

AGRICULTURAL IMPACT STATEMENT



DATCP File Photo

**DATCP
#4424**

**Ashland-Ironwood Transmission Line
Relocation Project
Ashland and Iron Counties
PSC Docket ID 4220-CE-183**



**WISCONSIN DEPARTMENT OF AGRICULTURE,
TRADE AND CONSUMER PROTECTION**
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Ashland-Ironwood Transmission Line Relocation Project

Ashland and Iron Counties

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

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MISSION STATEMENT

Dear Reader,

In the 1970's, Wisconsin farmers and many local governments located between Green Bay and Milwaukee overwhelmingly opposed the planned creation of Interstate 43 (I-43). As originally planned, the I-43 project would run about 2 miles west of and parallel to Hwy-57 and be constructed primarily on farmland, as opposed to utilizing the existing Hwy-57 right of way. These farmers organized and staged protest rallies on the Wisconsin State Capitol grounds, including bringing cows to graze on the capital lawn. The strong opposition these farmers and local governments demonstrated prompted a compromise that would relocate the interstate to run along the US 141 corridor between Milwaukee and Manitowoc. This same opposition also prompted the Wisconsin legislature in 1978 to establish the Agricultural Impact Statement (AIS) statute, Wis. Stat. § 32.035, as part of Wisconsin's Eminent Domain law.

Holding onto the spirit and purpose of the farmer led protests of the 1970's, the mission of the AIS program is ***to provide agricultural landowners and operators an opportunity to be heard in matters that impact their lands and an opportunity to voice for alternatives in order to preserve farmland under the framework of Wis. Stat. § 32.035***. Through the AIS program, agricultural landowners have the opportunity to provide feedback, document impacts, and advocate for alternative solutions any time agricultural lands are significantly affected by an entity with the potential powers of eminent domain. The AIS program also provides affected landowners the time to gather information in order to make well informed decisions before the potential project begins. Lastly, the AIS program makes suggestions and recommendations to project initiators to promote project alternatives and management practices that would reduce the potential impacts to agricultural lands and operations.

The AIS program has responsibilities to both the impacted landowners and the project initiator. The AIS program serves as an advocate to the affected agricultural landowners and will contact each affected landowner and operator in order to listen, learn and document the impacts the project poses to their agricultural lands and operations. Based on this feedback, the program will also identify and recommend project alternatives, best management & oversight practices and remediation practices to the project initiator, landowner(s) and operator(s) to reduce potential agricultural impacts. The AIS program serves the needs of the project 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 project development and oversight processes in order to advocate for agricultural landowners and support 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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ACRONYMS

AEA	Agricultural Enterprise Area
AIN	Agricultural Impact Notification
AIS	Agricultural Impact Statement
CPCN	Certificate of Public Convenience and Necessity
CREP	Conservation Reserve and Enhancement Program
CRP	Conservation Reserve Program
CSA	Core Statistical Areas
CTH	County Trunk Highway
DATCP	Department of Agriculture, Trade and Consumer Protection
EA	Environmental Assessment
EIS	Environmental Impact Statement
FP	Farmland Preservation Program
FSA	Farm Service Agency
IAM	Independent Agricultural Monitor
IEM	Independent Environmental Monitor
kV	Kilovolt
MFL	Managed Forest Law
MSA	Metropolitan Statistical Areas
NEV	Neutral to Earth Voltage
PSC	Public Service Commission of Wisconsin
ROW	Right-of-Way
STH	State Trunk Highway
USDA	U.S. Department of Agriculture
WisDNR	Wisconsin Department of Natural Resources
WisDOA	Wisconsin Department of Administration
WisDOR	Wisconsin Department of Revenue

TERMS

CIRCUIT	A continuous electrical path along which electricity can flow from a source, like a power plant, to where it is used, like a home. A typical transmission circuit consists of three phases, with each phase on a separate set of conductors.
CONDUCTOR	A wire composed of multiple aluminum strands wrapped around a steel core that together carry electricity. A transmission line is constructed with three conductors, one for each phase of the circuit generated by a power plant.
DOUBLE-CIRCUIT	Electric lines with two sets of three conductors, totaling six conductors on one structure. These two circuits are independent of one another.
DISTRIBUTION LINE	An interconnected group of lines and equipment for the delivery of low voltage electricity between the transmission network and end users (i.e. home/business)
KILOVOLT (kV)	A unit of electricity equal to 1,000 volts.
LAYDOWN YARD	Temporary equipment staging and storage areas.
SHIELD WIRE	A wire connected to the top of the structure to protect the conductors from lightning strikes, minimizing the risk of power outages.
SINGLE-CIRCUIT	Electric lines with one set of three conductors.
SUBSTATION	A facility that monitors and controls electrical power flows, uses high voltage circuit breakers to protect power lines, and transforms voltage levels for safe and reliable delivery of electricity.
TRANSMISSION LINE	An interconnected group of lines and equipment for transporting electric energy on a high voltage power line between power plants and substations.
TRIPLE-CIRCUIT	Electric lines with three sets of three conductors, totaling nine conductors on one structure. These three circuits are independent of one another.
UNDERBUILD	To place lower voltage distribution circuits underneath a higher voltage transmission circuit, thereby using a single structure for both transmission and distribution lines.

SUMMARY OF AGRICULTURAL IMPACT STATEMENT

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has prepared Agricultural Impact Statement (AIS) #4424 for the relocation of four electric transmission lines between the Cities of Ashland and Hurley in Ashland and Iron Counties, WI (the Project) by the Northern States Power Company, a subsidiary of Xcel Energy Incorporated (Figure 1). The proposed Project also extends into the City of Ironwood, MI, however the Michigan section of the Project is beyond the scope of this analysis. Xcel Energy has indicated the primary reason for the Project is to ensure reliable electric service to the Bayfield, Ashland and Ironwood areas (DATCP, 2021a; Xcel Energy, 2021a). Concerns for the reliability of the current transmission line infrastructure stem from the age and poor condition of existing transmission facilities, limited access to the facilities and limited land rights (Xcel Energy, 2021a).

To rebuild these transmission lines, Xcel Energy has proposed five alternative routes that generally follow along State Trunk Highway (STH) 13 and STH 77 spanning from the Cities of Ashland, Mellen and Hurley, WI. Xcel Energy plans to utilize existing transmission line, roadway and railroad corridors where possible to reduce new Right-of-Ways (ROW) acquisitions. Despite these efforts and depending on the selected alternative, Xcel Energy proposes to impact up to 715 acres of agricultural lands from 147 agricultural landowners.

The Public Service Commission of Wisconsin (PSC) has authority over the Project and Xcel Energy must obtain a Certificate of Public Convenience and Necessity (CPCN) to obtain the right to proceed with the Project. Through the issuance of a CPCN, the PSC would select the project route and other project criteria Xcel Energy shall follow. To date, Xcel Energy has submitted a CPCN application for the Project to the PSC under PSC Docket ID: 4220-CE-183 and is awaiting a ruling from the PSC. The Department will provide the PSC with AIS #4424 as evidence to aid in determining the outcome of Xcel Energy's CPCN application.

In accordance with [Wis. Stat. §32.035\(3\)](#), Xcel Energy has provided the Department with the necessary information and materials to conduct an AIS. The Department has also contacted the agricultural property owners and operators impacted by the alternative routes. In accordance with [Wis. Stat. §32.035\(4\)\(b\)](#), the Department has reviewed and analyzed Xcel Energy's materials and the comments obtained by the Department from the affected agricultural property owners and operators to assess the agricultural impacts of the proposed project. Through the AIS analysis, the Department offers a set of recommendations and conclusions to the PSC, Xcel Energy and the agricultural landowners and operators to help mitigate current and future impacts on agricultural lands and agricultural operations along the selected route.

The set of recommendations are located within the AIS Recommendation Section beginning on page 7. The AIS analysis begins on page 11 with information on the project located in Section 2. Information and conclusions on the agricultural setting of Ashland and Iron Counties and impacted

areas can be found in Section 3. The agricultural impacts of the project on the impacted land, landowners and operators can be found in Section 4. Appendices for AIS #4424 contain the following information: additional project figures and tables from Xcel Energy (Appendix A), information on the appraisal and compensation process (Appendix B), a complete record of comments submitted to the Department from agricultural landowners & operators (Appendix C), a copy of Wisconsin’s agricultural impact statement statute (Appendix D), various additional sources of related information for agricultural landowners and operators (Appendix E) and a copy of the Department’s agricultural monitoring form for transmission line projects.

If Xcel Energy deviates from the selected alternatives or the selected sites, Xcel Energy shall re-notify the Department. The Department shall review the re-notification for new potential impacts to agricultural lands and may generate an addendum to this AIS, if warranted.

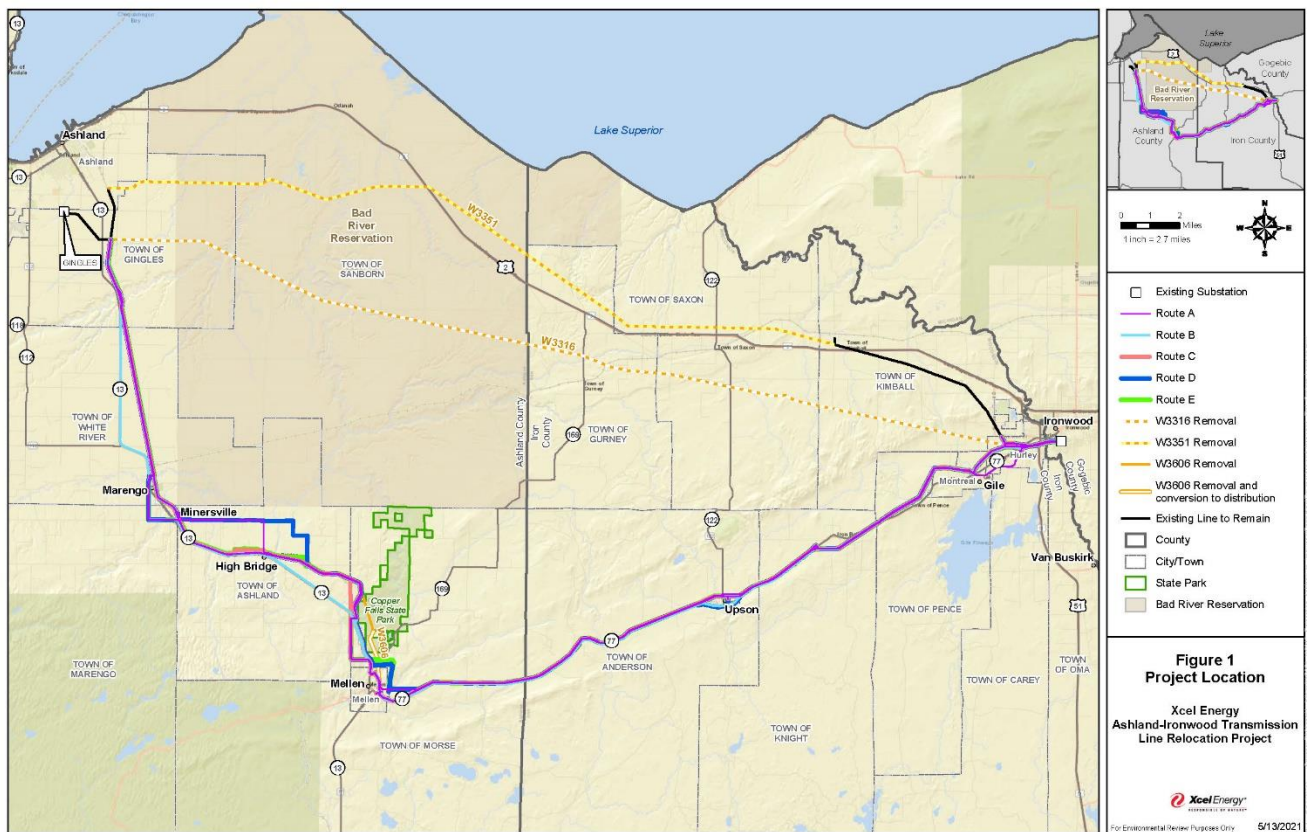


Figure 1: Location of alternative routes for the proposed Ashland-Ironwood transmission line relocation project in Ashland and Iron, WI (DATCP, 2021a; Xcel Energy, 2021a).

AGRICULTURAL IMPACT STATEMENT RECOMMENDATIONS

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has reviewed and analyzed the materials provided by Xcel Energy and comments from the affected agricultural property owners and operators regarding the proposed Ashland-Ironwood transmission line relocation project. Should the PSC approve the Project, the Department provides the following recommendations, in accordance with [Wis. Stat. §32.035\(4\)\(b\)](#), to the PSC, Xcel Energy and agricultural landowners and operators to help mitigate impacts on agricultural lands and agricultural operations.

Recommendations to the Public Service Commission

- 1) The PSC should consider requiring Xcel Energy to follow the Department's recommendations as seen in the *Recommendations to Xcel Energy* Section below.
- 2) The PSC should select a route alternative that utilizes as much pre-existing ROW including transmission line, railroad and roadway corridors to reduce the overall impacts to agricultural lands and operations. To reduce minimize the impacts to agricultural land, the Department prefers Route B and discourages Route E.
- 3) When selecting the final route, the PSC should consider exchanging certain sections of one route with another or altering the proposed transmission circuit structure to reduce agricultural impacts. For example, while the Department prefers Route B as a whole, there are specific areas--such as between Highbridge and Mellen as discussed in Section 4.4.3.2--where another route alternative or using double or triple circuit structures may reduce the impacts to agricultural lands and operations.
- 4) When selecting the final route, the PSC should avoid fragmenting large continuous blocks of forest and prioritize the preservation of windbreaks, Managed Forest Law (MFL) lands and forest lands used for specialty forest products such as maple sugar production.
- 5) The PSC should consider requiring Xcel Energy to hire an Independent Environmental Monitor (IEM) for the construction phase of the Project. The Department does not believe an IEM is necessary for the removal of lines W3316, W3351 and W3606. Furthermore, the IEM should be hired in consultation with and the approval of the PSC, DATCP, and WisDNR and all reports generated by IEM should be shared with the PSC, DATCP, and WisDNR.
- 6) Should the PSC select a route alternative with substantial impacts to croplands and pastures, such as Route E, Xcel Energy should be required to hire an Independent Agricultural Monitor (IAM) for the construction phase of the Project. Furthermore, the IAM should be required to complete the Department's standard Agricultural Monitoring Form for Transmission Line Projects (ARM-LWR-543) as seen in Appendix F.

- 7) Should an IEM/IAM be hired, the PSC should require Xcel Energy to reimburse the Department for time required to select & hire the IEM, review environmental inspection reports and associated matters related to the Departments involvement with the IEM.
- 8) The PSC should require Xcel Energy to submit drafts of their Construction Sediment and Erosion Control Plans and all related construction mitigation plans for review and approval by the PSC, WisDNR, and DATCP, prior to the start of construction.

Recommendations to Xcel Energy

- 1) The Department recommends Xcel Energy follow all the recommended mitigation efforts described in Section 5.5.1 through Section 5.5.16 to mitigate Project impacts to or regarding: topsoil, soil compaction, drainage, de-watering, irrigation, erosion, temporary access roads, managed forest lands, fencing, weed control, construction debris, crop rotation & dairy operations, organic farms & other areas with certifications, biosecurity, construction noise, and stray voltage.
- 2) Xcel Energy should continue to monitor the Project ROW for soil erosion and maintain erosion control practices until there is sufficient vegetative growth in the ROW to mitigate soil erosion.
- 3) Xcel Energy should provide agricultural landowners and operators advanced notice of acquisition and construction schedules so agricultural activities can be adjusted accordingly.
- 4) Xcel Energy should provide landowners with direct phone numbers and email addresses to key Xcel Energy project staff and project contractors that are able to respond to a range of topics including but not limited to: environmental & agricultural impacts, land acquisition & Right-of-Way (ROW), project schedule, access limitations, and project complaints.
- 5) If there is adequate growing season for a crop to mature and be harvested after Xcel Energy acquires the impacted lands, but before construction along the Project corridor begins, Xcel Energy should allow the current agricultural operators to harvest a crop for that season.
- 6) Prior to finalizing project design, Xcel Energy should consult with the Ashland County and Iron County Conservationists to assess whether planned land restoration and planting of the landscape within the restored Project ROW minimizes drainage problems, soil erosion and soil compaction on the remaining remnant agricultural lands as well as adjacent properties.
- 7) Xcel Energy should monitor for the presence of underground drainage tiles within the construction ROW. If an active drainage tile is damaged or broken as a result of construction activities, Xcel Energy shall repair or replace the damaged or broken section.

- 8) Where construction activities have altered existing drainage patterns or the natural stratification of soils resulting in new wet areas or decreased productivity, Xcel Energy should work with landowners to determine a means to return the agricultural land either in the ROW or adjoining lands to pre-construction function. New drainage tiles or ditching, de-compaction, regrading, or additional fill may be required to correct problems that arise after construction is complete.
- 9) Xcel Energy should consult with the affected agricultural landowners and operators to ensure any relocated, temporary or newly established agricultural land access points are located in areas that provide safe and efficient access to remnant agricultural properties.
- 10) Xcel Energy should provide appropriate compensation to all landowners with land enrolled in a conservation easement or farm program if the landowner must reimburse the administering agency for the land's removal or alteration. These conservation or farm programs could include, but are not limited to, Conservation Reserve Program (CRP), Conservation Reserve and Enhancement Program (CREP), Farmland Preservation Program (FP), or Managed Forest Law (MFL).
- 11) Xcel Energy should implement training for all construction supervisors, inspectors, and crews to ensure that they understand the steps needed to protect the integrity of agricultural lands and operations during Project construction and restoration.

Recommendations to Agricultural Landowners and Operators

- 1) Agricultural landowners and operators should review [Wis. Stat. §182.017](#) (i.e. the Landowner Bill of Rights) seen in Appendix D (VII) to understand their rights prior to the start of easement negotiations.
- 2) Landowners should review the recommended mitigation efforts described in Section 5.5.1 through Section 5.5.17 to mitigate project impacts to or regarding: topsoil, soil compaction, drainage, de-watering, irrigation, erosion, temporary access roads, managed forest lands, fencing, weed control, construction debris, crop rotation & dairy operations, organic farms & other areas with certifications, biosecurity, construction noise, and stray voltage.
- 3) Agricultural landowners should provide written consent or written lack of consent to Xcel Energy for herbicide application within the ROW owned by the agricultural landowner.
- 4) Landowners with conservation easements within the ROW should consult with the conservation program provider to determine if any effects will occur due to the land's alteration or removal from the contract. If the landowner is charged a fee for removing or altering the land within the conservation easement, Xcel Energy should compensate the landowner the cost of such fee.

- 5) Landowners concerned about potential impacts to their agricultural land should keep records of the conditions of the ROW before, during, and after construction, including field moisture conditions, historic presence/absence of ponded water prior to the start of construction for post-construction comparisons, crop yield records and photographs taken every season.
- 6) Landowners should inform Xcel Energy about the existence and location of drainage systems or planned drainage systems that could be affected by the Project.
- 7) Landowners with organic certification or other certifications should contact Xcel Energy and report the range and type of substances that are and are not permitted according to their certifications.
- 8) Agricultural landowners should consider using the Department's free online [Driftwatch™](#), [Beecheck™](#) and [Fieldwatch™](#) registries to communicate areas to safeguard from herbicide and/or pesticide applications to minimize the risk of accidental exposure. For more information on Driftwatch, please visit the Driftwatch website at <https://wi.driftwatch.org/>
- 9) Landowners who wish to farm within the deforested area should discuss tree stump removal with Xcel Energy during the easement negotiation process.
- 10) Landowners should inform Xcel Energy if they use aerial planting or aerial spraying.
- 11) Livestock owners & operators within the Project ROW whom are concerned about the noise potential for the Project should inform Xcel Energy or their representatives during the easement negotiation process.
- 12) Confined animal feeding operations or any operation with livestock facilities in the vicinity of the proposed power line should request pre- and post-transmission line energization Neutral to Earth Voltage (NEV) testing from their utility provider or Xcel Energy.
- 13) Landowners should fully describe and discuss property improvements and agricultural operations with appraisers so the appropriate value of the affected property is established.
- 14) Prior to the start of construction, landowners should identify for Xcel Energy where construction activities may interfere with farm operations, farm building/facilities or farming infrastructure including but not limited to drain tiles, wells, watering systems, drainage ditches, drainage tile, culverts, fencing, farm access roads, or grain bins.
- 15) Affected farmland owners should inform the tenant agricultural operators if Xcel Energy has made a jurisdictional offer, under the power of eminent domain.
- 16) After construction is complete, landowners and Xcel Energy should monitor for drainage problems. If problems are observed that can be attributed to construction, the landowner and Xcel Energy should work together to develop a mutually agreeable solution.

AGRICULTURAL IMPACT STATEMENT

1. INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) has prepared Agricultural Impact Statement (AIS) #4424 in accordance with [Wis. Stat. §32.035](#) for the proposed relocation of high voltage electric transmission lines between the Cities of Ashland and Hurley in Ashland and Iron Counties, WI (Figure 1) by the Northern States Power Company a subsidiary of Xcel Energy Incorporated. Through the Ashland-Ironwood transmission line relocation project (the Project), Xcel Energy proposes to remove existing segments of transmission line W3316 (115 kV), W3351 (88 kV) and W3606 (34.5 kV) and relocate the transmission lines along a combination of potential alternative routes.

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.

Xcel Energy has submitted a Certificate of Public Convenience and Necessity (CPCN) to the Public Service Commission of Wisconsin (PSC) ([REF#: 412031](#)) to obtain approval to construct the Project (Xcel Energy, 2021a). The PSC has assigned the Project PSC Docket ID: [4220-CE-183](#), which can be followed within the PSC Electronic Records Filing System. The PSC will analyze the need for the project and the potential environmental and community impacts in an Environmental Assessment (EA). In addition, the PSC will receive testimony and hold hearings to further assess the impacts of this project. Afterwards, the PSC will approve, modify, or deny Xcel Energy's proposed project. Construction on the project cannot begin before Xcel Energy receives a CPCN from the PSC, as well as permits and approvals from other regulatory entities.

As established under [Wis. Stat. §32.035\(4\)\(d\)](#), if Xcel Energy intends to actualize its powers of condemnation at any point during the project through a jurisdictional offer(s), Xcel Energy may not negotiate with an owner or make a jurisdictional offer until 30 days after the agricultural impact statement has been published. If Xcel Energy deviates from the selected alternative or the selected

sites, 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.

The full text of [Wis. Stat. §32.035](#) is included in Appendix D. Additional references to statutes that govern eminent domain and condemnation processes and other sources of information are also included in Appendices B, E, and F.

2. PROJECT DESCRIPTION

2.1. Project Summary

Xcel Energy has provided the Wisconsin Department of Agriculture, Trade and Consumer Protection (the Department) with an agricultural impact notification (AIN) and requested spatial materials for analysis for the proposed project (DATCP, 2021a). The AIN, requested materials from Xcel Energy and Xcel Energy's CPCN application to the PSC serve as the main reference documents for the Project. The proposed project route alternatives presented here do not represent the final project route, which requires PSC approval.

Xcel Energy is proposing to relocate and rebuild existing sections of four electric transmission lines known as W3316 (115 kV), W3351 (88 kV), W3606 (34.5 kV) and W3607 (34.5 kV) from the City of Ashland in Ashland, WI to the City of Ironwood in Gogebic County, MI (Figure 1). Xcel Energy's primary reason for the proposed Project is to ensure reliable electric service to the Bayfield, Ashland and Ironwood areas (DATCP, 2021a; Xcel Energy, 2021a). Concerns for the reliability of the existing transmission lines stem from three factors: 1) the age and poor condition of the existing transmission lines & facilities, 2) difficult terrain and lack of access and 3) limited and/or expiring land rights within the existing ROW. In addition to rebuilding these sections of transmission lines, Xcel Energy is also proposing to remove the existing structures for transmission lines W3316, W3351 and W3606.

As the acquisition of agricultural lands or property rights are a pre-requirement to conduct an Agricultural Impact Statement, this analysis will only analyze and evaluate the aspects of the Project that acquire new ROW's from agricultural lands. The proposed relocation and rebuild project, depending on the selected alternative will impact up to 147 agricultural landowners and approximately 715 acres of agricultural lands. A full list of the impacted acres for each agricultural landowner is provided in Table 8 (Section 4.2: *Agricultural Impact*).

2.2. Public Service Commission of Wisconsin (PSC)

The PSC is an independent regulatory agency that regulates public electric, natural gas, water and sewer utilities in Wisconsin. Through PSC regulations, public utilities must obtain PSC approval before setting new utility rates and undertaking major construction projects, such as electric

transmission lines or substations. Prior to gaining approval, PSC staff review the utilities application and prepare either an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) to evaluate the need, alternatives, cost, and environmental and social impacts of the proposed project.

Approval from the PSC is obtained by the issuance of a Certificate of Public Convenience and Necessity (CPCN) or a Certificate of Authority (CA), both of which grant the utility the right to proceed with the project as described within the CPCN or CA. Issuance of a CPCN or CA determined by a three-member PSC Commission. PSC Commissioners are full-time staff, appointed by the Governor, tasked with reviewing the project case file (documents, reports, testimony) and ultimately deciding whether to approve, modify, or deny a project. If the PSC determines that the project is needed and feasible, the utility must adhere to the PSC ruling and project alternatives/route selected by the Commission. PSC approval is not constrained by the utilities "Preferred" or "Alternate" route designations mentioned within this AIS and the Commission may choose any combination of route segments described in the application.

Xcel Energy submitted an application for a CPCN for the Project to the PSC on May 26, 2021 under PSC Docket ID: [4220-CE-183](#) (Xcel Energy, 2021a). The PSC deemed Xcel Energy's application complete on June 25, 2021 (Kitsemel, 2021) and issued the need for an EA on July 13, 2021 in accordance with requirements for "Type II Actions" under [Wis. Admin. Code § PSC 4.10\(2\)](#) (Greene, 2021). DATCP expects the PSC to utilize the information contained within this AIS, the EA, the CPCN application, and testimony from the public to determine the degree of impacts each route alternative will have on the agricultural landscape and economy, prior to issuing a ruling.

2.3. Project Design and Purpose

2.3.1. Preferred Project Design Description

Xcel Energy is proposing to rebuild existing sections of four electric transmission lines: W3316 (115 kV), W3351 (88 kV), W3606 (34.5 kV) and W3607 (34.5 kV). Segments of line W3351, W3316 and W3606 will also be relocated along a combination of potential alternative routes detailed in Section 2.4. As the Project contains separate designs for the rebuild/construction and removal aspects of the Project, the AIS will refer to these different project aspects as the "Construction Project" and the "Removal Project".

Construction Project

According to the AIN submitted to the Department (DATCP, 2021a) and the CPCN ([REF#: 412031](#)) submitted to the PSC under Docket ID 4220-CE-183 (Xcel Energy, 2021a), Xcel Energy's preferred solution for the Construction Project is to rebuild these transmission lines along State Trunk Highway (STH) 13 and STH 77 as follows:

- Rebuild 47 miles of line W3316 as a 161 kV line operating at 115 kV along STH 13 and STH 77 approximately from the intersection of STH 13 and Pearce Rd in Ashland County, WI to the City of Hurley, WI (Figure 1).
- Rebuild 47 miles of line W3351 as a 115 kV line, operating at 88 kV, along STH 13 and STH 77 approximately from Woodbury Ln in the City of Ashland, WI to the City of Hurley, WI (Figure 1).
- Rebuild 21 miles of line W3606 and 26 miles of line W3607 as 69 kV line operating at 34.5 kV within the same corridor as line W3316 and W3351.

The routing of these transmission lines along STH 13 and STH 77, is achieved by any combination of five route alternatives, denoted as A, B, C, D, and E in Section 2.4.

Removal Project

According to appendix L ([REF#: 412134](#)) of the CPCN for the removal portion of the Project, Xcel Energy will use conventional (land access) and aerial means to remove the existing structures for transmission lines W3316, W3351 and W3606. Conventional removal will consist of bucket trucks and cranes to disconnect and lower the conductor (i.e. power line) and dismantle and remove the existing wooden structures. Wooden poles will be cut at ground level with the below-grade portion being left in place. Dismantled wooden structures will be removed via truck and the disturbed area will be restored. Polymer mats will be installed along all off road access routes to mitigate disturbance.

Aerial removal will consist of 3-4 person crews flown into the area by a light utility helicopter. Once on location the helicopter will aid the removal crew in disconnecting and lowering the conductor. The crew will then cut and lower the wooden structures. Wooden poles will be cut at ground level with the below grade portion being left in place. A heavy lift helicopter will then remove the wooden structures.

2.3.2. *Project Design Alternatives*

In addition to the preferred Construction Project design, Xcel Energy also proposed the following two alternative construction project designs that the PSC may choose to select from:

Construction Project Alternative One

- Rebuild lines W3316, W3606 and W3607 as described within the preferred project design.
- Rebuild 54 miles of line W3351 as 115 kV line and operate it at 115 kV. To operate the 115 kV line, Xcel Energy would also need to 1) expand the 115 kV substation in the City of Bay Front, WI and 2) rebuild the Saxon Pump substation as well as the 7 miles of transmission line between it and the City of Hurley, WI to operate at 115 kV.

Construction Project Alternative Two

- Rebuild lines W3351, W3606 and W3607 as described within the preferred project design.
- Rebuild 47 miles of line W3316 as 161 kV line and operate it at 161 kV. To operate the 161 kV line, Xcel Energy would also need to 1) expand and move existing Gingles substation to a new 161 kV substation and 2) convert the proposed 115 kV transmission line between the City of Hurley, WI to the City of Norrie, MI to 161 kV and use this line as the extension to the City of Norrie.

2.3.3. Project Location

In Wisconsin, the proposed project occurs within Ashland and Iron Counties and the Bad River Band of Lake Superior Chippewa Reservation (Figure 1). In Michigan, the proposed project occurs within Gogebic County. The line W3316 Removal Project spans from the Town of Gingles in Ashland County, WI to the City of Hurley in Iron County, WI. The line W3351 Removal Project spans from the City of Ashland in Ashland County, WI to the Town of Kimball in Iron County, WI. The line W3606 Construction Project follows either STH 13 or the CN Railroad corridor between the Town of Gingles in Ashland County, WI to the City of Mellen in Ashland County, WI. Line W3607 follows STH 77 from the City of Hurley in Iron County, WI to the City of Ironwood in Gogebic County, Michigan. The line W3316 and W3351 Construction Project run along STH 13 and STH 77, spanning from the Town of Gingles in Ashland County, WI to the City of Ironwood in Gogebic County, MI. The transmission line Construction Project and Removal Project also cross through the Towns and Cities shown in Table 1.

Table 1: The towns and cities impacted by Xcel Energy’s proposed electric transmission line Removal and Construction Projects in Ashland and Iron Counties, WI.

County	Removal Project		Construction Project	
	Town	City	Town	City
Ashland	Gingles	Ashland	Ashland	Mellen
	Sanborn	-	Gingles	-
	-	-	Marengo	-
	-	-	Morse	-
	-	-	White River	-
Iron	Gurney	Hurley	Anderson	Montreal
	Kimball	-	Knight	Hurley
	Saxon	-	Pence	-

2.3.4. *Project Need*

Xcel Energy has indicated the primary reason for the proposed Ashland-Ironwood transmission line relocation project (the Project) is to ensure reliable electric service to the Bayfield, Ashland and Ironwood areas (DATCP, 2021a; Xcel Energy, 2021a). Concerns for the reliability of the current transmission line infrastructure stem from three factors: 1) the age and poor condition of the existing transmission lines & facilities, 2) difficult terrain and lack of roads that constrains access to the transmission lines & facilities and 3) limited land rights (Xcel Energy, 2021a).

Regarding the age and poor condition of the existing transmission lines, Xcel Energy stated lines included within the proposed project range from 42 to 72 years old. Given the age of these lines, Xcel also stated they contain various design or structural deficiencies (Xcel Energy, 2021a). Refer to Section 2.3.5 *Existing Transmission Lines* for additional information on the design and current conditions of the existing electric transmission lines.

Xcel Energy's second reason for reliability concerns is the difficult terrain and lack of roads that constrains access to the transmission lines & facilities (Xcel Energy, 2021a). A large proportion of the existing lines are located across remote areas that may be over a mile from a road or another means of access. These remote areas also contain difficult terrain, including large wetland complexes, beaver ponds, rock outcroppings, rivers, bogs that do not freeze and steep rugged terrain. Xcel Energy reports that the remoteness and terrain of these lines increases the level of difficulty to maintain the lines and delays repairs. As a result, Xcel Energy reported using non-standard techniques, including transporting maintenance crews on canoes and boats to reach transmission line poles in need of maintenance (Xcel Energy, 2021a).

The last reason for reliability concerns is Xcel Energy's limited land rights across the Bad River Band of Lake Superior Chippewa Reservation. Lines W3316 and W3351 each cross through the Reservation, however, Xcel Energy reported their easement with the Tribe for W3351 expired in 2002 and Xcel Energy is currently negotiating land rights with the Bad River Band of Lake Superior Chippewa for both lines through the completion of the proposed project (Xcel Energy, 2021a).

2.3.5. *Existing Transmission Lines*

Line W3316 (115 kV)

Line W3316 (115 kV) was constructed in 1976 using an H-frame wood-pole design and includes dual shield wires. As a result of lightning damage, natural weathering and animal damage, 214 of 270 structures (i.e. wooden poles, poletops, crossarms, and insulators) along line W3316 have recorded moderate to low severity damages and/or defects.

Line W3351 (88 kV)

Line W3351 (88 kV) was constructed in 1952 using an H-frame wood-pole design and does not contain shield wire(s) to protect the wooden structures from lightning damage. As a result of

lightning damage, natural weathering and animal damage, 258 of 336 structures (i.e. wooden poles, poletops, crossarms, and insulators) along line W3351 have recorded significant damage and/or defects.

Line W3606 (34.5 kV)

Line W3606 (34.5 kV) was constructed in 1979 using a triangular configured single wood-pole design with shield wire. Xcel Energy reported that pole testing conducted by in 2020 showed the wooden poles to be deteriorating at a 6% failure rate, which is double the 2-3% failure rate across the industry.

Line W3607 (34.5 kV)

Line W3607 (34.5 kV) was constructed in 1949 using a triangular configured single wood-pole design without shield wire. Xcel Energy has already identified this line for complete reconstruction. To date, 9.6 miles were already replaced while approximately another 17 miles of line remains to be replaced as part of the proposed project.

2.3.6. Project Routing and Siting

Wisconsin's energy policy [Wis. Stats. § 1.12\(6\)](#) prioritizes the siting of electric transmission corridors to certain types of corridor according to the following ranking 1st) existing corridor, 2nd) highway and railroad corridor, 3rd) recreational trails (to the extent that the facilities may be constructed below ground and that the facilities do not significantly impact environmentally sensitive areas) and 4th) new corridor. Within their CPCN application, Xcel Energy stated they established potential route corridors in accordance with Wis. Stats. § 1.12(6) using a multi-step analysis that emphasizes identifying route alternatives with minimal impacts to the human and natural environment (Xcel Energy, 2021a).

At the onset of Xcel Energy's analysis, a total of 26 routes were analyzed including the few existing corridors between Gingles and Ironwood. Initial route analysis consisted of 1) desktop mapping with available geographic data of environmental and infrastructure features, 2) aerial photos and 3) field reviews including environmental, construction and engineering reviews. Xcel Energy's route analysis also included consultation with the PSC, the WisDNR, the Bad River Band of Lake Superior Chippewa, WisDOT, Enbridge Energy, and the CN railroad, as well as public engagement. Xcel Energy also followed the transmission line siting priorities established by the state of Wisconsin.

Xcel Energy then utilized a multi-step analysis that emphasizes identifying route alternatives with minimal impacts to the human and natural environment. The 26 preliminary routes were then evaluated on factors including but not limited to the following:

- **Natural resource & environmental impacts** (waterways, wetlands, forest clearing, soils and steep slopes, archaeological sites, protected species)

- **Route corridor sharing opportunities** (existing corridors, highways and roads, recreational trails, section lines or field lines)
- **Affected landowners** (proximity to residences, permanent and temporary easements needed, tree clearing near homes, impacts to agricultural lands)
- **Aesthetics** (type, height, number and size of poles, visual appearance, tree clearing)
- **Public/protected lands** (type of ownership and protection, designated uses, ability to get approval to cross)
- **Constructability issues** (outage risk, worker safety, construction vehicle access routes, engineering constraints)
- **Estimated cost**

After evaluation of all of the options, Xcel Energy selected the five proposed route alternatives denoted here as A, B, C, D, and E. The remaining 21 options, shown in Appendix A Figure 1 were eliminated for the reasons Xcel Energy identified in Appendix A Table 1. As required by Wisconsin’s energy policy [Wis. Stats. § 1.12\(6\)](#) to prioritize certain corridor types, Xcel Energy also evaluated the percentage of each corridor type the proposed route alternatives were comprised of as shown in Table 2. Xcel Energy has stated within the CPCN application that the selected five potential routes “*solves the electrical need, are the least impactful, and most cost effective.*” (Xcel Energy, 2021a). Additional information on route alternatives and Xcel Energy’s analysis can be found within the Project application for a CPCN to PSC, under PSC Docket ID: [4220-CE-183](#) (Xcel Energy, 2021a).

Table 2: The percentage of corridor type, according to [Wis. Stats. § 1.12\(6\)](#), the five Xcel Energy transmission line routes occupy for the proposed Ashland-Ironwood transmission line relocation project (Energy, 2021a).

Corridor Type	Route A	Route B	Route C	Route D	Route E
Existing Utility	80%	60%	89%	78%	81%
Highway	1%	31%	3%	2%	0%
Railroad	3%	6%	2%	3%	3%
Recreational Trails	-	-	-	-	-
New Corridor (Greenfield*)	15%	3%	6%	15%	16%
Total	99%	100%	100%	98%	100%

*Greenfield: refers to land that is completely undeveloped

2.3.7. Project Schedule

According to the AIN and the CPCN application, pending approval by the PSC and obtaining all state agency permits, Xcel Energy plans on following the schedule shown in Table 3 for the proposed

project (DATCP, 2021a; Xcel Energy, 2021a). Xcel Energy estimates the Construction Project will take approximately two years with the relocated and reconstructed transmission lines to go into service by the end of 2026. Xcel Energy anticipates removing line W3606, W3351, and W3316 structures between 2027 and 2028, following the energization of the relocated lines.

Table 3: The anticipated construction timeline for the proposed Ashland-Ironwood transmission line relocation project, pending approval by the PSC and obtaining all state permits (DATCP, 2021a; Xcel Energy, 2021a).

Project Activity	Preliminary Date
Complete Engineering and Design	2nd Quarter 2023
Start Easement Procurement	3rd Quarter 2023
Complete Easement Procurement	2nd Quarter 2024
Start Vegetation Removal	2nd Quarter 2024
Start Installing Construction Matting	4th Quarter 2024
Start Civil and Line Construction	4th Quarter 2024
Project In-Service	2026
Removal of W3606, W3351 and W3316	2027-2028

2.4. Alternative Routes

As part of the AIN submitted to the Department and the CPCN application submitted to the PSC [REF#: 412031](#) Xcel Energy selected five route alternatives (Figure 1) for the preferred project (Xcel Energy, 2021a). All five routes generally follow STH 13, STH 77 and the existing corridors for transmission lines W3606 and W3607 (Figure 1), but contain different voltage configurations and different routing around townships and cities. For detailed information regarding route alternatives, refer to Xcel Energy’s CPCN application [REF#: 412031](#) located on the PSC website under Docket ID 4220-CE-183 (Xcel Energy, 2021a). In general terms Xcel Energy reported the design aspects of the five routes (denoted as A, B, C, D, and E) as follows:

NOTE: The reader is reminded definitions of commonly used terms within this document such as "double circuit" is included within the TERM SECTION on page 4.

2.4.1. Route A

Route Option A generally follows the existing 100-foot wide ROW along W3606 and W3607 corridors between [the City of Ashland (Structure W3316-42)] and [the City of Hurley (Structure W3316-255)] with new ROW corridors along roads such as Van De Bruggen Road (Marengo), County Road C (Highbridge), Golf Course Road (Mellen), Kokogen Road (Gile) and Odanah Road (Hurley). New ROW corridors along Van De Bruggen Road would be built with double circuit 161/69

kV, County Highway C would be built with double circuit 115/69 kV pole structures, Golf Course Road would be built with two paralleling lines of double circuit 115/69 kV and single circuit 161 kV, Kokogan Road would be built with single circuit 161 kV, and Odanah Road would be built with a single circuit 161 kV with distribution underbuilt. (Xcel Energy, 2021a)

2.4.2. Route B

Route Option B follows the existing 100-foot wide ROW along W3606 and W3607 corridors between [the City of Ashland (Structure W3316-42)] and [the City of Hurley (Structure W3316-255)] with new ROW areas such as along State Highways 13 and 77 south side and Van De Bruggen Road (Marengo). New ROW corridors along State Highway 13 would be built with single circuit 161 kV, State Highway 77 south side would be built with double circuit 161/69 kV, and Van De Bruggen Road would be built with double circuit 161/115 kV. (Xcel Energy, 2021a)

2.4.3. Route C

Route Option C uses new ROW along the existing 34.5 kV line corridor, as much as possible. It follows the existing 100-foot wide ROW along W3606 and W3607 corridors with different configurations than Route A around Marengo, Highbridge, Gile, and Hurley including new ROW areas such as Lohman Road and Poor Farm Road (both near Highbridge), Golf Course Road (Mellen) and State Highway 13 north of Mellen. New ROW corridors along Lohman Road and Poor Farm Road would be built with double circuit 115/69 kV, Golf Course Road would be built with single circuit 161 kV and State Highway 13 near Mellen would be built with double circuit 115/69 kV. (Xcel Energy, 2021a)

2.4.4. Route D

Route Option D is a blended option of Routes A and C with local modifications north of Highbridge, northeast of Mellen, and in Upson. It follows the existing 100-foot wide ROW along W3606 and W3607 corridors with different configurations than Routes A and C around Highbridge, Mellen, Upson, Gile, and Hurley including new ROW areas. New ROW corridors along Van De Bruggen Road would be built with double circuit 161/69 kV, whereas County Highway C, Delafield Road, and Seaquist Road would be built with double circuit 115/69 kV, Golf Course Road would be built with single circuit 161 kV, State Highway 13 would be built with double circuit 115/69 kV, greenfield areas north and east of Mellen city limits would have two paralleling lines of single circuit 161 kV and double circuit 115/69 kV, Sessions Avenue in Upson would be single circuit 69 kV with distribution underbuild. (Xcel Energy, 2021a)

2.4.5. Route E

Route Option E is similar to Route Option D except it is offset from the existing W3606 corridor to avoid any transmission line ROW overlap with railroad ROW. New ROW areas include Van De

Bruggen Road (Marengo), County Highway C, Lohman Road, Poor Farm Road (all near Highbridge), Golf Course Road (Mellen), State Highway 13 north of Mellen, greenfield areas north and east of Mellen city limits near a future Enbridge pipeline and existing Northern Natural Gas pipeline, northeast of the East Mellen Substation to State Highway 77, and Odanah Road along an abandoned 34.5 kV corridor. (Xcel Energy, 2021a)

2.4.6. Substations

Xcel Energy is not proposing any new electrical substations or upgrades to existing substations, other than relaying equipment, as part of the Project (DATCP, 2021a; Xcel Energy, 2021a).

2.4.7. Off-ROW Access Roads

According to the AIN and the CPCN application, Xcel Energy where possible will access the Project from the project ROW or by public roads that intersect the project ROW (DATCP, 2021a; Xcel Energy, 2021a). Xcel has stated that route alternatives A, B, C, D, and E have “reasonable access from local, County and State Highways and therefore, off-ROW access will be minimal.” (Xcel Energy, 2021a). In situations where access to the Project cannot be obtained from the project ROW, another public ROW or to avoid impacts to environmentally sensitive areas, Xcel Energy plans to obtain additional non-project ROWs to provide access to the project ROW. Such non-project ROW are referred to here as “off-ROW access roads”.

For the Construction Project, Xcel Energy plans to utilize existing access routes, forest roads, or trails for off-ROW access roads. For the Removal Project, Xcel Energy does not anticipate the need for off-ROW access roads as the structures will be accessed and removed by helicopter. Prior to the start of the Construction Project, Xcel Energy plans to modify or improve many of the existing access paths that will be used as off-ROW access roads. Access path modifications may include vegetation removal, grading, and/or gravel placement (Xcel Energy, 2021a). If a wetland is encountered along an off-ROW access road, Xcel Energy stated they may access a wetland by use of ice roads, conducting work during dry or frozen conditions, the use of low ground pressure equipment, and/or construction mats; however, permanent wetland fill associated with off-ROW access paths was not proposed (Xcel Energy, 2021a).

Once construction has concluded, Xcel Energy plans to restore the off-ROW access paths created or modified for the Project to pre-construction conditions, unless the landowner negotiations and approves the off-ROW access road to be left in place. Xcel Energy also stated that some off-ROW access paths may be required for the long-term maintenance and operation of the transmission line (Xcel Energy, 2021a).

2.4.8. Laydown Yards

Xcel Energy identified 11 potential laydown yards within WI (Table 4) and one additional laydown yard in MI (DATCP, 2021a; Xcel Energy, 2021a). Xcel Energy stated the potential laydown yards

were identified based on the construction requirements of the Project, proximity to work areas, spacing approximately 10 to 15 miles apart, and environmental and landowner impacts. Xcel Energy also conducted an environmental review of the potential laydown yards. The identified potential laydown yards were selected based on the ability to minimize the amount of disturbance and preparation required to provide suitable surfaces for temporary storage and staging of construction equipment and material (Xcel Energy, 2021a).

Table 4: Xcel Energy’s proposed laydown yards in Wisconsin for the Ashland-Ironwood transmission line relocation project (Xcel Energy, 2021a).

Site #	Parcel Owner	Township, Range, Section	County	Size of Laydown Yard (acres)
1	Robert & Shelton Brevak	T47N R4W Sec. 27	Ashland	6.7
2	M Jolma Inc	T46N R4W Sec. 35	Ashland	9.8
3	Ashland County Highway Department	T45N R3W Sec. 16	Ashland	5.5
4	Bayfield Electric Cooperative, Midland Services Inc	T45N R3W Sec. 13	Ashland	8.9
5	Terrence L Peters	T45N R2W Sec. 30	Ashland	10.0
6	Former CN railroad storage yard	T44N R2W Sec. 6	Ashland	1.9
7	Jake Peters Trucking LLC, Tyler J Harding	T44N R2W Sec. 6	Ashland	3.4
8	1. Northern States Power Company. 2. City of Mellen. 3. Midwest Hardwood Corporation. 4. North Country Lumber Company	T44N R2W Sec. 5	Ashland	1.9
9	Iron County	T45N R1W Sec. 29	Iron	5.8
10	Brian Peterson	T45N R1W Sec. 18	Iron	32.9
11	Ross Peterson	T46N R2W Sec. 26	Iron	3.6

2.5. Project Right-of-Way (ROW)

Throughout the proposed corridors of the five alternative project routes, with the exception of Route E (Ashland to Mellen), Xcel Energy has stated it will generally follow the existing 100 ft wide ROW it already owns (Xcel Energy, 2021a). Within Xcel Energy’s CPCN application, they also provided the following set of project design criteria that would yield ROWs different from the 100 ft wide typical ROW (Xcel Energy, 2021a):

- Where the typical 100 ft project ROW follows an existing roadway ROW, Xcel Energy expects to share the roadway ROW such that 45 ft will be shared project ROW and with the remaining 55 ft on private property when the transmission poles are centered 5 ft onto the private property.

- Where the typical 100 ft project ROW shares an existing 200 ft wide railroad corridor, Xcel Energy expects the entire 100 ft project ROW to be located within the shared railroad ROW (i.e. on railroad property) when poles are centered 50 ft onto railroad property.
- Where single circuit (100 ft ROW) and double circuit (100 ft ROW) transmission corridors run parallel to each other, 25 ft of the existing ROW will be shared, thus reducing the total ROW width from 200 ft to 175 ft wide.
- The ROW for the proposed White River crossing for all five alternative routes ranges from 250 to 375 ft in width to accommodate three parallel single circuits to cross the river valley.

Xcel Energy has stated they may also install triple circuit configurations in areas near cabins and homes where a landowner has requested the ROW width to be minimized or to increase the distance between the new facilities and the home or cabin (Xcel Energy, 2021a).

3. AGRICULTURAL SETTING

The agricultural setting of a county has the potential to broadly impact agricultural land valuations. For example, counties with productive lands and/or urban counties with increased developmental pressures are generally known to result in higher sale prices for agricultural lands (Borchers *et al.*, 2014; Nantel, 2020). As the impacted agricultural lands for the proposed Ashland-Ironwood transmission line relocation project (the Project) reside within both Ashland and Iron Counties, the urban development pressures and agricultural policies of each County will be analyzed to provide baseline information to assess the valuation and stability of agricultural lands within the counties. Section 4, *Agricultural Impacts* will analyze and discuss the potential impacts of the Project on impacted agricultural lands.

3.1. Urban Pressures on Agriculture

3.1.1. Urbanized Populations

Ashland County, with an estimated population in 2020 of 15,871 residents (WisDOA, 2020a) may be more commonly considered a rural county. Ashland County does not contain any urbanized areas or urban clusters (WisDOA, 2020b) which are defined as population clusters of at least 10,000 people or at least 50,000 people respectively (Standards, 2010). Iron County, with an estimated population in 2020 of 5,909 residents (WisDOA, 2020a) may also be more commonly considered a rural county. Iron County does not contain any urbanized areas or urban clusters (DOA, 2020b).

3.1.2. Urban Development Pressures

Urban development pressures on agricultural lands are known to increase the rate of farmland conversion and increase agricultural land sale values (Azadi *et al.*, 2010; Borchers *et al.*, 2014,

Brorsen *et al.*, 2015). The following analysis will identify if agricultural lands within Ashland and Iron Counties are demonstrating signs of residency to potential urban development pressures.

Based on the most recent available data from the U.S. Department of Agriculture (USDA), in 2017 Ashland and Iron Counties had 52,428 acres and 9,200 acres of land in farms or 7.8% and 1.9% of their respective counties, both of which are significantly lower than the statewide average of 41.3% (USDA, 2017a). Between 1997 and 2017 Ashland and Iron Counties converted -12.7% and 4.5% of their respective agricultural lands out of agricultural use (Table 5). The negative conversion number reported in Ashland County indicates that 5,925 acres of agriculture was added within the County over this period. When compared to the statewide average rate of 3.9% for agricultural land conversion, Ashland County is in stark contrast with its significant net gain; a net gain of agricultural lands for Ashland County indicates the county is part of a minority of counties (19 counties or 26%) gaining agricultural lands. In contrast, Iron County is converting agricultural lands at a higher but similar rate to the statewide average (USDA, 2017a). During this same time-period (1997 – 2017) both Ashland and Iron Counties have gained a proportionally higher number of farming operations, when compared to the statewide average of farm operation loss (Table 2). Ashland County reported gaining 41.4% of farming operations and Iron County reported gaining 28.8% of their farming operations which is a significant difference from the 1.2% average loss experienced across all counties in Wisconsin (Table 6) (USDA, 2017a).

Table 5: Agricultural land in production within Ashland County, Iron County and Wisconsin (USDA, 1997; USDA, 2017a).

Location	Acres of Agricultural Land (acres)		Agricultural Land Converted (%)
	<u>1997</u>	<u>2017</u>	
Ashland County	46,503	52,428	-12.7%
Iron County	9,633	9,200	4.5%
Wisconsin	14,900,205	14,318,630	3.9%

Table 6: Change in the number of farms between 1997 and 2017 within Ashland County, Iron County and Wisconsin (USDA, 1997; USDA, 2017a).

Location	Number of Farming Operations		Change in Farming Operations	Percent Change (%)
	<u>1997</u>	<u>2017</u>		
Ashland County	186	263	77	41.4%
Iron County	38	49	11	28.9%
Wisconsin	65,602	64,793	-809	-1.2%

3.1.2.1. Ashland County

The increase in agricultural acreage between 1997 – 2017 within Ashland County may suggest that agricultural lands are resilient to the pressures of urban development (Table 5). Though, the USDA data does not separate the means by which agricultural lands are added and Ashland County's increase may be, in part, attributed to the conversion of forests, wetlands or other non-agricultural lands to agriculture. The 41.4% growth in the number of farming operations over the same 20 year period in Ashland County far exceeds the statewide averaged loss (-1.2%) of operations and could provide additional evidence of resiliency (Table 6). Based on the most recent available data from the USDA, between 2012 – 2017 the growth in the number of farming operations in Ashland County appears to favor growth within very small (1 – 49 acre) agricultural operations but all agricultural operation sizes were shown to increase (USDA, 2017a). This growth pattern may be indicative of the increased emergence of smaller specialty agricultural operations in Ashland County.

The pressures of urban development and urban population growth on farmland conversion are not readily apparent across Ashland County as a whole. At the county level the Wisconsin Department of Administration (WisDOA) predicts that Ashland County, as compared to the population estimate for 2020, will see a 4.5% population decrease (725 persons) by 2040, which ranks 65th for growth by percentage within the state (WisDOA, 2013a).

3.1.2.2. Iron County

Between 1997 – 2017, Iron County has seen 4.5% of its agricultural lands converted out of farmland use, a conversion rate (by acre) which is about 1.2 times the statewide average (Table 5). However, Iron County has also gained 28.9% more farming operations between 1997 – 2017, a rate that is in stark contrast to the statewide trend of loss (Table 6). Based on USDA data between 2012 – 2017, farming operations gain within Iron County appears to favor growth within very small (1 – 49 acre), small (50 – 179 acre) and large (500+ acre) operations while mid-sized (180 – 499 acre), agricultural operations have decreased (USDA, 2017a). This growth pattern may be indicative of both the consolidation of agricultural operations and the emergence of smaller specialty agricultural operations in Iron County.

The pressures of urban development and urban population growth on farmland conversion are also not readily apparent across Iron County as a whole. At the county level the Wisconsin Department of Administration (WisDOA) predicts that Iron County, as compared to the population estimate for 2020, will see a 4.6% population decrease (260 persons) by 2040, which ranks 67th for growth by percentage within the state (WisDOA, 2013a).

3.1.2.3. Regional Pressures

The Ashland County and Iron County region does not contain any Core Statistical Areas (CSA) or Metropolitan Statistical Areas (MSA) that would influence urban development and farmland conversion in Ashland and Iron Counties (WisDOA, 2013b). The neighboring counties of Pierce,

Vilas, Oneida, Sawyer and Bayfield are all expected to see 2020 population decreases or single digit increases (-9% to 7%) by 2040 (WisDOA, 2013a), which is not a strong indicator for additional future growth, urban development and farmland conversion in this region.

Given the lack of potential signals of local, county and regional urban development pressures and urban population growth, both Ashland and Iron Counties are likely not particularly vulnerable to farmland conversion. However, agricultural lands within or abutting incorporated municipal boundaries such as cities (Guling *et al.*, 2009) or agricultural lands along transportation corridors, especially highways (Mothorpe *et al.*, 2013) would still maintain risks of future farmland conversion.

3.2. Agricultural Land Valuation

The valuation of agricultural lands is a key component of a county's agricultural settings. This valuation broadly serves as an indicator for the demand of agricultural land as well as its market value. Circumstances that impact the land such as agricultural productivity, urban development pressures and the intended future use of the land also factor into agricultural land valuation. Nonetheless, market conditions for agricultural land sales may vary from year to year and may not be apparent at the local scale.

The analysis of agricultural land value performed here encompassed agricultural land sales reported to the USDA for both continued agricultural use and agricultural land diverted to other land uses, at the county scale over a three-year time-period (USDA, 2018; USDA, 2019a; USDA, 2020). This analysis is not a sales comparison of any parcel. Premium agricultural land sale prices for sub-acre land sales are generally not reflected in this analysis. The results of the agricultural land sale value analysis are shown in Table 7. The average (\$ /acre) sale price for agricultural land sold for continued agricultural use between 2017 – 2019 in Ashland County was \$1,350. Iron County did not report sale prices for agricultural land sold for continued agricultural use over this period. In comparison to the statewide averages, agricultural land sold for agricultural uses in Ashland County sold on average for 13.5% of the statewide average sale price.

Across the state, agricultural lands sold and diverted for development to non-agricultural uses averaged sale values of \$10,005 per acre. In 2017, the average sale price for agricultural land sales for development to non-agricultural uses in Ashland County was \$1,575 per acre or 14.6% of the statewide average that year. However, Ashland County did not report sale prices for agricultural land sales for development to non-agricultural uses in 2018 and 2019. Iron County did not report any sale prices for agricultural land sales for development to non-agricultural uses over this time period. This may indicate a strong desire among agricultural landowners within Ashland and Iron Counties to resist the demands to sell agricultural land for non-agricultural uses or this may also be reflective of the weak urban development pressures in the region.

3.2.1. Ashland County Agricultural Land Valuation

The average sale price for agricultural lands sold for continued agricultural use in Ashland County is over seven times less than the statewide average price (Table 7). The 2017 record of agricultural lands diverted to non-agricultural uses seen in Table 7 represents two sales totaling only 52 acres, does not provide sufficient data here for analysis. However, the data may suggest agricultural lands diverted to non-agricultural uses in Ashland County is below the statewide average price (Table 7). The below average sale price for agricultural land sold for continued agricultural use shown in Ashland County indicates a low level of demand for both agricultural land for the purpose of continued agricultural use and possibly a low level of demand for development. However, the negative average rate of agricultural land conversions in Ashland County, as shown in Table 5, provides evidence that Ashland County agricultural landowners may be looking to convert non-agricultural land to agricultural uses. Converting non-agricultural lands to agricultural lands may also be a factor contributing to the below average sale price of agricultural lands in Ashland County.

Given the forest and cropland agricultural economy of the area, impacted lands may or may not be able to continue their agricultural use after the project is complete. Therefore, this analysis will provide an estimate of agricultural land valuation in Ashland County for land sold for continued agricultural use and land sold for development. The estimate of land sold for continued agricultural use is based on the 2017-2019 Ashland County averaged sale price of land sold for continued agricultural use (Table 7). The estimate for land sold for development is based on the 2017-2019 statewide average sale price for agricultural lands sold for development, as Ashland County did not contain sufficient records of agricultural land sales diverted from agricultural use for the analysis.

This analysis has established an average valuation of \$1,350 per acre for agricultural lands sold for continued agricultural use and an average valuation of \$10,005 per acre for agricultural land sold for development in this area. The estimated valuation proposed within this analysis is not a valuation of any particular agricultural land or property and is only intended to establish an estimated average valuation for agricultural lands sold for continued agricultural use or diverted to non-agricultural uses within Ashland County, WI. As the county and statewide data used within the analysis is an average over the 2017 – 2019 time period, it is likely the averaged sale valuation for agricultural lands in 2021 for Ashland County is different than the estimates presented here. Furthermore, the premium price theory that establishes exceedingly higher prices for small or sub-acre agricultural parcels or for agricultural parcels nearest to urban areas (Brorsen et al., 2015) is not reflective within this analysis.

3.2.2. Outagamie County Agricultural Land Valuation

Iron County does not have records of agricultural land sales over the 2017-2019 period; the lack of a single agricultural land sale within Iron County in said time period may indicate other factors are at play. There may be a strong desire among agricultural landowners within Iron County to resist

the demands to sell agricultural land or there may not be strong urban development pressures facing Iron County.

Given the forest and cropland agricultural economy of the area, impacted lands may or may not be able to continue their agricultural use after the project is complete. Therefore, this analysis will provide an estimate of agricultural land valuation in Iron County for land sold for continued agricultural use and land sold for development. These estimates are based on the 2017-2019 statewide average sale price for agricultural lands sold for continued agricultural use as well as for development as Iron County did not contain records of any agricultural land sales during this time period (Table 7).

This analysis has established an average valuation of \$5,272 per acre for agricultural lands sold for continued agricultural use and an average valuation of \$10,005 per acre for agricultural land sold for development in this area. The estimated valuation proposed within this analysis is not a valuation of any particular agricultural land or property and is only intended to establish an estimated average valuation for agricultural lands sold for continued agricultural use or diverted to nonagricultural uses within Iron County, WI. As the data used within the analysis is a statewide average over the 2017 – 2019 time period, it is likely the averaged sale valuation for agricultural lands in 2021 for Iron County is different than the estimates presented here. Furthermore, the premium price theory that establishes exceedingly higher prices for small or sub-acre agricultural parcels or for agricultural parcels nearest to urban areas (Brorsen et al., 2015) is not reflective within this analysis.

Table 7: Agricultural land sales from 2017 – 2019 in Ashland County, Iron County and the Wisconsin State average (USDA, 2018; USDA, 2019a; USDA, 2020).

Location	Agricultural Land Sale* (\$ / acre)					
	2017		2018		2019	
	Sold for Ag ^φ	Diverted [‡]	Sold for Ag ^φ	Diverted [‡]	Sold for Ag ^φ	Diverted [‡]
Ashland County	1,219	1,575	1,542	-	1,289	-
Iron County	-	-	-	-	-	-
Wisconsin Average	4,960	10,794	5,587	13,280	5,269	5,942

*Sales based on "arms length" transactions, not including sales outside of market conditions (e.g. family sales or foreclosures)

^φ Agricultural land sold for continued agricultural use

[‡] Agricultural land sold and diverted to other use outside of agriculture

3.3. 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.

Through this program, counties adopt a state-certified farmland preservation plan that maps areas identified as important for farmland preservation and agricultural development based upon reasonable and objective criteria. Based on the plan, local governments may choose to adopt a FP zoning ordinance or designate Agricultural Enterprise Areas (AEA) to achieve further land protections and ensure that farmland covered by the plan is eligible for farmland preservation tax credits. Such ordinances and AEA's must also be certified by the Department of Agriculture, Trade and Consumer Protection (the Department). Landowners who are eligible in either or both AEA and FP zoning areas and claim the tax credit are required to follow the state soil and water conservation standards to protect water quality and soil health.

3.3.1. Farmland Preservation Planning

Ashland County

The Department certified Ashland County's current FP plan in 2016 for a ten year period ending in 2026 (Ashland County, 2016). The criteria for land planned for FP in Ashland County includes all soils listed as prime agricultural; existing private land uses of agriculture, farmstead, open lands, and woodlands; lands within the Fields, Waters and Woods AEA; and privately-owned environmental areas along ravines, intermittent and perennial streams all if not otherwise excluded (Ashland County, 2016). The Towns of Gingles, White River, Ashland, Marengo, and Morse as well as the City of Mellen have lands that are planned for FP as part of Ashland County's FP Plan.

Iron County

The Department certified Iron County's current FP plan in 2017 for a ten year period ending in 2027 (Iron County, 2017). The criteria for land planned for FP in Iron County includes, areas intended for mainly agriculture or forestry uses, with new housing at a density generally not exceeding one residence per 40 acres with other uses like agricultural supply businesses, mineral extraction operations, farm family businesses, and some non-farm uses and home occupations also being acceptable in these planned areas (Iron County, 2017). The Town of Anderson has lands planned for FP as part of Iron County's FP Plan; however, Iron County did not plan for FP in the Towns of Knight and Pence or the Cities of Montreal or Hurley.

3.3.2. Farmland Preservation Zoning

Establishing FP zoning strengthens farmland protections beyond what an FP plan affords. A review of the Department's FP program participation map shows that neither Ashland County nor Iron County have adopted FP zoning (DATCP, 2021b).

3.3.3. Agricultural Enterprise Areas

AEA 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.

Ashland County

A review of the Department's AEA program shows that Ashland County contains one designated AEA, the Fields, Waters and Woods AEA that covers parts of Ashland and Bayfield Counties (DATCP, 2021c). All proposed routes intersect with the AEA, as seen in Figure 2, in some capacity although most parts of the routes follow existing highways not included as part of the AEA boundary. None of the proposed routes impact current FP agreements as most are focused on the Westside of the AEA and the project crosses through the East half. However, the Project could impact future agreements within the AEA as land devoted to electric transmission that is not farmed would be excluded and access easements would not be eligible for an FP agreement.

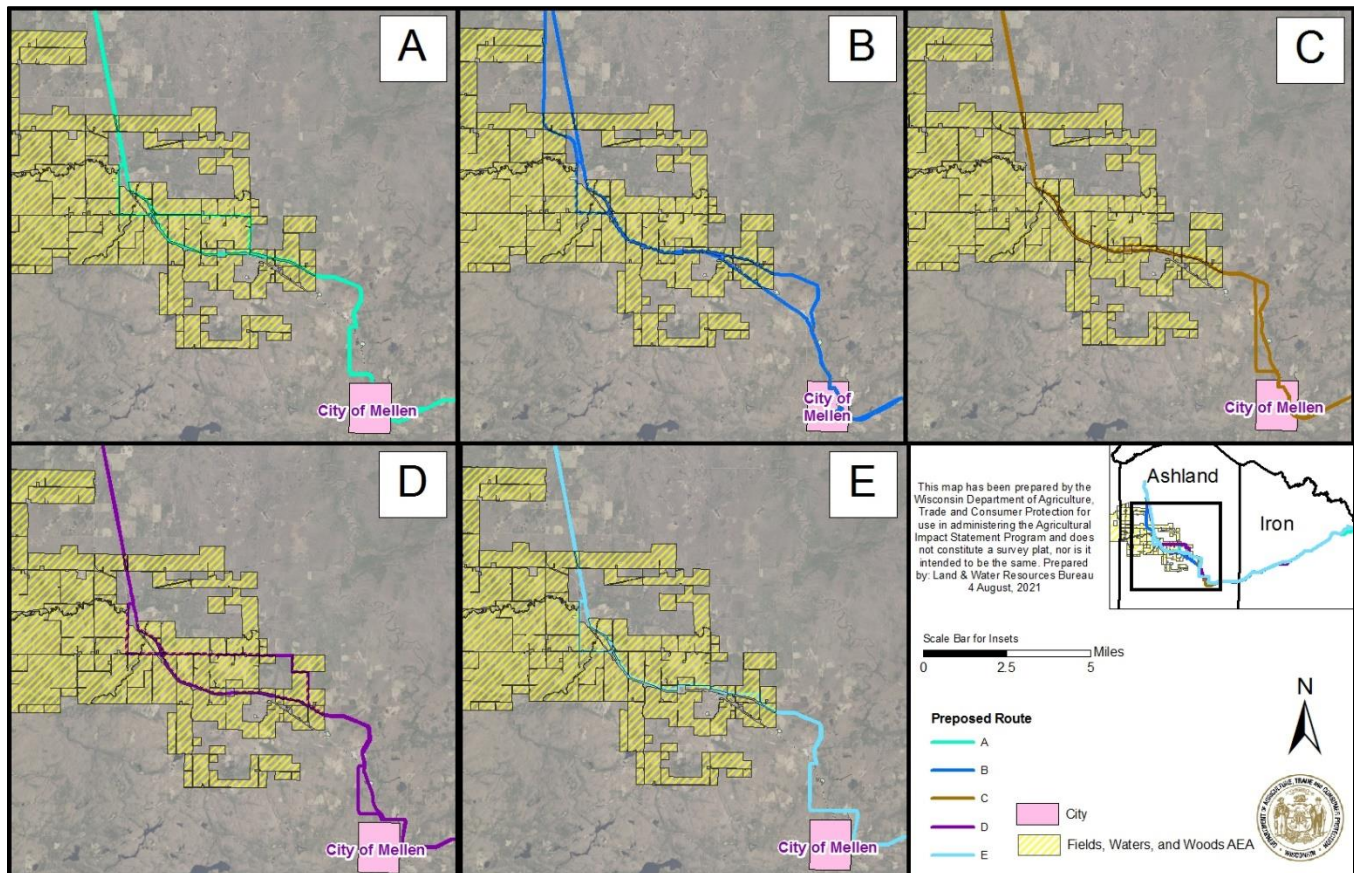


Figure 2: The *Fields, Waters and Woods* Agricultural Enterprise Area in relation to the proposed Project in Ashland County, WI. Alternative routes proposed by Xcel Energy are shown as (A, B, C, D, and E).

Iron County

A review of the Department's AEA program shows that Iron County does not contain any designated AEAs (DATCP, 2021c).

3.3.4. Managed Forest Law (MFL)

The MFL program is a voluntary sustainable forestry program administered by the Department of Natural Resources (WisDNR) under [subch. III of ch. NR 46](#). In exchange for reduced property taxes eligible landowners commit to a 25-50 year sustainable forest management plan on their privately owned woodlands. Sustainable forestry practices such as harvesting mature timber according to sound forest management practices and reforestation and afforestation of land to meet the size and density requirements are required in enrolled landowner's management plans. Land with buildings or improvements associated with buildings are not eligible for MFL. Exceptions such as utility right of ways are permitted such that the project and its ROW will not interfere with future or current MFL eligibility (WisDNR, 2017). A review of the WisDNR MFL program database indicates that the Removal and Construction Projects will impact a maximum of 265.1 acres of MFL enrolled land.

3.3.5. Purchase of Agricultural Conservation Easement Programs

The 2009 - 2011 State of Wisconsin budget authorized the state Purchase of Agricultural Conservation Easement (PACE) Program under [Wis. Stats. § 93.73](#), which is intended to provide matching funds to assist local governments and non-profits with the purchase of permanent agricultural conservation easements. The intent of the PACE program is to preserve agricultural land of significance at risk of development and to provide an additional layer of permanent protection to certified FP planned areas and designated AEAs. Post PACE acquisition, the partnering local entity and the Department co-hold the agricultural conservation easement voluntarily purchased from landowners. At the time of this analysis, the state's PACE Program is not currently funded or accepting new applications. However, the state holds 17 PACE easements. A review of the Department's PACE Program shows the Project would not impact any state held PACE easements.

Counties and private non-governmental organization such as land trusts may also hold agricultural conservation easements. Based on a review of publicly available online resources, the Department could not find any record of a county held or non-governmental organization held agricultural conservation easement that would be impacted by the Project (Land Trust Alliance, 2021; Northwoods Land Trust, 2021; MIWP.org, 2021).

3.4. Drainage Districts

Drainage districts are local governmental entities governed under Wis. Stat. Ch. 88 and organized under a county drainage board and for the primary purpose of draining of lands for agricultural use (DATCP, 2019a). 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. A review of the Department's Drainage Program database indicates that Ashland and Iron Counties contain no drainage districts.

3.5. 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.

3.5.1. 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, 2019b). A review of the Department's CREP records indicated that the proposed project construction of Route D would directly impact a current CREP 15-year agreement in the Town of Ashland set to expire on September 30th, 2022. The site is a CP-22 practice (Buffer Strip) that requires strips of trees and shrubs planted along rivers, creeks, or ponds. A 15-year CREP agreement may fall under a utility ROW, however, any damage to conservation cover during construction must be reestablished at the landowner's expense. If the landowner would wish to reenroll in the program by converting the agreement to a permanent easement, they would have to remove the portion of land enrolled under the Project ROW and request to reenroll any land that cannot contain trees in another conservation practice, i.e. a grassland practice.

Additionally, the Department's CREP records indicate that there are several additional agricultural fields located along proposed Route D enrolled within the CREP program as a permanent easement. While, the Department believes the proposed project area will not directly impact a CREP field, there is the potential that construction activities may increase the potential for increased runoff, erosion and sedimentation to occur in these nearby CREP fields. Therefore, if the PSC selects Route D the Department advises Xcel Energy to work with landowners to identify nearby CREP fields that could be impacted in order to ensure measures are in place to mitigate any potential impacts to the CREP fields.

3.5.2. 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, 2019b). 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, 2019b). 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.

4. 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 advocate for alternatives that may reduce impacts to agricultural lands. In order to promote the opportunity for alternatives, the Department has used information provided by Xcel Energy for this AIS and information gathered by the Department from agricultural landowner(s) to analyze the potential agricultural impacts of the Ashland-Ironwood transmission line relocation project (the Project) in Ashland and Iron Counties, WI. The analysis of the agricultural impacts and conclusions drawn from the analysis form the basis of the Department’s recommendations within the AIS Recommendation Section above.

As mentioned in Section 2.3.3 *Project Location*, the proposed project is located in the states of Wisconsin and Michigan. As the PSC and the Department lack authority within Michigan, the components of the proposed project within Michigan are beyond the scope of this analysis.

4.1. Landowner Rights

[Wisconsin Statute § 182.017](#), also referred to as the “Landowner Bill of Rights”, describes the rights of landowners and the requirements the utility must adhere to, when a transmission line will be constructed on private property. The transmission line applicant and contractor operating on the applicants behalf must comply with all aspects of this statute, which covers the range of topics described below:

- Compensation
- Infrastructure Repair
- Soil Conservation & Erosion
- Debris Removal
- Consent for Weed & Brush Control
- Landowner and Utility Liabilities
- Tree Harvesting and Tree Ownership
- Interference with television & radio reception
- Right-of-way Restriction

The applicant may request landowners to waive some rights during the negotiation process, but landowners are not required to do so. The Landowner Bill of Rights is still applicable to condemned land. The Department recommends that each affected landowner review the Landowners Bill of Rights (see Appendix D Section V) in its entirety prior to the start of easement negotiations.

4.2. Agricultural Land Acquisitions

In order to implement the proposed Construction Project, Xcel Energy will affect approximately 562 to 715 acres of agricultural lands depending on the selected route, access roads and laydown yards. Xcel Energy already holds easements for a portion of these affected agricultural lands. For the remaining agricultural lands, Xcel Energy plans to use a combination of temporary and permanent easements to obtain the necessary rights to construct the Project. The Department analyzed all impacted agricultural lands, regardless of the lands' current easement status, for the proposed Construction Project.

The Department attempted to contact 133 agricultural landowners and agricultural tenant operators impacted by the Construction Project alternative routes who had agricultural impacts of one or more acres as shown in Table 8. There were another 59 agricultural landowners impacted by the proposed Construction Project route alternatives with impacts less than one acre, who were not contacted. The following section relays the feedback and comments received from stakeholders and agricultural landowners through the Department's efforts. The information obtained helped form the basis of the Department's analysis of agricultural impacts to specific agricultural landowners and agricultural landowners in general. Xcel Energy has also engaged in a public outreach campaign, including in-person and virtual open houses in the affected area to gather public and stakeholder input, however this information was not included within the AIN.

Agricultural tenant operators impacted by the Project may be eligible for a farm replacement payment from Xcel Energy in accordance with Wis. Stat. §32.19(4m)(b) if Xcel Energy exercises the powers of eminent domain through a jurisdictional offer to the agricultural property owner. A voluntary sale between Xcel Energy and an agricultural property owner, after a jurisdictional offer has been made, would not negate the potential for a farm replacement payment.

Table 8: Agricultural landowners and tenant operators with more than one acre of impact from the proposed Construction Project in Ashland and Iron Counties, WI that the Department attempted to contact.

Agricultural Landowner	Max Impact (acres)	Agricultural Landowner	Max Impact (acres)	Agricultural Landowner	Max Impact (acres)
ADAM & JENA LINDQUIST	1.6	GEORGE G FADROWSKI	7.6	MIDLAND SERVICES INC	2
ADAM AND KELLY WADDLE	8.7	GERALD AND ELISE HEIMERL	3.9	MITCHELL MEUNIER	3.8
ALAN J LINDQUIST	1.7	GLORIA M UREMOVICH	6.0	NATHAN & CALLA ERICKSON	1.6
ALEX AND KATELYN MOHRBACHER	5.1	HEARTWOOD FORESTLAND FUND VII LP	20.5	NORTH COUNTRY LUMBER COMPANY INC	2.8
ANDREW & MARIA WICKMAN	1.6	HOUSE OF THE LORD MINISTRIES INC	6.2	NORTHERN STATES POWER COMPANY	6.7
ANGELO LUPPINO INC	1.1	IRON COUNTY	26.6	PAGE AND JOANIE ROSENLUND	5.8
ANTHONY & HOLLY DENNY	4.9	IRON COUNTY RESOURCE DEVELOPMENT ASSOCIATION	11.3	PAUL D. & NELDA JOHNSON	5.2
ARNOLD B & SHARRON R MACKEY JOINT INCOME ONLY TRUST	4.4	JACOB PETERS AND CRYSTAL KUKLINSKI	4.8	PAULINE BLAKEMAN	2.9
ARTHUR AND LORRANIE TOBIN	2.3	JACOB VITEK	1.3	RGGS LAND & MINERALS LTD LP	105
ASG HOLDING LLC	5.8	JAKE PETERS TRUCKING LLC	2.4	RICHARD J WINDT	4.3
ASHLAND COUNTY	3.0	JAMES & JULIE WASHATKA	4.2	ROBERT & BONITA MOORE	2.6
ASHLAND COUNTY HIGHWAY DEPARTMENT	5.5	JAMES PLATSKA	1.7	ROBERT & SALLY MIKA	1.9
ASHLAND COUNTY MEMORIAL FOREST	10.3	JAMES W MATTSON JR	5.8	ROBERT & SHELTON BREVAK	4.8
ASPEN RIDGE HOUSING LLC	2.9	JAMES W MATTSON JR	5.8	ROBERT KAZEKEWICZ	1.3
BARBARA J HANN	5.2	JENNIFER GEISSLER	2.8	ROBERT L SCRIBNER	14.2
BAYFIELD ELECTRIC COOPERATIVE	6.8	JEROME & JANET KRUZAN	11.5	ROBERT RIEMER	1.8
BERTHA AND DAVID MORELLO	1.2	JOHN & MEGHAN GRANGER	1.5	ROBERT WARREN	2.9
BETTY J SCHEPPLER	2.3	JOHN & SKYLER BLAKEMAN	4.1	ROGER BJORK	3
BRENDEN M RUSSO	1.2	JOLMA FAMILY FARM LLC	10.3	RONALD J HERR LIVING TRUST	5.1
BRIAN & JAMIE ANDERSON	3.1	JONATHON AND JACEY VERNOSKI	2.3	RONALD KRPAN	7.4
BRIAN AND ROSS PETERSON	32.9	JOYCE MCABEE	5.5	ROSS PETERSON	4.5
CAROL PETERSON AND MARTIN LIPSKE	2.7	JULIE AND MITCHELL MEUNIER	5.6	ROY & SAU GRAGE	4.9
CHRISTOPHER A WICKER AND AMY L WICKER REVOCABLE TRUST	5.5	JUSTIN & JESSICA JORDAN	1.9	RYAN LEE HUISHEERE	12.7
CHRISTOPHER AND DORIS WOLF	3.3	KARI L GRIFFITHS	1.4	SCOTT AND DENISE OLIPHANT	6.1
CITY OF HURLEY	2.5	KEITH & KATHLEEN STRICKER	1.4	SCOTT STEINBACH	3.3
CITY OF MELLEEN	2.5	KEVIN & JOY BUSH	1.8	SEDERHOLM TRUST	5.2
CITY OF MONTREAL	4.2	KEVIN D TAPANI	7.8	SHAWN SEDERHOLM	1.9
CLEMENCE DALE	3.8	KRETZSCHMAR HOLSTEINS INC	1.6	STATE OF WISCONSIN	13.5
CLINT BUSH	1.9	LA POINTE IRON CO	12.6	SUSAN KRUZAN AND LOIS KRETZSCHMAR	4.3
CRAIG R USKOSKI	5.3	LAWRENCE O & PATRICIA L KRUZAN REVOCABLE TRUST	3.6	SWANTE & YVONNE HILL TRUST AGREEMENT	13.9
CURTIS & JACQUELYN JAMES	1.7	LEIF WALLIN	3.2	TERESA P HENNING	1.8
DALE & ROXANNE BAUER	2.3	LEON & SHARON ADAMS	6.2	TERRENCE L PETERS	8.1
DALE ROBINSON	4.9	LUPPINO DEVELOPMENT, INC	2.8	TIMOTHY & EDNA PERKINS	3.2
DANIEL & SHELLEY GRANGER	1.9	LYLE N & MARIE E ANDERSON REVOCABLE TRUST	1.7	TODD W JUONI	1.6
DAVID & HOLLY GEORGE TRUST	10.8	M JOLMA INC	9.8	TONY & AMY HUBER	11.6
DAVID & JOYCE TAPANI	7.5	MARK & KAREN HOGLUND	4.1	TOWN OF KNIGHT	4.1
DAVID & SUSAN SEDERHOLM	8.0	MARK A CORON	4.1	TOWN OF PENCE	2.8
DENNIS & DEBORAH DELEGAN	6.9	MARK AND LORETTA HALLSTROM	3.4	WADE & FONDA BLAKEMAN	1.2
DENNIS L LINDQUIST	5.3	MARK AND ROBYANNE HOWARD	1.2	WAYNE & HEIDI STRICKER	1.4
DOUGLAS & PATRICIA SORRELS	9.2	MARK BALAS	23.9	WENDY KOOSMANN AND DONALD VITEK	18.6
DOYLE & PRISCILLA BLAKEMAN	4.6	MARK JOLMA	7.9	WHITE RIVER HUNTING CLUB	5.2
FAYE A FLESIA TRUST	7.8	MARY A KOSKI	4.4	WILLIAM A GREETER	4
FRANK & DENISE LIPKA	3.1	MICHAEL & MARGARET ELLIAS	2.8	WILLIAM J BACKHAUS	7.7
FRANK AND DAWN CHUDY	3.0	MICHAEL & SEIJA ANDERSON	1.4	WM F VILAS TRUST ESTATE	3.4

4.3. Summary of Landowner Concerns

In order to gather additional information about the project’s impact to agricultural lands and farm operations, the Department mailed surveys to agricultural landowners in the Construction Project ROW routes whom had agricultural impacts of one or more acres. The Department also mailed surveys to all agricultural landowners impacted by the Removal Project. In total, the Department mailed 223 surveys. Agricultural landowners were given the opportunity to respond by mail, an online survey or call the AIS program manager to give a verbal response. A total of 50 agricultural landowners responded, resulting in a response rate of 22%. A complete record of responses received for the Construction Project and Removal Project can be found in Appendix C: *Agricultural Landowner Comments*

4.3.1. Construction Project

Within the Construction Project ROW, 133 agricultural landowners were contacted by the Department and 30 responded (22.6% response rate). The majority of the respondent’s reported their agricultural operations consisted of managed woodlands followed by pasture and cropland. The respondent’s also indicated their agricultural operations possessed a variety of livestock and farm animals including cattle, pigs, sheep/goats, poultry, horses, bees, and trout.

When asked to select any of the concerns shown in Figure 3 about the Construction Project, the primary concern identified by respondents was access (Figure 3). Respondents were also concerned about impacts related to lumber, parcel severance, fencing, erosion control and aerial spraying or seeding (Figure 3). Other areas of concern reported by the respondents are shown in Figure 3.

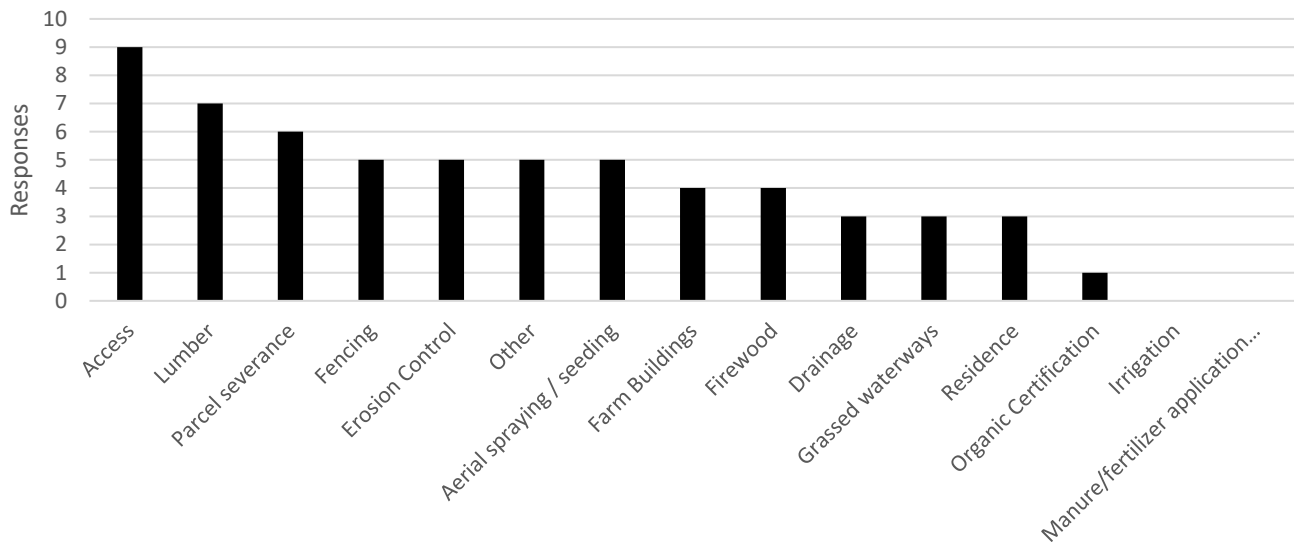


Figure 3: Landowner concerns resulting from the proposed Construction Project

Agricultural landowners were also asked to indicate if they participated in any conservation or agricultural programming including FP agreements, FP zoning, CREP, CRP and MFL. Six respondents (20% of respondents) indicated they have forested lands enrolled in MFL. Respondents did not report participation in any other conservation or agricultural program identified by the Department.

The Department also requested agricultural landowners to report the current land use within the proposed Construction Project ROW as shown in Figure 4. The most common (31% of respondents) land use reported within the Construction Project ROW was managed woodland. Forest management is defined as an “Agricultural use” under [Wis. Stat. § 91.01\(2\)](#) if it’s conducted for the purpose of producing an income or livelihood. Managed forest land in this survey included both MFL and non-MFL lands. The next most common choices (each with 17%) were cropland, pasture and other, with the remaining responses shown in Figure 4A.

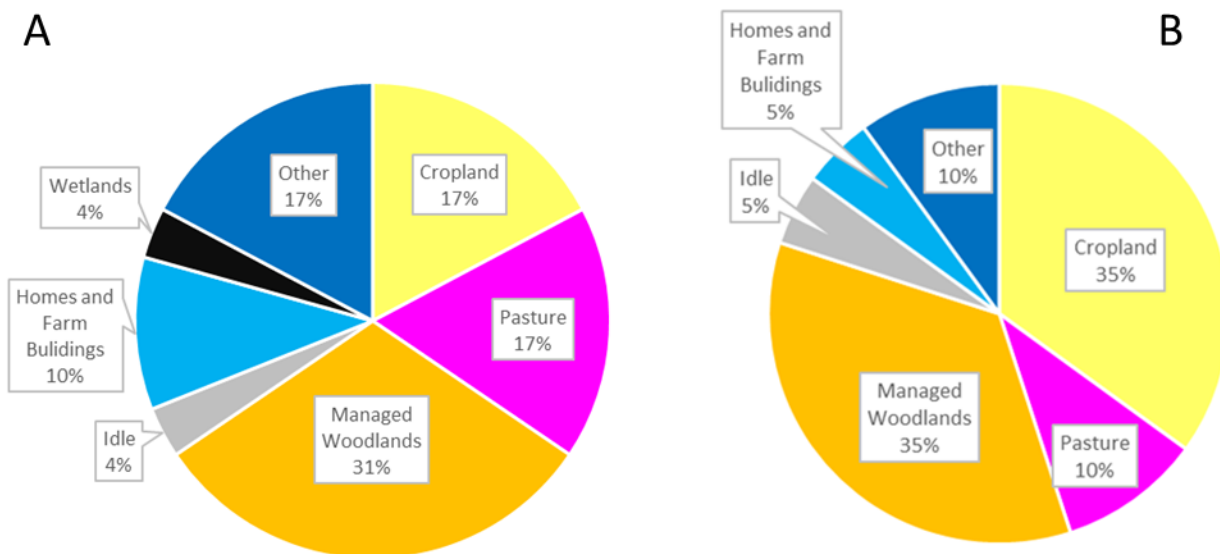


Figure 4: Construction Project landowner responses categorized by land use (Figure A), and Removal Project landowner responses categorized by land use (Figure B).

4.3.2. Removal Project

Within the Removal Project ROW, 90 agricultural landowners were contacted by the Department and 17 responded (18.8% response rate). The majority of the respondents reported their agricultural operations consisted of managed woodlands or cropland. When asked to select any of the concerns shown in Figure 5 about the Removal Project, the most common concerns were lumber and erosion control (Figure 5). Respondents were also concerned over access, fencing, grassed waterways and drainage (Figure 5). Additionally, 25% of respondents reported to the Department that the Removal Project would have no impact to their agricultural operation and one respondent stated the Removal Project would benefit their agricultural land.

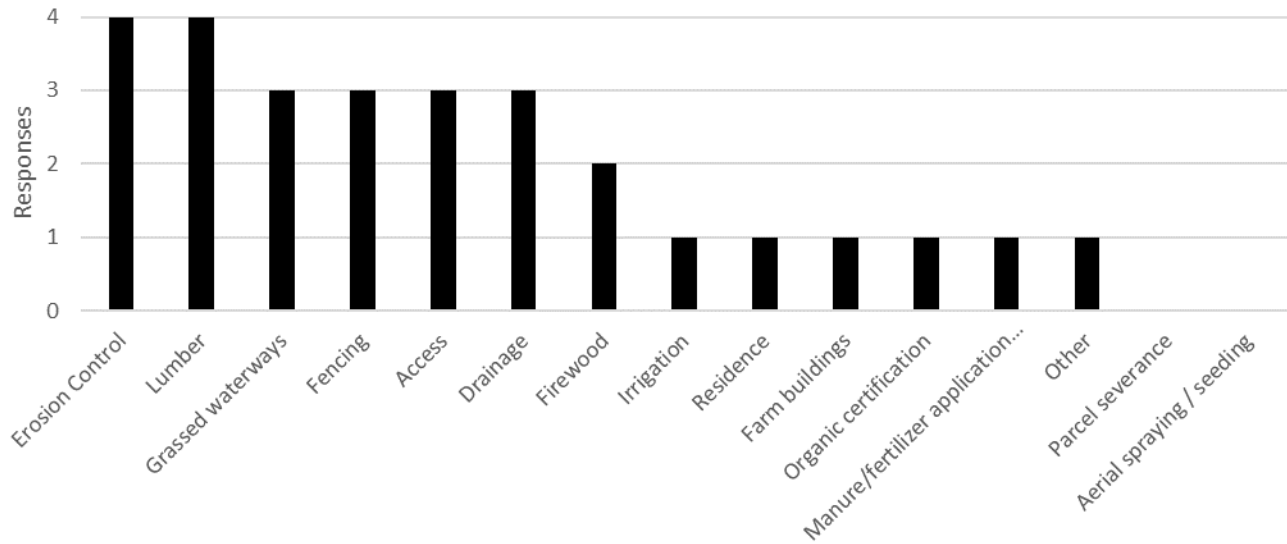


Figure 5: Landowner concerns resulting from the proposed Removal Project

The Department also requested agricultural landowners to report the current land use within the proposed Removal Project ROW as shown in Figure 4B. The most common land use reported was managed woodlands and cropland, each reported by 35% of respondents (Figure 4B). The percentage for the remaining land uses are reported in Figure 4B.

4.3.3. Landowner Concern Conclusions

After review and analysis of the agricultural landowner responses obtained from the Construction Project and Removal Project surveys, the Department has identified the following priority areas of agricultural landowner concerns: route location, access and lumber. By land use, managed forests are at the largest risk of impact; this can be attributed to managed forest lands being the predominant form (by acreage) of agriculture in the area. Thus, Xcel Energy should provide managed forest lands additional considerations to preserve this agricultural land.

Two respondents noted an abandoned railroad corridor lying in or adjacent to their property that they would prefer be used for the Project area. The Department supports the preservation of farmland. The Department recommends to the PSC that they select a route alternative that utilizes as much pre-existing ROW (including railroad corridors and roadway ROWs) to prevent the loss of agricultural lands and reduce impacts to farming operations. This is especially important for managed woodland agricultural operations as future trees cannot be grown within the ROW, which directly leads to lost agricultural production.

4.4. Severance, Access and Wasteland

As the Removal Project occurs within an existing Xcel Energy ROW and Xcel Energy will primarily utilize aerial means to remove the existing transmission line structures, new impacts to agricultural

lands are expected to be negligible. Therefore, this analysis will focus on the Construction Projects potential to sever agricultural lands, impede access and create wastelands.

The temporary and permanent easements of agricultural property required to implement any of the proposed Construction Project alternative routes would 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 parcels impacted by the proposed alternatives for the proposed Construction Project in Ashland and Iron Counties, WI.

4.4.1. Severance

While it's apparent that Xcel Energy has taken efforts to reduce or mitigate severance, agricultural parcels will be severed to accommodate the construction of the transmission line. Severance may be a physical barrier such as a road or non-physical barrier such as land use restrictions. Imposing land use restrictions as part of a transmission line easement ROW may still allow an agricultural landowner to access lands. However, barring the growth of trees or other woody plants as part of the easement may prevent the continuation of an agricultural lands pre-existing land use, such as managed forest lands where continuous tracks of forests are severed. Regardless of the means, severing an agricultural parcel effectively splits the existing parcel into two or more smaller parcels. Severing an agricultural parcel may also remove existing access points, create agricultural wastelands or uneconomic remnant parcels, and even divide the operation of a farm. Under Wisconsin's Eminent Domain Statute, compensation for damages resulting from severance is described in [Wis. Stat. § 32.09\(6\)](#).

Of the alternative routes proposed by the Construction Project, route E would have the greatest potential to sever agricultural parcels, given the ROW for Route E requires more new ROWs and more new ROW outside of the pre-existing ROW (including railroad corridors and roadway ROWs) than the other route alternatives. Collectively, the alternative routes also share long spans of common ROW corridors that have the potential to sever agricultural lands. Route B, especially between Minersville to Ironwood, requires the least amount of agricultural ROW and holds the ROW closest to pre-existing ROWs.

Where the proposed Construction Project impacts MFL lands, the Department recommends Xcel Energy utilize the mitigation efforts described in in Section 5.5.8 "Managed Forest Law, Trees and Other Woody Vegetation" to mitigate impacts to managed forests and preserve continuous tracks of managed forests where possible.

4.4.2. Access

As proposed, the Construction Project has the potential to temporarily limit agricultural field access and limit access to agricultural operations. 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 limitation would be specific to temporary and permanent easements utilized for laydown yards, staging areas, off-ROW access roads and the transmission line ROW. As the Construction Project ROW generally follows STH 13 and STH 77 between the Cities of Ashland, Mellen and Hurly WI any agricultural parcel or operation has the potential to experience temporary access limitations. Agricultural parcels Xcel Energy is planning to use for temporary laydown yards would have the greatest potential for access limitations. As reported by the Brevak's within Appendix C (I) "Construction Project Comments", the use of their property for Laydown Yard #1 along STH 13 would directly impact the function of their agricultural related operation and potentially reduce the functionality of their logging business due to temporary access limitations to the business. Proposed Laydown Yards #2 and #4 may also experience significant access limitations that prevent a crop from being planted/harvested or that may hinder an agricultural operation.

At this time, it is unclear where Xcel Energy would provide new access points to these remnant fields. In order to accommodate field access to the remnant fields, the Department recommends that Xcel Energy work with agricultural landowners and any agricultural tenant operators to determine safe new access points to the remnant fields.

4.4.3. Wasteland

Acquisitions and easements that impact farmland frequently create small remnant fields that may be difficult to access, are irregularly shaped, or are no longer able to produce the pre-existing agricultural crop (e.g. timber). These small irregularly shaped remnant fields may also contain numerous obstacles, such as transmission line poles, that can make it difficult for agricultural equipment to navigate and reduce the amount of tillable acres. This in turn reduces agricultural productivity, decreases the economic viability of the land and increases the likelihood of creating undeveloped land ([Wis. Stat. § 70.32\(2\)\(a\)\(5\)](#)) or what is commonly referred to as wasteland as shown in Figure 6B. Compensation for the reduction in the value of parcels that are small and/or irregularly shaped and the potential creation of uneconomic remnant parcels according to [Wis. Stat. 32.05\(3m\)](#) should be addressed in the appraisal of each affected parcel.

4.4.3.1. Wasteland

By the nature of transmission line projects, all of the route alternatives proposed by Xcel Energy for the Construction Project have the potential to create small amounts of agricultural wastelands in the immediate area surrounding each transmission line pole. Where the transmission line requires the deforestation of managed forests and prevents further growth of timber, the entirety

of Construction Project ROW within an MFL parcel may be wastelands if that land does not have a suitable secondary agricultural purpose.

To mitigate the potential to create wastelands of MFL land, the Department recommends that the PSC select a route that avoids the fragmentation of major blocks of forest and prioritize the preservation of windbreaks, MFL lands and forest lands used for specialty forest products such as maple sugar production. Furthermore, the Department recommends Xcel Energy utilize the mitigation efforts described in Section 5.5.8 "Managed Forest Law, Trees and Other Woody Vegetation" to mitigate impacts to managed forests and preserve continuous tracks of managed forests where possible.

4.4.3.2. Uneconomic Remnant Fields

The proposed Construction Project also has the potential to create uneconomic remnant fields, depending on the selected route. For example, as reported by the Tobin's within Appendix C (I) "Construction Project Comments", the Tobin's operate a specialty agricultural operation consisting of maple syrup production, cropland, pasture, idle or fallow farmland and state and federal licensed trout ponds and hatchery. The agricultural parcels where the Tobin's operation is located are narrow tracts of land along STH 13 and the railroad corridor to the north of STH 13 in the unincorporated community of Highbridge, WI. As proposed, the ROW for Route B would impact a substantial amount of land from parcel IDs 004001490200 and 004001500100, which are utilized by the Tobin's agricultural operation. As such, Route B has the potential to substantially impact the Tobin's agricultural operation and may create uneconomic remnant fields.

To mitigate the potential creation of uneconomic remnant fields, if the PSC approves the Project the Department recommends the PSC consider selecting a route, modifying a route to utilize the existing railroad corridor, or altering the proposed transmission circuit structure near the Tobin agricultural operation.

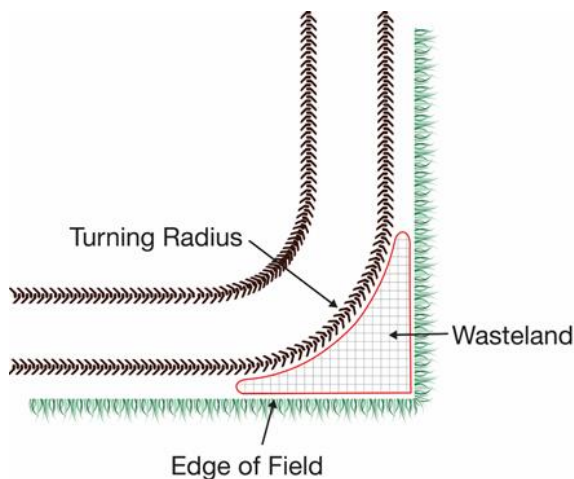


Figure A: Regular Shape

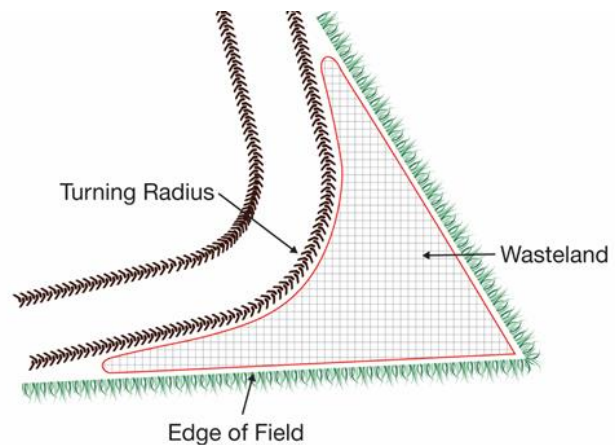


Figure B: Irregular Shape

Figure 6: Examples of agricultural wastelands created from regular shaped fields with square corners (Figure A) and irregular shaped fields with sharp or acute angles (Figure B) that may result from parcel severance.

4.5. Prime Farmland and Soils

As the Removal Project occurs within an existing Xcel Energy ROW and Xcel Energy will primarily utilize aerial means to remove the existing transmission line structures, new impacts to agricultural lands and soils are expected to be negligible. Therefore, this analysis will focus on the Construction Projects potential to impact prime farmland and agricultural soils.

As proposed, the Construction Project will impact between 562 to 715 acres of agricultural lands and agricultural soils depending on the selected route, access roads and laydown yards. The soils impacted by the proposed Construction Project were cataloged and analyzed by farmland classification, for each route alternative, using the using the Department's prime farmland soils GIS layer. Farmland soil classifications impacted by the Construction Project include prime farmland, prime farmland if drained, farmland of statewide importance or farmland of local importance (Table 9). Prime farmland is designated by the USDA according to section 622.3 of the National Soil Survey Handbook (USDA, 2017b) 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/local importance are provided under Table 9. The soil texture of agricultural soils impacted by the Construction Project was analyzed, in general terms, across the project ROW.

The vast majority of the agricultural lands (63.9% - 72.8%), depending on route alternative, impacted by the Construction Project are not agricultural lands of any Federal or State priority designation. While the majority of impacted agricultural lands are Not-Prime Farmland, each route alternative will impact between 130 – 228 acres of farmland that holds some level of Federal or State priority (Table 9). A comparison of the routes shown in Table 9 indicates that Route alternative E has the greatest impact to priority farmlands with a cumulative 228.3 acres of impacts to Prime, State and Local priority farmlands. Route B has the least amount of impacts to priority farmlands with only 130.5 acres of cumulative impact. The impacts to priority farmlands from the Construction Project laydown yards, shown in Table 9, will remain constant regardless of the selected route alternative.

The agricultural soils across the Construction Project ROW, when classified by texture, are primarily sandy loam, silt loam or a complex (i.e. unique mixture of soil textures) of various soil series. These soils series were also generally found to occur on slopes above 6% and contain notable amounts of stones and rocks. In general, silt loam soils 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). Sandy loam soils are coarse-textured porous soils (Cornell, 2017) that aren't able to hold onto water as well as medium or fine textured soils and may require irrigation to best suit crop production (UW-Extension, 2005). While silt loam soils may be ideal for crop production the presence of complex soil textures, stones, rocks and increased hillslopes are likely contributing factors to the dominance of Not-Prime Farmland in the Construction Project ROW.

On average, this soils analysis shows that any of Xcel Energy’s proposed Construction Project route alternatives will not impact a high proportion of prime farmland or high quality soils. However, each route when combined with the laydown yards and access roads still has the potential to impact well over 100 acres of farmland that holds some level of Federal or State priority (Table 9). Route E would have the largest impact and when combined with laydown yards would impact approximately 242.0 acres of priority farmland. In addition, all route alternatives have the potential to affect the Fields, Waters and Woods AEA located within Ashland County, which would prevent agricultural landowners from enrolling eligible lands that are within the Construction Project ROW. In keeping with the AIS program mission statement to preserve farmland, the Department prefers Route B and cautions against Route E.

Table 9: Agricultural soils, by farmland classification, impacted by the proposed Construction Project in Ashland and Iron Counties, WI.

Route Alternative	Prime Farmland* (acre)	Prime Farmland if Drained ^o (acre)	Farmland of Statewide Importance [‡] (acre)	Farmland of Local Importance [#] (acre)	Not Prime Farmland ^φ (acre)	Total (acre)
A	1.8	7.2	113.5	50.6	356.2	529.3
B	1.8	4.2	75.9	48.6	348.7	479.2
C	0.0	6.1	104.2	49.3	345.1	504.8
D	1.8	6.4	111.2	47.0	367.2	533.6
E	1.9	8.7	167.9	49.7	403.4	631.6
Laydown Yard	0.8	6.4	6.4	0.1	69.0	82.6

***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.

^o**Prime farmland if drained**, indicates that if farmland is drained it would meet prime farmland criteria.

[‡]**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.

[#]**Farmland of local importance** are set by state agency(s). These farmlands, as a map unit, contain less than 50 percent prime or statewide importance but the total of land of prime, statewide, and/or local importance for the map unit is greater than 50 percent.

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

4.6. Drainage and Soil Health

As the Removal Project occurs within an existing Xcel Energy ROW and Xcel Energy will primarily utilize aerial means to remove the existing transmission line structures, new impacts to agricultural drainage and soil health is expected to be negligible. Therefore, this analysis will focus on the Construction Projects potential to impact 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).

4.6.1. Drainage and Soil Health Impacts

Project construction activities have the potential to disrupt and/or mix soil profiles within the Construction Project ROW as well as the surrounding area. Construction activities may affect the existing surface and subsurface (i.e. drain tile) drainage patterns of agricultural fields if drainage tile lines are broken or if the topography of grassed waterways, known water flowlines or erosion control structures are altered. The movement of heavy equipment through the Construction Project ROW may compact soil and impede drainage. 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). In addition, research has also shown that construction activities can negatively impact soil properties, soil health and crop yields for up to a decade within the ROW depending on the type and severity of construction impacts (e.g. equipment axle weight, use of excavation, intermixing of soil layer etc.) (Culley and DOW 1988; Shi et al., 2014).

The Department recommends Xcel Energy take several mitigation efforts related to topsoil mixing, soil compaction, drainage, de-watering, and erosion control as see in Section 5.5 “Recommended Mitigation Efforts” to mitigate impacts to drainage and soil health on agricultural lands and preserve prime farmland & soils.

5. AGRICULTURAL IMPACT MITIGATION

Xcel Energy has indicated within their CPCN application, pending Project approval, they will coordinate with each agricultural landowner to obtain detailed information about each agricultural operation including but not limited to: irrigation systems, drainage tiles, locations of farm animals and crops, current farm biological security practices, landowner concerns, and use of access routes. Potential impacts to each farm property along the ordered route will be identified and where practicable, construction impact minimization measures will be implemented. Site-specific practices will vary according to the activities of the farm operator, the type of agricultural operation, the susceptibility of soils to compaction, the degree of construction occurring on the parcel, and the ability to avoid areas of potential concern (Xcel Energy, 2021a).

The Department recommends that landowners whom are concerned about potential impacts to their agricultural land should keep records of the conditions of the ROW before, during, and after construction. Records could include keeping crop yield records, beginning once the ROW is known, and photographs taken every season. These measures can all help a landowner negotiate for compensation, should damages caused by Project occur.

5.1. Independent Environmental Monitor (IEM)

For large-scale utility projects, the requirement for project initiators (i.e utilities) to hire an IEM has become a standard part of a PSC approval order. When hired, an IEM works on behalf of the PSC, WisDNR, the Department or other state regulatory agency as opposed to the utility. IEMs monitor project construction activities and report on a wide range of environmental issues such as construction impacts to wetlands, waterways, protected species, archaeological sites, state and federal properties, and erosion control. The IEM is also responsible for reporting incidents and has the power to stop project work if construction activities would violate permits, approvals, PSC order conditions, or agreement with a state regulatory agency.

Given the extended linear length (potentially over 60 miles) of the Construction Project in Ashland and Iron Counties, there is the potential for a range of environmental impacts to soil, wetlands, woodlands, wildlife, archaeological sites, stream crossings and surface water quality. If approved by the PSC, the Department recommends Xcel Energy be required to hire an IEM for only the Construction Project. The IEM should be hired in consultation with and the approval of the PSC, DATCP, and WisDNR and all reports generated by IEM should be shared with the PSC, DATCP, and WisDNR.

5.2. Independent Agricultural Monitor (IAM)

When a project affects a significant amount of agricultural land an IAM may also need to be hired. IAMs monitor project construction activities and report on a wide range of agricultural issues including but not limited to construction impacts to soil health, soil erosion, crop damage, agricultural operations, irrigation and impacts to surface and subsurface drainage. Similar to and IEM, an IAM works on behalf of the PSC, WisDNR, the Department or other state regulatory agency as opposed to the utility. IAMs should also verify the project initiator are complying with any agricultural best management practices and agricultural conditions in the PSC order and any construction environmental documents approved by the PSC. While the duties of an IAM and IEM may sound similar the IAM specializes in agricultural impacts and the IAM does not hold the power to stop the project.

As the Construction Project offers a range of route alternatives, differing in the amount of existing railroad and roadway ROWs used, the amount of potential agricultural impacts also varies. Potential agricultural impacts from the Construction Project include but not limited to crop damage, loss of access, soil compaction, mixing of topsoil, soil erosion, impacts to surface and subsurface drainage, impacts to irrigation systems and stray voltage. Regardless of the route selected, the proposed Construction Project will impact several hundred acres of agricultural land and the Department suggests the PSC consider requiring Xcel Energy to hire an IAM for only the Construction Project. Should the PSC select a route alternative that impacts an exceeding amount

of agricultural land and relies less on existing railroad and roadway ROW, such as Route E, the Department recommends that Xcel Energy be required to hire an IAM for the Construction Project.

Should the PSC require an IAM for the Construction Project, the Department recommends the IAM complete the Department's standard Agricultural Monitoring Form for Transmission Line Projects (ARM-LWR-543) seen in Appendix F. For the Department to maintain constant review of Construction Project activities occurring on agricultural lands, the IAM should document daily observations of construction activities on agricultural land only. The IAM should send the Department an updated form weekly.

5.3. Agricultural Mitigation Plan

According to AIN Xcel Energy submitted to the Department (DATCP, 2021a) and the CPCN application submitted to the PSC [REF#: 412031](#) (Xcel Energy, 2021a), Xcel Energy will not have an agricultural mitigation plan. In place of an agricultural mitigation plan, Xcel Energy has outlined key guidelines within Section 7.4.4 of the CPCN they will follow during the Project including:

- Compensating agricultural landowners for project impacts
- Restoring agricultural lands, to the extent practicable
- Siting the transmission line route along fence lines or between fields
- Locating transmission line poles, where practicable, at the edge of fields
- Pre-construction coordination with impacted agricultural landowners
- Special consideration and procedures for organic operations within the project ROW

To mitigate the impacts of stray voltage, Xcel Energy stated within the AIN to the Department that they have a Neutral to Earth Voltage (NEV) plan on file with the PSC. The NEV plan includes mitigation measure to reduce NEV levels by voltage cancellation, separation or enhanced grounding. Xcel Energy stated they would follow the NEV plan for the Construction Project (DATCP, 2021a). Xcel Energy also stated within the CPCN, if approved by the PSC, Xcel Energy will prepare a Construction Sediment and Erosion Control Plan for the route selected by the PSC (Xcel Energy, 2021a). As Xcel Energy has yet to prepare the Construction Sediment and Erosion Control Plan for the Project, the Department recommends that the PSC require Xcel Energy submit drafts of this plan and all related Construction Mitigation Plans for review and approval by the PSC, WisDNR, and DATCP, prior to the start of construction. These plans should include a detailed map of the construction segment and best management practices for construction and restoration of all environmental resources as well as for agricultural resources. Plans should also include specifics for all areas that would have construction impacts including the ROW, off-ROW access roads, laydown yards, and other temporary work areas.

5.4. Cleanup and Restoration

In accordance with [Wis. Stat. § 182.017\(7\)\(c\)](#), following the completion of construction activities, Xcel Energy will restore the area to preconstruction conditions. In general, cleanup and restoration activities include the removal of construction mats, temporary clear span bridges, and any other material or debris (including stones and rocks) from the ROW. Stockpiled topsoils and subsoils removed during construction are returned, in the proper order, and graded to match the existing topography and slopes. All ruts and depressions are restored and new topsoil may be brought in where topsoil has been lost or seriously mixed with subsoils. Agricultural soils are also monitored for compaction and when required undergo decompaction efforts to return the soil structure to its original condition. In areas where crops are not present, such as roadsides, pastures, old fields or upland woods, native seed mixes (or other appropriate seed mixes approved by the landowner) may be sown.

Under Wis. Stat. § 182.017(7)(c), if drainage tiles, fencing or other agricultural features are damaged during construction, Xcel Energy is responsible to repair and/or replace the damage feature. Xcel Energy is also responsible to pay for any crop damages caused by construction or maintenance of the transmission line. Within the AIN to the Department (DATCP, 2021a), Xcel Energy stated crop damages would be determined by the growing season affected for the crop, or the inability to harvest due to construction related activities. The Xcel Energy Construction Liaison/ROW Agent will work with impacted agricultural landowners to determine the impacted areas and obtain yields from either historical data or from the remainder of the field/property not impacted by the project construction. Xcel Energy stated the per bushel crop price could be determined by the market rate, landowner's contract price, local elevators, or the Wisconsin Agricultural statistics. Once the Xcel Energy Construction Liaison/ROW Agent completes a damage payment worksheet and a calculation of the area impacted by project construction, a check would then be issued to the landowner for crop damages. In circumstances where excessive compaction may hinder yield losses, an additional "compaction payment" is made on top of the actual damages. Xcel Energy stated the compaction payment is based on a percentage of crop damage payment over a three-year timeframe as follows: 1st year = 50%, 2nd year = 25% and 3rd year = 25% (DATCP, 2021a).

The Department recommends that Xcel Energy continue to monitor the ROW for soil erosion and maintain erosion control practices until there is sufficient vegetative growth in the ROW to mitigate soil erosion. Only after restoration activities are complete and vegetation has re-established within the ROW should temporary restoration erosion control devices, not designed to be left in place, be removed.

5.5. Recommended Mitigation Efforts

5.5.1. 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.

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.

5.5.2. 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.

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 axle 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 measured for compaction.

5.5.3. 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 damaged drain tile.

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 5.5.2 “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.

5.5.4. 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

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.

5.5.5. Irrigation

Electric transmission line construction activities and the placement of transmission line poles can interfere with the operation of linear or center pivot irrigation systems used to irrigate crops. Soil compaction from construction equipment may also impact or damage underground piping that supplies irrigation systems. Any interruption to irrigation systems cause by the Project can deprive crops from needed water and nutrients resulting in decrease crop yields.

The Department recommends the following to mitigate the impacts to irrigation systems:

- Prior to construction, agricultural operations that use irrigation within or adjacent to the Project ROW should inform Xcel Energy of their irrigation system, how the Project may impact the system, irrigation schedules frequency of irrigation and weather conditions that may change the irrigation schedule.
- Xcel Energy should consider using the techniques outlined in Section 5.5.2 “Soil Compaction” when crossing a known irrigation pipeline.
- If the Project plans to disrupt an irrigation system, Xcel Energy should notify the landowner beforehand and establish a mutually acceptable amount of time that the system will be taken out-of-service.
- If any part of an irrigation system is damage as a result of construction activities, Xcel Energy should pay for and repaired reported damages as soon as possible.
- If an irrigation system needs to be reconfigured as a result of the Project, Xcel Energy should work with the irrigation operators to reconfigure the irrigation equipment where necessary and to compensate them for any portion of cropland where the irrigation system no longer operates.

5.5.6. 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.

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

- As part of a potential PSC approval order, the PSC should require Xcel Energy to follow all erosion control practices described within the Project’s Construction Mitigation Plan.
- Pending project approval, Xcel Energy should allow the Department to comment on a draft Construction Mitigation Plan prior to finalization.

- 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.

5.5.7. Temporary Access Roads

Xcel Energy has proposed to install temporary access roads as part of the Project, when an alternative access road does not exist, to allow personnel and construction equipment to access the Project corridor. When a temporary access road is constructed there is a range of potential negative effects to agricultural lands including the mixing of topsoil with subsoil & rocks, soil compaction, soil erosion, and interference with existing drainage & irrigation. New temporary access roads also have the potential to impact agricultural operations by severing cropland or pastures, limiting field access or limiting access to agricultural infrastructure & buildings. Any of these impacts can result in lost agricultural productivity whether from lost soil productivity, crop losses or the direct loss of agricultural revenue when access to agricultural infrastructure is limited. When the Project has completed, Xcel Energy is required by [Wis. Stat. § 182.017\(7\)\(c\)](#) to restore the land to its original condition, clear all debris and remove all stones and rocks associated with the access roads. However, if desired by the landowner and in consultation with Xcel Energy, temporary roads may be left in place after construction.

The Department recommends the following to mitigate the impacts of access roads when they cross agricultural lands within the Project ROW:

- Xcel Energy should consult with agricultural landowners before siting any temporary access roads.
- Xcel Energy should strip and stockpile the topsoil for later reuse during restoration.
- After top soil removal, Xcel Energy should install a geotextile construction fabric along the roadbed prior to the placement of gravel/rock roadway.
- Access roads should also be designed to allow proper drainage and minimize soil erosion.

- Xcel Energy should consider using the techniques outlined in Section 5.5.3 “Drainage” when siting an access road over drain tiles.

5.5.8. Managed Forest Law, Trees and other Woody Vegetation

If approved, the Construction Project will impact approximately between 225 – 275 acres of MFL lands depending on the route that is selected. An explanation of the state’s MFL program and what that means for the woodlands enrolled within the program is provided in Section 3.3.4 “Managed Forest Law”. Additional acres of unmanaged forest lands will also be impacted, but are beyond the scope of this AIS as unmanaged forest lands are not defined as an agricultural use according to [Wis. Stat. § 91.01\(2\)](#). Both managed and unmanaged woodlands can provide financial benefit to the landowner either directly through the sale of managed forest for timber, the sale of firewood, or the harvest of tree sap for sale. The removal of any trees from a property may also decrease the market value of the property.

Prior to the start of construction, Xcel Energy will remove all woody vegetation, trees and brush not already removed by the landowner from the full width of the Construction Project ROW. Vegetation will be cut at or slightly above the ground surface using mechanized equipment or by hand. Tree stumps are generally left in place, except in areas where stump removal is necessary to facilitate the movement of construction vehicles, or required by the landowner. Once removed, trees are not permitted to regrow or be replanted in the Project ROW after construction is complete or while maintained by Xcel Energy. According to [Wis. Stat. § 182.017\(7\)\(e\)](#) affected landowners will maintain ownership of all trees removed by Xcel Energy during construction. Xcel Energy is also required to provide the landowner a reasonable amount of time, prior to construction, to harvest the trees on their own. Post construction and restoration, the deforested land could be used for farming so long as the intended crop or agricultural equipment does not interfere with transmission line facilities. Xcel Energy will manage and maintain deforested areas, including vegetation removal and management within the deforested ROW for those areas that landowners do not wish to crop or maintain.

The Department recommends the following to mitigate the impacts of tree and woody material removal from the Project ROW:

- The PSC should select a route that avoids the fragmentation of major blocks of forest and prioritize the preservation of windbreaks, MFL lands and forest lands used for specialty forest products such as maple sugar production.
- Xcel Energy should adjust the placement of transmission line poles to minimize the need for tree removal and prioritize the preservation of trees used for windbreaks.
- Xcel Energy should compensate agricultural landowners for the construction of any additional structures that serve in the place of the harvested trees.

- Xcel Energy should hire an appraiser who has experience and expertise in valuing trees.
- Landowners who wish to obtain their own appraisal should also hire an appraiser who has experience and expertise in valuing trees.
- Landowners who wish to farm within the deforested area should discuss tree stump removal with Xcel Energy during the easement negotiation process.

5.5.9. 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.

5.5.10. Weed Control

The Project may introduce noxious weeds or other invasive plants species into the Project ROW that compete 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.

5.5.11. Aerial Application of Seeds and Sprays

The location of an electric transmission line on cropland can restrict the aerial application of seeds and chemicals and can increase the danger of making aerial applications. When agricultural pilots have to maneuver to avoid transmission lines resulting in uneven, imprecise or missed aerial applications. When aerial applications are restricted or prevented agricultural produces may experience 1) increased weed growth and pest infestations that reduce crop yields, 2) increased cost and labor from land based application of seeds and chemical in non-applied areas.

To mitigate the potential for impacts to aerial application, the Department recommends the following:

- Agricultural landowners inform Xcel Energy if they use aerial applications.
- Xcel Energy and the impacted agricultural landowners work to determine the most effective techniques to minimize the impact to their aerial applications.
- Xcel Energy install colored wire shielding near fields that utilize aerial applications.

5.5.12. Construction Debris

After construction is complete, there may be construction debris remaining on the field. If large pieces of debris or rocks are left in the field, agricultural machinery may be damaged when the landowner first works the land. Xcel Energy is required by [Wis. Stat. § 182.017\(7\)\(c\)](#) to clear all debris and remove all stones and rocks resulting from construction activity upon completion of construction. To that end, Xcel Energy shall also clear the ROW of signage, construction mat debris, litter, and spoil piles etc.

To mitigate the potential impact of construction debris, the Department recommends the following:

- Should a landowner find construction debris remaining in the field after Xcel Energy has cleared the field, the landowner should contact the Xcel Energy IAM or IEM to report the debris prior to operating agricultural equipment in the field.
- Should Xcel Energy remove an existing power line pole from within or immediately adjacent to cropland, Xcel Energy should remove the old structure at a minimum of four feet below the ground surface.
- Should Xcel Energy create a hole within croplands during the removal of any part of the existing transmission structure, they should fill the hole with clean imported topsoil.

5.5.13. Crop Rotation and Dairy Operations

The construction of an electric transmission line may disrupt a planned crop or crop rotation. Impacts to alfalfa fields and planned alfalfa seeding are especially disruptive to dairy operations as they need to maintain a proper supply of alfalfa to feed dairy cows. Any delays, yield reductions or damages to an alfalfa crop may require the dairy operation to buy haylage or hay, obtain more corn silage, and/or provide protein supplements such as soybean oil meal to make up for the lost alfalfa. With advanced notice of the Project's construction schedule, a dairy operator would be better able to adjust forage requirements and plan for any increased associated costs. If the Project is approved, the Department recommends that Xcel Energy provide any impacted dairy operations with advanced notice of the construction schedule across their operations and compensate the landowner for any increased costs associated with construction impacts to forage requirements.

5.5.14. Organic Farms & Other Areas with Certifications

Construction and ongoing maintenance activities for the Project may jeopardize a farm's organic certification or other certifications such as *pesticide free* or *herbicide free* (certified areas) if a prohibited chemical is used on their certified land, drifts from a neighboring field or enters their land on construction machinery, construction matting or improper de-watering. Xcel Energy and their contractors must use caution and care where the Construction Project ROW borders or crosses an area with certification. Wis. Admin. Code § ATCP 29.50(2) states that no pesticides (includes

herbicides) may be used in a manner that results in pesticide overspray or significant pesticide drift. In addition, any oil or fuel spill on these farms could prevent or remove a farm's certification.

To mitigate impacts to areas with certifications, the Department recommends the following:

- Xcel Energy should not apply herbicides or pesticide to organic farms or other certified farms that preclude the use of these chemicals without the expressed written consent of the landowner.
- Xcel Energy shall not apply an herbicide or pesticide in a manner that results in overspray or significant drift.
- Xcel Energy should clean construction equipment and materials prior to entering an area of certification.
- Xcel Energy should post signs at entry points to an area of certification denoting its existence and reminding personnel of appropriate mitigation steps to take.
- Agricultural landowners with an area of certification should contact Xcel Energy and report the range and type of substances that are and are not permitted according to their certifications.
- 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 Department's 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.
- Xcel Energy should generate and distribute a list of organic farms or other certified farms and the prohibited chemicals to their construction staff and contractors.
- Prior to construction, Xcel Energy and the farms with areas of certification should agree to the appropriate methods avoid unintentional contacts or applications of prohibited chemicals from entering their farms.
- Xcel Energy may wish to underlay heavily used areas of the ROW with geotextile fabric in order to limit the potential for prohibited substances from contaminating areas with certification.

- Xcel Energy should consult with farms with areas of certification prior to the application of seeds for revegetation efforts on their property.

5.5.15. Biosecurity

Farm biosecurity is the implementation of measures designed to protect a farm operation from the entry and spread of diseases and pests. Construction activities can spread weeds, diseases, chemicals and genetically modified organisms (GMO's) that impact an agricultural operation. Certified organic farms and farms with other certifications such as pesticide-free or herbicide-free are susceptible to the widest range of biosecurity impacts and may suffer greater negative impacts if their agricultural operation is exposed to a biosecurity threat. For more information on basic biosecurity protocols, please visit the Department's [Basic Biosecurity](#) website at the provided link or at https://datcp.wi.gov/Pages/Programs_Services/BasicBiosecurity.aspx

The Department recommends the following to mitigate biosecurity risks within the Project ROW:

- Xcel Energy and agricultural operations within the Project ROW should develop a biosecurity plan that contains a set of protocols including but not limited to: Cleaning construction equipment between parcels; manure handling within the ROW; responsible parties that can move livestock and manure within the ROW; establishing communication channels to report construction and farm activities within the ROW.
- Xcel Energy and their contractors should avoid contact with livestock and manure throughout the Project.
- If livestock need to be moved, Xcel Energy should work with the livestock owner to move the livestock.

5.5.16. Stray Voltage

Electric distribution systems are grounded to the earth to ensure safety and reliability. At the site of the grounding, electrical current enters the earth where voltage can be detected. This is generally known as Neutral to Earth Voltage (NEV). When a person, animal or object is near an NEV, the voltage may pass to them resulting in electrical contact (i.e. shock), this is generally known as stray voltage. Stray voltage often goes unnoticed by humans, but stray voltage from NEV may affect animals on farms. Animals may encounter stray voltage any time the animal makes contact with an electrified point such as a fencing, feeder, the earth or stalls. Animals affected by stray voltage may show changes in behavior or milk production.

The PSC administers Wisconsin's Stray Voltage program under [Wis. Stat. § 196.857](#) in coordination with the Department. The PSC established the Phase II Stray Voltage Testing Protocol to fulfill its duty to create a standard stray voltage NEV testing protocol as required by Wis. Stat. § 196.857(b). Under the Phase II testing protocol, a utility is mandated to take corrective action to resolve any electrical contact at or above 0.5 volts (Reines and Cook, 1999). The Stray Voltage

program is able to review voltage testing data generated by the utility and the conclusions the utility has reached. For more information on the PSC Stray Voltage program, impacts to agricultural operations and mitigation steps, visit <https://psc.wi.gov/Pages/Programs/StrayVoltageHomePage.aspx>.

Should additional concerns for the health of a herd arise from stray voltage testing, the Department's [Herd-Based Diagnostic Program](#) may be able to assist. The program provides a licensed veterinarian, free of charge, to help producers investigate concerns with milk production, milk quality, herd health, and more. For more information on the Herd-Based Diagnostic Program visit <https://datcp.wi.gov/Pages/Herd-basedDiagnostics.aspx>.

The Department recommends the following to mitigate the impact of stray voltage within the project ROW:

- Confined animal feeding operations or any operation with livestock facilities within ½-mile of the proposed power line should request Phase II Stray Voltage Testing pre- and post-transmission line energization testing from their utility provider, Xcel Energy, or the PSC.
- Xcel Energy should inform each landowner with livestock facilities within ½-mile of the Project ROW of their ability to request Phase II Stray Voltage Testing from their local utility, Xcel Energy or the PSC. Xcel Energy should be responsible for costs associated with Phase II Stray Voltage Testing within ½-mile of the Project corridor.
- As required by PSC guidance set forth under [Wis. Stat. § 196.857](#), Xcel Energy shall take action to resolve electrical contacts at livestock feeding operations detected at or above 0.5 volts that are a result of the Project.

5.5.17. Construction Noise and Dust

During each phase of the Project, noise and dust is likely to be generated. Landowners near the Project ROW may experience noises and dust associated with construction techniques, movement of heavy equipment, blasting (if necessary) and helicopters. This noise and dust may cause dairy, beef cattle and other grazing livestock to stampede, break through fences, and escape from the farm property. Fur animals, poultry and other confined livestock may also be impacted by these sounds.

To mitigate impacts of noise and dust, the Department recommends the following:

- Livestock owners & operators within the Project ROW whom are concerned about the noise potential for the Project should inform Xcel Energy or their representatives during the easement negotiation process.

- Livestock owners & operators near the Project ROW whom are concerned about the noise potential for the Project should inform Xcel Energy of their concerns prior to the project construction.
- Xcel Energy should identify agricultural livestock operations with sensitive animals within and adjacent to the Project ROW and provide them appropriate advance warning of construction activities, including the use of helicopters, so they may take steps to safe guard their animals.
- Xcel Energy should avoid loud and dusty construction activities in the early morning (before 7am) or evening (after 6pm).
- 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.
- When construction activities have the potential to generate substantial amounts of dust that could impact livestock or an agricultural operation, Xcel Energy should apply water over the dust generating areas to reduce dust output.

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Madeline Island Public Library

Legion Memorial Library

Mercer Public Library

Hurley Public Library

Northern Waters Library Service

Newspapers

Iron County Miner

Ashland Daily Press

My Ashland County

Agri-View Newspaper

Country Today Newspaper

Wisconsin Document Depository Program

The Library of Congress

Interest Groups, Entities and Individuals

Merjent

Lindsay Tekler

Naomi Christenson

Zach Hirsch

Xcel Energy Inc.

Matthew McFarlane

Agricultural Landowners

Adam & Jena Lindquist

Adam And Kelly Waddle

Alan J Lindquist

Alex And Katelyn Mohrbacher

Andrew & Maria Wickman

Angelo Luppino Inc

Anthony & Holly Denny

Arnold & Sharron Mackey Trust

Arthur And Lorraine Tobin

Asg Holding Llc

Gerald And Elise Heimerl

Gerald And Tami Moore

Gloria M Uremovich

Heartwood Forestland Fund Vii Lp

House Of The Lord Ministries Inc

Iron County Resource Dev. Assoc.

Jacob Peters And Crystal Kuklinski

Jacob Vitek

Jake Peters Trucking Llc

James & Julie Washatka

Mitchell Meunier

Nathan & Calla Erickson

North Country Lumber Company

Northern States Power Company

Oei Inc

Page And Joanie Rosenlund

Paul D. & Nelda Johnson

Pauline Blakeman

R H Bergquist And Ellen Becker

Rggs Land & Minerals Ltd Lp

Ashland County Highway Dept.	James Platske	Richard J Windt
Ashland County Memorial Forest	James W Mattson Jr	Robert & Bonita Moore
Aspen Ridge Housing Llc	Jennifer Geissler	Robert & Sally Mika
Barbara J Hann	Jerome & Janet Kruzan	Robert & Shelton Brevak
Bayfield Electric Cooperative	Joan Elias	Robert And Shelton Breuak
Becki And Raymond Chavers	John & Meghan Granger	Robert Kazekewicz
Bertha And David Morello	John & Skyler Blakeman	Robert L Scribner
Betty J Scheppler	Jolma Family Farm Llc	Robert Riemer
Brenden M Russo	Jonathon And Jacey Vernoski	Robert Warren
Brian & Jamie Anderson	Joyce Mcabee	Roger Bjork
Brian And Ross Peterson	Julie And Mitchell Meunier	Ronald J Herr Living Trust
Carol Peterson & Martinj Lipske	Justin & Jessica Jordan	Ronald Krpan
Christopher & Amy Wicker Trust	Kari L Griffiths	Ross Peterson
Christopher And Doris Wolf	Keith & Kathleen Stricker	Roy & Sau Grage
Cindy And Kenneth Waldros	Kevin & Joy Bush	Ryan Lee Huisheere
Clemence Dale	Kevin D Tapani	Sam W Skoviera
Clint Bush	Kretzschmar Holsteins Inc	Samuel Merenda
Craig R. Uskoski	La Pointe Iron Co	Santo J Filippo Living Trust
Curtis & Jacquelyn James	Lance L Anderson	Scott And Denise Oliphant
Dale & Roxanne Bauer	Lawrence & Patricia Kruzan Trust	Scott Steinbach
Dale Robinson	Leif Wallin	Sederholm Trust
Daniel & Shelley Granger	Leon & Sharon Adams	Shawn Sederholm
David & Holly George Trust	Luppino Development, Inc	Susan Kruzan And Lois Kretzschmar
David & Joyce Tapani	Lyle N & Marie E Anderson Trust	Swante & Yvonne Hill Trust
David & Susan Sederholm	M Jolma Inc	Teresa P Henning
Dennis & Deborah Deegan	Mark & Karen Hoglund	Terrence L Peters
Dennis L Lindquist	Mark A Coron	Timothy & Edna Perkins
Denny & Carolyn Smith Trust	Mark And Loretta Hallstrom	Todd W Juoni
Douglas & Patricia Sorrels	Mark And Robyanne Howard	Tony & Amy Huber
Doyle & Priscilla Blakeman	Mark Balas	Wade & Fonda Blakeman
Edward Berube Trust	Mark Jolma	Wayne & Heidi Stricker
Faye A Flesia Trust	Mary A Koski	Wendy Koosmann And Donald Vitek
Frank & Denise Lipka	Mary Blandford	White River Hunting Club
Frank And Dawn Chudy	Michael & Margaret Ellias	William A Greeter
Gary Kabasa And David Kabasa	Michael & Seija Anderson	William J Backhaus
George G Fadrowski	Midland Services Inc	Wm F Vilas Trust Estate



**WISCONSIN DEPARTMENT OF AGRICULTURE,
TRADE AND CONSUMER PROTECTION**

**DIVISION OF
AGRICULTURAL RESOURCE MANAGEMENT**

Agricultural Impact Program

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