AGRICULTURAL IMPACT STATEMENT


DATCP File Photo

DATCP #4623

Emerald Substation
Towns of Baldwin and Emerald, St. Croix County

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

PUBLISHED FEBRUARY 18, 2025

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DATCP #4623

Emerald Substation Project

St. Croix County

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

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MISSION STATEMENT

Dear Reader,

Through the Agricultural Impact Statement ("AIS") program, agricultural operations have the opportunity to provide feedback, document impacts, and suggest alternative solutions when their agricultural lands are affected by an entity with the potential powers of eminent domain. The AIS program also provides affected agricultural landowners time to gather information to make well-informed decisions before a study begins. Lastly, the AIS program makes suggestions and recommendations to study initiators to promote study alternatives and management practices that would reduce potential impacts to agricultural lands and operations.

The AIS program also serves the needs of the study initiator by conducting the AIS analysis and publishing the statement within a timely manner as required by Wis. Stat. § 32.035. In addition, the AIS program provides a continuing presence throughout study development and oversight processes in order to support agricultural operations and the statewide priority to preserve prime farmland.

The Agricultural Impact Statement program and the WI Department of Agriculture, Trade and Consumer Protection are honored to provide this essential state service to the agricultural landowners and operators of the state.

Thank you

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SUMMARY OF AGRICULTURAL IMPACT STATEMENT

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has prepared this Agricultural Impact Statement (AIS) #4623 for the proposed acquisition of land by Northern States Power Company of Wisconsin, doing business as Xcel Energy, herein referred to as Xcel Energy, in the Towns of Baldwin and Emerald, St. Croix County, WI. Xcel Energy proposes to establish a new 161/ 115 kV electric substation, associated facilities and to rebuild 1-mile of existing double circuit 161/ 155 kV transmission line to single circuit 115 kV line on the impacted agricultural land (the Project") (Figure 1). Xcel Energy will retire the Pine Lake North substation.

In 2025, Xcel Energy projects to purchase 36.10 acres of agricultural land for the substation site. The rebuild of the double circuit 161/ 155 kV transmission line to single circuit 115 kV line will occur within existing ROW- modifications to existing easements are not anticipated. According to the AIN, 3.38 acres of agricultural lands within existing ROW may be impacted by the transmission line rebuild. Xcel Energy is a public utility vested with the right of eminent domain but has documented that the proposed Project is on property currently optioned by Xcel and intends to acquire the property for the substation site through a voluntary sale (fee-simple purchase). Xcel Energy's proposed acquisition includes Tax Parcel ID 002100650000, located in the NE of section 4, T29N, R16W in the Town of Baldwin, St. Croix County. Construction of proposed electric substation will require 52.62 acres of leveled property. The proposed project footprint is anticipated to be converted from agricultural use, but it is not yet known if the remnant agricultural land will continue to be rented for agricultural use (Sara Ploetz, Merjent, personal communications, December 2024).

In accordance with Wis. Stat. §32.035, Xcel Energy has provided the Department with the necessary information and materials to conduct an AIS. The Department contacted the agricultural landowners and operators whose feedback is documented in Section IV. In accordance with Wis. Stat. §32.035(4)(b), the Department has reviewed and analyzed Xcel Energy's materials and comments from the affected agricultural property owner to assess the agricultural impacts of Xcel Energy's land acquisitions. Through the AIS analysis, the Department offers a set of recommendations and conclusions to Xcel Energy and the agricultural landowner to help mitigate impacts on agricultural lands and agricultural operations at the site of the proposed substation and the new transmission line right-of-way (ROW).

The set of recommendations are located within the AIS Recommendation Section beginning on page 3. The AIS analysis begins on page 5 with information on the project located in Section II. Information and conclusions on the agricultural setting of St. Croix County and impacted areas can be found in Section III. The agricultural impacts of the project on the land, landowner and operator can be found in Section IV. Appendices for AIS #4623 contain information on the appraisal and compensation process (Appendix B), a copy of Wisconsin's agricultural impact statement statute

(Appendix C), various additional sources of related information for agricultural landowners and operators (Appendix D) and Xcel Energy Best Management Practices- Substation Construction Specifications (Appendix E).

If Xcel Energy deviates from the planned voluntary acquisition, proposed use or scale of the acquired land, Xcel Energy shall re-notify the Department. The Department shall review the re-notification for new potential impacts to agricultural lands and may determine to generate an addendum to this AIS.

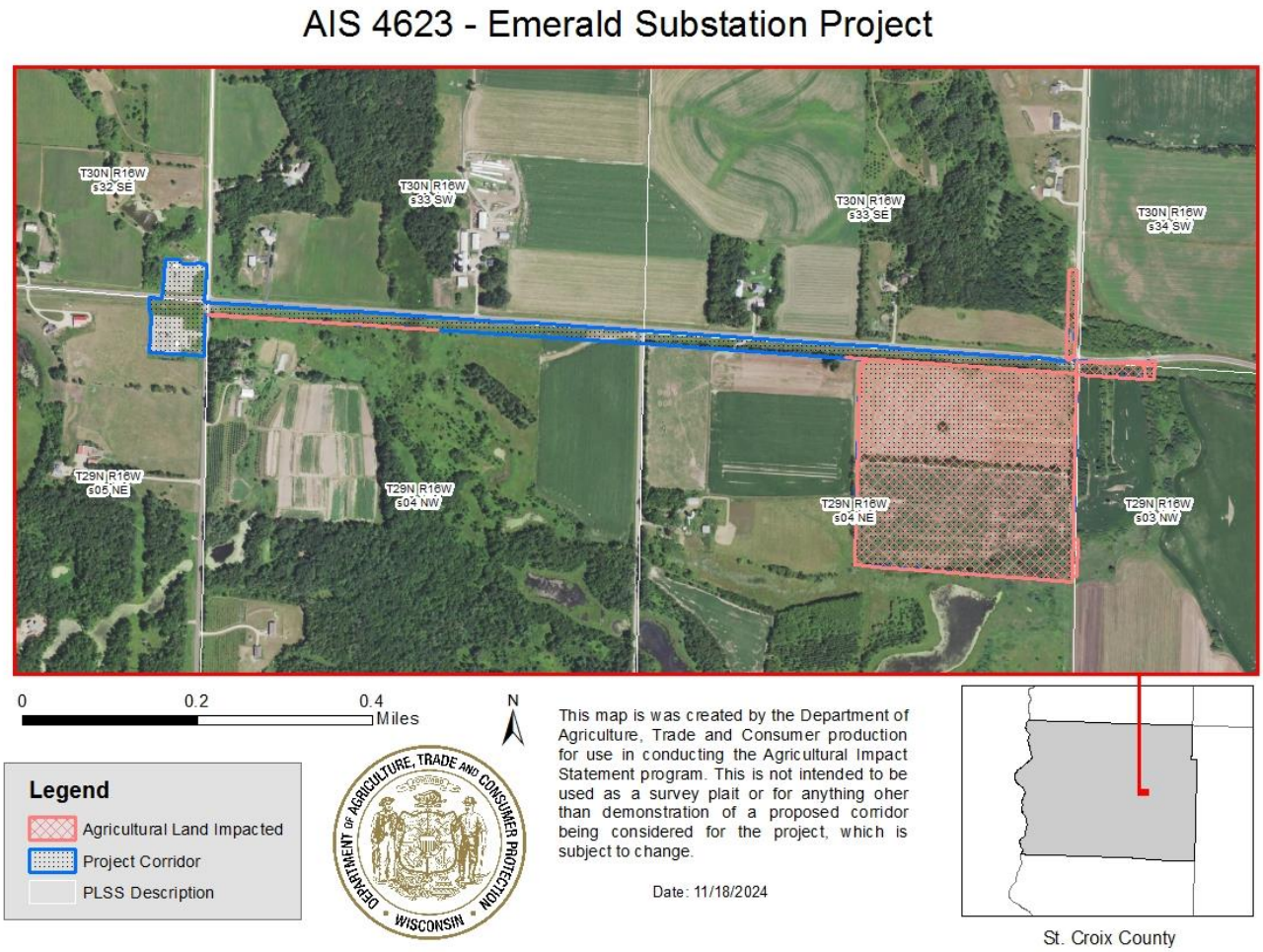

Figure 1: Location of the proposed acquisition, in the Towns of Emerald (Sections 32 and 33, Township 30 North, Range 16 West) and Town of Baldwin (Sections 3, 4 and 5, Township 29 North, Range 16 West), DATCP.

AGRICULTURAL IMPACT STATEMENT RECOMMENDATIONS

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has reviewed and analyzed the materials provided by Northern States Power Company, a Wisconsin corporation doing business as Xcel Energy, herein referred to as Xcel Energy, and comments from the affected agricultural property owner regarding the proposed Emerald Electrical Substation and one mile of double circuit transmission line land acquisition. In accordance with Wis. Stat. §32.035(4)(b), the Department provides the following recommendations to Xcel Energy and agricultural landowner to help mitigate impacts on agricultural lands and agricultural operations. Xcel Energy and their consultant, Merjent, was offered the opportunity to review and comment on this analysis. See Appendix F for a copy of Xcel Energy's comments regarding the Department's recommendations.

Recommendations to Xcel Energy

- The Department recommends Xcel Energy follow all the additional recommended mitigation efforts described in Section 5.5.1 through Section 5.5.7 to mitigate Project impacts to or regarding: topsoil mixing, soil compaction, drainage, de-watering, erosion, fencing, and weed control.
  - As part of any potential future agricultural rental agreements, Xcel Energy should consider requiring conservation practices such as but not limited to conservation tillage, cover cropping, or no-till and require the tenant operator to meet agricultural performance standards under ATCP 50.04 to maintain the health of the soils and preserve the investment.
  - If the remnant fields are no longer economically viable to farm and are not required for expansion of the substation facility, Xcel Energy should consult the Land and Water Conservation Division within the St. Croix County Community Development Department for opportunities to enroll undeveloped lands in conservation programming to positively affect drainage or pollinators in the area.
  - Xcel Energy is advised to consult the St. Croix County Land & Water Conservation Department on the existence of installed SWRM conservation practices within the Project area.
- As Tax Parcel ID 002100650000 is currently operated by a renter, Xcel Energy should disclose the availability of any remnant fields for future agricultural use.
- The Department recommends that Xcel Energy reach out to landowners proposed to be impacted individually to explain Project details as early as practical.

Recommendations to Seller and Tenant Operators

- Landowners should review the recommended mitigation efforts described in Section 5.5.1 through Section 5.5.7 to mitigate Project impacts to or regarding: topsoil mixing, soil compaction, drainage, de-watering, erosion, fencing, and weed control.
- If the Landowner is aware of any SWRM cost-shared practices on their farm within the proposed Project area, they should consult with the St. Croix County Land & Water Conservation Department to determine 1) the compatibility of the proposed substation with the existing conservation practice and 2) if any effects will occur due to alteration of a practice during construction activities.
- As Tax Parcel ID 002100650000 is currently operated by a renter, the seller should disclose information related to the sale that will impact their agricultural operation.
- Agricultural landowners and renters should inform Xcel Energy about the existence and location of drainage systems or planned drainage systems that could be affected by the Project.

AGRICULTURAL IMPACT STATEMENT

I. INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has prepared Agricultural Impact Statement (AIS) #4623 in accordance with Wis. Stat. §32.035 for the proposed purchase of agricultural land by Xcel Energy in St. Croix County, WI (Figure 1). Xcel Energy reported the proposed substation project in the Towns of Baldwin and Emerald, would include a 6.1 acre substation pad, a 5.6 acre storage yard, three stormwater ponds, two permanent access roads and a rebuild of approximately 1 mile of double circuit 161 kV/ 115 kV transmission line to a single circuit 115 kV transmission line. The project will replace the aging transformer at the Pine Lake North Substation and address expansion limitations at the Pine Lake North Substation facility. In addition, the transmission line rebuild will address a three terminal line situation, improving the reliability of the system (DATCP, 2024a).

The Public Service Commission of Wisconsin (PSC) is responsible for regulating the construction of electric public utilities and extensions of electric service in Wisconsin, which may include the construction of or modification to an existing substation. If a substation project does not meet a cost threshold it is not subject to the review of the PSC and is instead subject to applicable local permitting authorities. Xcel Energy reported that an application for a Certificate of Authority to construct the Emerald Substation and associated transmission line project is anticipated to be submitted to the PSC during the spring of 2025 (DATCP, 2024a).

Xcel Energy is a Wisconsin corporation furnishing electric light or power to the public and may be vested with the authority to condemn under Wis. Stat. § 32.02. Vested with the power of condemnation, utility projects that impact agricultural lands are also subject to Wisconsin's AIS statute Wis. Stat. §32.035. The Department issued a statement in accordance with Wis. Stat. §32.035 on October 23, 2024 requiring an AIS for the proposed project (Biefeld, 2024).

According to Wis. Stat. §32.035 , the AIS is designed to be an informational and advisory document that describes and analyzes the potential effects of a proposed project on agricultural operations and agricultural resources, but it cannot stop a project. The Department is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an acquisition of any interest in more than five acres of land from any agricultural operation. The term "agricultural operation" includes all owned and rented parcels of land, buildings, equipment, livestock, and personnel used by an individual, partnership, or corporation under single management to produce agricultural commodities.

The AIS reflects the general objectives of the Department in its recognition of the importance of conserving vital agricultural resources and maintaining a healthy rural economy. The Department is

not involved in determining whether or not eminent domain powers will be used or the amount of compensation to be paid for the acquisition of any property.

As the voluntary contract for the fee-simple acquisition by Xcel Energy precedes, or, may preclude a jurisdictional offer, the 30-day waiting period for contract negotiations under Wis. Stat. §32.035(4)(d) is not applicable. If Xcel Energy deviates from the selected project site as represented in the agricultural impact notification (AIN), the Department shall be re-notified in accordance with Wis. Stat. §32.035(3).

Should Xcel Energy ever actualize its powers of condemnation for this acquisition, information on the appraisal and compensation process under eminent domain is provided within Appendix B. The full text of Wis. Stat. §32.035 is included in Appendix C. Additional references to statutes that govern eminent domain and condemnation processes and other sources of information are also included in Appendices C and D.

II. PROJECT DESCRIPTION

The Project

Xcel Energy is planning to site a new electric substation and rebuild 1 mile of existing double circuit 161/115 kV transmission line to a single circuit transmission line on land currently under agricultural production. In accordance with Wis. Stat. §32.035(3), Xcel Energy has provided an AIN to the Department that serves as the main reference document for the project and the project need. The proposed project would be located in the Towns of Emerald (Sections 32 and 33, Township 30 North, Range 16 West) and Baldwin (Sections 3, 4 and 5, Township 29 North, Range 16 West), St. Croix County, WI (Figure 1) and will replace the Pine Lake North Substation and address expansion limitations at the Pine Lake North Substation facility. In addition, the transmission line rebuild will address a three terminal line situation, improving the reliability of the system.

To construct the proposed project, Xcel Energy will acquire 36.1 acres of agricultural land (Tax Parcel ID 002100650000) shown in

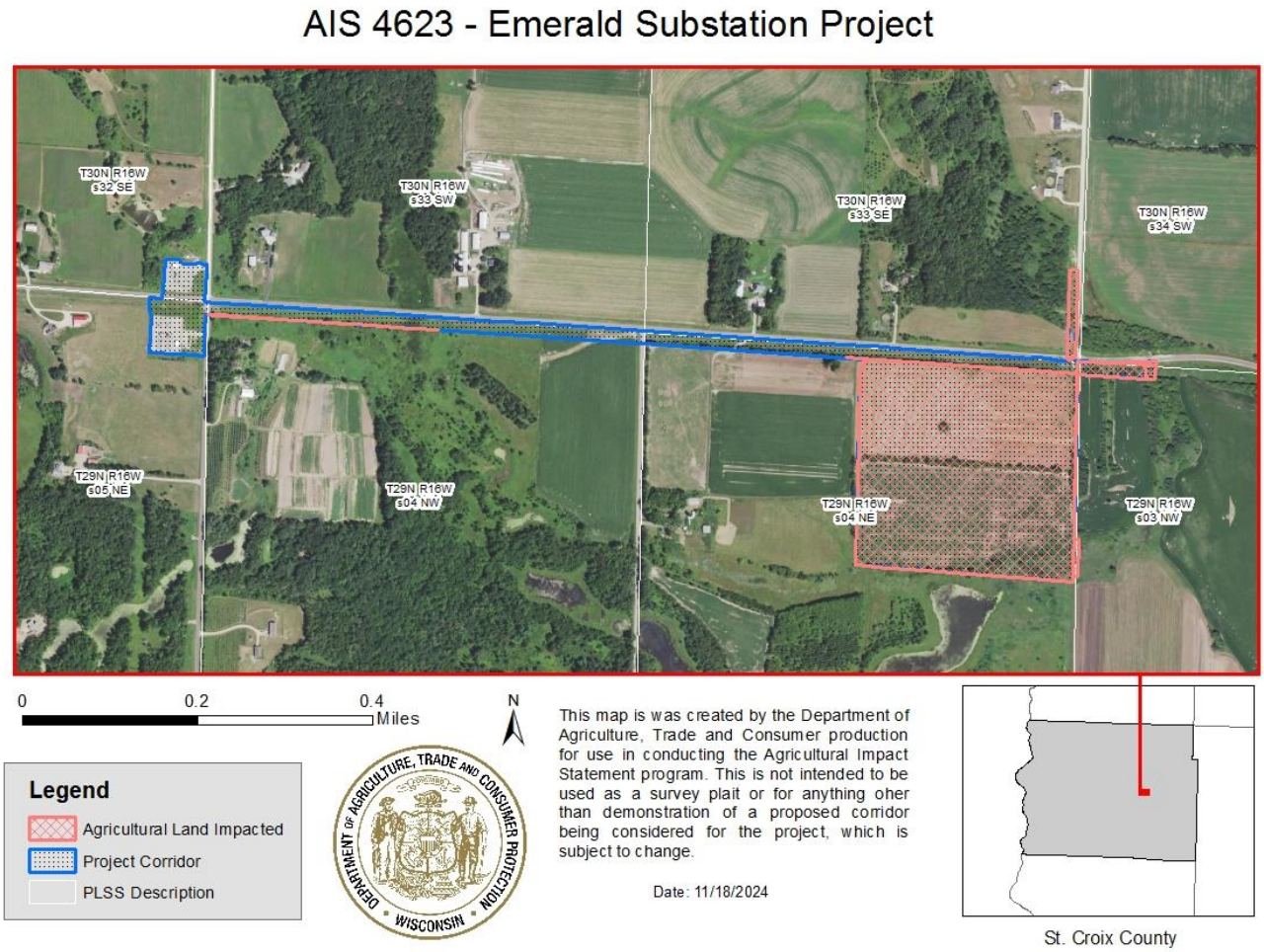

Figure 1, by a fee-simple acquisition (i.e. to purchase full ownership and exclusive rights to the property). In addition, the transmission line rebuild will occur within existing right-of-way (ROW). As proposed, the substation project will comprise approximately 52.62 acres (13.19 acres for the transmission line project, 39.43 acres for the substation site) of which 39.48 acres are currently in agricultural use. Xcel Energy is planning to submit an application for a certificate of authority to the PSC in Quarter two of 2025, initiate land acquisitions in February 2025, start construction of the facility commencing in Quarter one of 2027 to conclude in Quarter four of 2028.

Project Need

According to the AIN, the project will replace the aging transformer at the Pine Lake North Substation and address expansion limitations at the Pine Lake North Substation facility. In addition, the transmission line rebuild will address a three terminal line situation, improving the reliability of the system (DATCP, 2024a).

III. AGRICULTURAL SETTING

Farmland Preservation

Wisconsin's farmland preservation (FP) program provides local governments and landowners with tools to aid in protecting agricultural land for continued agricultural use and to promote activities that support the larger agricultural economy. Lands that are planned for farmland preservation by the county and included in a certified zoning district or located within an Agricultural Enterprise Area (AEA) are afforded land use protections intended to support agriculture, and are eligible for the farmland preservation tax credit.

Farmland Preservation Planning

St. Croix County's current FP plan was certified by the Department in 2024 and is set to expire in 2034. St. Croix County's farmland preservation plan criteria are based on a land evaluation and site assessment model that considers county soils and their agricultural characteristics in addition to development pressures based on locally adopted plans, policies, social, economic and geographical attributes as well as future land use maps (St. Croix County, 2024). The certified farmland preservation plan area includes the Tax Parcel ID 002100650000 where Xcel Energy is proposing to site the new substation facility, but excludes almost the entire corridor for the transmission line rebuild.

Farmland Preservation Zoning

The Town of Baldwin has certified FP zoning through St. Croix County's general zoning ordinance. The certified farmland preservation zoning districts for St. Croix County are the AG-1 and AG-2 zoning districts (DATCP, 2024b). These locally crafted zoning districts restrict covered lands to agricultural uses and uses compatible with agricultural use and is certified to be consistent with the state's Farmland Preservation Law, Chapter 91. Under Wis. Stat. §91.46(4), farmland preservation zoning districts may authorize electric transmission uses with a conditional use permit for uses that do not comply with s. Wis. Stat. §91.44(1)(f). The Town of Emerald does not have a certified farmland preservation zoning ordinance.

Agricultural Enterprise Areas (AEAs)

AEAs are community-led efforts to establish designated areas important to Wisconsin's agricultural future. This designation highlights the importance of the area for local agriculture and further supports local farmland preservation and agricultural development goals. Designation as an AEA also enables eligible landowners to enter into FP agreements. Through an FP agreement, a landowner agrees to voluntarily restrict the use of his/her land to agriculture for fifteen years in exchange for eligibility for the farmland preservation tax credit.

A review of the Department's AEA program shows that St. Croix County contains four designated AEAs (DATCP, 2024c): Rush River Legacy AEA (Town of Rush River), Town of Troy AEA (Town of Troy), Apple Lake AEA (Towns of Alden, Farmington, Somerset and Star Prairie) and the Stanton Farmland Heritage Preservation AEA (Towns of Cylon, Stanton and Star Prairie). As proposed, the Xcel Energy acquisition for the project will not impact any farmland in designated AEAs in St. Croix County.

Prior to 2009, owners of eligible farmland could sign 10 to 25-year farmland preservation agreements outside of AEA boundaries. There are no effective pre-2009 farmland preservation agreements located in the Towns of Baldwin or Emerald, St. Croix County.

Drainage Districts

Drainage districts are local governmental entities governed under Wis. Stat. Ch. 88 and organized under a county drainage board for the primary purpose of draining of lands for agricultural use. Landowners who benefit from drainage pay assessments to cover the cost to construct, maintain, and repairing the district's drains. According to the Department, approximately 190 active districts exist within 27 of Wisconsin's 72 counties (DATCP, 2021). A review of the Department's Drainage Program database indicates that no drainage districts are located within the Towns of Baldwin or Emerald, St. Croix County nor are any drainage districts anticipated to be indirectly impacted by the proposed project.

Conservation Programs

Voluntary conservation programs such as the USDA Conservation Reserve Enhancement Program (CREP) and the USDA Conservation Reserve Program (CRP) are financial incentive programs to help agricultural landowners meet their conservation goals. The USDA and the Department jointly administer the CREP program in Wisconsin.

Conservation Reserve Enhancement Program (CREP)

The CREP program pays eligible agricultural landowners enrolled within the program to install filter strips along waterways or to return continually flooded fields to wetlands while leaving the remainder of the adjacent land in agricultural production. To be eligible for CREP payments, a recipient must have agricultural lands in crop production that are within 150 ft of a stream or water body or 1,000 ft from a grassland project area (DATCP, 2019). A review of the Department's CREP records indicated that the proposed Xcel Energy acquisition for the project would not directly impact any current CREP fields or easements.

Conservation Reserve Program (CRP)

The CRP program is a land conservation program administered by the Farm Service Agency of the USDA. In exchange for a yearly rental payment, eligible agricultural landowners enrolled in the program agree to remove highly erodible land from agricultural production and plant resource-

conserving plant species such as grasses or trees that will improve environmental health and quality (USDA, 2022). Eligible agricultural landowners must possess lands with the potential for long-term improvements to water quality, prevent soil erosion or establish beneficial wildlife habitats according to the USDA Environmental Benefits Index (USDA, 2022). CRP enrollment information is privileged to the USDA and CRP program participants. The Department is therefore unable to determine if any of the impacted agricultural parcels are enrolled within the CRP program.

Soil and Water Resource Management Grant Program (SWRM)

The state has a SWRM program with goals including: enhancing surface and groundwater protections, providing financial and technical assistance for locally led conservation and addressing soil and water resource concerns. Through the SWRM Program, the Department allocates funds to County Conservation Departments to facilitate landowner cost-share for installation of conservation practices. When a cost-share contract is issued under Wis. Stat. §92.14, a landowner and or grant recipient agrees to install and maintain the conservation practice according to an operation and maintenance plan. If the Landowner is aware of any SWRM cost-shared practices on their farm within the proposed Project area, they should consult with the Land and Water Conservation Division within the St. Croix County Community Development Department to determine 1) the compatibility of the proposed substation with the existing conservation practice and 2) if any effects will occur due to alteration of a practice during construction activities.

Xcel Energy is advised to consult the Land and Water Conservation Division within the St. Croix County Community Development Department on the existence of installed SWRM conservation practices within the Project area. Practices that are not maintained in accordance with the terms of the contract operation and maintenance plan may be subject to repayment of cost-shared funds. If the landowner is required to repay any cost-share funds because a construction impact resulted in a violation of the SWRM contract, the landowners should contact the Xcel Energy staff member, as designated by the Company, responsible for handling compensation for release of lands from conservation programs. The landowner should be compensated for any termination of SWRM grant contract resulting from a construction impact.

IV. AGRICULTURAL IMPACTS

In addition to being a key component of Wis. Stat. §32.035, documenting the agricultural impacts of a project provides the project initiator and the agricultural landowner the opportunity to better understand the project in its own right as well as learn how the project will impact agriculture. Furthermore, the documentation of agricultural impacts by agricultural landowners and operators creates the opportunity for them to support alternatives that may reduce impacts to agricultural lands. The Department has used information provided by Xcel Energy for this AIS to analyze the potential agricultural impacts of the Project. The analysis of agricultural impacts and conclusions

drawn from the analysis form the basis of the Department's recommendations within the Agricultural Impact Statement Recommendation Section above.

Farmland Acquisitions and Landowner Concerns

Xcel Energy's new substation project will impact approximately 39.48 acres of agricultural lands and impact 7 landowners, with 37.62 acres impacting one landowner for the construction of the new Emerald Substation. The Department reached out to the impacted agricultural landowners to discuss feedback about potential agricultural impacts and received two responses.

Xcel Energy's Proposed Acquisitions

Within the AIN submitted to the Department, Xcel Energy stated they considered a "rebuild" alternative that would reconstruct the existing transmission line with the current arrangement but replacing painted poles with galvanized or weathering poles, replacing the mounted switch with a new, similar one, and rebuilding the double circuit wood line with steel poles. However, Xcel Energy found this rebuild alternative does not address the electrical layout and reliability concerns. Xcel Energy also considered building a second 161kV circuit into the Pine Lake North substation and removing the existing 161kV switch, however there was not enough space at the substation to expand the yard to accommodate another 161kV circuit.

The Project is located in Township 29 North, Range 16 West, Section 4 and 5 of the Town of Baldwin and Township 30 North, Range 16 West, Section 32 of the Town of Emerald. The proposed Emerald Substation site is located on approximately 52.6 acres of land zoned AG-1 Agricultural District in St. Croix County, on parcel ID 109002100650000. This land is predominately agricultural with wetlands and wooded areas. The Project area where the proposed substation would be build consists of 36.10 acres of agricultural land that would be converted to industrial use. At the time of the analysis, Xcel Energy has not yet determined if the rest of the parcel will be converted or leased back for agricultural use (Sara Ploetz, Merjent, personal communications, December 2024). The transmission line aspect of the Project is a rebuild of an existing transmission line within existing ROW, and Xcel Energy does not anticipate land use changes to occur, but does overlap 3.38 acres of agricultural land.

The AIN submitted by Xcel Energy reports that the parcel is proposed to be fitted with a 6.1 substation pad, an approximately 5.6 acre storage yard area, three stormwater ponds, and two new permanent access roads coming south off County Road DD into the Emerald Substation site. The Pine Lake North Substation will be retired, with existing equipment and footings removed from the gravel pad, but the gravel yard will remain as a permanent storage yard.

Xcel Energy follows a set of best management practices for electrical substation construction and site preparation, including erosion control, grading, and topsoil management, amongst others, incorporated herein as Appendix E.

Landowner Concerns

The Department attempted to contact the impacted landowners for comment and received two response from Robert and Faye Otis, and Brent and Rachel Ackley. See Table 1 below for a list of the impacted agricultural landowners.

Table 1: List of Agricultural Landowners the Department Attempted to Contact

Landowner Name	Acres Impacted
BRENT D ACKLEY	0.82
CHAD L & ERIKA L KRUEGER	0.07
DEAN J & SHELLEY A WINK	0.27
JOSEPH A HOLLE	0.00020
PAUL E & MARYLU SCHWINTEK	0.64
ROBERT C & FAYE A OTIS	37.62
SIA THAO	0.06

Robert and Faye Otis

Robert and Faye Otis own around 157 acres of land, including over 20 acres of pasture and over 10 acres of managed woodlands as well as around 38 acres of cropland that they rent to a farm operator. Xcel Energy is projected to acquire 36.1 acres from Robert and Faye Otis by a fee-simple acquisition (i.e. to purchase full ownership and exclusive rights to the property) for the use of the substation. An additional 1.52 acres is proposed to become a permanent easement for transmission line ROW (DATCP, 2024a).

The Department contacted Otis by mail for feedback on potential impacts to their farm operation. Otis reported that the current land renter has rented the land for 28 years and Otis shared that the renter has stated that he doesn't think the substation construction would negatively affect his farm operation. Otis additionally shared that the land not being used for the substation footprint might continue to be rented by Xcel Energy to the current land renter. Xcel Energy has confirmed that a large aspect of the parcel, around 30 acres, will be used for the substation, but has not yet determined if the remaining acreage will continue to be used for agricultural use or not yet (Sara

Ploetz, Merjent, personal communication, December 2024). Beyond the potential for existing fences to be moved, Otis did not describe other concerns of the project impacting the land.

As Tax Parcel ID 109002100650000 is currently operated by a renter, the seller should disclose information related to the sale that will impact their agricultural operation. Xcel Energy should disclose the availability of any remnant fields for future agricultural use to the current renter.

Brent and Rachel Ackley

The Department contacted Ackley by mail for feedback on potential impacts to their farm operation. They shared that their farm operation consists of 11 acres of cropland and 3 acres of homes/farm buildings, with cropland being the main land use located within the proposed project area.

Within the questionnaire that the Department mailed, Ackley noted that they could not share specific concerns about how the Project would impact their farm operation as the project initiator had not shared the proposals with the public yet (to their knowledge) and they do not know what is planned for the Project.

The Department recommends that Xcel Energy reach out to landowners proposed to be impacted individually to explain Project details as early as practical, including on lands which Xcel Energy has existing ROW.

Severance, Access and Wasteland

The acquisitions of agricultural property can result in agricultural parcel severance, removal of existing field access points and potentially the creation of wastelands and uneconomic remnant parcels. The circumstances (i.e. loss of access, severance, wasteland etc.) surrounding the impacts to each impacted remnant agricultural parcel are unique, thus some agricultural parcels may remain economically viable, while others may not. The following analysis will document the potential for severance, loss of access and potential creation of wastelands and uneconomic remnant parcels for the agricultural parcel impacted by the project.

Severance

Severing an agricultural parcel to accommodate a project effectively splits the existing parcel into two or more smaller parcels. Severing an agricultural parcel may remove existing access points, create agricultural wastelands or uneconomic remnant parcels, and at times divide the operation of a farm. The proposed project is not anticipated to sever or bisect any agricultural parcels.

Access

As proposed, the Project has the potential to temporarily limit agricultural field access and limit access to agricultural operations during transmission line construction. When agricultural lands and operations lose access, even temporarily, agricultural productivity may be impacted if crops,

livestock or other agricultural products cannot be tended too. Lost access may also directly result in lost income if a field cannot be planted or harvested, or if an agricultural operation as a whole is hindered. Access limitations will be specific to temporary and permanent easements utilized for laydown yards, staging areas, off-ROW access roads and the transmission line ROW. Construction mitigation efforts for each farm will vary according to land use activities of the farm operator, type of farm operation, soil conditions, and extent of construction activities on the parcel or farm operation, and feasibility to avoid areas of concern. Landowners and farm operators with concerns related to access on their farm operation should discuss them with the Project Initiators during easement negotiations and in subsequent communications. The proposed project is not anticipated to permanently change existing access to agricultural parcels.

Wasteland

Acquisitions that sever farmland frequently create small remnant fields that may be difficult to access or are irregularly shaped. Small remnant fields that are irregularly shaped can make it difficult for agricultural equipment to navigate and reduce the amount of tillable acres, thus creating undeveloped land (Wis. Stat. § 70.32(2)(a)(5)) or what is commonly referred to as wasteland. This in turn reduces agricultural productivity and decreases the economic viability of the land. Furthermore, as remnant fields decrease in size the proportion of wasteland (a result of narrow fields and sharp corners) increases, which further influences the fields overall productivity and economic viability. At the time of this analysis, the Project is not expected to create significant wastelands.

Prime Farmland and Soils

The proposed acquisition and construction of the project will impact approximately 39.477 acres of agricultural lands and agricultural soils. The soils impacted by the proposed project were cataloged by soil map unit and soil texture using the Department's prime farmland soils GIS layer. These soils were analyzed for impacts to soils designated as prime farmland, prime farmland if drained or farmland of statewide importance (Table 1). Table 1 reflects adjusted total GIS acres for the selected parcel rather than assessed acres or total acreage reported in Xcel Energy's AIN. Prime farmland is designated by the USDA according to section 622.3 of the National Soil Survey Handbook (USDA, 2021) and is based on the ability of the land and soil to produce crops. Definitions of prime farmland, prime farmland if drained and farmlands of statewide importance are provided under Table 2.

Approximately 82.5% of the agricultural land impacted by the proposed acquisition holds some level of State priority designation. Specifically, 76.9% of the soils are designated as prime farmland 5.6 % are designated as prime farmland if drained (Table 2). Across the impacted agricultural parcel, the primary soil textures is silt loam of various soil series. All of the impacted soils are silt loam soils, which are medium-textured soils (Cornell, 2017) with good soil structure, possess an ideal ability to hold onto water without becoming excessively wet and are usually best suited for

crop production (UW-Extension, 2005). A review of the topography for parcel ID 109002100650000 to be acquired for the substation facility suggests there may be a 39 foot difference between the elevation between the west and east boundaries of the parcel. New substations require a stable and level ground surface (PSC, 2013). As is the case, the parcel may need to be regraded before the new substation facility is sited.

This soils analysis shows that Xcel Energy's proposed acquisition has the potential to remove high quality soils from production.

Table 2: Soils impacted by the proposed Xcel Energy acquisition for new electric substation. Adjusted total acres reflect measured GIS acres for the parcel rather than assessed acres or total acreage reported in Xcel Energy's AIN.

Soil Texture	**Prime Farmland*** (acre)	**Prime Farmland if Drained**[◊] (acre)	**Farmland of Statewide Importance**[Ŧ] (acre)	**Not Prime Farmland**[ϕ] (acre)	**Total** (acre)
Alternate Route					
Loam	0.0	0.0	0.0	5.9	5.9
Silt Loam	30.4	2.2	0.0	1.0	33.6
				Total	39.5

*__Prime farmland__ is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and may be utilized for cropland, pastureland, rangeland, forest land, or other lands excluding urban built-up land or water. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management.

[◊]**Prime farmland if drained**, indicates that if farmland is drained it would meet prime farmland criteria.

[Ŧ]**Farmlands of statewide importance** are set by state agency(s). Generally, these farmlands are nearly prime farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce yields high as prime farmlands under proper conditions.

[ϕ]**Not Prime farmland**, indicates farmland is neither prime farmland nor of designated importance.

Drainage and Soil Health

Maintaining proper field drainage and preserving soil health is vital to the success of an agricultural operation. If drainage is impaired, water can settle in fields and cause substantial damage, such as reducing soil health, harming or killing crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock. Soil structure, texture, organic matter and microorganisms are all important factors that influence soil health (Wolkowski and Lowery, 2008).

The substation's site plan will dictate where grading and/or filling may be required to establish a stable and level surface for the new substation as well as any practices that may be required to capture or mitigate runoff from gravel pads, concrete foundations and access roads. The practice of grading may require the removal of topsoil, which will affect organic matter, nutrient and water

holding capacity of the land. Grading of soils to prepare a construction site may increase soil compaction which can lower the holding capacity for water, resulting in runoff and or other drainage issues if unmanaged (USDA-NRCS, 2000).

Xcel Energy is subject to permitting requirements to ensure that construction proceeds in a manner to minimize drainage issues and soil erosion. Proximal farmland owners should also consider consulting the St. Croix County Community Development Department for applicable site erosion control and storm water management practices, such as planting cover crops, in anticipation of potential increased storm water runoff or soil erosion originating from the Project site.

V. AGRICULTURAL IMPACTS

Xcel Energy has provided a copy of its best management practices (BMPs) for the Emerald Substation construction specifications incorporated herein as Appendix E (Sara Ploetz, Merjent, personal communication, December 2024). The Department reviewed these BMPs and provides additional recommends in the following subsections for Xcel Energy and impacted landowners that aim to minimize impacts to agricultural land where transmission line construction is proposed to occur, to any remnant farmland, as well as impacts to agricultural operations surrounding the substation.

5.1.1. Topsoil Mixing

Agricultural topsoil is an invaluable resource that should be preserved. Excavation activities required to create the structural foundations for electric transmission line poles have the potential to mix highly productive topsoil with underlying less productive and potentially rocky subsoils. Deep rutting also has the potential to intermix topsoil. If intermixing of topsoil occurs, the resulting soils are generally known to be less productive and in-turn reduce the agricultural productivity of the impacted area. When excavation is required, Xcel Energy is required by Wis. Stat. § 182.017(7)(c) to segregate and stockpile topsoil from subsoil.

Within their BMPs (Appendix E), Xcel Energy states that they will restore agricultural lands to an extent practicable and will use mitigation techniques such as topsoil replacement as appropriate.

The Department recommends that Xcel Energy take the following steps to prevent the mixing of topsoil with subsoil layers within the Project ROW:

- Do not spread mixed soils or segregated subsoils over cropland, pastures or other agricultural fields.
- Prevent and monitor for erosion to keep topsoil segregated and within the ROW.
- Avoid working in areas with recently saturated soils.
- If rutting occurs, allow sufficient time for the soil to dry before repairing the ruts.

- If topsoil mixing occurs, remove the intermixed soil and replace with new topsoil.

5.1.2. Soil Compaction

Equipment used to construct electric transmission lines has the potential to compact soil and reduce soil productivity on the farmland traversed during construction. Soil compaction is widely known to have a range a potential negative impacts to the productivity of soil, including reduced crop productivity, reduce crop uptake of water and nutrients, restriction of plant rooting depth, decreased water infiltration and increased surface runoff.

Several factors influence whether soil becomes compacted. An important influence is soil moisture: the wetter the soil, the more likely it is to be compacted from traffic. The potential for compaction also depends on the soil texture. Coarser textured soils, like sand or sandy loam, are less likely to become compacted than are clay or silty clay loams. Finally, the axle weight of the construction equipment affects compaction. UW-Extension report A3367 states that heavy equipment with axle loads that exceed 10 tons increase the risk of soil compaction into subsoil layers that cannot be removed by conventional tillage (Wolkowski and Lowery, 2008). The expected compaction depth increases as the axle load and soil moisture content increases.

Within their BMPs (Appendix E), Xcel Energy states that they were restore agricultural lands to an extent practicable and will use mitigation techniques such as deep tilling as appropriate.

The Department recommends taking the following steps to prevent soil compaction and rutting wherever possible. Measures to prevent soil compaction within the Project ROW include:

- Low-ground pressure and/or wide tracked equipment to reduce axel weight applied to soils.
- The use of construction matting in wet areas, areas prone to rutting, or wetlands to spread out ground pressure.
- When possible, conduct construction work during winter months when the ground is frozen.
- Avoid working in areas with recently saturated soils.
- If rutting occurs, allow sufficient time for the soil to dry before repairing the ruts.

After construction is complete, the ROW will be compacted to some degree. The Department recommends measuring for soil compaction post-construction within the Project ROW and outside of the Project ROW with a penetrometer throughout the soil horizon and comparing the measurements. If soil measurements within the Project ROW are comparatively higher, this is an indication that compaction has occurred. In areas where soil compaction occurred, the Department recommends Xcel Energy take steps to decompact the soils by conducting a sufficient amount of deep tillage (V-ripper, chisel plow, para plow or other depth appropriate tillage implement) within the ROW to help restore the soil structure to pre-construction productivity. Following decompaction, the soil should be measured again for signs of compaction to ensure proper

decompaction has occurred throughout the topsoil and subsoil profile. The Department also recommends Xcel Energy monitor soil moisture conditions post-construction throughout the Project ROW for signs of standing water. Areas with standing water may also have experienced soil compaction and should be measure for compaction.

5.1.3. Drainage

Proper field drainage is vital to a successful farm operation. Construction of an electric transmission line can disrupt improvements such as drainage tiles, grassed waterways, and drainage ditches, which regulate the flow of water on farm fields. If drainage is impaired, water can settle in fields and cause substantial damage, such as killing crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock. Construction-caused soil compaction or damage drain tiles leading to ponded water where none existed prior to construction. If drain tiles are damaged, Xcel Energy is required by Wis. Stat. § 182.017(7)(c) to repair or replace the damage drain tile.

Within their BMPs (Appendix E), Xcel Energy states that they were restore agricultural lands to an extent practicable and prior to the start of any land disturbing activity, temporary sediment and erosion control best management practices (BMPs) will be installed along the boundaries of the construction workspace and sensitive resources.

To help mitigate the potential for drainage impacts, the Department recommends the following:

- Agricultural landowners should inform Xcel Energy about the existence and location of drainage systems or planned drainage systems that could be affected by the Project.
- Agricultural landowners should document field moisture conditions and the historic presence/absence of ponded water prior to the start of construction for post-construction comparisons.
- Xcel Energy should consider using the techniques outlined in Section 5.1.2 "Soil Compaction" when crossing a known drain tile.
- Where construction activities have created new wet areas Xcel Energy should work with the landowner to determine the best means to return the agricultural land to pre-construction function.

5.1.4. De-watering

During excavation/auguring of the structure foundation for a transmission line pole, dewatering may be necessary. Improper dewatering can result in soil erosion, sedimentation and deposition of gravel, sand, or silt onto adjacent agricultural lands, and the inundation of crops. The discharge of these construction waters must be in compliance with current drainage laws, local ordinances, WisDNR permit conditions, and the provisions of the Clean Water Act. Xcel Energy is required by

Wis. Stat. § 182.017(7)(c) to compensate the landowner for any damage to agricultural fields caused by construction de-watering activities.

Within their BMPs (Appendix E), Xcel Energy states that they were restore agricultural lands to an extent practicable and prior to the start of any land disturbing activity, temporary sediment and erosion control best management practices (BMPs) will be installed along the boundaries of the construction workspace and sensitive resources.

The Department recommends the following to mitigate the impacts of construction water discharge on agricultural lands:

- Xcel Energy should identify prior to construction 1) excavation sites with low areas and/or hydric soils where de-watering is likely and 2) suitable upland areas for discharge.
- Discharge locations should be well-vegetated areas with topography that will prevent the water from returning to the ROW, resist soil erosion, and allow for infiltration and settling of gravel and other unwanted sediments prior to entering a field, pasture, or waterbody.
- Xcel Energy should consider using pre-filter bags or other filter devices, prior to discharge, in order to capture sediments, gravel and rocks.
- Cropland, pasture lands and other agricultural areas selected for discharge should not be inundated for more than 24 hours, as longer durations could result in crop damage.
- Xcel Energy should not directly discharge or allow construction waters from non-organic farms to enter an organic farming operation.

5.1.5. Erosion and Conservation Practices

Electric transmission line construction activities and the placement of transmission line poles can destabilize existing erosion control practices such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. The destabilization of these erosion control practices have the potential to cause soil erosion within the ROW, but also from upland fields. During wet conditions the risk of soil erosion is increased, as exposed soils, especially areas with increased slope, may more easily erode and move downslope. Wind erosion may also be of concern if existing windbreaks are removed from the ROW, especially when soil are dry. If left unchecked, significant erosion can have an adverse effect on the long-term productivity of agricultural lands. Xcel Energy is required by Wis. Stat. § 182.017(7)(c) to restore existing erosion control practices such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. that are damaged by construction activities to pre-construction condition and function.

Within their BMPs (Appendix E), Xcel Energy states that they were restore agricultural lands to an extent practicable and prior to the start of any land disturbing activity, temporary sediment and erosion control BMPs will be installed along the boundaries of the construction workspace and sensitive resources.

The Department recommends the following to mitigate soil erosion within the Project ROW:

- Once construction is complete, pending soil decompaction, impacted agricultural lands within the ROW should be returned to cropland or seeded with the appropriate seed mix.
- Xcel Energy should inspect all temporary erosion controls structures on a daily basis throughout construction and restoration phases and undertake erosion control structure maintenance as required to prevent soil erosion within the ROW.
- Xcel Energy should avoid impacting any existing permanent erosion control structure (e.g. diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc.) that's intended to prevent soil erosion from an upland agricultural area.
- Should Xcel Energy disrupt an existing permanent erosion control structure, a temporary structure should be installed until the permanent erosion control is restored.

5.1.6. Fencing

The construction process may require fences that cross the Project ROW to be severed. According to Wis. Stat. § 182.017(7)(c), if Xcel Energy is required to cut or sever a fence they are required to install a temporary gate and repair all damages to fencing. Changes to existing fence lines can interfere with grazing activities, particularly for rotational grazing operations that depend on precise, scheduled grazing in particular areas. To mitigate the impacts to fencing, the Department recommends the following:

- Prior to construction, Xcel Energy should consult with agricultural landowners with grazing operations in and adjacent to the Project ROW and modify construction activities and timing to mitigate impacts to livestock.
- Xcel Energy and agricultural landowners should agree on the appropriate measures to prevent livestock from entering the Project ROW.
- Xcel Energy should develop a plan for livestock to access pastures adjacent to the Project ROW or otherwise compensate the landowner for the costs related to restricted grazing.

5.1.7. Weed Control

The Project may introduce noxious weeds or other invasive plants species into the Project ROW that complete with agricultural crops. Noxious weeds may also spread from parcel to parcel by construction equipment and project activities. Once weeds establish, they can interfere with

agricultural harvesting equipment, attract unwanted insects, and require physical removal or chemical applications to remove.

Post construction and restoration, agricultural operations may resume normal agricultural cropping activities within the ROW so long as the crop or agricultural equipment do not interfere with transmission line facilities. After construction and during the operation of the line, Xcel Energy is required by Wis. Stat. § 182.017(7)(d) to control weeds and brush around the transmission line facilities. However, Xcel Energy shall not use herbicide for weed and brush control without the express written consent of the landowner (Wis. Stat. § 182.017(7)(d)).

The Department recommends the following to control for and manage the spread of noxious weeds within the project ROW:

- Agricultural landowners should state whether they do or do not give Xcel Energy their express written consent for herbicide to be applied within the ROW they own.
- Xcel Energy should clean construction equipment and materials prior to entering an area of certification.
- Xcel Energy should clean all roadways (private, county, state etc.) of construction debris, dirt and rocks.
- Xcel Energy should use tracking pads at frequently used access points.
- Agricultural landowners and beekeepers should consider using the free online DriftWatch™ and BeeCheck™ registries, operated by FieldWatch™ to communicate areas containing specialty crops or beehives with pesticide applicators, in order to minimize the risk of accidental exposure. For more information on DriftWatch, please visit the WDATCP DriftWatch website at the provided link or at https://wi.driftwatch.org/.
- Xcel Energy and its contractors that are applying herbicide or pesticides should utilize the Departments Driftwatch™ online mapping tool to locate agricultural lands and operations that are susceptible to herbicide or pesticides. If the online mapping tool locates an agricultural operation on or near areas that will receive herbicide or pesticide applications, Xcel Energy should contact the operation to discuss the appropriate methods required to minimize the risk of accidental exposure.

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