AGRICULTURAL IMPACT STATEMENT

North Appleton to Morgan 345 kV & 138 kV Transmission Line Project

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Trade and Consumer Protection
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Agricultural Impact Statement

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Table of Contents

List of Figures

List of Tables

Acronyms

AIS	Agricultural Impact Statement
AEA	Agricultural Enterprise Area
ATC	American Transmission Company
BMP	Best Management Practice
BPA	Bonneville Power Administration
CREP	Conservation Reserve and Enhancement Program
CRP	Conservation Reserve Program
DATCP	Department of Agriculture, Trade, and Consumer Protection
DNR	Department of Natural Resources
ECP	Erosion Control Plan
EIS	Environmental Impact Statement
EMF	Electromagnetic Field
GIS	Geogrpahic Information System
GPS	Global Positioning System
LIDAR	Light Detection and Ranging
MFL	Managed Forest Law
NEV	Neutral to Earth Voltage
NRCS	Natural Resources Conservation Service
PSC	Public Service Commission
REPS	Rural Electric Power Service
ROW	Right-of-Way
SVC	Static Var Compensator
TCSP	Temporary Clear Span Bridge
USDA	U.S. Department of Agriculture

AGRICULTURAL IMPACT STATEMENT

EXECUTIVE SUMMARY
North Appleton-Morgan Transmission Lines

PSCW Docket #: 137-CE-166

American Transmission Company (ATC) is proposing to construct 345 kV and 138 kV transmission lines known as the North Appleton-Morgan Project. This Agricultural Impact Statement (AIS), developed by staff at the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) is an informational and advisory document that describes and analyzes the potential effects of the proposed project on farm operations and agricultural resources. The AIS provides information that will help affected landowners understand the potential effects of the project on their land and their rights in the review and construction processes; aid the Public Service Commission (PSC) in making decisions regarding project approval and route alternatives; offer ATC practices and techniques to avoid or mitigate damages to farmland and farm operations; and give the general public a better understanding of the impacts the proposed project could have on agriculture.

DATCP 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, nor can the information in the AIS stop a project. The AIS reflects the general objectives of DATCP in recognition of the importance of conserving important agricultural resources and maintaining a healthy rural economy.

ATC proposes to construct approximately 40-48 miles of two new independent, co-located 345 kV and 138 kV transmission lines on separate structures from the North Appleton Substation to the Morgan Substation, which may require rebuilding certain existing 345 kV and 138 kV transmission facilities depending on the route alternative selected. ATC additionally proposes to construct a new Benson Lake Substation located on ATC-owned property adjacent to the existing Amberg Substation, electrically separate an existing Morgan–Stiles 138 kV circuit into two circuits, and perform miscellaneous substation work including the relocation of several existing transmission lines to support the project. ATC has proposed routes for the line which have been divided into route alternatives for ease of comparison. The AIS attempts to describe impacts associated with each route alternative in a comparison format so readers are aware of the agricultural impacts associated with choosing one route alternative over another.

Agriculture is extremely important for the economy of Wisconsin and for each of the potentially affected counties this project would cross. Should the PSC determine that this project is needed, significant consideration should be given to choosing routes and construction practices that impact agricultural operations and agricultural landowners to the smallest extent possible. Specific

considerations to assess route alternative decisions, construction requirements, and the degree of impacts to agriculture include:

- Multiple transmission line poles and wider right-of-ways (ROWs) affecting production practices
- Total agricultural land along Route Section corridor
- New versus existing right-of-way extent on agricultural land
- Right-of-way extent on prime and other highly productive farmland classes
- Number and type of agricultural operations impacted (dairy, organic, specialty, row crop, etc.)

If the project is approved, DATCP strongly requests that the Commission consider and possibly require double-circuiting the two proposed lines on a single structure. Doing so will significantly reduce the amount of farmland affected by easements and reduce the number of poles in cropland that farmers would need to farm around. Obstacles in fields reduce a farmer's efficiency and productivity by:

1. Removing land from production where the pole stands as well as where adjacent land becomes inaccessible to farm equipment (240-320 square feet per pole).

2. Increasing the potential for weed infestation in the adjacent field from land that has been made inaccessible to cultivation because of the pole.

3. Causing the equipment operator to overlap parts of the field to avoid the pole, resulting in multiple applications of seed and chemicals to those areas.

4. Increasing the collision risk of farm machinery with poles leading to equipment damage as the operator attempts to minimize the loss of productive cropland by maneuvering as close to the poles as possible. Depending on the individual circumstances for a farm, these losses could be significant.

Easement values for right-of-ways on this project should consider the long term impacts of multiple transmission line poles on field operations that will remain for the life of the project.

ATC and the affected landowners should be aware of and prepared to mitigate the major potential impacts to agriculture, including:

- Damage to drainage structures
- Restrictions or elimination of irrigation systems
- Topsoil and subsoil mixing
- Soil compaction

- Erosion control during construction and restoration
- Crop loss due to construction
- Impacts on farm viability and future farm expansions
- Impact on farm residences
- Effects on property values

DATCP CONCLUSIONS AND RECOMMENDATIONS

If approved, the proposed North Appleton-Morgan Transmission Line Project would have considerable effects on farmland owners and agricultural resources, regardless of which routes are chosen. Many of the potential impacts could be mitigated through actions taken by ATC, including hiring one or more experienced, independent agricultural monitors to make daily evaluations of project construction. Other potential impacts are more difficult to define with certainty and, consequently, more difficult to mitigate. If the project is approved, DATCP recommends the Commission include in its order the requirement that ATC works with DATCP to hire one or more qualified, independent agricultural monitors to train construction crews on proper procedures when working on agricultural land, to observe construction and restoration work on agricultural land, to identify damaging construction practices that must be stopped or corrected, and to report regularly to DATCP about their observations.

Farmland owners should become familiar with *Wisconsin Statute* §182.017 also known as the "Landowners' Bill of Rights" included in Appendix IV of this AIS. This statute describes the obligations and responsibilities of utilities when constructing and maintaining transmission lines on easements. Landowners may agree to waive some or all of their rights identified in this statute, but they are not required to waive any of these rights. DATCP recommends that farmland owners carefully consider the protections provided in the statute before negotiating conditions in their easement that would offer less protection.

Farms in the path of the proposed project range from small life style farms and organic producers to large cash-crop and dairy operations. If the project is approved by the PSC, the project would have both temporary and permanent impacts on the farms that it crosses. The AIS describes the potential impacts that could be caused by the proposed project. Temporary impacts could include the disruption of farm work during construction and soil compaction along the right-of-way. Permanent impacts include the loss of cropland that becomes inaccessible to farm equipment due to the placement of poles in fields. In order to gain an understanding of the concerns that farmers and farmland owners have about the project, DATCP surveyed the farmland owners with 4 or more acres of their land crossed by the project right-of-way. In all, 144 surveys were sent and 73 were returned for a useable response rate of 51 percent.

From the North Appleton Substation to the Morgan Substation, the project would follow one of sixteen potential routes. The number of Route Alternatives is affected by the possible combinations of Route Sections at the northern end of the project. The following six tables summarize some of the agricultural impacts of these routes by Route Section. These tables also indicate how substantially this project will affect farms and agricultural land regardless of which Sections are chosen for the final route. Agricultural land is disproportionally impacts agricultural land uses over all other land use types, including wetlands, woodlands, and residential properties. Additionally, most of the agricultural land crossed contains drainage tile systems and a majority of affected landowners expressed concerns that construction would damage those drainage systems.

The South Routing Area consists of two main Route Sections (S1 & S2) and a connector (S3), which can run east or west depending on the Southern and Central Route Sections are chosen. Both S1 and S2 follow existing transmission lines in Outagamie County and are proposed to have three sets of transmission line poles in the ROW.

The following table summarizes the extent of agricultural land impacted as well as the predominant agricultural impacts listed by landowners with ROWs along the South Routing Area and respective Route Sections.

	Route Sections		
Section Alternatives	**S1**	**S2**	**S3**
Section Length (miles)	5.1	5.8	0.7
Total ROW Area (acres)	126.8	131.8	21.7
ROW in Agriculture (acres)	102.2 81% of Section ROW	109.4 83% of Section ROW	21.3 98% of Section ROW
Existing ROW in Agriculture (acres)	71.6	19.8	11.6
New ROW in Agriculture (acres)	30.6	89.7	33.3
Poles in Agricultural Land	82	73	16
Prime Farmland in ROW (acres)	21.8	58.8	27.2
Prime Farmland when Drained in ROW (acres)	6.9	24.4	4.8
Dairy Operations within 300 ft of ROW	0	0	0
Farms responding to DATCP's survey and indicating concerns:			
Aerial Application[a]	0 farms	0 farms	0 farms
Poles Impacting Field Operations [a]	1 farm	5 farms	2 farms
Organic Farm*[a]	0 farms	2 farms	0 farms
Access During Construction[a]	2 farms	4 farms	2 farms
Drainage Tiling and/or Grassed Waterways[a]	2 farms	5 farms	2 farms

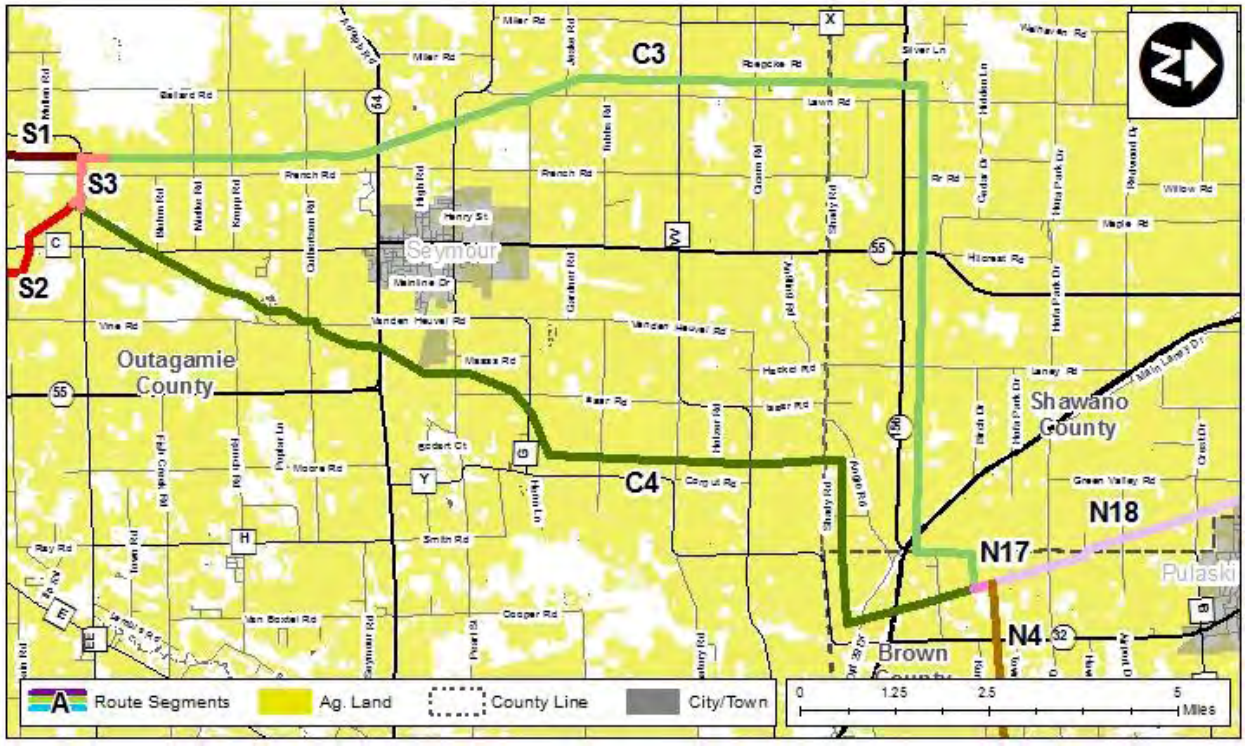
[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but do provide an indication of the degree of impact.

*Certified organic or in the process of becoming certified.

Over eighty percent of the ROWs in the South Routing Area cross agricultural land. Difficulties farming around transmission line poles and drainage were the most common issues listed by farmers in this area followed by access to land during construction. There are two organic farms located in Route Section S2.

The Central Routing Area is located in Outagamie, Shawano, and Brown Counties and consists of two Route Sections which can be combined with any of the Southern Route Sections listed above.

C3 runs parallel to an existing transmission line north until the route turns east, while C4 follows a gas pipeline over much of its route. C3 is proposed to have three sets of transmission poles over most of its route while C4 is proposed to have two sets of poles.



The following table summarizes the extent of agricultural land impacted as well as the predominant agricultural impacts listed by landowners with right-of-ways along the Central Routing Area.

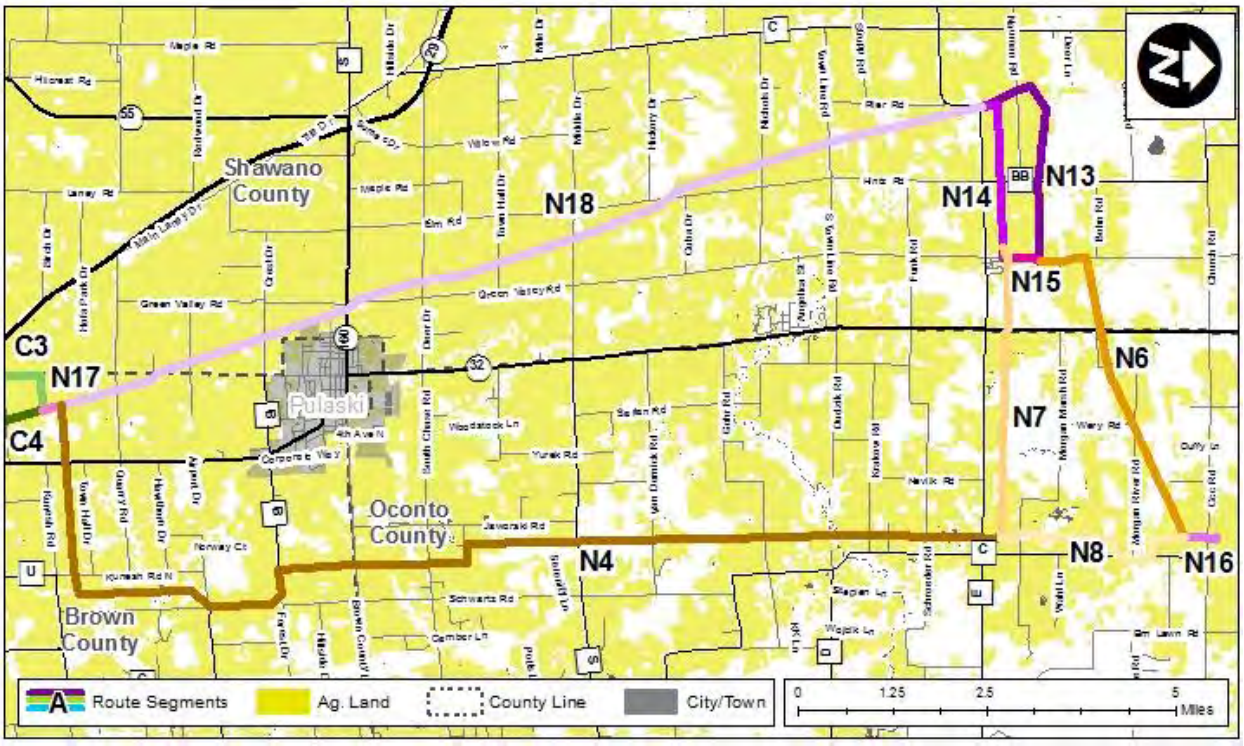
	Route Section	
Section Alternatives	**C3**	**C4**
Section Length (miles)	18.5	15.4
Total ROW Area (acres)	414.5	332.0
ROW in Agriculture (acres)	374.3 90% of Section ROW	305.9 92% of Section ROW
Existing ROW in Agriculture (acres)	75.6	8.6
New ROW in Agriculture (acres)	298.7	297.3

	Route Section	
Section Alternatives	**C3**	**C4**
Poles in Agricultural Land	214	196
Prime Farmland in ROW (acres)	114.9	138.5
Prime Farmland when Drained in ROW (acres)	148.7	150.4
Dairy Operations within 300 ft of ROW	1	1
Farms responding to DATCP's survey and indicating concerns:		
Aerial Application[a]	3 farms	4 farms
Poles Impacting Field Operations[a]	14 farms	13 farms
Organic Farm*[a]	0 farms	0 farms
Access During Construction [a]	6 farms	12 farms
Drainage Tiling and Grassed Waterways[a]	12 farms	16 farms

[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but do provide an indication of the degree of impact.
*Certified organic or in the process of becoming certified.

At least ninety percent of the ROW land in the Central Routing Area is agricultural. Transmission line poles affecting field operations and drainage were the most frequent issues raised by farmers in this area.

The North Routing Area has two main Route Sections, N18 which is routed along an existing gas pipeline easement and N4 which does not run along existing transmission or gas ROWs. N6, N7, N8, N13, N14, N15, and N16 are Route Section options leading to the Morgan Substation at the northern end of the project. If Route Section N4 is chosen, Route Section N8 continues directly north to the Morgan Substation. If Route Section N18 is chosen, there are multiple potential routes to the Morgan substation in Oconto County.



The following tables summarize the predominant agricultural impacts listed by landowners with ROWs in the Northern Routing Area.

	Route Section	
Section Alternatives	**N18**	**N4**
Section Length (miles)	12.9	15.4
Total ROW Area (acres)	282.1	337.8
ROW in Agriculture (acres)	243.9 87% of Section ROW	222.3 66% of Section ROW
Existing ROW in Agriculture (acres)	13.8	3.7
New ROW in Agriculture (acres)	230.2	218.6
Poles in Agricultural Land	140	131
Prime Farmland in ROW (acres)	38.3	74.0
Prime Farmland when Drained in ROW (acres)	186.3	100.0

	Route Section	
Section Alternatives	**N18**	**N4**
Dairy Operations within 300 ft of ROW	1	2
Farms responding to DATCP's survey and indicating concerns:		
Aerial Application[a]	4 farms	2 farms
Poles Impact Field Operations[a]	11 farms	8 farm
Organic Farm*[a]	0 farms	1 farm
Access During Construction[a]	5 farms	3 farm
Drainage Tiling and Grassed Waterways[a]	9 farms	10 farms

[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but they provide an indication of the degree of impact.
*Certified organic or in the process of becoming certified.

Route Section N18 crosses more farmland (87%) than Route Section N4 (66%). Landowners in both Route Sections indicated that working around transmission line poles and drainage issues were the primary concerns. There was one organic farm located on Route Section N4. Both Route Sections pass within 300 feet of dairy milking facilities.

Route Sections N13 and N14 run eastward parallel to one another toward the Morgan Substation starting at the northern end of N18. Route Section N13 is routed along an existing transmission line, which would result in three poles in the right-of-way while Route Section N14 would have two poles.

	Route Section	
Section Alternatives	**N13**	**N14**
Section Length (miles)	3.1	2.1
Total ROW Area (acres)	68.3	46.0
ROW in Agriculture (acres)	62.7 92% of Section ROW	43.4 94% of Section ROW
Existing ROW in Agriculture (acres)	7.2	0.1
New ROW in Agriculture (acres)	55.5	43.3
Poles in Agricultural Land	38	23
Prime Farmland in ROW (acres)	18.4	17.9

	Route Section	
Section Alternatives	**N13**	**N14**
Prime Farmland when Drained in ROW (acres)	18.5	19.6
Dairy Operations within 300 ft of ROW	2	0
Farms responding to DATCP's survey and indicating concerns:		
Aerial Application[a]	1 farm	1 farms
Poles Impact Field Operations[a]	1 farms	2 farms
Organic Farm*[a]	0 farms	0 farms
Access During Construction[a]	1 farms	1 farms
Drainage Tiling and Grassed Waterways[a]	1 farm	2 farms

[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but they provide an indication of the degree of impact.
*Certified organic or in the process of becoming certified.

Agricultural land composes over ninety percent of the ROW land in Route Sections N13 and N14. Route Section N13 passed within 300 feet of two dairy milking barns.

Route Section N6 continues Route Section N13 in a northeast direction along an existing transmission line towards the Morgan Substation. N7 continues Route Section N14 eastward. Route Section N8 continues N4 north to the Morgan Substation. Again, N6 will have three sets of poles while N8 has two sets. Route Sections N6, N7 & N8 cross through woodland but still affect farmland. There is an organic farm in N7 and a dairy milking facility in N8 that is within 300 feet from the ROW. Poles impacting field operations and access to land during construction were the major concerns listed by landowners.

	Route Section		
Section Alternatives	**N6**	**N7**	**N8**
Section Length (miles)	4.6	3.9	2.9
Total ROW Area (acres)	122.5	84.9	64.6
ROW in Agriculture (acres)	69.5 57% of Section ROW	37.5 44% of Section ROW	41.6 64% of Section ROW

	Route Section		
Section Alternatives	**N6**	**N7**	**N8**
Existing ROW in Agriculture (acres)	24.0	0.1	1.1
New ROW in Agriculture (acres)	45.5	40.4	48.2
Poles in Agricultural Land	40	19	32
Prime Farmland in ROW (acres)	16.1	13.3	25.5
Prime Farmland when Drained in ROW (acres)	23.0	17.7	1.9
Dairy Operations within 300 ft of ROW	0	0	1
Farms responding to DATCP's survey and indicating concerns:			
Aerial Application[a]	1 farm	1 farm	0 farms
Poles Impact Field Operations[a]	1 farms	2 farms	1 farm
Organic Farm*[a]	0 farms	1 farm	0 farms
Access During Construction[a]	0 farms	2 farms	2 farms
Drainage Tiling and Grassed Waterways[a]	1 farm	1 farm	0 farms

[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but do provide an indication of the degree of impact.
*Certified organic or in the process of becoming certified.

Two Route Sections (N15 and N17) are connector sections which allow an increased number of route alternatives. Route Section N16 connects to the Morgan Substation. Route Sections N15 and N17 will be included in any route option chosen.

	Route Section		
Section Alternatives	**N15**	**N16**	**N17**
Section Length (miles)	0.6	0.4	0.3
Total ROW Area (acres)	13.6	9.9	5.5
ROW in Agriculture (acres)	13.2	9.9	5.5

	Route Section		
Section Alternatives	**N15**	**N16**	**N17**
	97% of Section ROW	100% of Section ROW	100% of Section ROW
Existing ROW in Agriculture (acres)	1.7	5.4	0.3
New ROW in Agriculture (acres)	11.5	4.4	5.2
Poles in Agricultural Land	10	4	2
Prime Farmland in ROW (acres)	1.8	4.4	0.0
Prime Farmland when Drained in ROW (acres)	7.7	0.0	5.2
Dairy Operations within 300 ft of ROW	0	0	0
Farms responding to DATCP's survey and indicating concerns:			
Aerial Application[a]	0 farms	0 farms	1 farm
Poles Impact Field Operations [a]	0 farms	0 farms	2 farms
Organic Farm*[a]	0 farms	0 farms	0 farms
Access During Construction[a]	0 farms	0 farms	2 farms
Drainage Tiling and/or Grassed Waterways[a]	0 farms	0 farms	1 farm

[a] Data are from responses to survey and comments by farmland owners and are NOT totals, but do provide an indication of the degree of impact.
*Certified organic or in the process of becoming certified.

The previous tables show that any route chosen for this project will have a significant impact on agricultural activity in and near the ROW. Farmers will have to negotiate around two or three sets of transmission line poles during field operations and this becomes more difficult as farm equipment increases in size. Construction impacts will be greater due to multiple lines and wider ROW.

Because much of the farmland along the routes contains tile drains, producers indicated widespread concern about damage to drainage systems during construction.

Many farmers were also concerned about the loss in value to their land and noted that replacement land was hard to find and expensive if available. Some producers on smaller farms commented

that the easements would limit the possibility of expanding or modernizing their operations or make the farm less likely to be operated by their children.

Where the routes crossed woodland, there was concern about loss of firewood and logging options. Farmers also commented on the effects that the transmission line project would have on aerial spraying, irrigation systems, manure systems, and pasture access. Those with livestock expressed animal health and stray voltage concerns.

The DATCP recommends the following as ways to mitigate the potential adverse impacts associated with the proposed project if it is approved by the PSC:

1. If the project is approved, the Commissioners should consider requiring double-circuiting of the proposed 345 kV and 138 kV lines to reduce the negative impacts of the project by having one set of transmission line support structures in cropland instead of two. A double-circuit would also impact a narrower corridor and require the acquisition of less right-of-way.

2. ATC should hire independent agricultural monitors, who are approved by DATCP, to oversee compliance with the portions of the PSC's order for the project dealing with agricultural issues; and to observe and document project construction and construction-related work on agricultural property. These monitors must be adequately trained, experienced and knowledgeable in agricultural issues and practices, and in measures to prevent and mitigate damage to agricultural land caused by transmission line projects. Given the vast extent of agricultural land impacted by this project, the agricultural monitors should be granted stop work authority should this project be approved.

3. ATC should hire an agricultural specialist to conduct pre-construction interviews with farmers and farmland owners who will be directly affected by the acquisition of easements for this project. At a minimum, the interview should determine whether the affected farm operation has a biosecurity plan, the types of crops grown and livestock raised, any specific concerns the landowner has related to agricultural impacts, concerns related to pole placement within agricultural fields, and the location of any existing or planned drainage systems or other agricultural infrastructure.

4. Information from the pre-construction farm interviews and those in the landowner response section of the AIS should be incorporated into the bid packages and line lists used by the contractors, inspectors, and monitors.

5. ATC should consult with affected farmland owners to determine the least damaging locations for transmission support structures.

6. Landowners who will have easements acquired for the proposed project should be familiar with the "Landowners' Bill of Rights" which is found in Wis. Stat. §182.017 (7). ATC may

ask landowners to waive some or all of the rights listed in this statute, but the landowners are not required to waive any of these rights. Refer to the Appendix for the text of the "Landowners' Bill of Rights."

7. The County Conservationists in the counties affected by the proposed project should be consulted to ensure that construction proceeds in a manner that minimizes drainage problems, crop damage, soil compaction, and soil erosion.

8. If an approved route passes through a drainage district, ATC should consult with the relevant Drainage Board(s) to ensure that construction will not permanently disrupt the operation of the district(s).

9. All farmland owners and operators should be given advance notice of acquisition and construction schedules so that farm activities can be adjusted accordingly. To the extent feasible, the timing of ROW acquisitions and construction by ATC and its contractors should be coordinated with farmers to minimize crop damage and disruption of farm operations.

10. ATC 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.

11. ATC should ensure that its contractors and subcontractors incorporate all necessary site-specific easement conditions to protect agricultural resources, as well as all statutory requirements and PSC permit conditions regarding agricultural land protection into its construction line list, and into any bid documents for the project.

12. As much as possible construction on agricultural land should occur when the ground is frozen which will minimize soil compaction and reduce the risk of spreading diseases and pests between farms.

13. If ruts are created in ROWs that cross farmland, ATC should restore the affected soils as quickly as possible.

14. ATC should strip and segregate the topsoil over and around all excavation sites on the project to ensure that the uniquely valuable topsoil is not mixed with lower quality subsoil and underlying parent material.

15. ATC should make sure that all excavated soil below the topsoil layer displaced by the pole and foundation, and other spoil material, are removed from the site and not deposited on or mixed with any cropland, unless otherwise requested by the landowner.

16. If ATC removes any existing power line support structures within or immediately adjacent to cropland, it should remove all of the support structure and replace it with clean fill to the level in the adjacent soil where the topsoil begins. Imported topsoil of similar quality to the adjacent top soils should then be placed over the remainder of the hole. If a support structure cannot be completely removed from cropland, as much of the structure as possible should be removed and the site flagged so the farmer can avoid collisions between his/her equipment and the remainder of the buried structure.

17. After construction of the line is complete, ATC should test the soil profile to determine whether the soils in the ROW have been compacted by construction or other equipment. This is commonly done by comparing the compaction levels of soils on the portion of the ROW that carried the traffic to comparable soils off the ROW. If soils are compacted, ATC should be responsible for taking steps to correct this problem.

18. ATC should undertake long-term, post-construction monitoring to ensure that no damage to agricultural fields along the project route has occurred. This should be conducted for a minimum of two years after construction is completed to ensure no permanent damage to soils, drainage fields or facilities has occurred. DATCP AIS staff should remain informed of post-construction monitoring results, mitigation actions, and any associated reporting.

19. Landowners should be given phone and email information for whom to contact within ATC's organization should impacts from the project on their farmland arise or continue after project completion.

AGRICULTURAL IMPACT STATEMENT

North Appleton to Morgan 345 kV Transmission Line
Outagamie, Brown, Shawano, and Oconto Counties
American Transmission Company
Docket #: 137-CE-166

I. INTRODUCTION

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) has prepared this agricultural impact statement (AIS) in accordance with §32.035, *Wisconsin Statutes*. The AIS is an informational and advisory document that describes and analyzes the potential effects of the proposed project on farm operations and agricultural resources, but does not have the authority to stop a project. This document provides information that will: help affected landowners understand the potential effects of the project on their land and their rights in the review and construction processes; aid the Commissioners in making their decisions; offer ATC practices and techniques to avoid or mitigate damages to farmland and farm operations; give the general public a better understanding of the impacts the proposed project could have on agriculture. The potential impacts on agriculture discussed in this AIS are described based on the route(s) they would occur in. These potential impacts include, but are not limited to, the impact on existing land use, drainage, soil erosion, soil compaction, property values, and aesthetic values. Please see Appendix I for more information regarding AIS's.

DATCP is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an acquisition of interest in more than 5 acres of land from any farm operation.[1] DATCP may choose to prepare an AIS if an acquisition of 5 or fewer acres will have a significant impact on a farm operation. Significant impacts could include the acquisition of buildings, the acquisition of land used to grow high-value crops, or the severance of land. DATCP should be notified of such projects regardless of whether the proposing agency intends to use its condemnation authority in the acquisition of project lands. The proposing agency may not negotiate with or make a jurisdictional offer to a landowner until 30 days after the AIS is published.

[1]The term *farm 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.

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

II. DESCRIPTION OF THE PROJECT

American Transmission Company LLC and its corporate manager, ATC Management Inc. (collectively, "ATC"), propose to construct the North Appleton to Morgan Project (Project). ATC owns and operates transmission facilities and transacts business as a transmission company with the sole purpose of planning, constructing, operating, and maintaining transmission facilities to provide electric transmission service. ATC is obligated to provide adequate and reliable energy transmission service that meets the needs of all transmission users in the areas it serves and that supports effective competition in energy markets without favoring any market participant. The facilities proposed for construction would be 100% owned by ATC.

The Project is generally located in Brown, Marinette, Oconto, Outagamie, and Shawano Counties. There are also substation modifications required as part of the Project and they are located in Brown, Marinette, Shawano, Oconto, Outagamie, Kewaunee, and Winnebago Counties in the State of Wisconsin and Dickinson County in the State of Michigan. The complete application and documentation for this project can be found on the Wisconsin Public Service Commission's website at http://psc.wi.gov/apps35/ERF_search/content/SearchResult.aspx.

The Project is a component of a larger ATC project known as the Bay Lake Project. In the fall of 2011, ATC began the Bay Lake Project to address reliability needs in northeast Wisconsin, including the Green Bay area, and the Upper Peninsula of Michigan. The northern portion of the ATC footprint possesses unique characteristics, including few transmission ties to the rest of the transmission system, relatively flat load shapes, and significant uncertainties in the availability of generating resources in the area. These unique characteristics increase the risk for uncontrolled loss of load in the area.

ATC proposes to construct approximately 40-48 miles of two new independent, co-located 345 kV and 138 kV transmission lines on separate structures from the North Appleton Substation to the Morgan Substation. This may require rebuilding certain existing 345 kV and 138 kV transmission facilities depending on the Route Alternative selected. ATC additionally proposes to construct a new Benson Lake Substation located on ATC-owned property adjacent to the existing Amberg Substation, electrically separate an existing Morgan–Stiles 138 kV circuit into two

circuits, and perform miscellaneous substation work including the relocation of several existing transmission lines to support the Project.

ATC reviewed over 700 miles of linear features within the 680-square mile Project study area and analyzed approximately 550 Route Sections for numerous possibilities for siting the co-located transmission lines. ATC used many qualitative methods to solicit and gather stakeholder comments and collect and analyze data and impacts. These methods included three phases of open houses, light detection and ranging (LIDAR), geographic information system (GIS), soil borings, environmental and utility surveys, and constructability helicopter and field reviews.

Project Need

ATC has proposed the Project to address growing reliability concerns in the northern portion of ATC's footprint, including northeastern Wisconsin. According to ATC, failure to construct the Project exposes that region, including the Green Bay area, to an increasing risk of outages. ATC has indicated that the Project is an important means to maintain the reliability of the transmission system in the northern portion of ATC's footprint.

Routing and Siting

The routing and siting process for the Project began in 2011 as part of the Bay Lake Project. The North Appleton–Morgan Project (originally known as Green Bay–Morgan) is one of four project proposals that would connect to create the Bay Lake Project. The other proposals are the Holmes–Old Mead Road (originally known as Holmes–Escanaba) transmission line project located in Michigan; the Morgan–Quinnesec transmission line project located in both Wisconsin and Michigan; and the Quinnesec–National transmission line project located in Michigan.

Project Overview and Project Area Information

The proposed facilities (collectively referred to as the North Appleton–Morgan Project or Project) are further detailed below.

- Construct a new North Appleton–Morgan 345 kV line and a new North Appleton–Morgan 138 kV line. The new transmission line facilities are proposed to be constructed on separate structures with overlapping ROW for approximately 40 to 48 miles, depending on the ordered route.
- Expand, reconfigure, relocate, and replace existing equipment at the North Appleton Substation.
- Expand, relocate, and replace existing equipment at the Morgan Substation.
- Add a new Morgan–Stiles 138 kV line by constructing new 138 kV terminations at the Morgan and Stiles substations and electrically separating the existing six conductors on

existing double circuit structures between the existing Morgan, Falls, Pioneer, and Stiles substations, which are currently operating as one line electrically.

- Install a Static Var Compensator (SVC) at a new Benson Lake Substation, which will connect to the existing Amberg Substation via construction of a short new Benson Lake–Amberg 138 kV line and line termination at the existing Amberg Substation.
- Replace relay protection packages and other modifications at the Falls, Highway 22, Fitzgerald, Kewaunee, Fox River, Werner West, Lost Dauphin, White Clay, and Plains substations.

Location of Routes and Associated Facilities

ATC subdivided the Project study area into three Routing Areas: the South Routing Area, the Central Routing Area, and the North Routing Area. Figure 1 depicts the overall route with the three routing areas, beginning at the North Appleton substation and terminating at the Morgan substation. Each of the three routing areas are comprised of Route Sections (i.e. S1, C3, N4). Table 1 displays the municipalities that the proposed routes will cross through. ATC has indicated that although every route possibility presents different issues and challenges, each is cost-effective, feasible, constructible, and appropriately balances environmental concerns and other potential impacts. Please see section 5 of this AIS for a more complete description of each possible route.

Proposed Right of Way (ROW)

The typical ROW width for the Project's transmission line facilities is 180 feet. By proposing to co-locate the Project transmission facilities and share other infrastructure ROW, the amount of required ROW width for the Project transmission facilities, where ROW sharing occurs, has been reduced. Portions of the Route Alternatives share existing ROW with transmission lines, ANR and Guardian Pipeline, L.L.C. (Guardian) gas pipelines, highways, and roads and include new ROW where appropriate.

The general ROW requirement and ROW sharing characteristics for each route are presented in Table 2 of Appendix B of the application submitted to the Public Service Commission (PSC) by ATC.

Route Areas were broken into Route Sections to facilitate analysis. Route Section breaks were based on several factors such as total ROW width required, type, and extent of existing ROW sharing.

Figure 1. Map of Proposed Routes with Sections.

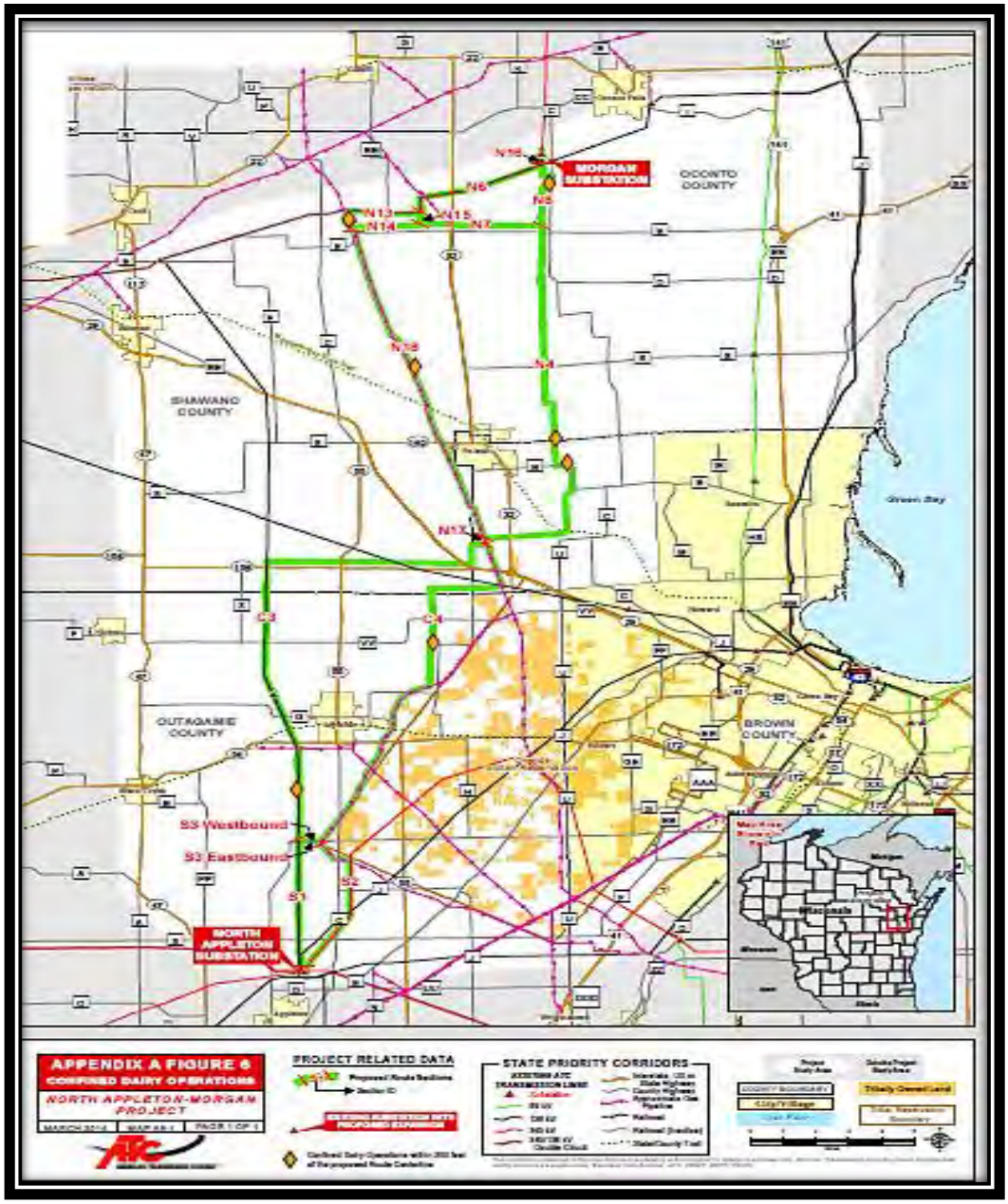


Table 1. Jurisdictions Crossed By Transmission Line Route Sections

Route Sections	Municipal Jurisdiction(s) Crossed			County
	City	Town	Village	
S1		Freedom Osborn		Outagamie
S2		Freedom Osborn		Outagamie
S3 Westbound		Osborn		Outagamie
S3 Eastbound		Osborn		Outagamie
C3		Osborn Seymour Cicero Lessor Maple Grove Pittsfield		Outagamie Shawano Brown
C4	Seymour	Osborn Seymour Maple Grove Pittsfield		Outagamie Shawano Brown
N4		Pittsfield Chase Morgan		Brown Oconto
N6		Green Valley Morgan		Shawano Oconto
N7		Green Valley Morgan		Shawano Oconto
N8		Morgan		Oconto
N13		Green Valley		Shawano
N14		Green Valley		Shawano
N15		Green Valley		Shawano
N16		Morgan		Oconto
N17		Pittsfield		Brown

If the project is approved by the PSC, the commissioners will also choose the final route. The Route will include at least one segment from each of the three Routing Areas (South, Central, and North). ATC has identified sixteen potential Routes for the project. They are identified by letters A through P. Each of the Route Alternatives is listed in Table 2 with its component Route Sections.

Table 2. Complete Routes Alternatives and their Component Route Sections.

Route Alternative	Route Section (South Routing Area)	Route Section (Central Routing Area)	Route Section (North Routing Area)
A	S1	C3	N17, N18, N13, N6, N16
B	S1	C3	N17, N18, N14, N15, N6, N16
C	S1	C3	N17, N18, N14, N7, N8, N16
D	S1	C3	N17, N4, N8, N16
E	S1, S3-Eastbound	C4	N17, N18, N13, N6, N16
F	S1, S3-Eastbound	C4	N17, N18, N14, N15, N6, N16
G	S1, S3-Eastbound	C4	N17, N18, N14, N7, N8, N16
H	S1, S3-Eastbound	C4	N17, N4, N8, N16
I	S2, S3-Westbound	C3	N17, N18, N13, N6, N16
J	S2, S3-Westbound	C3	N17, N18, N14, N15, N6, N16
K	S2, S3-Westbound	C3	N17, N18, N14, N7, N8, N16
L	S2, S3-Westbound	C3	N17, N4, N8, N16
M	S2	C4	N17, N18, N13, N6, N16
N	S2	C4	N17, N18, N14, N6, N16
O	S2	C4	N17, N18, N14, N7, N8, N16
P	S2	C4	N17, N4, N8, N16

Summary of Land Cover

The application submitted to PSC provides an estimate of the land cover area that will be impacted by each Route Alternative within the proposed Project ROW. The land cover uses include agricultural lands, undeveloped lands, and developed/urban lands as described in more detail below.

Agricultural Land Use

Agricultural land cover includes active fields, pastures, old field, and specialty crops (e.g., tree farms). A detailed discussion of agricultural lands is also included Appendix B of the application.

Crop Land

The majority of agricultural lands along the Route Alternatives are in corn and soybean production, although alfalfa fields were occasionally observed. The acreage of crop land along the Route

Alternatives ranges from 624 acres along Route Alternative H to 839 acres along Route Alternative K.

Pasture
Pasture lands refer to areas grazed by livestock. The acreage of pasture along the Route Alternatives ranges from 11 acres along Route Alternative H to 26 acres along Route Alternatives I and J.

Old Field
The areas designated as old field are comprised of recently fallow lands and other rural areas that are not used for crop production or pasture. They are typically dominated by grasses and scattered shrubs. The acreage of old field along the Route Alternatives ranges from 45 acres along Route Alternative O to 101 acres along Route Alternative A.

Specialty Crops
Specialty crops along the Route Alternatives include a tree farm and a large hops trellis. The acreage of specialty crops along the Route Alternatives range from no specialty crops along Route Alternatives D and L, up to 1.3 acres along Route Alternatives E, F, G, M, N, and O.

III. AGRICULTURAL SETTING

The information provided in the Agricultural Setting section is intended to describe the existing agricultural sector of the project area in general terms. Data will be presented for each of the four potentially affected counties and for the state as a whole. Later in this report, individual farm operations will be described. Data in the Agricultural Setting section can be used to compare those individual operations with the larger agricultural economy and with average farms in the region. This section includes descriptions of the agricultural sector's contribution to the overall economy, the change in the amounts of commodity crops grown, and the overall amount of farmland and the average size of farms. Recent data on the sale of and taxes on farmland may provide landowners with a comparison to use when evaluating compensation offers. Descriptions of some of the most popular government programs will provide details about their function and the importance they have to the bottom line of many farm operations.

Agricultural Productivity

Crops and livestock are the primary sources of income for most farms. The crops that are grown may be sent directly to market or used on the farm for livestock feed. Therefore, the amount of crops grown can offer clues to the importance of farming in a region's economy. In addition, the changes in the amount of particular crops grown can show changes in the types of farms that are

prevalent in a region's agriculture. For example, a shift away from growing alfalfa and corn for silage to corn for grain and soybeans suggests a reduction in dairying and a shift toward cash crop farming.

The types of farms observed in the Project area also suggest the types of broad concerns farmers will have about a transmission line project. While any farmer who grows crops, whether for livestock feed or for the market, will be concerned about issues like soil compaction caused by transmission line construction. Livestock farmers will also be concerned about the proper grounding of barns and sheds near the new line or the potential disruption of grazing during construction. In contrast, cash crop farmers are likely to be concerned about the disruption of aerial spraying.

Brown County has the largest workforce of the counties affected by this transmission line project at approximately 181,000 workers and 21,038 agricultural workers. However, the transmission line will only affect a northern portion of the county's agriculture land. In contrast, thirty percent of Oconto County's workforce and twenty two percent of Shawano County's workforce is part of the agriculture sector. Only nine percent of Outagamie's workforce is part of the agricultural sector. In addition to farmers and farm laborers, agriculture provides employment for veterinarians, crop and livestock consultants, feed, seed, fuel, and other input suppliers, farm machinery dealers, barn builders, agricultural lenders and other professionals, as well as employees in food processing and other value-added industries. Table 3 lists the number and percentage of agriculture sector workers in each county of the project area.

Table 3. Workers in the Agriculture Sector

County	Number of Workers in Agriculture	Percent of Workforce in Agriculture
Brown	21,038	12
Oconto	3,997	30
Outagamie	11,593	9
Shawano	4,267	22

Comparing the four counties in the project area, agriculture accounts for the largest value of business sales in Brown County at $5.7 billion. Agricultural business sales also have a significant value of overall county business sales in Outagamie County at $2.8 billion. In Oconto and Shawano Counties, agriculture accounts for forty five and twenty five percent of total business sales, respectively. Table 4 lists the amount of agricultural business sales and their percentage of the total. This is important because the Project may affect farmers short and/or long term business

decisions, which could affect county sales of agricultural products and employment. ROW easements can impact farm expansion plans, affect the type of equipment used, production practices, and land rental or purchase decisions.

Table 4. Agricultural Business Sales by County

County	Agricultural Business Sales ($ Million)	Agriculture as a Percentage of the County's Total Business Sales
Brown	5,700	20
Oconto	788	45
Outagamie	2,800	14
Shawano	487	25

Agriculture's contribution to overall county income is largest in Oconto County at twenty eight percent followed by Shawano County at sixteen percent. Brown County has the largest agricultural income and taxes paid by agriculture-related businesses (Table 5). Agricultural income includes wages, salaries, benefits, and profits of farmers and workers in agriculture-related businesses. The taxes identified do not include property taxes paid to local school districts. They do include local and state taxes from the economic activity generated by farms and agriculture-related businesses. Of the four counties in the project area, taxes paid by the agriculture sector were largest in Brown County and smallest in Oconto and Shawano Counties.

Table 5. Income and Taxes Generated by the Agriculture Sector

County	Agricultural Income ($ Million)	Agricultural Income as a Percentage of total Income	Taxes Paid by Agriculture ($ Million)
Brown	1,600	12	139
Oconto	181	28	16
Outagamie	705	8	58
Shawano	175	16	16

Agricultural Productivity

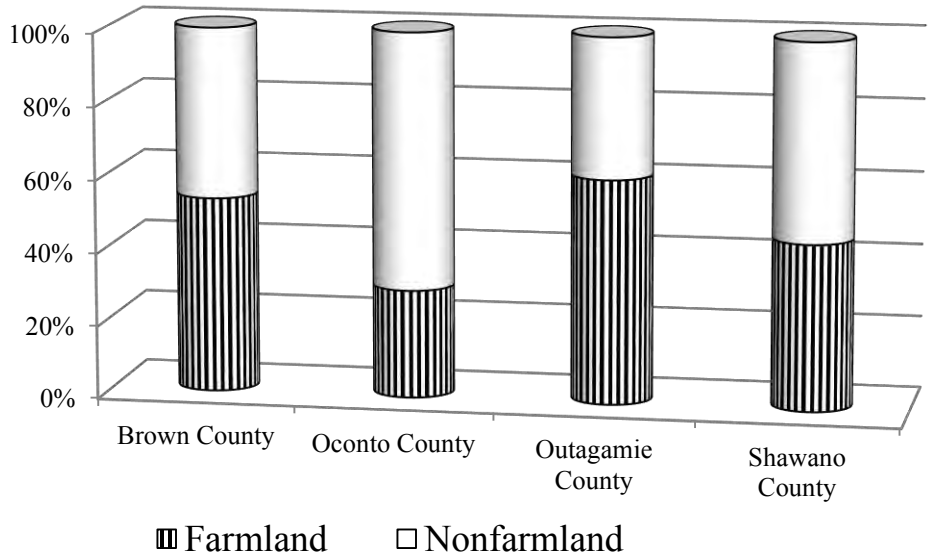
The counties affected by the Project all have vibrant agricultural sectors. In 2013, milk was the leading agricultural commodity, followed by grain and cattle in all four counties in the project area. Nursery and greenhouse products and vegetables are also important commodities produced in the four counties.

Agricultural land uses have shifted over time in many of the counties due to a reduction in the number of dairy farms and an increase in prices for corn and soybeans. This has resulted in acreage increases for corn and soybeans in many areas that were formally used to grow alfalfa hay (Table 6). Farm equipment used to produce corn and soybeans has increased in size and become more technologically sophisticated. Transmission line poles and towers may impact cropping operations using this new larger machinery that is often guided by global positioning system (GPS) units.

Table 6. Acres of Selected Crops for 1996 and 2013

County	Acres					
	All Corn		Alfalfa Hay		Soybeans	
	2013	1996	2013	1996	2013	1996
Brown	67,700	65,000	20,900	39,900	18,000	10,200
Oconto	64,300	51,900	17,900	31,800	21,400	4,100
Outagamie	85,500	103,900	14,500	33,400	45,100	21,800
Shawano	87,500	69,800	20,700	53,000	22,100	6,700

Figure 2. Percentage of Land in Farms



Land in Farms, Number of Farms, and Average Size of Farms

Brown and Outagamie counties have more than 50 percent of their land area classified as farmland while Oconto and Shawano counties have less than 50 percent of land associated with farms. A major part of Oconto County is currently forested, reducing the percentage of farmland. Brown and Outagamie Counties are classified as urban counties (having an average of 100 or more residents per square mile). Refer to Figure 2 for a graphic comparison of the percentage of land in farms in each of the four counties in the project area.

According to the *Census of Agriculture*, all four counties showed a decrease in the number of farms between the 2007 and 2012. Those changes are reflected in Table 7.

Table 7. Change in the Number of Farms, 2012 to 2007

County	Number of Farms in 2012	Number of Farms in 2007	Change in the Number of Farms	Percent Change
Brown	1,322	1,484	-162	-11
Oconto	929	1,244	-315	-25
Outagamie	1,170	1,362	-192	-14
Shawano	1,278	1,450	-172	-12

Comparisons of 2007 and 2012 Census of Agriculture data show that the amount of land in farms decreased in all counties except for Outagamie County, which showed a very slight increase (Table 8).

Table 8. Change in the Acres of Farmland, 2012 to 2007

County	Acres of Farmland in 2012	Acres of Farmland in 2007	Change in Acres	Percentage Change
Brown	309,750	324,196	-14,446	-4
Oconto	189,389	205,924	-16,555	-8
Outagamie	250,748	247,482	+3,266	+1
Shawano	261,141	271,718	-10,577	-4

The average size of farms increased in all four of the affected counties between 2007 and 2012 (Table 9). Transmission line easements may affect the number of farms and land in farms by reducing the amount and value of farmland that is available. They may also affect farm succession

where younger family members may not want to invest in a property that would have farming operations affected by transmission lines.

Table 9. Change in Average Size of Farms

County	Average Acres per Farm in 2012	Average Acres per Farm in 2007
Brown	234	218
Oconto	204	166
Outagamie	214	182
Shawano	204	187

Size Distribution of Farms

Table 10 shows the percentage of farms in each size category for each of the four affected counties. Outagamie County has proportionately more farms that are greater than 500 acres in size compared to the other counties. Brown County has the largest proportionate number of small farms.

Table 10. Number of Farms per Size Category

Location	0 to 49 Acres	50 to 179 Acres	180 to 500 Acres	More than 500 Acres
Brown County	586	269	189	72
Oconto County	326	339	179	85
Outagamie County	453	351	241	125
Shawano County	341	495	338	104

Property Taxes and Values

Table 11 lists the average property tax, assessed value, and sale price per acre of agricultural land in each of the four counties affected by the project and all Wisconsin counties. The assessed values and property taxes are based on the "use value" of agricultural land. Wisconsin Statutes define agricultural land as "land, exclusive of buildings and improvements that is devoted primarily to agricultural use." This information will be useful to help determine easement values. Brown

County has the highest average tax per acre on farmland. Brown County also has the highest average sale price per acre of farmland compared to the other counties affected by the project.

Table 11. Farmland Taxes and Values

County	2013/14 Dollars per Acre of Farmland		
	Average Tax	Assessed Value	Sale Value
Brown	$3.38	$170	$8,423
Oconto	2.87	157	4,410
Outagamie	3.10	174	7,067
Shawano	3.15	173	5,400
Wisconsin	3.32	171	4,791

Farm Programs

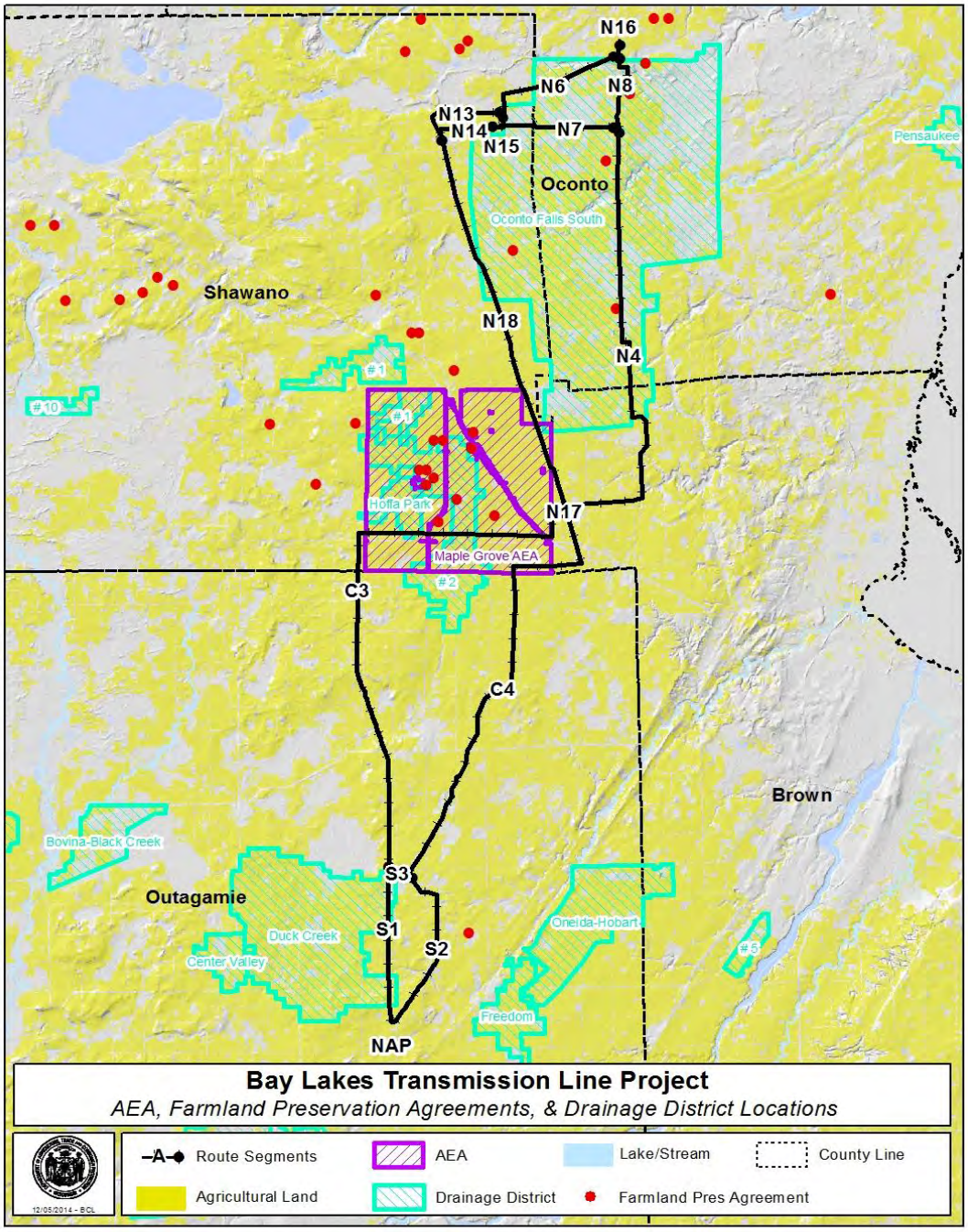
Farmland Preservation Program (FPP)

The Farmland Preservation Program provides counties, towns, and landowners with tools to aid in protecting agricultural land for continued agricultural use and to promote activities that support the larger agricultural economy. Through this program, counties adopt state-certified farmland preservation plans which map areas identified as important for farmland preservation and agricultural development based upon reasonable criteria. Within these farmland preservation areas, local governments and owners of farmland can petition for designation by the state as an Agricultural Enterprise Area (AEA). This designation highlights the importance of the area for agriculture and further supports local farmland preservation and agricultural development goals. Designation as an AEA also enables eligible landowners to enter into farmland preservation agreements. Through an agreement, a landowner agrees to voluntarily restrict the use of their land for agriculture for fifteen years. ATC has identified parcels with Farmland Preservation Agreements that could be crossed by the project. They are listed in Section 6.1.3 on page 105 of ATC's application.

Depending on the Route Alternative ultimately chosen, the project could pass through the AEAs depicted in Figure 3 and listed below:

- Shawano County: (Route Sections C3, C4, N17, N18)

Figure 3. Locations of AEAs and Drainage Districts along the Proposed Routes



Drainage Districts

Drainage Districts are organized under Chapter 88 of the Wisconsin Statutes and are overseen by County Drainage Boards. They allow landowners to join together to establish and maintain drainage ditches to remove excess water from their property, typically so that it can be farmed. Since it is possible that this project could affect the topography and hydrology in the construction areas, it is suggested that ATC consult with the Drainage Boards for the affected districts. The Drainage Districts that could be affected by the project are listed below with the Route Sections that would cross them (Figure 3):

- Outagamie County: Duck Creek Drainage District (Route Section S1)
- Shawano County: Hoffa Park Drainage District and Drainage District #2 (Route Section C3)
- Oconto County: Oconto Falls South Drainage District (Route Section N4, N6, N7, N8, N15, N18)

Commodity Programs

The loss of any farmland enrolled in the federal government's various commodity programs could affect a farmer's base acreage, resulting in lower revenue from these programs. Since farming will still be permitted under the transmission line, permanent cropland loss, such as the land occupied by the transmission line support structure and the land immediately adjacent to it, will typically be small, which should result in little impact to overall commodity program payments made to a given farmer.

Conservation Reserve Program

The Conservation Reserve Program (CRP) is a cost-share and rental payment program under the United States Department of Agriculture (USDA) that encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to perennial vegetative cover. This program helps reduce soil erosion, enhance water supplies with groundwater recharge, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. Land taken out of CRP is often transitioned into row crop production, causing the potential for increased soil erosion, which could result in increased chances for soil erosion concerns along the proposed routes.

Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is a joint effort between the Federal, State, and County governments that pays landowners who currently till or graze land along a stream, lake, or wetland to set aside small strips of land for soil conservation and water quality protection practices while leaving the remainder of the adjacent land in agricultural production. Land eligible for CREP is located in one of 50 designated CREP counties, has a history of crop or

pasture, and is within 150 feet of a stream, lake, or wetland. The typical CREP site consists of buffers ranging from 30 to 150 feet wide along a stream and covers an area of about 10 acres or a wetland less than 40 acres. Conservation practice options in CREP include filter strips, riparian buffers, grassed waterways, wetland restorations, marginal pastureland habitat buffers, permanent introduced grasses, permanent native grasses, grass prairie ecosystem restorations, and established legumes and grasses.

Thousands of Wisconsin landowners have enrolled land in either a CREP 15 Year Agreement or Perpetual Easement. Currently, there are about 400 Easements and 3500 Agreements enrolling 40,000+ acres into CREP. The CREP agreement and perpetual easement contracts are tied to the land. Landowners with land enrolled in CREP agree to install and maintain the conservation practice for the duration of the CREP contract. The building of structures within the CREP area is limited, including utility poles and substations, but does allow overhead utility lines to cross over CREP enrolled land. CREP conservation practices requiring trees are a conflicting practice that is not permitted under utility lines and requires landowners to change to a non-conflicting conservation practice on the CREP contract. Below ground local distribution utilities are permitted within CREP areas, however, when construction or maintenance of below ground utilities occurs the landowner is responsible for reestablishing the conservation practice where it is disturbed. Major oil and gas pipelines are limited within CREP enrolled land, do not allow a conservation practice with trees, and may require the landowner to remove the pipeline area from the CREP enrolled area with payback if the potential for disruption outweighs the conservation benefits. Permanent utility access routes are not permitted within CREP areas. Temporary access routes are allowed in CREP areas during maintenance or construction of utilities with the landowner being responsible for reestablishing the conservation practice to the disturbed area when the utility work is completed.

The Project ROW crosses and could potentially disrupt one existing CREP enrolled site:

- CREP #2985 - 15 year agreement, expires in 2022, owner: Ralph R. Zibell, Route Section C3

Managed Forest Law (MFL)

Many of the state's farmers also own forested land adjacent to their farmland that may be enrolled in the Wisconsin Department of Natural Resources (DNR) MFL. Farm income may be affected if land enrolled in the MFL program is acquired for utility ROW purposes. Landowners with forested acreage along the proposed route should consult the information about this program, which is available in section 5.5.18.6 of the Environmental Impact Statement (EIS) for the Project, to better understand the impacts of the project on their MFL lands.

Soils

Soil is the foundation of agricultural production. It produces the crops and pasture that in turn give us food and livestock feed. Soils not only provide the physical medium for growing plants, they also supply the nutrients and moisture required for healthy plant growth. Characteristics of the most productive soils include optimum tilth, fertility, and drainage.

All of the soils in the project area are underlain by glacial till. They range from well drained to very poorly drained, but there is a significant amount of land in the area that requires subsurface drainage if it is to be cropped. Clay and clay loam soils tend to need drainage to make them suitable for farming. Most of the area has nearly level to gently sloping topography, but there are a few areas with steep and very steep slopes.

Farmland Classification

Farmland is classified based on its ability to produce crops. If the Project is approved, DATCP would recommend that when routes are selected, consideration is given to the extent of farmland impacted along each route option, and emphasis be placed on choosing routes that reduce that impact to the extent possible. Further, DATCP would recommend considering routes that contain the least amount of new ROW on farmland types of the highest productivity: Prime Farmland, Prime Farmland if drained, Farmland of Statewide Importance, and Unique Farmland. The following describes the USDA Natural Resources Conservation Service's (NRCS) written criteria for classifying farmland.

Prime Farmland: Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. Prime farmland is not excessively erodible or saturated with water for a long period of time, and it either does not flood frequently or is protected from flooding.

Unique Farmland: Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

Farmland of Statewide Importance: This is land, in addition to prime and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are determined by the appropriate state agency or agencies. Generally, farmland of statewide importance includes land that is nearly prime farmland and that economically produces high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmlands if conditions are favorable.

Farmland of Local Importance: In some local areas there is concern for certain additional farmland for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are identified by the local agency or agencies concerned, but are not described in this AIS.

Table 12 and Figure 4 identify the amount (acres) of potentially impacted agricultural land in each soil classification for the proposed Route Sections. In contrast, Figure 5 looks only at the new ROWs proposed and the amount of each soil class contained in those new proposed ROWs.

Table 12. Acres of Impacted Farmland by Soil Class

Route Section	Prime Farmland	Farmland of Statewide Importance	Prime Farmland if Drained	Not Prime Farmland	Total
C3	115	31	149	4	299
C4	139	8	150	1	298
MGN	4	1	0	0	5
N13	18	13	19	6	56
N14	18	6	20	0	44
N15	2	0	8	2	12
N16	4	0	0	0	4
N17	0	0	5	0	5
N18	38	4	156	7	229
N4	74	19	100	26	219
N6	16	4	23	3	46
N7	13	1	18	8	40
N8	26	12	2	9	49
S1	22	2	7	0	31
S2	59	6	24	0	89
S3	27	1	5	0	33

Figure 4. Soil Farmland Class of Agricultural Land Only Within Proposed Route Sections

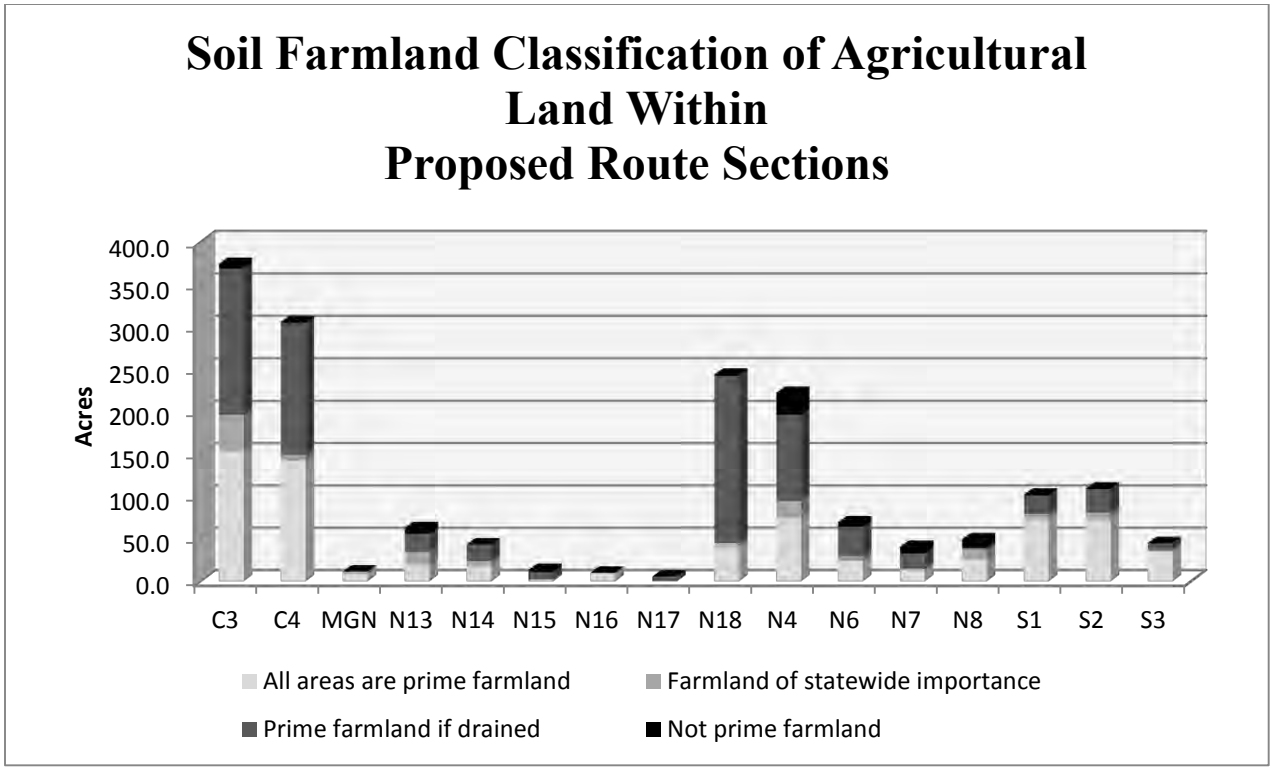
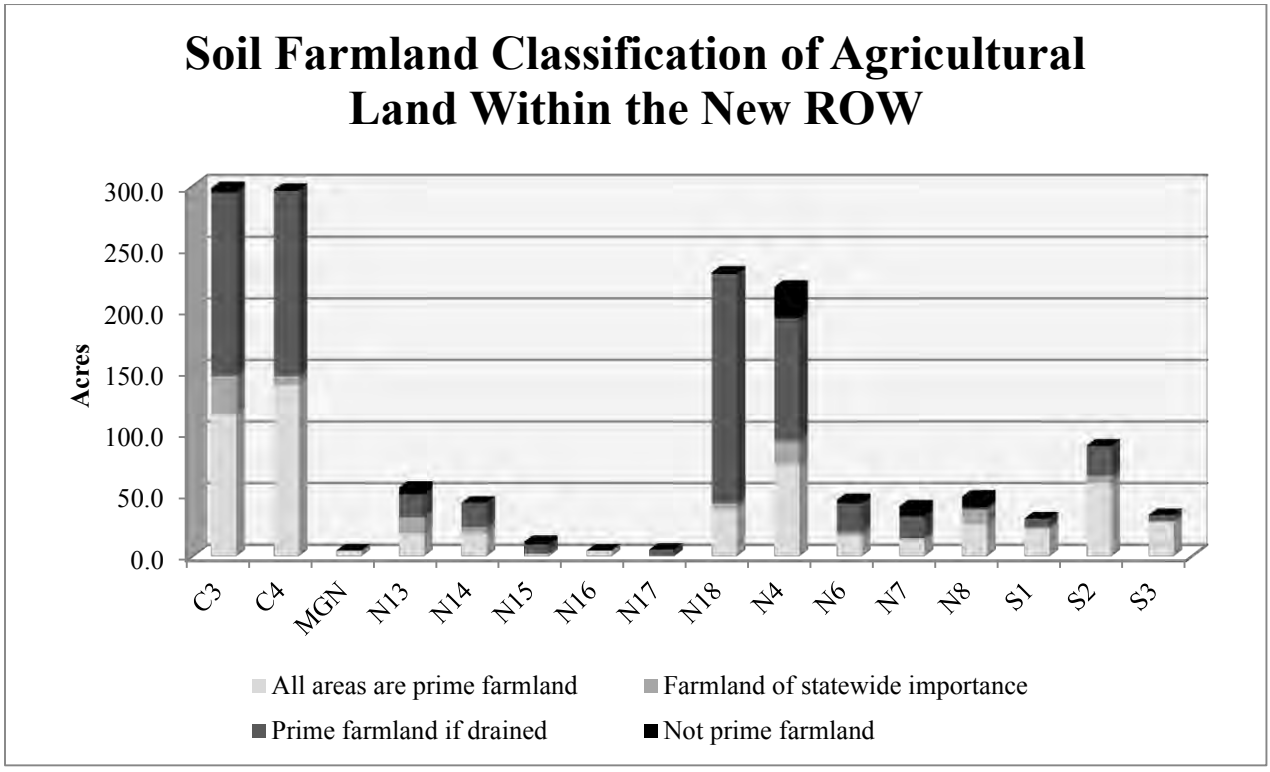


Figure 5. Soil Farmland Class of Agricultural Land Only Within the Proposed New ROWs



IV. CONSTRUCTION PROCESS

Transmission line construction will be confined to the ROW, identified access routes, and the laydown and staging areas. Most disturbances will occur in the area immediately surrounding transmission line structures. In areas where access cannot be gained from existing roads, disturbance from vehicular traffic will also occur on the ROW or established access routes. Disturbance at these areas may include clearing of vegetative cover, soil compaction, vehicular tracking, and some topsoil disturbance. The following information generally describes the major construction activities, their approximate sequence, and the anticipated impacts associated with each activity. This information can help landowners understand what project activities may occur on their properties.

Typical Construction Activities

Soil borings
Identifying soil characteristics will be necessary for final design of the transmission line and will be done using soil borings. Soil borings are typically taken using rubber tired or tracked drill rigs, depending on site and access conditions. A pick-up truck or ATV is also typically used to transport the crew and drilling supplies to the work area.

Surveying and staking of the ROW
These activities are typically completed by a two-person crew traveling by foot, ATV, or pick-up truck.

Clearing of the ROW
To facilitate construction equipment access and ensure safe clearances between vegetation and the transmission line, all vegetation will be cleared on the full width of the ROW. Vegetation will be cut at or slightly above the ground surface using mechanized mowers, harvesters, or by hand. Root stocks will generally be left in place, except in areas where stump removal is necessary to facilitate the movement of construction vehicles, or required by the landowner. Where permission of the landowner has been obtained, stumps of tall-growing species will be treated with an herbicide to discourage re-growth.

Road building
In areas of steep topography, access roads and work platforms will need to be constructed prior to construction access. This work is typically completed using equipment such as a bulldozer, track-hoe, skid-loader and dump trucks. The travel surface of the access road is typically 14 to 20 feet wide and work platforms are typically 30 feet by 30 feet. Following construction, the access roads will be left in place or returned to prior conditions, depending on landowner preference.

Construction matting

Matting will be installed to provide access through wetlands or other unstable soil areas prior to construction access. Construction matting may consist of timber, composite, or hybrid timber mats and will be installed with rubber tired mat trucks, forwarders, forklifts or skid loaders. Mat access roads will generally be 16 to 20 feet wide and mat work platforms may be as large as 100 feet by 100 feet, depending on the type of structure. Matting will be removed using similar equipment as for installation as each section is completed.

Temporary staging areas

Trucks, loaders, and cranes will be used to unload poles and other materials near each work location.

Installation of erosion control Best Management Practices (BMPs)

BMPs will be location specific and installed prior to all anticipated ground disturbance. Where unexpected ground disturbance occurs, BMPs will be installed immediately after the disturbance occurs. Typical erosion control equipment includes ATVs and/or trucks for crew transportation, skid loaders, tractors, backhoes, hydro-seeders, and other light duty equipment.

Foundation installation and/or excavation for direct embedded structures

There are two predominant foundation types: (1) direct embedded; and (2) reinforced concrete caissons. The single-circuit single-shaft tangent structures, single-circuit H-frame tangent structures, and double-circuit tangent structures where the lower voltage circuit is in the underbuilt position are anticipated to be supported by direct embedded foundations. The single-circuit angle, strain and dead-end structures, as well as the double-circuit tangent, angle, and strain and dead-end structures are anticipated to be supported by reinforced concrete caissons. In general, the excavated holes for each type of foundation will range from 3 to 12 feet in diameter and 20 to 60 feet in depth, or greater, depending on soil conditions and support structure size. Excavation is required for all structures whether they are direct-embedded or use reinforced concrete foundations. The volume of the holes are anticipated to range from 20 cubic yards to in excess of 150 cubic yards on several of the largest foundations. Most holes will be in the range of 30 to 60 cubic yards.

To mitigate impacts from foundation construction, DATCP recommends that the topsoil removed at support structure locations be segregated and stockpiled separately from the underlying spoil material. As part of the restoration of the ROW, the topsoil will be replaced around the support structures. Excavated spoil may be spread thinly on surrounding upland areas and stabilized depending on site conditions, landowner preferences, and environmental requirements. Spoil may also be hauled to an approved disposal site. Because of the lack of organic material and the high probability of the presence of rocks and gravel, spoil material should never be spread on cropland or pasture. Temporary stockpiles of excavated spoil and woody debris resulting from ROW clearing and construction will be required throughout the course of construction. While specific locations have not been determined, it is anticipated that minor soil piles may be required adjacent

to excavations for the new transmission line structures and within the laydown yards. Stockpiles will be placed in upland locations. If contaminated materials are encountered during the construction, spoils will be isolated and steps will be taken to determine disposal requirements in accordance with applicable regulations. In areas where groundwater seeps into the excavation, or where water is needed to hold the hole during drilling, it may be necessary to dewater the excavation. Depending on site conditions, the water may be de-silted and discharged to an upland area where it is allowed to re-infiltrate, or it may be removed from the site via a tank truck. Dewatering will proceed in accordance with applicable regulations and permit requirements.

Structure setting

After the direct embed base is set or the caisson is cured, the remainder of the steel pole structure (or sections) is mounted to the base. Typical equipment for this phase of construction are cranes and bucket trucks. A majority of the structures will be self-supporting tubular steel monopoles, whether they are single-circuit or double-circuit structures, and will have either a weathering steel finish or galvanized coating. Drawings of typical transmission line support structures can be found in Appendix C of the application, figures 10 through 37.

Wire stringing and clipping

Once all of the structures within a wire pull segment are set, the wires are pulled and clipped into place. This requires access to each structure with either a bucket truck or helicopter. Wire set up areas containing reel trailers, wire pullers, and related equipment are located at each end of the wire pull.

Cleanup and restoration of the ROW

Upon completion of construction, cleanup and site restoration occurs. This includes removing construction mats, temporary clear span bridges (TCSBs), and other material or debris from the ROW, as well as conducting any necessary seedbed preparation and seeding. Typical equipment for these activities includes mat trucks, bobcats, pickup trucks, and other light duty vehicles.

Unique Construction Methods

Unique construction methods that may be employed include light helicopter usage, heavy helicopter usage, micro-piles, helical piers, vibratory or hammer driven piles, and vibratory cans.

Light helicopters

Light helicopters may be used along the entire length of the project. The primary usage for light duty helicopters is to assist in stringing operations and the installation of conductor and shield wire accessories. Light duty helicopters are beneficial because they decreases the total project construction time, allow work in remote or inaccessible locations, reduce environmental impacts, minimize ROW intrusion, and minimize matting in sensitive areas.

Heavy helicopters

Applications for heavy helicopter usage are more limited than light helicopters. The best application for heavy helicopters is the transport of equipment and material to remote locations, for example in the Coulee Region of Wisconsin. It is anticipated that line construction in many locations may be from ridge top to ridge top, with the conductor spanning the valley below. As an alternative to traditional drilled pier foundations, other foundation types may be used. In support of those alternative foundations, heavy-lift helicopters may be employed to carry material (e.g. poles, hardware, and grout) or equipment (compact drill rigs) to the ridge tops.

Micro-piles

Micro-piles are deep foundation elements constructed using high-strength, small-diameter steel casing and/or threaded bar. As an alternative to traditional drilled pier foundations, micro-piles may be used in remote and rocky locations. Areas that would lend themselves to the use of heavy helicopters would also be a likely location for the installation of micro-piles. This would include the Coulee Region and the hilly areas west of Black River Falls. Since all material and equipment needed for installation can be flown to the structure location, there is no need for extensive road building to provide access. Access to the structure location is still necessary on the ROW, but the construction vehicles are limited to small excavators and pick-up trucks as opposed to cranes and concrete trucks used in traditional foundations. Accordingly, the lighter foot print significantly reduces environmental impacts to the access route.

Helical piers

A helical pier is a pre-manufactured steel deep foundation element consisting of a central steel shaft (usually square), and one or more helical shaped bearing plates (helices). The element is similar to a large screw. The most likely application for helical piers is soil strata indicating expansive soils, a high water table, fill, or other unstable conditions in locations requiring a deep foundation. It is anticipated that helical piers will be used in the area of the Lemonweir River (Route Alternative N, Route Sub-Alternative N2) due to possible access difficulties and the general wet and marshy ground conditions that exist.

Vibratory or hammer driven piles

This type of foundation is often used where poor soil conditions would result in excessively large drilled pier foundations. Construction traffic for vibratory or hammer driven piles is considerably heavier than that used for micro-piles, as a large track mounted crane would be needed to install the piles. The benefit of using vibratory or hammer driven piles is the avoidance of matting a large percentage of the access route to make way for concrete truck traffic. Low ground pressure track equipment significantly reduces environmental damage to the access route.

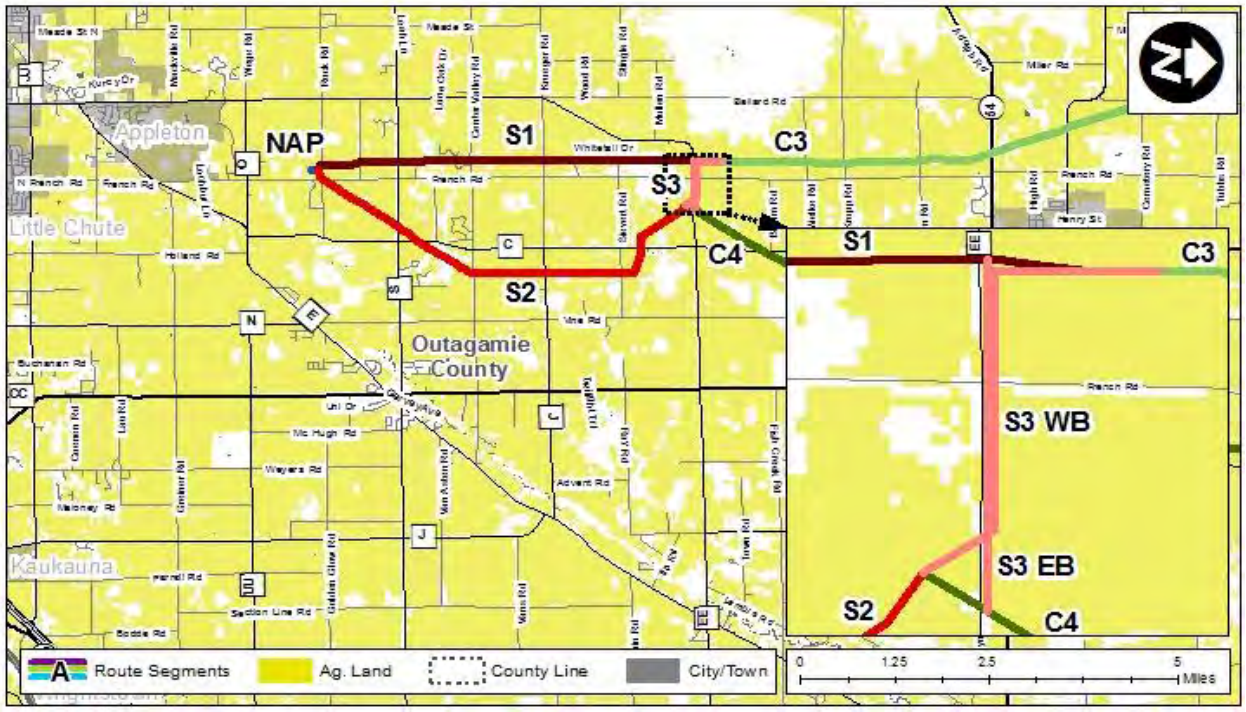
Vibratory cans

For lightly loaded structures (tangents) in sandy soil, vibratory cans may be employed as an alternative to vibratory or hammer driven piles. The benefits of this type of installation are the same as those for vibratory or hammer driven piles.

V. ROUTE DESCRIPTION AND LANDOWNER COMMENTS SUMMARY

The following descriptions regarding route options are provided by Routing Area (South, Central, and North) and reference the typical structures drawings. Variations of these structures may be used for the Project depending on final engineering analysis that determines the angle or tension of the transmission line facilities. Individual landowner comments are provided in Appendix II of this AIS.

Figure 6. South Routing Area



South Routing Area

The South Routing Area is generally located near Freedom, Wisconsin, and lies entirely within Outagamie County (Figure 6). The South Routing Area is comprised of four Route Sections. Route Sections S1 and S2 travel south to north. Route Sections S3 Westbound and S3 Eastbound provide connections between the South Routing Area and the Central Routing Area.

Route Section S1

Route Section S1, approximately 5.5 miles long, begins at the North Appleton Substation and heads north, co-located with the existing North Appleton–White Clay 138 kV line and the existing North Appleton–Mason St. 138 kV line. The North Appleton–White Clay 138 kV line would be rebuilt for the majority of Route Section S1 to facilitate an overall narrower ROW than if the new lines were co-located with the existing configuration. The rebuild of existing North Appleton–White Clay 138 kV line begins just north of the location where the North Appleton–Mason St. 138 kV line veers northeast, away from Route Section S1. Route Section S1 continues north along the North Appleton–White Clay 138 kV line to intersect with County Highway EE. It ends just north of County Highway EE, marking the end of the rebuild for the North Appleton–White Clay 138 kV line. This Route Section will use single-circuit, delta-configured structures (Application Appendix C, Figure 20) and single-circuit, vertical-configured structures. Existing transmission line structures will be rebuilt.

Route Section S2

Route Section S2, approximately 5.8 miles long, begins at the North Appleton Substation and heads northeast, co-locating with the existing North Appleton–Kewaunee 345 kV line. Route Section S2 then continues north, crossing over the existing North Appleton–Mason St. 138 kV line to intersect with the Guardian pipeline. Route Section S2 then follows the Guardian pipeline northwest, south of the intersection with County Highway EE. It will use single-circuit, delta-configured structures and single-circuit, vertical-configured structures. Existing transmission line structures will be rebuilt.

Route Section S3 Westbound

Route Section S3 Westbound would allow for the possibility for Route Section S2 to connect to Route Section C3. Route Section S3 Westbound is approximately 1.0 mile long and begins at the endpoint of Route Section S2 and continues northwest to intersect with County Highway EE. Route Section S3 Westbound then heads west along County Highway EE and then north, continuing to Route Section C3.

Route Section S3 Eastbound

Route Section S3 Eastbound would allow for the possibility for Route Section S1 to connect to Route Section C4. Route Section S3 Eastbound is approximately 0.7 mile long and begins at the intersection of CTH EE and Route Section S1. Route Section S3 Eastbound then heads east along CTH EE until intersecting with Route Section C4.

Route Sections S3 Westbound and S3 Eastbound connect the South and Central Routing Areas.

Route Sections S3 Westbound and S3 Eastbound will use single-circuit, delta-configured structures.

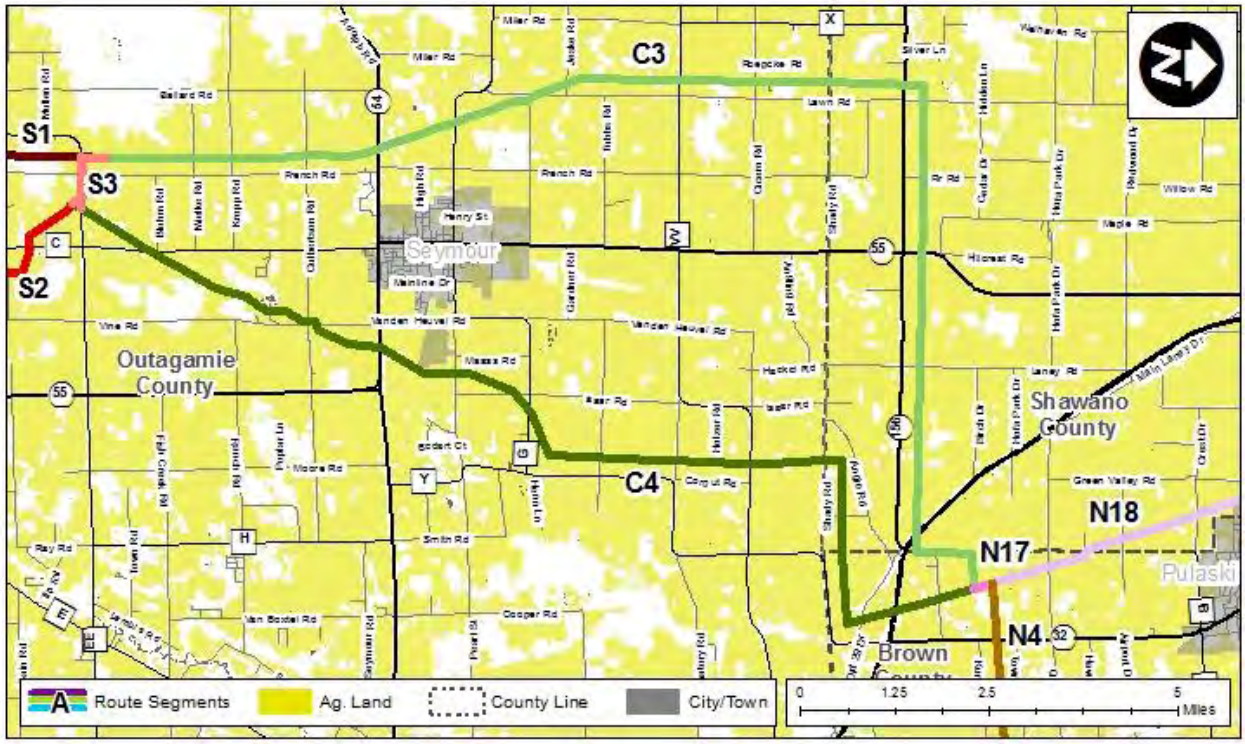
South Routing Area Landowner Comment Summary

Eleven landowners in the South Routing Area responded to the Agricultural Impact Questionnaire (Table 13). Nine landowners commented about concerns with drainage tiles, eight had concerns about access to land during construction, eight commented that field operations would be affected by transmission line poles, and four thought that replacement land would be difficult to rent or buy. Six landowners felt that the project would have a negative effect on property values. There were two certified organic producers in this area who were concerned that the construction process would reduce yield potential. Landowners who had land in multiple route sections had their questionnaire assigned to the section with the largest ROW acreage.

Table 13. South Routing Area Comment Summary

Concern	Responses	Concerns	Responses
Questionnaires Returned	11	Aerial Application	0
Drainage Tiles	9	Field Operations Around Poles	8
Irrigation System / Fencing	1	Land Values	6
Access During Construction	8	Stray Voltage	0
Replacement Land Availability	4	Health Issues	1
Firewood / Logging	3	Farming Practices	5
Certified Organic Production	2	Other	0

Figure 7. Central Routing Area



Central Routing Area

The Central Routing Area is located in Outagamie, Shawano, and Brown Counties (Figure 7). It is comprised of two Route Sections. Route Sections C3 and C4 generally travel south to north.

Route Section C3

Route Section C3, approximately 18.5 miles long, begins at the endpoint of Route Sections S1 or S3 Westbound, and continues north, co-locating with the existing North Appleton–White Clay 138 kV line. It continues along the North Appleton–White Clay 138 kV line heading northwest, away from the city of Seymour, and then north again to cross STH 156. It then heads east, co-locating with, although offset from, State Highway 156 to cross the Brown County boundary. It then continues north along property lines, crosses the Shawano County boundary, then heads east to intersect with an ANR pipeline. Route Section C3 will use single-circuit, delta-configured structures. Existing transmission line structures will be rebuilt.

Route Section C4

Route Section C4, approximately 15.4 miles long, begins at the endpoint of Route Sections S2 or S3 Eastbound and heads northeast along the Guardian pipeline approaching the border of the Oneida Indian Reservation. Route Section C4 then turns north and generally follows property lines, crossing the Shawano County boundary. Route Section C4 then heads east, generally following property lines to the intersection with an ANR pipeline, crossing the Brown County boundary. Route Section C4 then turns northwest and follows the ANR pipeline, crossing STH 156. Route Section C4 will use single-circuit, delta configured structures.

Central Routing Area Landowner Comment Summary

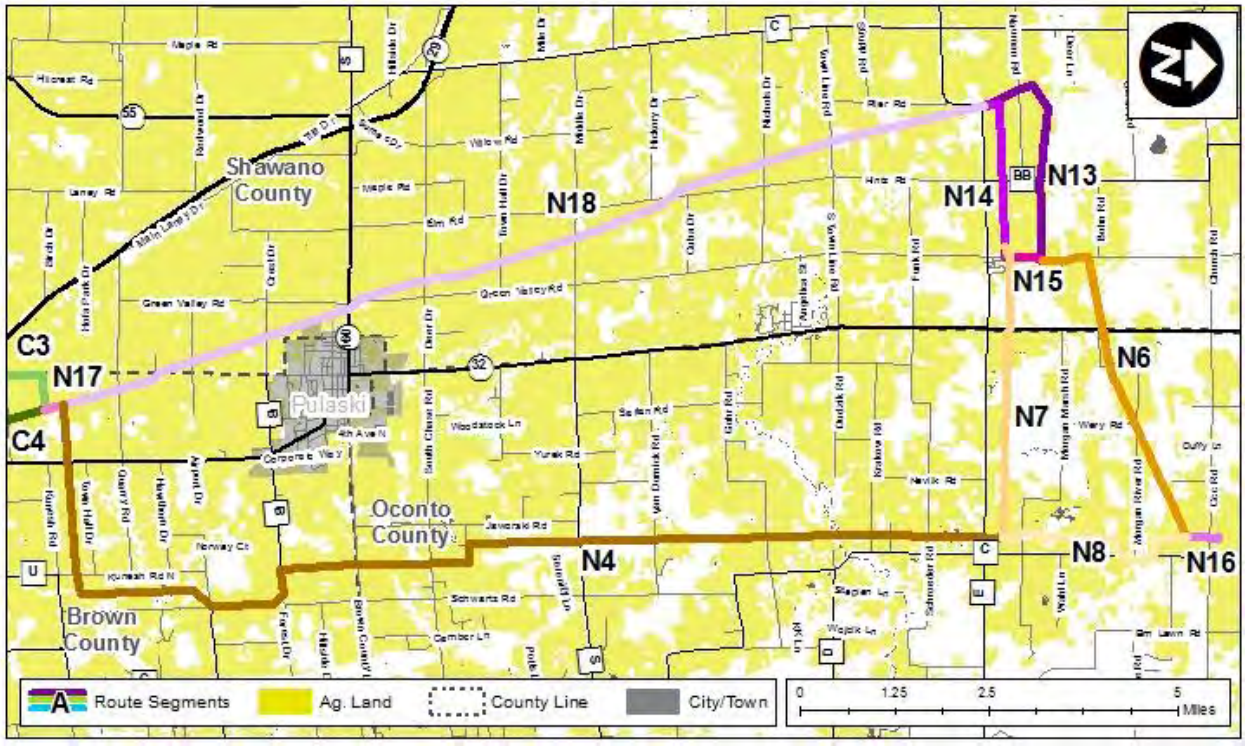
Thirty eight landowners in the Central Routing area responded to the Agricultural Impact Questionnaire (Table 14). Drainage tiles were a concern listed by twenty eight respondents. Field operations around transmission line poles were a concern of twenty six respondents. Twenty six landowners also commented that replacement land would be difficult to find and be expensive to rent or buy. Access to land during construction was a concern of eighteen respondents. Fourteen respondents were concerned about logging and firewood. The effect of transmission lines on property values concerned fourteen respondents.

There are some very large dairy operations that operate land in several of the proposed route options. These farms have concerns about irrigation and manure storage systems, the proximity of transmission lines to dairy barns and milking facilities, the effect of transmission line poles on field operations also significant concerns for them.

Table 14. Central Routing Area Comment Summary

Concern	Responses	Concern	Responses
Questionnaires Returned	38	Aerial Application	7
Drainage Tiles	28	Field Operations Around Poles	26
Irrigation System / Fencing	6	Land Values	14
Access During Construction	18	Stray Voltage	8
Replacement Land Availability	26	Health Issues	9
Firewood / Logging	14	Farming Practices	11
Certified Organic Production	0	Other	3

Figure 8. North Routing Area



North Routing Area

The North Routing Area is located within Brown, Shawano, and Oconto Counties (Figure 8). The terminus of the North Routing Area is at the Morgan Substation, located near Oconto Falls, Wisconsin. The North Routing Area is comprised of ten Route Sections. Route Section N17 is a common Route Section and provides a connection between the Central and North Routing Areas. The North Routing Area is comprised of two primary south to north Route Sections, a western (Route Section N18) and an eastern (Route Section N4) Route Section. Then there are options for entering into the Morgan Substation using Route Sections N14, N15, N13, N6, N7, and N8. Route Section N16 is a common Route Section into the Morgan Substation for all Route Alternatives.

<u>Route Section N4</u>
Route Section N4, approximately 15.5 miles long, begins at the endpoint of Route Section N17

and heads east, generally following property lines. It then turns north, crossing the Mountain Bay State Trail and generally follows property lines before heading northeast to intersect with County Highway B. It then heads north along County Highway B, and then follows County Highway B as it turns west. Route Section N4 then heads north, crossing County Highway B and the Oconto County boundary, and continues north after a short span to the west, south of County Highway S. Route Section N4 will use single-circuit, delta-configured structures and single-circuit, vertical-configured structures.

Route Section N6

Route Section N6, approximately 4.6 miles long, begins at the endpoint of Route Sections N13 or N15 and heads north along the existing double-circuit Highway 22–Morgan/White Clay–Morgan 345/138 kV lines. It then turns northeast, continuing along the Highway 22–Morgan/White Clay–Morgan 345/138 kV lines and crosses the ANR pipeline. It will use single-circuit, delta configured structures and single-circuit, vertical-configured structures. Existing transmission line structures will be rebuilt.

Route Section N7

Route Section N7, approximately 3.9 miles long, begins at the endpoint of N14 and heads east, and generally follows existing property lines. It continues east, crossing the ANR pipeline and the Oconto County boundary to intersect with the endpoint of Route Section N8. Route Section N7 will use single-circuit delta-configured structures.

Route Section N8

Route Section N8 is approximately 2.9 miles long and begins at the endpoint of Route Sections N4 or N7, heading north, generally following property lines. It then heads east to intersect with County Highway C before turning north to follow County Highway C. It then turns west, generally following property lines, and then north to intersect with the existing double-circuit Highway 22–Morgan/White Clay–Morgan 345/138 kV lines. Route Section N8 will use single-circuit, delta-configured structures.

Route Section N13

Route Section N13, approximately 3.1 miles long, begins at the endpoint of Route Section N18 and heads northwest along the ANR pipeline. It continues northwest along the ANR pipeline, then heads northeast to intersect with the existing double-circuit Highway 22–Morgan/White Clay–Morgan 345/138 kV lines. It then continues east along the Highway 22–Morgan/White Clay–Morgan 345/138 kV lines. Route Section N13 was added in response to public comment after ATC's Phase III open house. Route Section N13 will use single-circuit, delta-configured structures.

Route Section N14
Route Section N14, approximately 2.1 miles long, begins at the endpoint of Route Section N18 and heads east, generally following property lines, crossing County Highway BB to approach Green Valley Road. It will use single-circuit, delta-configured structures.

Route Section N15
Route Section N15, approximately 0.6 of a mile long, begins at the endpoint of Route Section N14, heads east then north along Green Valley Road until it heads northeast, crossing Green Valley Road, and intersects with the existing double-circuit Highway 22–Morgan/White Clay–Morgan 345/138 kV lines. Route Section N15 provides an alternate Route to get to the Highway 22–Morgan/White Clay–Morgan 345/138 kV lines and then into the Morgan Substation. It will use single-circuit, delta configured structures.

Route Section N16
Route Section N16, approximately 0.4 miles long, begins at the endpoints of Route Sections N6 or N8. It is common among all Route Sections heading north along the double-circuit existing Highway 22–Morgan/relocated White Clay–Morgan 345/138 kV lines and the existing Morgan–Falls 138 kV line relocated onto new structures, into the Morgan Substation. Route Section N16 will use single-circuit delta-configured structures. Existing transmission line structures will be utilized for the new North Appleton–Morgan 138 kV line and the new Morgan–Stiles 138 kV line.

Route Section N17
Route Section N17, approximately 0.3 of a mile long, begins at the endpoint of Route Sections C3 or C4 and heads northwest along an ANR pipeline. It is a common Route Section that connects the Central and North Routing Areas. ATC determined that having a common Route Section in this area would have less of an impact than attempting to provide two separate and distinct pathways through this area. Route Section N17 will use single-circuit, delta-configured structures.

Route Section N18
Route Section N18, approximately 12.9 miles long, begins at the endpoint of Route Section N17 and heads northwest along an ANR pipeline for the length of the Route Section, crossing the pipeline three times. Route Section N18 will use single-circuit, delta-configured structures.

North Routing Area Landowner Comment Summary

There were forty four landowners who returned questionnaires in the Northern Routing Area (Table 15). Replacement land availability, field operations around poles, drainage tiles, and land values were concerns with the most responses. There were also concerns about firewood / logging from seventeen landowners and stray voltage from eleven respondents.

Table 15. North Routing Area Comment Summary

Concern	Responses	Concern	Responses
Questionnaires Returned	44	Aerial Application	10
Drainage Tiles	25	Field Operations Around Poles	28
Irrigation System / Fencing	6	Land Values	22
Access During Construction	14	Stray Voltage	11
Replacement Land Availability	30	Health Issues	4
Firewood / Logging	17	Farming Practices	5
Certified Organic Production	1	Other	3

VI. AGRICULTURAL IMPACTS

Transmission line impacts to farmland can be categorized as temporary or permanent. These include restrictions on the use of the land, reductions in the area that can be farmed and potential reductions in the productivity of the affected farmland. Reductions in the loss of productivity due to soil mixing, soil erosion, or soil compaction during construction could be permanent if mitigating construction practices are not followed.

Within fields, the area adjacent to the support structures that is not accessible to farm equipment can become a haven for weeds and other pests. These weeds and pests can spread to adjacent crops and potentially reduce yields and/or necessitate the application of additional pesticides.

ATC has indicated that upon receipt of the Commission's Order, they will coordinate with each agricultural landowner to obtain detailed information about each agricultural operation including the use of irrigation systems or 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 may be implemented. Site-specific practices would vary according to the activities of the landowner/farm operator, the type of agricultural operation, the susceptibility of site-specific soils to compaction, the degree of construction occurring on the parcel, and the ability to avoid areas of potential concern.

It is important for ATC and its contractors to maintain respectful and cooperative working relationships with property owners and renters. Good communications, knowing the limits of the ROW easements, and removing construction debris are a few actions that will be useful in avoiding problems and misunderstandings.

Permanent Impacts

Impacts of Poles in Agricultural Fields

The negative effects of transmission line support structures on agricultural lands are much more significant if that land is cropland rather than pasture. After a new transmission line is constructed, animals will be able to graze on all of the pasture except for the land occupied by support structure foundations, on average about a 6-foot diameter circle, for most poles in the North Appleton to Morgan project. Poles constructed in cropland will act as obstacles to fieldwork and affect more cropland than just the area used for the pole foundation. The impact will be different for each farm operation and potentially for each field crossed by the Project. In addition, the Project will have the added impacts of two new transmission lines in fields it crosses rather than just one, making all of the impacts below twice as burdensome.

The course that a farmer follows when working a field tends to be the same, year after year. A course is the path the farmer takes through the field with his/her equipment when planting, harvesting, spraying, or conducting other necessary fieldwork. These courses are developed to maximize the area of the field that is cropped and minimize the area of the field where any repeat or overlap of work occurs. Long rectangular fields with square corners allow for the most efficient fieldwork courses. Overlapped areas are more likely to have soil compaction and, if they are cropped, repeated applications of seed and chemicals, also referred to as agricultural inputs. Soil compaction leads to reduced yields because of the reduced pore space in the soil needed by a plant's roots to access moisture and nutrients. The over application of agricultural inputs is inefficient and negatively affects the farmer's bottom line. Headlands, where a farmer makes a turn at the end of each row, are typically not cropped because of the greater amount of overlapping that occurs. In most fields, overlap cannot usually be avoided altogether, but farmers will work to reduce overlap as much as possible.

Another obstacle is the location of the structure. Transmission line support structures constructed in fields will occupy the same space as those in pasture. However, these poles will be obstacles to farmers working their fields. Additional land adjacent to the foundation will be removed from production because farm machinery will not be able to work the land immediately adjacent to those poles. The actual amount of farmland lost due to inaccessibility will vary depending on the location of the support structure in the field, the size and maneuverability of the equipment the farmer operates, and the distance the farmer is willing to leave between farm equipment and support structures when moving around them.

Maneuvering around transmission line poles can be difficult, particularly when larger farm equipment is used. Farmers may attempt to reduce the area that cannot be cropped around the pole by planting as close as possible to the transmission line structure; however, doing so increases the likelihood of hitting the pole with farm implements. It is unlikely that the transmission line structures proposed for this project would be damaged in such a collision; however, the farm implements may be damaged significantly, requiring expensive repairs and delayed field operations during planting and harvesting when time is most critical.

Cropland that becomes inaccessible to farm equipment could become a host for weeds, insects, and other pests that could spread to the adjacent cropland if adequate controls are not undertaken. This will create added expenses and demands on a farmer's time that will further affect the farm's overall bottom line.

Impacts from support structures in headlands will also vary depending on their relationship to the existing cropping course and the adjustments needed to work around them. The single pole

structure that will be used for this project provides much less loss of farmable area than would an H-Frame or a structure with guy wires.

In general, the excavated holes for each type of foundation will range from 3 to 12 feet in diameter and 20 to 60 feet deep, or more, depending on soil conditions and support structure size. Therefore, the loss of farmland area for each support structure ranges from 7 to 452 sq. ft. A pole in the middle of a field is likely to affect more cropland than one placed at the edge of the field (see calculation examples below). While the path taken to avoid a support structure is unique for individual circumstances, for purposes of this analysis, we can assume the travel path of the machine is parabolic.

To calculate the area of farmland that becomes inaccessible in order to avoid the support structure, use the equation:

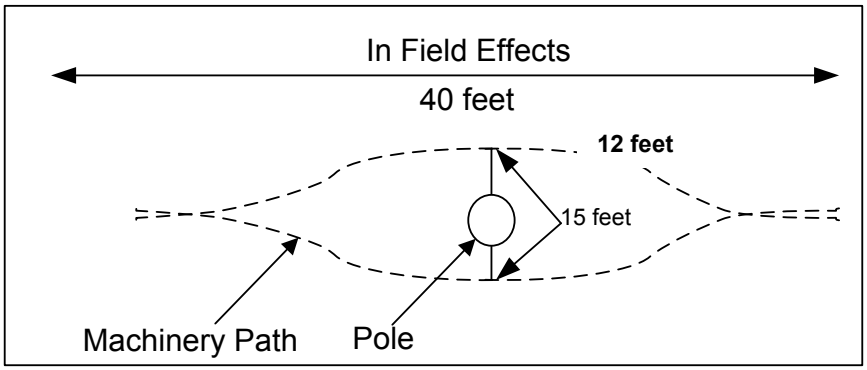
$$A = (\tfrac{2}{3}*H*D)*2$$

Where:
A = inaccessible area in square feet on one side of the structure
H = horizontal distance (feet) from the point where the machine begins to turn out around the pole to the point where the machine is back on its regular path of travel
D = the distance from the center-line of the pole, or the edge of the field to the point where the end of the machine passes by the pole. D is perpendicular to H

As an example, if the caisson supporting the pole is 6-feet in diameter, the figure below shows the machinery path that the farmer takes to avoid the pole. The farmer begins to turn out 17-feet in front of the pole to avoid it and travels 17-feet beyond the pole before coming back to a straight line of travel. Assume the farmer is operating a 12- row corn planter that is 30 feet wide and that he leaves 3 feet between the end of the corn planter and the pole on each side as he passes by to ensure that he does not hit it (Figure 9). In terms of modern farming practices, a twelve-row corn planter may be on the smaller end of the scale of machinery employed.

In this in-field pole location example, approximately 320 square feet of cropland is no longer accessible and can be considered cropland lost when negotiating compensation for an easement.

Figure 9. In-Field Effect of Pole Location



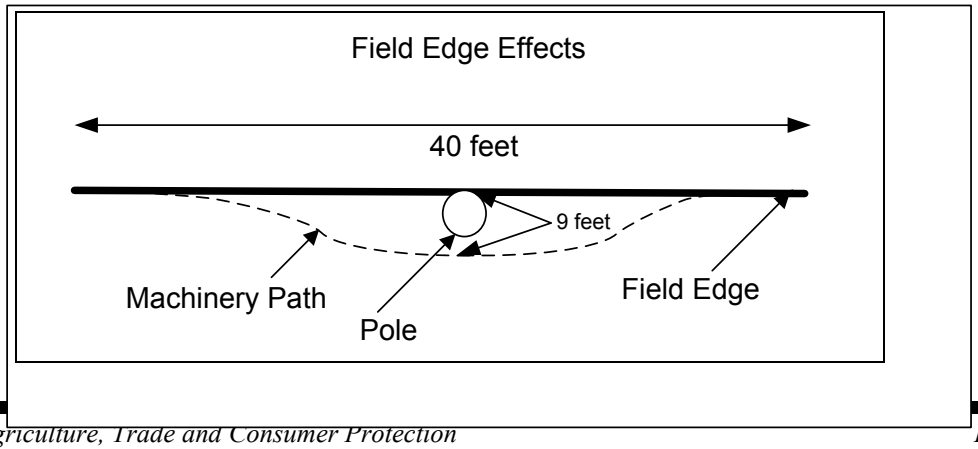
Therefore: H = 17 ft. + 3 ft. (which is ½ the diameter of the pole)*2 = 40 feet
D = 6 ft. (3 ft. to avoid the pole + 3 feet, which is ½ the diameter of the pole)

The total area inaccessible for production to avoid the pole is:

A = (⅔*40*6)*2 = 320 square feet

In contrast, if the outside edge of the 6-foot diameter caisson supporting the pole is on the edge of the field, the following figure shows the machinery path that the farmer takes to avoid the pole.

Figure 10. Field Edge Effects of Pole Location



Therefore: H = 17 ft. + 3 ft. (which is ½ the diameter of the pole)*2 = 40 feet
D = 9 ft. (3 ft. to avoid the pole + 6 ft., diameter of the pole)

The total area inaccessible for production to avoid an edge of field pole is:

A = ⅔*40*9 = 240 square feet

Calculating the Cost of Inaccessible Land

Few studies have been conducted to determine the cost of transmission tower construction to the farmer whose land is impacted, however studies by Gustafson, et al. (1979) and Scott (1981) found that approximately 70 percent of the costs of towers to farmers resulted from the nonproductive area created by the presence of the tower. Those studies also estimated that the remaining 30 percent of costs to famers resulted from the time lost in working around towers, crop damage, and potentially material waste through double coverage. Comprehensive studies of the estimated costs from farming around transmission structures based on Wisconsin-specific farm operations are not available.

However, a number of such estimates have been made based on a model for typical Montana farming operations as part of an environmental impact assessment conducted for a transmission project there. Although this model was based on different crops from those in Wisconsin, the basic sequence of farm operations involved is similar to that found here and included: pesticide use, fertilizer application, planting, in-crop spraying, harvesting, and post-harvest harrowing. The model also included an estimate for labor time and equipment. It adjusted for the presence of the structure in the field causing "overlap areas" where equipment passes through more than once. Based on 2007 prices, it estimated the annual cost of farming around a regular span mono-pole at the field edge in the range of $13 to $16 dollars per structure; a similar amount for H-frames parallel to the field edge; $40 for H-frames perpendicular to the field edge; $177 for H-frames in the field interior; and $150 for mono-poles in the field interior (HydroSolutions Inc. and Fehringer Agricultural Consulting Inc. 2007).

Somewhat different figures were reported for the same project simulations. The full report states that the 2007 annual costs to farm around a small monopole, a large monopole and an H-pole in the middle of a field planted with spring wheat are $105.09, $107.98 and $120.57, respectively. The costs to farm at the edge of a field for the three structures, with the H-pole built parallel to the edge, would be $13.81, $15.06 and $14.99, respectively (Thornton 2007).

Wisconsin Statutes, Chapter 187.017 (7)(b) states: "In determining just compensation for the interest under s. 32.09, damages shall include losses caused by placement of the line and associated facilities near fences or natural barriers such that lands not taken are rendered less readily accessible to vehicles, agricultural implements and aircraft used in crop work … "

Since the Project proposes the construction of two new transmission lines rather than one, the negative impacts from the placement of poles in fields will be multiplied. In some places where the new lines parallel an existing power line, there may be three sets of poles on farm fields. ATC has indicated that along existing transmission lines, the new poles would be in line with the existing poles rather than staggered.

Where the two new lines do not follow existing infrastructure ROW, the width of the new ROW will be 180 feet wide (45 feet from the edge of the ROW to the 138 kV line, 75 feet between the lines, and 60 feet from the 345 kV line to the edge of the ROW). The span between poles on the same line will average 600 to 800 feet.

In a typical 40-acre field where the sides are 1,320 feet long, at least two sets of poles and possibly 3 sets would be constructed in that field if it is crossed by the project. Using the earlier example of a 12-row corn planter that is 30 feet wide working this field, the minimum of two sets of poles in the field with one line following the edge of the field removes 1,120 square feet of cropland from production (2 x 320) + (2 x 240) = 1,120. If the productivity of this field generates a yield of 200 bushels of corn per acre, the loss of 1,120 square feet of cropland represents a loss of 5.1 bushels. That is the loss of cropland (1,120 square feet) divided by the number of square feet per acre (43,560) then multiplied by the average yield per acre (200). A severe example would be if the two crossed the middle of the field with a shorter span of 600 feet. This would place three sets of poles in the middle of the field and remove 6 x 320 = 1,920 square feet of cropland from production. In a field with an average yield of 200 bushels of corn per acre, the loss of 1,920 square feet of cropland would represent the loss of 8.8 bushels of corn. These losses would likely be worse where a farmer uses larger equipment because larger equipment is typically less maneuverable and, therefore, likely to leave a larger area of inaccessible land around a pole. These calculations do not include the economic value of the farmer's time lost maneuvering around the poles. Also, if the line parallel to the edge of the field is in the field but less than 33 feet from the edge of the field, the cropland between the field edge and the pole will be inaccessible to the 30-foot side corn planter. This would increase the loss of cropland available to that farmer.

The losses from overlapping are much more difficult to quantify because they involve more variables that are unique to each situation. These variables include: 1) the size of the area that is overlapped, which depends on the size and geometric shape of the field, the size and maneuverability of the farm equipment used, and the ability of the equipment operator to minimize the distance between the equipment and the pole; 2) the degree of compaction on the overlapped

cropland, which depends on the soil's characteristics, the number of passes the operator has to make over the area, and the crop grown; 3) the ability of the machinery operator to regulate the flow of inputs when overlapping cropland; and 4) the extra time spent by the equipment operator working a field that has obstacles as well as the extra fuel used and equipment wear.

The loss of cropland due to the construction of a second line is not restricted to the areas surrounding the pole foundations, they also occur between the poles and between the poles and the edge of the field. Continuing with our example of a 12-row, 30-foot wide corn planter, a farmer planting the land between the two lines, which will be constructed 75 feet apart, can easily make two passes between the poles (30 + 30 = 60) with 15 feet to spare. If we subtract 3 feet of clearance to avoid colliding with each of the poles, we are left with a 9-foot wide strip of land that is not cropped. It will be up to the individual farmer to determine how to address this problem. He may choose to leave areas fallow or overlap them. Leaving areas fallow will necessitate additional pest control actions and will reduce the overall productive capacity of the field. If the farmer chooses to overlap, he may be able to temporarily adjust his equipment to turn off part of the planter so that areas that have already been planted are not replanted. This would increase the time needed to plant the field and carry out all the subsequent fieldwork needed to grow and harvest the crop. Adjustments to the cropping pattern would need to be workable by all of the machinery the farmer uses. If he plants corn in an area that is inaccessible to his combine, that area of the field won't be harvested.

A farmer's loss of cropland due to the Project will be more than what is lost for the footprint of the pole foundation. The loss will also include:

- The land immediately adjacent to each pole foundation that the farmer uses as a buffer to avoid colliding with the pole
- The land that is overlapped or left fallow due to adjustments in field courses needed to work around poles
- The land that becomes inaccessible to farm equipment due to the locations of poles within a field

All of these will vary depending on the size and maneuverability of the equipment used and the size and shape of the existing field. Some impacts may be felt outside of the ROW.

If the proposed project is determined to be necessary, DATCP is requesting that the Commissioners strongly consider double-circuiting the two new lines rather than constructing two separate sets of support structures for two single-circuit lines. Double-circuiting these lines would reduce by half the number of new obstacles in cropland and would reduce the amount of ROW

needed. Not only would this reduce the cost of the project, it would reduce the losses in cropland due to inaccessibility

It is understandable that ATC wants two single-circuit lines to improve reliability and to allow for more convenient maintenance times. However, having a second set of support structures on farmland, especially on cropland, will be a burden to farmers who will have to adjust their operations to work around these structures. The benefits for ATC and its customers might not outweigh the burdens placed on private property owners.

Table 16 identifies the number of poles for each Route Section that could be placed in agricultural land. This information is based on preliminary pole locations provided by ATC. The final design of the transmission line will not be completed until after the project is approved and a route selected. The final data may differ from the currently available preliminary data.

Table 16. Number of Poles in Agricultural Land by Route Section

Route Section	Poles in Agricultural Land
C3	196
C4	214
Morgan Substation	6
N13	38
N14	23
N15	10
N16	4
N17	2
N18	140
N4	131
N6	40
N7	19
N8	32
North Appleton Substation	11
S1	82
S2	73
S3 Westbound or Eastbound	16

Interference with Precision Farming and other Technologies

Some concerns have been expressed about proposed transmission lines interfering with the precision technology that is currently used or could be used in the future by farmers. Precision agriculture requires consistent contact with satellites in order to determine field location.

Without precision farming technology, farmers generally apply inputs, such as fertilizer, seed, and pesticides, uniformly based on the average needs of a field. However, the presence of significant variation in soil characteristics of a field means that the most economical application of inputs to such a field would need to be precisely calibrated to such variation. In some cases, the yield variation can be up to 100 percent within a field. Precision farming addresses the spatial and temporal variability in growth limiting factors. It manages fields by adopting a variable rate application of fertilizers, herbicides, and pesticides in place of a uniform application across the whole field.

Such variable-rate application technology consists of three steps: collecting data through yield monitoring, grid soil sampling, or remote sensing; analyzing the data, and generating maps that reflect the variability within a field; and field use of GIS/GPS map-based systems to identify problems in a field. Two spatial requirements are necessary for the variable-rate application of inputs. One requirement is the knowledge of where the farm equipment is as it moves across a field. The other is information on selected variables important to the farmer as a function of location within the field. These two factors are often referred to as the "where" and "what" components.

GPS's are used to determine the "where" component within a field. The "what' factor involves the application of remote sensing or collecting information on a site-specific basis through grid-sampling. Precision-agriculture applications have been relatively limited till now because of the complexity and expense involved in such applications.

Currently, the most common application of precision farming is as a monitor to measure yield data during harvesting. Yield monitors allow farmers to measure crop yield, grain weight and harvested area. Some applications export this information to a personal computer for further analysis. The intended outcome is to enable farmers to compensate for natural and manmade types of variability that affect crop growth.

The question of whether transmission lines may have an effect on increasingly sophisticated agriculture equipment, including the GPS component of precision agriculture systems, has come up frequently in recent years. Some experts in the field have indicated that they believe that there were no effects of transmission lines on GPS, but that the issue deserves further investigation.

Xcel Energy reported that its survey crews use GPS units. The crews routinely work along and under high voltage transmission lines, including 345 kV lines, and have not encountered interference" (State of Minnesota 2005).

Expert testimony by J. Michael Silva for Montana Alberta Tie Ltd. strongly supports the view that a proposed 345 kV transmission line will have no effect on GPS electronic devices associated with precision agriculture applications (Missouri PCS 2014). There has been a concern that close proximity to power lines may interfere with farm equipment's ability to accurately receive the satellite signals needed to guide the field position of variable-application farm equipment.

A minimum signal-to-noise ratio must be present for the GPS to operate, and "the noise must be in the same frequency band as the GPS receiver to cause interference. As a practical matter, power lines produce little to no noise in these microwave bands". For the same reason, differential correction signals determined from ground-reference stations are also unlikely to be affected by transmission lines (Silva 2007).

One other possible mode of transmission line interference considered by Silva is whether the overhead wires, or conductors of the line, could partially block satellite signals through scattering. According to Silva, "Theoretical analysis showed that this was not possible due to the small "electrical size" of power line conductors relative to a GPS signal wavelength and the large height ground of the electric wires"(Silva, 2007). Silva performed multiple experiments under varied weather conditions to document the effect on GPS signal strength while driving under several large high voltage transmission lines without finding any effect. Silva also points out that cellular phones are spectrum microwave devices similar to GPS, yet "transmission towers are commonly used for cell phone base stations." In fact, he notes:

Any damages resulting from transmission line interference with GPS-based or other farm equipment is compensable under Wis. Stats., s. 182.017 (7) (b).

Aerial Spraying

The location of transmission line poles in cropland can restrict aerial application of pesticides and increase the danger of making applications. In determining just compensation for an interest under Wis. Stats. § 32.09, damages shall include losses associated with inability to adequately aerial seed or spray. When agricultural pilots have to maneuver to avoid transmission lines, uneven or imprecise aerial spraying may result in: 1) cropped areas being missed resulting in weed growth and or pest infestations that reduce yields; 2) increased cost from hand application of pesticides in "missed areas"; 3) increased risk of liability from pesticide drift on neighboring properties.

Potential Reduction in Property Values

Numerous studies have shown there is often a small, but real, discount in residential property values due to the presence of transmission lines on a property. This discount appears in many peer reviewed studies comparing the market value of similar properties with and without transmission lines crossing them. There are also a number of peer reviewed studies that show no significant difference in sale price between properties with and without transmission poles on them. A review summarized by the PSC found that the presence of a power line can reduce home values up to 14 percent, but that effects tend to decrease over time (PSC 2000). Similar findings were seen in the Mountain States Transmission Initiative Review Project (MSTI 2012). Negative proximity effects on residential properties are not limited to properties actually crossed by a line (Colwell 1990).

Studies have attempted to link electromagnetic radiation to health risks. Data from these studies have produced differing levels of evidence supporting or failing to support the validity of this linkage. The possibility of a connection between electromagnetic fields and health risks could affect the real estate market, irrespective of whether this connection is scientifically established. Since it is nearly impossible to prove a negative - for example that something does not cause cancer - it is likely that the electromagnetic field (EMF) controversy will not soon be resolved.

A transmission line may also create a negative visual impact. This depends on the landowner's perception of the pole placement across their property, which would include each individual landowner's perception of what is visually acceptable or unacceptable.

One area of concern with transmission line projects has been the way that the market value of the property for resale could be affected, involving the right of the landowner to dispose of the property. Damages related to increased risk of economic loss associated with impairments to a property that exist or may occur are sometimes known as "stigma" damages (Mitchell 2000). In many cases, landowners have sought to demonstrate that the fear of adverse health effects from exposure to transmission line EMF on their land contributes to reduced re-sale value for their parcel.

Electromagnetic Fields

EMFs are produced by everything that carries or is operated by electricity. EMFs exist in the air around all electrical equipment and devices from toasters to power lines. An electric field is produced by voltage, the electrical force that causes current to flow in a conductor. Electric fields are reduced in strength (shielded) by trees and buildings. These fields are measured in units of kilovolts per meter (kV/m) or volts per meter (V/m) for weaker fields. Current, the movement of electric charge in the conductor, produces a magnetic field. Magnetic fields pass through most objects, including buildings. They are usually measured in units of milligauss (mG). Alternating electric fields and magnetic fields both cause induced currents. Additional information about

EMFs and their potential impacts on humans can be found in the PSCW's Draft and Final EIS for this project.

The current consensus from most studies conducted to assess transmission line effects in farm situations is that the EMFs generated by the transmission lines running through farms have no significant effects on crops (Osborn, et al. 1982; King 1983) or on livestock (Algers and Hennichs 1985; Algers and Hultgren 1987; Amstutz and Miller 1980; Angell, et al. 1990; Ganskopp, et al. 1989; Mercer 1985; Ontario Hydro 1980).

Stray Voltage

Stray voltage is defined by the PSCW as a natural phenomenon that can be found at low levels between two contact points in an animal confinement area where electricity is used. Electrical systems, including farm wiring systems and utility distribution systems, must be grounded to the earth according to the electrical safety code to ensure continuous safety and reliability.

Stray voltage often goes unnoticed by humans, but can affect cows on dairy farms. Small stray voltage shocks are created when a cow makes contact between an energized point, such as a feeder, and the earth or concrete floor at a different voltage. Dairy cows can show changes in behavior or milk production if a level of stray voltage above a few volts is present, but these behavioral changes alone are not good indicators of the electrical situation. DATCP and the PSCW Rural Electrical Power Service (REPS) program suggest that all farms routinely (every year or two) have their electrical systems tested for stray voltage and other electrical safety concerns.

According to the PSCW docket 05-EI-106, the case that defines stray voltage, the response level for stray voltage is 1.0 volt at cow contact from all sources. This level of stray voltage is considered to be below the level at which most cows would react. If an investigation determines that the utility is contributing 0.5 volts or more to the cow contact voltage, the utility will take immediate action to lower its contribution. Free investigative services are available to landowners who have livestock containment facilities through their electric service provider. Farmers with confined livestock facilities in the vicinity of the proposed power line can request their electricity provider to test for stray voltage before the project is constructed and then repeat the test after construction is completed. This will create the documentation to begin to address any problems that may exist or have been created by the project.

Distribution lines carry lower voltages (12.5 kV or less) than transmission lines and they distribute power to neighborhoods and individual homes and businesses. Although it is not common, there is a possibility that a transmission line paralleling a distribution line may induce a measurable steady voltage or neutral to earth voltage (NEV) on the distribution neutral. Induction and its

potential impacts can be mitigated through implementation of appropriate design measures and techniques, such as:

- Cancellation – The arrangement of transmission line conductors and shield wires to lower electric and magnetic field levels;
- Separation – Increasing the distance between the transmission line and other conductors or conductive objects. Electric and magnetic field levels decrease rapidly with distance; and,
- Grounding of non-energized conductors or conductive objects.

ATC will design and construct the proposed facilities to minimize the potential for induction issues.

ATC has indicated that it does not underbuild distribution lines on 345 kV transmission line structures. They do use underbuilds in some instances for lower voltage transmission lines. Some existing distribution lines will be buried in order to minimize interference between the proposed transmission line and those distribution lines.

Table 17 lists the number of agricultural buildings and dairy operations located within 300 ft of the ROW for each route Route Section

Table 17. Number of Agricultural Buildings and Dairy Operations Located Within 300 Feet of a Route Section

Route Section	Agricultural Buildings within 300 Feet of the	Dairy Operations within 300 Feet
S1	10	0
S2	6	0
S3	0	0
C3	17	1
C4	39	1
N4	23	2
N6	12	0
N7	1	0
N8	18	1
N13	6	2
N14	0	0
N15	0	0
N16	0	0
N17	0	0
N18	17	1

ATC has not identified any farm buildings that will need to be removed or relocated because of the proposed project.

Once a route is chosen and before construction begins, NEV testing is offered to all identified dairy farms that are within ½ mile and fed from collocated distribution. Collocated distribution is defined as distribution that is less than 150' from the proposed transmission line and parallel for more than 1,000 feet. This testing will measure the amount of cow contact voltage that exists on the farm before construction of the transmission line. Once the project is constructed, the NEV testing will be performed again to verify that any NEV levels present on the farm are still below allowable limits set by the PSCW. Farms with confined animals in the project area that were not initially identified or that were not offered testing can request that their facilities be tested.

Safety Issues when Farming Near Transmission Lines

Many safety issues exist related to the location of farm fields, buildings and the use of farm equipment near and under power lines. Safety concerns that landowners should be particularly aware of are described in detail below.

Direct Contact and Arcing

The most significant risk of injury from a transmission line is the danger of electrical contact. Unlike the wiring in a home, the conductors of overhead transmission lines are not enclosed by an insulating material. Electrical contact between an object on the ground and an energized conductor can occur even if the two do not actually touch. In the case of high voltage lines, electricity will arc across an air gap if the object on the ground comes close enough to a conductor. The distance between an object and a transmission line needed for arcing varies with the voltage at which the line is operated. In general, the arcing distance for a 345 kV line is two to three feet and for a 115 kV line it is one to one and one half feet. However, it is recommended that objects on the ground not be raised more than 14 feet above the ground in the vicinity of any power line. In some instances, it can be exceeded without any problems. **Farmers should contact ATC if they need to deviate from this recommendation to be sure that their situation is safe for anticipated farming activities.**

Farmers must be careful where transmission lines sag due to high air temperatures. In areas where the soil shifts significantly with wind, the resulting dunes can elevate the earth under a line. **If the safety limit needs to be exceeded or equipment close to the height limit is routinely used under a line, - such as bale wagons, bale elevators, grain augers, cranes, large combines, or antennas on equipment- farmers should check with ATC to confirm the necessary clearance requirements.** This may include confirming that the earth-to-line distances have not changed since the line was constructed.

Injuries are more likely to occur with lower voltage power lines (12.5 kV to 115 kV) than with higher voltage lines because contact with the lower voltage lines is more likely. The electrical conductors for lower voltage lines are closer to the ground, smaller, and less noticeable. An injury from contact with a 12.5 kV line can be just as serious as that from a 500 kV line. Some general safety tips for farmers working near any power line include the following:

- Always lower portable augers or elevators to their lowest possible level (under 14 feet) before moving or transporting and be aware of your surroundings when raising them.
- When moving large equipment or high loads near a power line, always use a spotter, someone to help make certain that contact is not made with a power line.
- Be aware of increased height when loading and transporting larger modern tractors with higher antennas.
- Never attempt to raise or move a power line to help clear a path.
- Never raise ladders, poles, pipes, or rods near power lines. Remember that nonmetallic material such as lumber, tree limbs, and hay can conduct electricity depending on moisture and dirt contamination.

Transmission circuits are built to automatically de-energize upon contact with the ground or if phase conductors are severed. Therefore, the danger of electric shock from a downed transmission line is minimal.

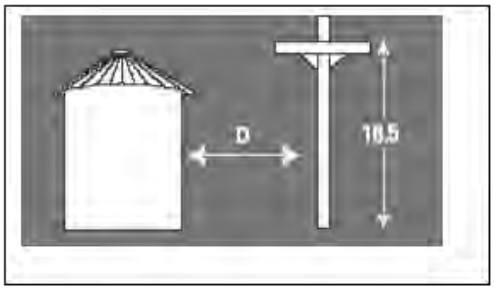
Farm Electrical Safety Resources
The following websites provide additional information about electrical safety on farms.

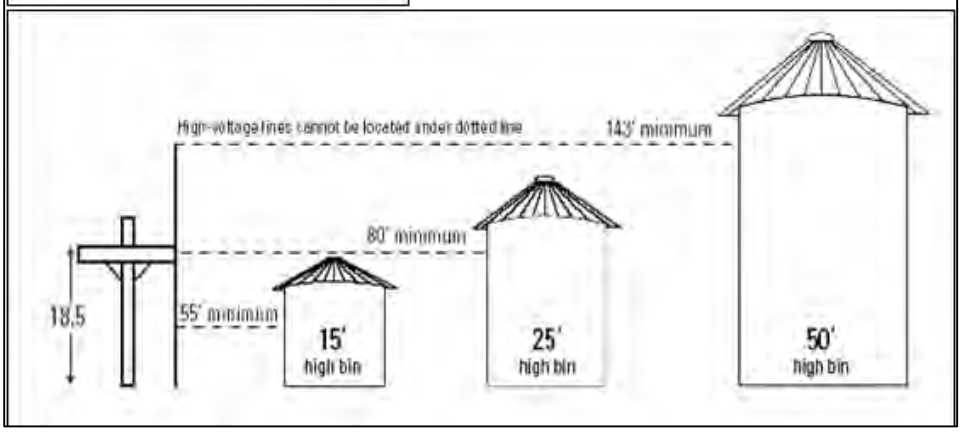
- Wisconsin Public Service Corporation's Brochures and Fact Sheets webpage http://www.wisconsinpublicservice.com/business/farm_brochures.aspx
- Safe Electricity, an Illinois project http://www.safeelectricity.org/
- Living and Working Safely around High-Voltage Power Lines, a publication of Bonneville Power Administration http://www.bpa.gov/news/pubs/GeneralPublications/lusi-Living-and-working-safely-around-high-voltage-power-lines.pdf

Power Line Proximity to Grain Bins
The National Electric Safety Code requires power lines be at least 19 ft above the highest point on any grain bin with portable augers and other portable filling equipment. Figure 11 illustrates the recommended distances that grain bins should be from transmission lines. A 19 ft clearance should be maintained from the grain bin's highest fill port and the transmission line.

Figure 11. Minimum Distances between Grain Bins and Transmission Lines

Height of Grain Storage Structure	D= Minimum distance from line* to bin wall
15 feet	55 feet
20 feet	68 feet
25 feet	80 feet
30 feet	93 feet
35 feet	104 feet
40 feet	118 feet
50 feet	143 feet
60 feet	168 feet
70 feet	193 feet
80 feet	218 feet





Irrigation Systems Proximity to Power Lines

According to the Bonneville Power Administration (BPA) located in the northwestern United States, irrigation systems can be operated safely on a power line ROW. However, irrigators should avoid spraying a solid stream of water on a conductor. Caution should also be used in storing and handling irrigation piping. It should be moved in a horizontal position relative to the ground when passing under or near all power lines to keep it away from conductors overhead. BPA also says that center-pivot systems near transmission lines can develop hazardous shock potentials during operation and maintenance. Farmers should ground the pivot point to avoid these hazards. Also, they should not touch the sprinkler pipe or its supporting structures when the system is operating near a transmission line and should only repair the system when the sprinkler pipe is perpendicular to the transmission line.

Refueling Near Power Lines
Although there has been no report of the accidental ignition of fuel caused by spark discharges induced from transmission line fields, it is recommended that vehicles be refueled at least fifty feet from the centerline of a transmission line corridor that is 345 kV or greater.

Static Discharge
Under certain conditions, a perceptible electrostatic voltage can be induced on such objects as large vehicles, permanent and temporary fences, metal buildings, shade cloth support structures used in ginseng gardens, or irrigation systems. This can happen when the object is near a high-voltage transmission line and is insulated from the ground. When a person or animal touches the object, a shock will be felt similar to what you may receive when you cross a carpet and then touch a doorknob. The static discharge is momentary, but can be painful. The magnitude of the static discharge depends on the voltage of the transmission line, distance from the conductors, size or length of the object, its orientation to the line, and the extent of grounding of the object to the earth.

The owners of Mlsna East Town Dairy, which would be affected by Route Alternative O, are constructing a robotic milking parlor. They are concerned that the proposed transmission line could cause a build-up of static charges on this system because it will be housed in a steel building.

This condition can be corrected by effectively grounding the object to the earth. Sometimes this is simply done by dragging a chain behind a tractor. Irrigation systems, metal buildings, and long wire fences may require additional assistance from ATC to remove the nuisance static discharges if they are close to the ROW.

Induced Internal Currents
An internal electric voltage and current, also referred to as an EMF, are induced in any conducting object such as a plant or an animal that is in an AC electric or magnetic field. Induced internal current is one of the primary mechanisms by which EMF from power lines is thought to cause a biological response. Unlike a static discharge or stray voltage, the level of the induced internal current density does not usually reach a sufficient level to cause a perceivable shock.

Some of the many factors that influence the induced current densities are the strength of the electric field, the shape of the body in the field, the cross-sectional areas at any point between the line and the earth, the extent of grounding of the object to earth, and the nature of the internal structures of the object.

Corrosion on buried pipelines running parallel to a transmission line can occur if those pipelines are not properly grounded. This occurs where pipelines and transmission lines share a portion of their ROW. Transmission lines can induce voltages on a nearby pipeline, which could lead to corrosion of the pipeline. This problem has been made worse by improvements in coatings that

reduce the number of imperfections on the surface of a pipeline, which reduces the number of grounding opportunities. The problems of induced voltages and pipeline corrosion can be reduced by properly grounding the pipeline and providing adequate distance between the power line conductors and the pipeline.

Biosecurity

ATC will actively work toward avoiding contact with livestock and manure during the construction process to reduce the risk of biosecurity issues occurring. If avoidance is not possible, ATC will work with the farmers to develop protocols specific to a landowner's farm operation. These protocols could include cleaning the equipment between parcels.

If the PSCW approves the project, ATC has indicated that they will work with the agricultural producers along the approved route to follow any farm biosecurity plans currently in place on the affected farms. ATC will work to ensure that currently utilized farm disease mitigation standards will be adhered to during construction of the project. If an agricultural landowner has no biosecurity plan in place, ATC will work with that landowner, at the landowner's request, to develop farm disease mitigation practices relevant to his/her agricultural operation.

Impacts on Woodlands and Windbreaks

Affected forest landowners will maintain ownership of any trees that need to be cut as a result of the proposed project. The manner in which these trees are handled should be negotiated between ATC and the affected landowner before construction begins. Typically, any timber or saw logs are stacked on the edge of the ROW in upland locations for the landowner's disposition. Smaller diameter trees and limbs, often referred to as slash, are usually chipped and disposed of according to the landowner's wishes: spread on the ROW, piled on the edge of the ROW for the landowner's use, or disposed of according to other agreed-upon arrangements. Slash may also be disposed of by burning, but local permits may be required for this.

All of the proposed Route Alternatives, with the exception of K and L, have windbreaks that could be affected by the proposed project. Windbreaks are linear plantations of trees that help to maintain soil quality by providing a barrier on the windward side of a field which reduces erosion from the wind. If trees that are part of a windbreak are removed as a result of the proposed project, the adjacent soils could be more susceptible to erosion. Depending on soil conditions and supporting practices, a single row of trees protects for a distance downwind of approximately 10 to 12 times the height of the windbreak. Therefore, taller trees in a windbreak will protect a larger area of cropland than shorter trees. If a tree line separates an organic farm parcel from a farm operation not under organic management, removing the tree line may increase the possibility of herbicide drift.

Trees that provide shade in pastures can be a valuable asset to livestock farmers. Livestock can begin to benefit from shade when the temperature rises above 75 degrees Fahrenheit. The negative effects of heat on livestock such as lower feed intake can be reduced where they have access to shade. Lower feed intake can lead to lower milk production in dairy animals and lower weight gain in meat animals, which would lead to lower revenue for the farmer. It could take many years for newly planted trees to grow large enough to replace mature trees that are lost as a result of transmission line construction.

Trees also add to the aesthetic value of property, which can increase the overall market value of the property. When compensating landowners for any trees removed as a result of the proposed project, an appraiser who has experience and expertise in valuing trees should be consulted to ensure that landowners receive fair compensation that includes all of the value those trees provide for the owner.

A hazard to livestock that can occur during ROW clearing or maintenance is the disturbance of black walnut trees. The roots of these trees produce a toxin known as juglone that causes an allergic reaction in horses and may also affect other livestock. Care should be taken when clearing any black walnut trees to make sure that all roots, wood, bark, leaves, hulls, and sawdust are removed from any area to which livestock may have access. Even the ash from trees that have been burned may still contain the toxin. Relatively small amounts of juglone are also found in Persian (English or Carpathian) walnut trees as well as butternut, pecan, and hickory trees.

Irrigation

Center pivot irrigation systems exist in several locations along the potential routes for the Project. For center pivot systems located along portions of the routes that are shared ROW (e.g., along roads, transmission lines, and railroads), interference with the irrigation system could be minimal if the new transmission line does not place support structures in the path of the irrigation equipment. Center pivot systems could be significantly affected by placement of the proposed transmission line structures if the new line bisects the field rather than following a field edge.

The following farm operators indicated that they have center-pivot irrigation systems that could be affected by the project. There may be additional systems that could be affected.

- The Wilkey Farm LLC on Route Sections C3 and N4 has a pivot irrigation system
- David Wilkey on Route Section N18 has pivot irrigation
- The Jacobs Brothers Farm LLC on Route Sections N18 and N14 has pivot irrigation and underground piping

Organic Farms

Organic certification allows farmers to receive a premium for their products in the marketplace. There are a number of organizations that farmers can work with to obtain certification. Specific parcels can be certified after three years of following the practices that have been established by the farmer's certifier. Construction of a transmission line can jeopardize this certification if prohibited chemicals are used on or drift onto certified land. For example, the use of a prohibited herbicide to clear ROW that crosses an organic field could remove all or part of that field from certification, but also leaking hydraulic fluid from construction equipment that crosses a certified organic field could endanger certification for that land. Care must be taken by ATC and their contractors where construction crosses certified organic farmland. ATC will need to identify and work with individual organic producers and their certifiers to establish procedures that will not impair organic certification.

The survey of farmland owners affected by the Project identified all of the following operations that have, or are in the process of, obtaining organic certification:

Route Section S2

- The Elmer Eggert Testamentary Trust rents 70 acres to Rick and Diane Fischer who are certified organic farmers and who also own land on Rout Section S2.

Route Section N4

- Gary and Cathy Niespodzany are in the process of obtaining organic certification

Aesthetics

Aesthetics are often assumed to be a factor in reducing the value of properties encumbered by a transmission line ROW. Case law has upheld in many cases the admissibility of potential negative aesthetic effects of transmission lines on the value of farm property, but only where the line is actually located on the property in question (for examples, see 97 American Law Reporter 3d, "Unsightliness of Powerline or Other Wire, Or Related Structure, As Element of Damages in Easement Condemnation Proceeding"). In other cases, courts have held that '"unsightliness" was inadmissible without a showing of direct physical disturbance to the subject property resulting in damage "in excess of that sustained by the general public".

In general, courts require that to be compensable, damages suffered by a subject property must be different in kind, not merely in degree, from those suffered by the general public or other properties in the neighborhood of the line. This distinction is commonly known and referred to as that between "special" and "general" damages.

The issue of how and the extent to which subjective aesthetic concerns may affect the value of property, including farmland, may vary greatly from case to case. However, in general, there has been an evolution toward increasing public concern or opposition to transmission lines related to

their appearance. This concern is often focused on lines that go through wealthy or high-amenity urban parks or rural landscapes. It is considerably less common to see it applied to the flat, generic farmland typical in some parts of the country. However, in other parts of the country, like New England or certain parts of Wisconsin, farmland itself has significant scenic power and contributes to agricultural tourism and tourism generally. The variation in attractiveness of viewsheds along a linear corridor can be mapped, and such techniques have been increasingly accepted in court decisions on appraised value of wilderness or rural properties (Devitt 1988).

Despite utility concerns with the aesthetic impact of power lines and structures for the last 40 years, one industry survey concluded that there has been little reliable research on the subject. A 1990 report found that "the paucity and inconclusiveness of the research can be interpreted as an indication that transmission line aesthetic evaluation is an area of professional practice that is in too early a stage of development to have generated either pressures for validation or a framework for evaluation" (Evans 1990). The report also states, "The effect of aesthetic design on public perception of electrical transmission structures remains an elusive topic. …Despite more than 40 years of research, findings relating these two subjects are far from being established as definitive" (Tikalsky and Willyard, 2007).

Time Loss during Negotiations

It is important that the farm owner understands how his/her farmland may be impacted both during and after construction. In some cases, farmland owners choose to consult with an attorney prior to signing an easement. The time spent negotiating easements can be time-consuming and represents a cost to the farmland owner. It is time that cannot be spent on managing the farm operation. This is particularly significant if these negotiations occur during planting or harvesting times.

Temporary Construction Impacts

Some impacts to agriculture can be "temporary" if effective construction protocols are implemented when constructing through farmland. The construction and maintenance of high-voltage transmission lines across or adjacent to cropland and pastures can affect the farming practices and operations in several ways.

Farmers have invested in their cropland to improve or maintain yields. Some of the invested costs are an annual expense, such as fertilizer and lime. Others involve a long-term investment in agricultural drainage systems, erosion control, and irrigation. An assessment of the possible impacts and damages to cropland begins with knowledge of the soil and its characteristics.

Soil Compaction

Equipment used to construct transmission lines has the potential to compact soil and thereby reduce soil productivity on the farmland traversed during construction. Soil compaction reduces pore space between soil particles, restricting the movement of water and gases through the soil. This can affect the rooting depth of crops and the uptake of soil nutrients and water. In addition, soil compaction can decrease soil temperature, decomposition of organic matter, and a plant's ability to access required nutrients found lower in the rooting zone. It can also increase the likelihood of water erosion on farm fields.

Studies by several universities have shown that yield reduction due to compaction can range from 10 to 40 percent. Compaction is most evident when the crop is under additional stress. For example, this could include drought conditions or excessively wet conditions.

Several factors influence whether a 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. The expected compaction depth increases as the axle load increases and as soil moisture content increases.

Compaction of the soil in the root zone of agricultural crops results in reduced yields. The depth at which the compaction occurs is very important. The combination of soil structure and the soil's internal drainage are major factors in determining whether compaction will occur and at what depth. The soil structure most resistant to compaction is granular or single grained. Subangular blocky structure resists compaction forces reasonably well at a soil moisture content of roughly 50 percent field moisture capacity. Field moisture capacity is defined as the water content of soil after the excess water has drained away. It is the maximum amount of water stored in the soil for crop production. The soil structure least able to resist compaction forces is platy structure. A platy structure has the soil particles arranged around a plane, generally horizontal, and appears laminated.

Topsoil compaction and subsoil compaction can be viewed separately. When traffic loads are relatively lightweight, less than 10 tons per axle, the soil generally will not be compacted below the 8-10 inch range, the depth at which the topsoil layer is commonly found. Compaction at this depth normally can be decompacted with typical farm tillage equipment.

Some of the heavier construction equipment that will likely be used on the project can compact soil to depths of 20 inches or more, resulting in subsoil compaction that is very difficult to alleviate, especially with regular tillage equipment.

Subsoil compaction is related to weight-per-axle. Total axle load affects the depth of compaction, generally the subsoil layer, while contact pressure (psi) more commonly affects the topsoil layer.

Subsoil compaction affects nutrient uptake, available water capacity, and can delay spring planting under wet conditions, consequently reducing crop yield. Indicators of soil compaction include abnormal root growth, excessive erosion, soil crusting, standing water, and uneven emergence of crops.

Soil Drainage and Texture Definitions

The soil drainage classes used in the description of the soils reflect the combined effects of surface runoff, soil permeability, and internal soil drainage. The classes are:

- Excessively well drained – Water is removed from the soil very rapidly.
- Well drained – Water removed readily, but not rapidly.
- Moderately well drained – Water removed from the soil somewhat slowly so that the profile is wet for a small, but significant part of the time.
- Somewhat poorly drained – Water is removed from the soil slowly enough to keep it wet for significant periods. The soil has a slowly permeable layer in the profile, a high water table, seepage from up-hill, or a combination of the above.
- Poorly drained – Water is removed so slowly that the soil remains wet for a large part of the time. The water table is commonly at or near the surface during a large part of the year. The soil has a high water table, slowly permeable layers within the profile, up-hill seepage, or a combination of the above.
- Very poorly drained – Water is removed from the soil so slowly that the water table remains at or near the surface the greater part of the time. Soils of this drainage class usually occupy level or depressed sites, and are frequently ponded.

The water table is the upper limit of the waterlogged soil. Growing plants will remove soil water by transpiration. During the growing season this will lower the water table and reduce downhill seepage.

An apparent water table results from an impermeable or essentially impermeable layer, below the soil profile. A perched water table occurs because a slowly permeable soil layer within the soil profile causes part of the profile to be waterlogged.

The field description of soil structure established by the soil mapper/classifier provides (1) the grade (distinctness) of structure, which is the degree of aggregation, (2) the class or size of the aggregate or ped, and (3) the type of structure.

The grade or distinctness of the structure is expressed as (1) weak being equal to poorly formed or indistinct peds (aggregates), (2) moderate being equal to well-formed or distinct peds, and (3) strong equaling durable peds.

The class or size of aggregate or ped is expressed as (1) very fine or very thin, (2) fine or thin, (3) medium, (4) coarse or thick, and (5) very coarse or very thick. The reference to thin applies to platy or laminated structural shape.

The types of soil structure shape are (1) platy (laminated) where the soil particles are arranged around a plane, generally horizontal, (2) prism like (prismatic or columnar) where the soil particles are arranged around a vertical axis, (3) block like or polyhedral (angular or subangular) where the soil particles are arranged around a point and bounded by flat or rounded surfaces, and (4) spheroidal or polyhedral represented by granular or crumb. Structure-less soils are either "single grain" or massive. A massive structure is a condition where the soil particles adhere without any regular cleavage, as in a hardpan.

"Soil consistence when moist" is the consistence when the soil moisture is midway between air dry and field moisture capacity. "Friable" describes a condition where the soil material crushes easily under gentle to moderate pressure between the thumb and fore-finger. "Firm" represents the condition when the soil material crushes under moderate pressure between the thumb and fore-finger, but resistance is distinctly noticeable. Color is the easiest condition to observe. The color of the soil material is provided to help us recognize when the surface layer becomes the subsoil, and subsoil becomes substratum.

Soil Erosion

Many of the soils in the project area are subject to wind and water erosion due to their steep slopes and texture. Steeper slopes and longer slope length are subject to greater soil loss from erosion by water. Soil erosion by water also increases as the slope length increases due to the greater accumulation of runoff. Soils with higher levels of organic matter and improved soil structure have a greater resistance to erosion. Sand, sandy loam, and loam textured soils tend to be less erodible than silt, very fine sand, and certain clay textured soils. Refer to the Appendix III for soils by county that could be affected by the project. The slopes of the soils are included in the table.

Soil erosion can affect crop yield through the loss of natural nutrients and applied fertilizers. Seeds and plants can be disturbed or completely removed from the eroded site. Organic matter, manure, and crop residue can be transported off the field through erosion. Pesticides can also be carried off the site with the eroded soil.

Erosion control practices must be carefully followed to minimize construction-related erosion impacts. If the Project is approved, an Erosion Control Plan (ECP) will be developed to meet the requirements outlined in NR 216 and NR 151. The plan will provide guidance on revegetation and site stabilization. Disturbed areas will be monitored weekly and after rain events as required by NR216.

An erosion problem occurs if ruts or wheel tracks run up or down the slopes. This is why farmers are careful not to leave a dead-furrow (a furrow that remains open in the center of a field) when

moldboard plowing in the fall. The spring snowmelt will erode the soil severely with channelized flow if a dead-furrow is present.

Rutting in the soil from construction equipment in the transmission corridor will create a similar erosion problem. Silty soils in the Project area are very susceptible to flowing water when rutted. Rutting also mixes topsoil with the subsoil. The amount of damage to soils from rutting depends on the depth of the ruts. To reduce the likeliness of rutting, ATC should stay off the soil when it is wet, stop construction activities on farmland when rutting is greater than 6 inches deep, or use some form of matting to prevent rutting by the equipment.

Wind erosion can also be a concern in some areas of the proposed project, especially where windbreaks must be removed from the ROW. Factors that affect wind erosion include degree of ped formation, surface roughness, wind speed, soil moisture, and vegetative cover. According to the Indiana Soils Evaluation and Conservation Online Manual, soil clods prevent wind erosion because they are large enough to resist the forces of the wind and because they shelter other erodible materials. Their firmness and stability vary with soil type and depend on other factors such as moisture, compaction, organic matter, and clay content. Sandy loams, loamy sands, and sands are most susceptible to wind erosion. Loams, silt loams, clay loams, and silty clay loams are the least susceptible to wind erosion. Ridges and depressions formed by tillage alter wind speed by absorbing and deflecting part of the wind energy. Such ridges are most effective in reducing soil erosion when they are perpendicular to the wind direction. Rough surfaces also trap moving particles. Higher wind speeds also increase erosion. Erosion decreases as soil moisture increases. Field size affects the distance wind blows without encountering a barrier. The rate of soil loss increases rapidly with distance downwind from the point in the field where the wind erosion process begins. Vegetative cover is the best way to control wind erosion.

Drainage

Proper field drainage is vital to a successful farm operation. Construction of a transmission line can disrupt improvements such as drainage tiles, grassed waterways, and drainage ditches, which regulate the drainage of farm fields. If drainage is impaired, water can settle in fields and cause substantial damage, such as harming or killing crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock.

During pre-construction planning, ATC's staff should ask landowners about the extent of their existing and/or planned drainage tiles and systems and document existing drainage problems that could affect the construction easement area. During construction, matting may be used to more evenly distribute the weight of heavy equipment and/or use low ground impact construction equipment. Post-construction, ATC will work with the landowners to repair any damaged drain tiles to pre-construction conditions.

Many of the soils in the project area would benefit from tiling or other drainage devices if they are used for cropland.

Fencing

ATC should fence off the construction area to prevent livestock from wandering onto the ROW. If transmission line construction divides a pasture, access between the divided parcels could be restricted. ATC will need to work with the farmer to develop an access plan for the livestock or else compensate the farmer for the cost related to restrictions on grazing. If ATC needs to cut any fences during construction, ATC will see that a temporary gate is installed (Wis. Stats. §182.017 (7)(c)5.). Such gates may be left in place at the request of the landowner.

Before construction begins, one of the issues that ATC should ask landowners about is whether there are animals on their farm operations, and the type of operation, i.e. feedlot, managed grazing, etc. Farm operator schedules for manure application and storage in proximity to the ROW should be ascertained.

Crop Rotations

A common dairy rotation may include 2-3 years of field corn, followed by soybeans, and then 3 years of alfalfa. Construction activities across fields may cause farmers to alter their crop rotations. Farmers can make adjustments in their crop rotation, if they know the construction schedule on their land in advance. They may wish to plant a row crop during the year of construction and the year following construction to have an additional opportunity for tillage to remove any residual effects of compaction caused by construction equipment.

Given the high cost of seeding alfalfa, a farmer may plant an extra year of row crop and delay planting the field to alfalfa if construction will occur in the seeding year. Delaying alfalfa seeding may cause dairy operations a shortage of alfalfa forage, which results in: 1) a need to buy haylage or hay or; 2) a need for more corn silage; and 3) an adjustment in the programmed diet for the herd. There may be increased feed costs for buying forage or protein supplements, such as soybean oil meal.

The farmer choosing to keep a field in alfalfa, rather than move to the first year of field corn, may result in decreased alfalfa plant density in the field and/or an increase in the percentage of grass. Without advanced knowledge of the construction schedule, the farmer may not fertilize (top-dress) the forage with potassium (K2O) in the fall. The result is lower yield and poorer quality forage (alfalfa) than the previous year.

Farm Roads Needed to Access the Construction Corridor

ATC is proposing to directly access the ROW from public roads, utility ROW, and private roads and field roads (where access is granted). ATC has developed a preliminary access plan identifying access for each of the proposed routes. It has indicated that upon approval of a route, the

preliminary access plan may be amended based on field review of the routes, negotiations with local landowners and/or contractor requirements.

The access plan identifies where the ROW will be accessed by the contractor. However, the contractor may choose to ignore this plan and find alternate access if it is less damaging to the environment or less costly and the affected landowner agrees. The contractor reports to ATC where a deviation from ATC's access plan was made. ATC is responsible to the affected landowner for damage done outside of the access plan.

Access roads should be designed to allow proper drainage and minimize soil erosion. If desired by the landowner, temporary roads will be left in place after construction is completed. If access roads are removed, soil restoration practices should be applied to the road to mitigate compaction. Access roads are subject to the same impacts that can occur on the rest of the Project ROW. These include soil compaction, soil mixing, the potential spread of unwanted plants and diseases, erosion, and the temporary loss of crops and other vegetation.

Impacts Associated with Surveying and Staking the ROW

If surveying or construction crews leave wire surveying flags, equipment, or other debris behind after their work is completed, these items can pose a hazard to livestock. When livestock ingest such material, they can develop what is known as "hardware disease". Ingested wires or other objects can damage the animal's viscera and may lead to death.

Noise and Dust during Construction

Dust and noise due to transmission line construction can affect landowners and farm animals. If blasting is necessary to place the poles, the noise may cause dairy and beef cattle to stampede, breaking down fences and escaping the farm property. Fur animals and poultry are particularly sensitive to noise.

Dewatering of the Caisson Hole

The caisson hole will fill with water when the hole is augured in somewhat poorly to poorly drained soils with either a perched or apparent water table. A 6-foot diameter hole, 10 feet deep will contain 283 cubic feet or 2,117 gallons of water. A 30-foot deep hole will contain 848 cubic feet or 6,342 gallons of water.

The usual procedure is to pump the water from the hole to a safe disposal area or to a tank truck for removal. ATC has indicated that dewatering will be done in accordance with applicable regulations and permits.

Proper dewatering of the caisson hole requires pre-construction identification by ATC's contractors of low areas and hydric soils that are likely to collect water during construction, as well

as suitable areas for the discharge of water accumulated within the caisson hole or other excavated areas. ATC's contractors should structure work to minimize accumulation of water within the excavated area and get the landowner's approval for all discharge locations and techniques used. Discharge locations must be well-vegetated areas that prevent the water from returning to the ROW, be as far from backfilling activities as possible, and avoid deposition of gravel or sediment onto fields, pastures, or watercourses.

If delivery of water onto cropland is unavoidable, crops inundated for more than 24 hours will cause severe damage to the crop. Discharge of water from non-organic farms is not allowed if that runoff would flow onto adjacent organic farm operations.

Silt or sediment extraction from the excavation site is minimized by preventing the intake from touching the bottom or sides of the hole. Erosion control measures must be used to divert the flow of pumped water and prevent erosion. Dewatering should be monitored and stopped whenever necessary. When construction in hydric soils and dewatering activities cause damage that cannot be avoided, ATC should reasonably compensate the landowner for such damages and restore the land and crops to pre-construction conditions.

Delayed Compensation and Cash Flow Impact

If negotiations are prolonged and a settlement is not forthcoming, the farmer may not receive timely compensation for crops that are not planted or harvested due to construction activities through his/her farmland. In some cases, this could result in cash flow problems to the farm operation.

Manure and Nutrient Management

Permanent or temporary loss of farmland can cause impacts to a farmer's ability to effectively, efficiently and economically utilize the manure nutrients generated on a livestock farm. Loss of farmland may result in a reduction in the acres available to spread the farm's manure. Landowners should recognize this potential impact and include this effect when negotiating easement contracts.

ROW Easements

If approved, the proposed transmission line will require new easement purchases by ATC. The easement is a contract between ATC and the individual landowner, specifying restrictions on both the utilities' and the landowner's use of the land and specifies the rights of the utilities. The contract is binding upon the utilities, the landowner, and any future owners of the land until the contract is dissolved. It will identify the specific kinds of structures that will be placed on a given landowner's property, and the number and location of each of them. In general, buildings and large trees cannot be located on an easement. Permanent easements restrict certain activities on the corridor or ROW

and allow the utilities access for construction and maintenance of the line. Maintenance will include clearing vegetation, typically of trees that could interfere with the operation of the line. An example of an easement is included in Appendix V.

ATC will acquire new easements for the entire ROW including locations where the Project ROW overlaps existing transmission line ROW easements. In addition, ATC is evaluating whether to retain or release any existing transmission line easements that overlap the Project ROW and are already owned by ATC depending on the language in the easement. If any existing easements are retained, they will not be modified. An existing easement could follow a road, railroad, pipeline, existing transmission line, or other existing corridor. Following existing infrastructure would allow ATC to incorporate portions of existing ROW into the proposed ROW for the new transmission line, which would minimize the amount of new easement acreage that would need to be acquired for the Project.

Both the landowner and the easement owner (ATC) have property rights in the ROW. These rights should be clarified in the easement contract. Importantly, an easement acquired for transmission line ROW does not allow public use of the ROW. *Wisconsin Statutes* §182.017, also referred to as the "Landowners' Bill of Rights" (see Appendix IV), describes the rights landowners have and requirements ATC must adhere to when a transmission line will be constructed on their property. These rights and requirements include actions such as ensuring the topsoil is stripped, piled and replaced upon completion of the project, and payment for any crop damage caused.

ATC may request a landowner to waive some of their rights during the negotiation process. Two of the rights ATC may ask landowners to waive are (7)(d) and (7)(h). They ask landowners to waive (7)(d) so the utilities will have more flexibility in weed control. ATC may ask landowners to waive (7)(h) because access on farm lanes or other private roads may be less damaging than using the ROW for access. Landowners are not required to waive these, or any of their statutory rights.

Easement Initiation

If ATC receives approval for the Project, the PSC will issue the order that will identify the selected route and authorize construction of the Project. ATC would then begin contacting landowners to inform them of the PSC order and to request surveying permission. ATC will try to work with landowners to address their concerns. However, if landowners don't respond to the ATC's contact attempts, ATC will not know what concerns landowners might have. Landowners should expect ATC to offer compensation based on the fair market value of the easement to be acquired and any damages to the remaining parcel.

If a landowner is unwilling to engage in the easement negotiation, or other impediments make

easement negotiation not possible, ATC may seek condemnation of the needed easements. If an easement is acquired through condemnation, the court assigns the legal obligations of ATC. Under a court-ordered condemnation settlement, ATC may not be as capable of flexibly when addressing individual landowner concerns, however they may still be willing to work with the landowners in such cases. The "Landowners' Bill of Rights" Wis. Stat. §182.017 (7) still applies on condemned land, but if condemnation is used, it doesn't result in an easement contract between the utilities and the landowner. It results in a court decision.

Under all circumstances, landowners should review their easement contracts carefully and consult an attorney if they are unsure about what they are signing.

Estimating Easement Impacts and Just Compensation

Although most crops can be grown under transmission lines, other land uses and activities may be restricted such as constructing buildings or growing trees on the ROW. Part of the compensation provided by ATC is intended to compensate the landowner for the lost opportunities associated with these restrictions. In the "Landowners' Bill of Rights", part (b) describes the damages accounted for in determining "just compensation" for the easement.

The determination of just compensation includes evaluation of both the permanent and temporary impacts that will occur from both existing and new easements. Easements can be viewed as lost opportunities to the farmland owners. These lost opportunities could include restrictions on building construction, expansion or modification of irrigation systems, and planting of certain types of trees or other vegetation that mature to heights above those compatible with maintaining the transmission line. Compensation for easements should take this into consideration.

Items such as crop yield records and photographs taken prior to project initiation can all help a landowner when identifying if and when damages occur.

Expected Easement Extent

Table 18 summarizes the number of acres of farmland affected by easements on each route Route Section. It has six groupings of Sections. In order to complete a route, at least one section must be chosen from each group. Existing ROW refers to the portion of the corridor that would be shared with existing infrastructure ROW.

Table 18. Acres of Easement on Farmland

Route Section	Existing ROW (Acres)	New ROW (Acres)	Total (Acres)
C3	75.6	298.7	374.3
C4	8.6	297.3	305.9
Morgan Sub Station	6.8	4.5	11.3
N13	7.2	55.5	62.7
N14	0.1	43.3	43.4
N15	1.7	11.5	13.2
N16	5.4	4.4	9.9
N17	0.3	5.2	5.5
N18	13.8	230.2	243.9
N4	3.7	218.6	222.3
N6	24.0	45.5	69.5
N7	0.1	40.4	40.5
N8	1.1	48.2	49.4
S1	71.6	30.6	102.2
S2	19.8	89.7	109.4
S3	11.7	33.3	44.9

VII. RECOMMENDATIONS

The DATCP recommends the following as ways to mitigate the potential adverse impacts associated with the proposed Project if it is approved by the PSC:

1. If the Project is approved, the Commissioners should consider requiring double-circuiting of the proposed 345 kV and 138 kV lines to reduce the negative impacts of the project by having one set of transmission line support structures in cropland instead of two. A double-circuit would also impact a narrower corridor and require the acquisition of less ROW.

2. ATC should hire independent agricultural monitors, who are approved by DATCP, to oversee compliance with the portions of the PSC's order for the Project dealing with agricultural issues, and to observe and document Project construction and construction-related work on agricultural property. These monitors must be adequately trained, experienced, and knowledgeable in agricultural issues and practices, and in measures to prevent and mitigate damage to agricultural land caused by transmission line projects. Given the vast extent of agricultural land impacted by this Project, the agricultural monitors should be granted stop work authority should this Project be approved.

3. ATC should hire an agricultural specialist to conduct pre-construction interviews with farmers and farmland owners who will be directly affected by the acquisition of easements for this Project. At a minimum, the interview should determine whether the affected farm operation has a biosecurity plan, the types of crops grown and livestock raised, any specific concerns the landowner has related to agricultural impacts, concerns related to pole placement within agricultural fields, and the location of any existing or planned drainage systems or other agricultural infrastructure.

4. Information from the pre-construction farm interviews and those in the landowner response section of the AIS should be incorporated into the bid packages and line lists used by the contractors, inspectors, and monitors.

5. ATC should consult with affected farmland owners to determine the least damaging locations for transmission support structures.

6. Landowners who will have easements acquired for the proposed project should be familiar with the "Landowners' Bill of Rights" which is found in Wis. Stat. §182.017 (7). ATC may ask landowners to waive some or all of the rights listed in this statute, but the landowners are not required to waive any of these rights.

7. The County Conservationists in the counties affected by the proposed Project should be consulted to ensure that construction proceeds in a manner that minimizes drainage problems, crop damage, soil compaction, and soil erosion.

8. If an approved route passes through a drainage district, ATC should consult with the relevant Drainage Board(s) to ensure that construction will not permanently disrupt the operation of the district(s).

9. All farmland owners and operators should be given advance notice of acquisition and construction schedules so that farm activities can be adjusted accordingly. To the extent feasible, the timing of ROW acquisitions and construction by ATC and its contractors should be coordinated with farmers to minimize crop damage and disruption of farm operations.

10. ATC 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.

11. ATC should ensure that its contractors and subcontractors incorporate all necessary site-specific easement conditions to protect agricultural resources, as well as all statutory requirements and PSC permit conditions regarding agricultural land protection into its construction line list, and into any bid documents for the Project.

12. As much as possible construction on agricultural land should occur when the ground is frozen which will minimize soil compaction and reduce the risk of spreading diseases and pests between farms.

13. If ruts are created in ROWs that cross farmland, ATC should restore the affected soils as quickly as possible.

14. ATC should strip and segregate the topsoil over and around all excavation sites on the project to ensure that the uniquely valuable topsoil is not mixed with lower quality subsoil and underlying parent material.

15. ATC should make sure that all excavated soil below the topsoil layer displaced by the pole and foundation, and other spoil material, are removed from the site and not deposited on or mixed with any cropland, unless otherwise requested by the landowner.

16. If ATC removes any existing power line support structures within or immediately adjacent to cropland, it should remove all of the support structure and replace it with clean fill to the level in the adjacent soil where the topsoil begins. Imported topsoil of similar quality to the adjacent

top soils should then be placed over the remainder of the hole. If a support structure cannot be completely removed from cropland, as much of the structure as possible should be removed and the site flagged so the farmer can avoid collisions between his/her equipment and the remainder of the buried structure.

17. After construction of the line is complete, ATC should test the soil profile to determine whether the soils in the ROW have been compacted by construction or other equipment. This is commonly done by comparing the compaction levels of soils on the portion of the ROW that carried the traffic to comparable soils off the ROW. If soils are compacted, ATC should be responsible for taking steps to correct this problem.

18. ATC should undertake long-term, post-construction monitoring to ensure that no damage to agricultural fields along the Project route has occurred. This should be conducted for a minimum of two years after construction is completed to ensure no permanent damage to soils, drainage fields or facilities has occurred. DATCP AIS staff should remain informed of post-construction monitoring results, mitigation actions, and any associated reporting.

19. Landowners should be given phone and email information for whom to contact within ATC's organization should impacts from the project on their farmland arise or continue after Project completion.

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North Appleton to Morgan Transmission Project

Agricultural Impacts Statement

APPENDIX I

AGRICULTURAL IMPACT STATEMENTS

Appendix I: Agricultural Impact Statements

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is required to prepare an Agricultural Impact Statement (AIS) whenever more than five acres of land from at least one farm operation will be acquired for a public project if the agency acquiring the land has the authority to use eminent domain for the acquisition(s). The DATCP has the option to prepare an AIS for projects affecting five or fewer acres from each farm. An AIS would be prepared in such a case if the proposed project would have significant effects on a farm operation. The agency proposing the acquisition(s) is required to provide the DATCP with the details of the project and acquisition(s). After receiving the needed information, DATCP has 60 days to analyze the project's effects on farm operations, make recommendations about it and publish the AIS. DATCP will provide copies of the AIS to affected farmland owners, various state and local officials, local media and libraries, and any other individual or group who requests a copy. Thirty days after the date of publication, the proposing agency may begin negotiating with the landowner(s) for the property.

Section 32.035 of the *Wisconsin Statutes:* Agricultural impact statement.

(1) Definitions. In this section:
(a) "Department" means department of agriculture, trade and consumer protection.
(b) "Farm operation" means any activity conducted solely or primarily for the production of one or more agricultural commodities resulting from an agricultural use, as defined in s. 91.01 (1), for sale and home use, and customarily producing the commodities in sufficient quantity to be capable of contributing materially to the operator's support.
(2) EXCEPTION. This section shall not apply if an environmental impact statement under s. 1.11 is prepared for the proposed project and if the department submits the information required under this section as part of such statement or if the condemnation is for an easement for the purpose of constructing or operating an electric transmission line, except a high voltage transmission line as defined in s. 196.491(1)(f).
(3) PROCEDURE. The condemner shall notify the department of any project involving the actual or potential exercise of the powers of eminent domain affecting a farm operation. If the condemner is the department of natural resources, the notice required by this subsection shall be given at the time that permission of the senate and assembly committees on natural resources is sought under s. 23.09(2)(d) or 27.01(2)(a). To prepare an agricultural impact statement under this section, the department may require the condemner to compile and submit information about an affected farm operation. The department shall charge the condemner a fee approximating the actual costs of preparing the statement. The department may not publish the statement if the fee is not paid.
(4) IMPACT STATEMENT. (a) When an impact statement is required; permitted. The department shall prepare an agricultural impact statement for each project, except a project under ch. 81 or a project located entirely within the boundaries of a city or village, if the project involves the actual or potential exercise of the powers of eminent domain and if any interest in more than 5 acres from any farm operation may be taken. The department may prepare an agricultural impact

statement on a project located entirely within the boundaries of a city or village or involving any interest in 5 or fewer acres of any farm operation if the condemnation would have a significant effect on any farm operation as a whole.

(b) *Contents*. The agricultural impact statement shall include:

1. A list of the acreage and description of all land lost to agricultural production and all other land with reduced productive capacity, whether or not the land is taken.

2. The department's analyses, conclusions and recommendations concerning the agricultural impact of the project.

(c) *Preparation time; publicatio*n. The department shall prepare the impact statement within 60 days of receiving the information requested from the condemnor under sub. (3). The department shall publish the statement upon receipt of the fee required under sub. (3).

(d) *Waiting period*. The condemnor may not negotiate with an owner or make a jurisdictional offer under this subchapter until 30 days after the impact statement is published.

(5) PUBLICATION. Upon completing the impact statement, the department shall distribute the impact statement to the following:

(a) The governor's office.

(b) The senate and assembly committees on agriculture and transportation.

(c) All local and regional units of government which have jurisdiction over the area affected by the project. The department shall request that each unit post the statement at the place normally used for public notice.

(d) Local and regional news media in the area affected.

(e) Public libraries in the area affected.

(f) Any individual, group, club or committee which has demonstrated an interest and has requested receipt of such information.

(g) The condemnor.

North Appleton to Morgan
Transmission Project

Agricultural Impacts Statement

APPENDIX

II

SUMMARY OF FARMLAND OWNER COMMENTS

Appendix II: Summary of Farmland Owner Comments

This appendix contains abridged comments from landowners who responded to the Agricultural Impact Questionnaire. Out of the 144 questionnaire that were mailed out, 73 were returned. Landowners who were affected by multiple Route Sections will have their comments listed in the Route Section with the largest ROW easement.

Route Section S1

- Victor Salm and Linda Vorsters-Salm own approximately 350 acres of land that is rented to Randy Schmidt. They are concerned about the effect that transmission lines will have on field drainage. The Salms are also concerned about the transmission lines being near buildings and the loss of rental income and property values.

- Michael and Shari Konkel farm about 20 acres with about 5 acres being affected by the project. They are concerned about access to fields during construction and the closeness of the transmission line to their home.

- David and Judith Rickert own land that is included in Route Sections S1 & S2. Their land is rented to Willard and Randy Schmidt. The Rickerts commented that the project will reduce land values, make farming operations more difficult, and have concerns about damage to drainage tiles. The lines would be too close to their home.

Route Section S2

- Bruce Gonnering farms 400 acres along Route Section S2. He is concerned about drainage tiles, the proximity of transmission lines to farm buildings, field operations around poles, access during construction, and land values.

- Kenneth and Dor Stellmacher rent 50 acres to Marvin Hintz. The Stellmachers are concerned about access to their land, field operations around poles and the loss of land value.

- The Elmer Eggert Testamentary Trust rents 70 acres to Rick and Diane Fischer are certified organic farmers. They are concerned about damage to drainage tiles, reduced yields following construction and land values.

- Richard and Diane Fischer (see comment above) also own land along the proposed route. There is approximately 215 acres of certified organic cropland. The Fischers are concerned

about field operations around poles, yield reductions, drainage issues, access to land during construction, and restricting livestock from pastures.

Route Section S3

- Peter Grosse's dairy farm has 168 acres along Route Section S3. Mr. Grosse is concerned about drainage, pole placement that would affect field operations, the effects of construction on fertility and land values. There is not much additional land available to rent or purchase.

Route Section C3

- Duane Carrie & Carrie Gorges operate 650 acres in Route Section C3 and C4. They grow crops and raise 250 head of beef cattle. The Gorges are concerned about field operations around poles, drainage tiles, the proximity of power lines to home and barns, land values, health concerns. They utilize firewood for heat and are concerned about the loss of trees in the ROW.

- Elaine Moeller is concerned that the power lines will be too close to her home.

- The Fred Horn Living Trust rents 55 acres of farmland. They are concerned about the loss of farmland rental acreage.

- James and Gail Radecki rent 254 acres of farmland to their son along Route Section C3. They are concerned about damage to drainage tiles, erosion, productivity losses due to construction and soil compaction. They indicated that field operations would be difficult around three sets of transmission line poles. Concerns about human and animal health were also listed.

- Jay and Deanna Debruin rent 17 acres of farmland to Williamson Farms LLC. Five acres of their land will be in Route Section C3. They are concerned about field operations around multiple sets of transmission line poles access to land during construction.

- Jolene Vandevoort rents 40 acres of farmland along Route Section C3. Five acres will be in the ROW. She is concerned about the loss of farmland rental income and firewood.

- John and Margaret Gwidt operate a dairy farm along the Route Section. They are concerned about drainage tiles in their fields, field operations around transmission line poles, and the loss of land used to produce feed for their dairy herd. They stated that there is not much additional land available to rent or buy.

- Keith and Mary produce maple syrup and lumber from their woodland and rent out their cropland. They are concerned about tile fields and a septic system that would be in the ROW. Field operations would be affected by transmission line poles and they have concerns about loss of property values.

- Ken and Ann Moeller farm approximately 220 acres along C3. They grow crops and milk 45 cows. The transmission lines would be 400 feet from their buildings and they are concerned fencing for their cattle, field operations around poles, and access to land during construction. They stated that this project would add to the transmission lines already running across their property.

- Mitchell and Cheryl Hovell have a dairy farm along the C3 ROW. They are concerned about field operations around transmission line poles.

- Neil and Jill Krohlow farm approximately 480 along Route Section C3. Their concerns center on potential damage to drainage tiles and field operations around transmission line poles. They have a shed that will be around 300 feet from the line.

- Ralph Zibell farms around 310 acres in the project area. Mr. Zibell's concerns focus on drainage tiles and field operations around transmission line poles.

- Randy and Robin Ashman raise replacement dairy cows and farm along the route. Their land is hilly and they are concerned about potential erosion from construction, field operations around poles, the loss of farmland value, and stray voltage.

- Robert and Barbara Ciesielczyk have 160 acre dairy farm along the route. They are concerned about drainage tiles, soil compaction, field operations around transmission line poles, and animal health. They noted that additional farmland would be difficult to find and expensive to rent or buy.

- Shirley Young farms 110 acres along C3. She is concerned about drainage tiles and field operations around transmission line poles.

- The Staley Farm LLC rents 155 acres to a dairy farm. They have 11 acres in the right-of way and commented about drainage tiles, access to land during construction, and field operations around poles. They feel that the project will result in less farmland rental income because the additional poles will make land too difficult to farm.

- The Wilkey Farm LLC is a dairy operation with 137 acres along Route Sections C3 and

N4. They have a pivot irrigation system and fencing that would be affected by the project. They are also concerned about drainage tiles, stray voltage, and the effects of poles on field operations.

- Marshall and Debbie Elsner farm 147 acres in Route Section C3 with a 12 acre ROW. They are concerned about drainage tiles, field operations around poles, and the loss of farmland values. They noted that replacement farmland was not available to buy or rent.

Route Section C4

- Allen and Jean Timm have a dairy farm along Route Section C4 with 10 acres in the ROW
- . They are planning to expand the dairy operation and are concerned about a loss in land values. They also indicated that the transmission line run diagonally across their property making field operations difficult and affect the drainage tiles. The line will run near the dairy barns and stray voltage is a concern. They indicated that additional farmland is not available to rent or buy.

- Ambrosius Dairy Farms LLC operates approximately 200 acres along C4. They have concerns with drainage tiles and field operations around poles. They are also concerned about the effects of transmission lines on human and animal health.

- Curtiss and Nancy Mueller farm approximately 180 acres along the N4 right-of-way. The route would be close to their home and barns and they have concerns about drainage tiles and field operations around poles.

- Daniel and Mary Vandenheuval are affected by Route Section C4, S2, and S3. They rent their land to others and are concerned about drainage lines, field operations around poles, and the loss of farmland and rental income.

- Dennis Mueller and Susan Knothe own 65 acres along C4 that has a 9 acre right-of-way. They are concerned about drainage tiles, the proximity of transmission lines to 3 family homes, field operations around poles, and the loss of farmland values.

- Donald and Kathy Strom rent their farmland along Route Section C4. The transmission lines would be very close to their home and they are also concerned about poles affecting field operations and reducing rental values.

- Glen and Catherine Schaumberg have 410 acre dairy farm along the project route. Their home and barns will be near the transmission lines and they are concerned about human and animal health. They use firewood for heating and also log their woodlands. Drainage

tiles, field operations around poles, and loss of land values were also concerns.

- Jack and Roberta Mueller farm 60 acres along C4. The proposed route will divide their field forcing field operation around transmission line poles. They also commented that additional farmland was not available for rent or sale, there might be human and animal health issues from the lines, and that their land would lose value.

- John and Amy Krause farm 72 acres along the proposed route. They indicated that the line would cut across their land making field operations around poles an issue. They use firewood from their woodlot and commented that additional farmland would be hard to find.

- Peter and Toni Bauman rent their farmland. They are concerned about drainage tiles, field operations around poles, and the loss of land values and farmland rental income.

- Robert and Jo Ann Nooyen have a 110 acre dairy farm along Route Section N4. They are concerned about damage to drainage tiles, field operations around transmission line poles, field access during construction, and human health. They also commented that additional farmland in the area was not available and are worried that the project will affect the farm's viability.

- Lardinois Farms operate a 1,400 acre dairy farm along Route Sections C4, C3, N4, N17 and N18. They milk 600 cows and are concerned about stray voltage. They also commented about drainage tile, and the difficulty field operations around transmission line poles. They use aerial spraying which would be affected by the lines.

Route Section N4

- Alan and Joyce Kabara have a 227 acre dairy farm with a 21 acre right-of-way in Route Section N4. They stated that the transmission line would cut across all of their fields and be near their dairy barn. They are concerned about stray voltage, drainage tiles, field operations with large equipment around poles, and human health concerns. They also use firewood for heating.

- Christopher Jaworski operates a certified organinc farm with 10 right-of-way acres in N4. He is concerned about tile drains, field operations around poles, soil compaction from construction, and herbicide use on the right-of-way.

- Dennis and Linda Karcz operate a 300 acre grain and livestock farm in Route Sections N4 and N18. There is a drainage ditch and fences in the right-of-way that they have concerns about. They also noted that there is very little cropland in their area that is available to rent

or buy.

- Eunice Bodart operates a 200 acre crop farm in N4. She is concerned about the proximity of transmission lines to buildings, field operations around poles, and land values. Firewood is harvested from their woodlot. There is no additional farmland in the area to rent or buy.

- Gary and Cathy Niespodzany operate a 280 acre dairy farm in Route Section N4. They indicated that they are in the process of getting organic certification for the farm. The proximity of transmission lines to their home and farm buildings, land values, and drainage tiles were concerns noted.

- Gramma Petes LLC rents 100 acres of farmland to others in Route Section N4. They are concerned about land values and loss of farmland rental income. The project may limit their ability to mine gravel on their property.

- Lawrence and Donna Karcz rent out their farmland in N4 but harvest firewood from their woodlot. They are concerned about the distance of the transmission lines to their home and buildings.

- Leo and Veronica Rudnick operate a 160 acre crop and livestock farm with a 10 acre right-of-way in N4. They are concerned about drainage, fences, proximity of power lines to their home and buildings, stray voltage, field operations around transmission line poles and loss of land values.

- Nancy Ann Wade operates a 130 acre dairy farm in Route Section N4. She indicated concerns about drainage tiles, the loss of land to produce feed for dairy herd, and animal health. She noted that there is no agricultural land to rent or buy in her area.

- The Trustees of the Wagner Revocable Trust rent out their farmland along N4. They are concerned about drainage tiles in cropland, contour strips, leaching of chemicals from transmission poles into the soil, and the loss of cropland.

Route Section N18

- Bruce and Marie Raymakers have an 890 acre dairy farm that with an 8 acre right-of-way in N18. They are concerned about drainage tiles, contour strips and aerial spraying/seeding.

- Daniel and Barbara Ferfecki farm 236 acres in Route Section N18 with a 9 acre right-of-way. They indicated concerns about drainage tiles, the loss of tillable acres, and a decrease in farmland values.

- David Styczynski has a 172 acre crop and beef cattle operation with a 6 acre right-of-way. He is concerned about drainage tiles, the proximity of transmission lines to livestock facilities, access to fields during construction, field operations around poles, stray voltage, and land values.

- David Wilkey has a 1,000 acre dairy farm with a 10 acre right-of-way in N18. Mr. Wilkey expressed concerns about damage to tile drains, the transmission lines limiting pivot irrigation, stray voltage, access to fields during construction, and field operations around poles.

- Dexter Porter produces maple syrup on his land and his woodlot is professionally managed. He indicated that he is concerned about field operations around transmission line poles, safety, close proximity of the power lines to their son's home, the loss of farmland rental income, and declining property values.

- Donald and Janet Kowalkowski farm 40 acres along Route Section N18 with a 5 acre right-of-way. The Kowalkowskis are concerned about field operations around transmission line poles, the proximity of transmission lines to farm buildings, stray voltage, and property values.

- Floyd Bohm farms 50 acres along Route Section N18. He is concerned about transmission lines being near his farm buildings, access to pastures, field operations around poles, and a loss of property values.

- The Judith Ann Smurawa Survivor's Trust rents 65 acres of farmland in the N18 right-of-way. They are concerned about drainage tiles, fencing, transmission lines close to home and buildings, field operations around poles, loss of farmland rental income and property values.

- Leonard and Mary Szprejda farm 155 acres in Route Section N18 with a 14 acre right-of-way. They commented that the transmission line poles would affect field operations, their pastures and fences would be affected, and the transmission lines would be near their home.

- The Patrick D and Gloria Gwidt Revocable Trust farms 200 acres in Route Section N18 with a 9 acre right-of-way. They commented that they are concerned about drainage tiles, field operations around poles, aerial spraying, the transmission lines proximity to their home, and property values. They also noted that there was no nearby farmland available to rent or buy.

- Peter and Sandra Wilcox farm land that has a total of 9 acres of ROW in Route Sections N18, N4, and N17. The transmission lines will be near their barn and shed. They are also concerned about losses in crop production, field operations around poles, and land values.

Route Section N6

- David and Dean Lumaye have land along Route Section N6 in two parcels with an 8 acre right of way. One parcel is agricultural land which is rented out while the second parcel has been planted with trees. They are concerned about drainage, productivity losses, field operations around poles, and land values. They will lose the trees that are planted in the right-of-way. Replacement land is not available in the area.

Route Section N7

- Curtis Birr has a 320 acre dairy farm with 8 acres of right-of-way in Route Sections N7 and N8. The transmission lines will be 600 feet from his dairy barn. He is also concerned about access to fields during construction, field operations around poles, loss of firewood, and land values.

Route Section N8

- Allan and Janice Westphal rent their farmland in Route Section N8 to others. They commented that the project would reduce land values and the lines would be routed near their home and buildings.

- The Leonard and Cindy Wahl Family Trust rents 80 acres of farmland in Route Section N8 with a 10 acre right-of-way. The project will reduce land values and affect field operations around poles. They indicated that aerial spraying is used on the land.

Route Section N13

- Harold and June Geiser farm 157 acres in Route Section N14 with an 11 acre right-of-way. They have concerns about their drainage tiles, farm buildings near the lines, field operations around poles, production losses, center pivot irrigation, human health, and land values.

Route Section N14

- The Jacobs Brothers Farm LLC operates a 9,800 acre dairy farm with 3,400 milk cows in Route Sections N14, C4, N13, N18, N4, and N7 with a total of 55 acres of right-of-way. The project will affect many facets of their operation including drainage tiles, manure storage/transfer, center pivot irrigation, animal health, access to fields, field operations around transmission line poles, aerial spraying. The transmission lines will be very close to their dairy barns and they have animal health concerns. The Jacobs Brothers have submitted an extensive comment to the Public Service Commission describing the effects of the project on their operation.

North Appleton to Morgan
Transmission Project

Agricultural Impacts Statement

APPENDIX III

AFFECTED SOIL TYPES

Appendix III: Affected Soil Types

The following table lists the soils that would be affected by each of the potential Project Route Sections.

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
C3	Ah	1.20	Angelica silt loam	Prime farmland if drained
C3	Ax	2.21	Angelica silt loam	Prime farmland if drained
C3	Ba	0.61	Bach silt loam	Prime farmland if drained
C3	BnA	1.46	Bonduel silt loam, 0 to 3 percent slopes	Prime farmland if drained
C3	Cm	3.11	Cathro muck	Farmland of statewide importance
C3	Fu	4.18	Fluvaquents	Not prime farmland
C3	HnB	0.43	Hortonville fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
C3	HnC2	0.90	Hortonville fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C3	HrB	33.58	Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland
C3	HrC2	6.73	Hortonville silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C3	HrD2	0.42	Hortonville silt loam, 12 to 20 percent slopes, eroded	Not prime farmland
C3	HsB	0.04	Hortonville silt loam, limestone substratum, 2 to 6 percent slopes	All areas are prime farmland
C3	HtB	5.79	Hortonville-Symco silt loams, 2 to 6 percent slopes	All areas are prime farmland
C3	IsA	0.84	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
C3	Ke	0.10	Keowns silt loam	Prime farmland if drained
C3	KoB	10.34	Kolberg silt loam, 1 to 6 percent slopes	All areas are prime farmland
C3	KoC2	1.64	Kolberg silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C3	Ln	0.06	Limestone quarries	Not prime farmland

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
C3	MsB	1.51	Menominee loamy fine sand, loamy substratum, 2 to 6 percent slopes	Farmland of statewide importance
C3	MuA	0.08	Mundelein silt loam, 0 to 3 percent slopes	Prime farmland if drained
C3	OeB	57.57	Onaway fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
C3	OeC2	8.88	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C3	OhB	29.41	Onaway loam, 2 to 6 percent slopes	All areas are prime farmland
C3	OhC2	18.50	Onaway loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C3	OhD2	0.42	Onaway loam, 12 to 20 percent slopes, eroded	Not prime farmland
C3	OlB	41.96	Onaway-Solona complex, 2 to 6 percent slopes	Prime farmland if drained
C3	Pe	9.85	Pella silt loam	Prime farmland if drained
C3	Po	4.28	Poygan silty clay loam, 0 to 2 percent slopes	Prime farmland if drained
C3	Ra	0.14	Rock outcrop	Not prime farmland
C3	ShA	3.92	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
C3	SoA	88.35	Solona silt loam, 1 to 3 percent slopes	Prime farmland if drained
C3	SyA	19.19	Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained
C3	SyB	15.05	Solona-Onaway complex, 1 to 6 percent slopes	Prime farmland if drained
C3	WaA	1.59	Wainola loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
C4	AdA	0.60	Allendale loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
C4	Ah	0.67	Angelica silt loam	Prime farmland if drained
C4	Ax	5.62	Angelica silt loam	Prime farmland if drained
C4	BrB	2.73	Boyer loamy fine sand, 2 to 6 percent slopes	Farmland of statewide importance

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
C4	Ca	0.24	Carbondale muck	Not prime farmland
C4	De	0.85	Deford loamy fine sand	Not prime farmland
C4	HnB	4.55	Hortonville fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
C4	HrB	30.65	Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland
C4	HrC2	0.44	Hortonville silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
C4	HtB	13.62	Hortonville-Symco silt loams, 2 to 6 percent slopes	All areas are prime farmland
C4	Ke	0.66	Keowns silt loam	Prime farmland if drained
C4	MsB	1.14	Menominee loamy fine sand, loamy substratum, 2 to 6 percent slopes	Farmland of statewide importance
C4	OeB	3.89	Onaway sandy loam, 2 to 6 percent slopes	All areas are prime farmland
C4	OhB	38.18	Onaway loam, 2 to 6 percent slopes	All areas are prime farmland
C4	OlB	86.74	Onaway-Solona complex, 2 to 6 percent slopes	All areas are prime farmland
C4	Pe	7.26	Pella silt loam	Prime farmland if drained
C4	RoB	0.16	Rousseau loamy fine sand, 2 to 6 percent slopes	Not prime farmland
C4	ShA	3.42	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
C4	SkA	1.20	Shiocton silt loam, clayey substratum, 0 to 3 percent slopes	Prime farmland if drained
C4	SoA	61.38	Solona silt loam, 1 to 3 percent slopes	Prime farmland if drained
C4	SpA	1.05	Solona loam, 1 to 3 percent slopes	Prime farmland if drained
C4	SyA	33.74	Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained
C4	SyB	2.13	Solona-Onaway complex, 1 to 6 percent slopes	Prime farmland if drained

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
C4	SzA	0.95	Symco variant, 0 to 3 percent slopes	Prime farmland if drained
C4	WaA	2.73	Wainola loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
C4	Wb	1.32	Will silt loam	Prime farmland if drained
MGN	OeB	8.44	Onaway fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
MGN	OeC2	2.88	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N13	Ah	0.26	Angelica silt loam	Prime farmland if drained
N13	AuA	2.65	Au Gres loamy sand, 0 to 3 percent slopes	Not prime farmland
N13	Bs	6.52	Brevort mucky loamy sand	Prime farmland if drained
N13	FpB	12.91	Fairport fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
N13	FpC	7.49	Fairport fine sandy loam, 6 to 15 percent slopes	Farmland of statewide importance
N13	IsA	3.67	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N13	Mk	2.96	Markey and Cathro mucks	Not prime farmland
N13	MsB	4.56	Menominee loamy sand, 1 to 6 percent slopes	Farmland of statewide importance
N13	MsC	0.95	Menominee loamy sand, 6 to 12 percent slopes	Not prime farmland
N13	OeB	6.27	Onaway fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N13	SoA	10.88	Solona loam, 0 to 3 percent slopes	Prime farmland if drained
N13	WaA	3.53	Wainola fine sand, 0 to 3 percent slopes	Farmland of statewide importance
N14	Ah	0.26	Angelica silt loam	Prime farmland if drained
N14	FpB	1.43	Fairport fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
N14	IsA	1.25	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N14	MsB	2.20	Menominee loamy sand, 1 to 6 percent slopes	Farmland of statewide importance

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N14	OeB	16.51	Onaway fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N14	SoA	11.98	Solona loam, 0 to 3 percent slopes	Prime farmland if drained
N14	SyB	6.16	Solona-Onaway complex, 1 to 6 percent slopes	Prime farmland if drained
N14	WaA	3.61	Wainola fine sand, 0 to 3 percent slopes	Farmland of statewide importance
N15	Bs	2.00	Brevort mucky loamy sand	Prime farmland if drained
N15	IsA	5.53	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N15	Mk	0.64	Markey and Cathro mucks	Not prime farmland
N15	OeB	1.79	Onaway fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N15	RsB	1.63	Rousseau loamy fine sand, 2 to 6 percent slopes	Not prime farmland
N15	SfC	0.08	Shawano loamy fine sand, 6 to 12 percent slopes	Not prime farmland
N15	SoA	1.51	Solona loam, 0 to 3 percent slopes	Prime farmland if drained
N16	OeB	8.70	Onaway fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
N16	OeC2	1.16	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N17	OlB	5.48	Onaway-Solona complex, 2 to 6 percent slopes	Prime farmland if drained
N18	Ah	6.31	Angelica silt loam	Prime farmland if drained
N18	Ba	0.00	Bach silt loam	Prime farmland if drained
N18	Fx	0.08	Fluvents, loamy	Not prime farmland
N18	IsA	8.13	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N18	Mk	0.00	Markey and Cathro mucks	Not prime farmland
N18	OeB	32.86	Onaway fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N18	OeC2	2.34	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N18	OeD2	0.84	Onaway fine sandy loam, 12 to 20 percent slopes, eroded	Not prime farmland
N18	OhB	6.78	Onaway loam, 2 to 6 percent slopes	All areas are prime farmland
N18	OlB	22.33	Onaway-Solona complex, 2 to 6 percent slopes	Prime farmland if drained
N18	SaA	0.26	Salter variant very fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland
N18	SaB	0.61	Salter variant very fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N18	SaC	2.10	Salter variant very fine sandy loam, 6 to 12 percent slopes	Farmland of statewide importance
N18	Sd	0.01	Seelyeville muck	Not prime farmland
N18	SfC	0.42	Shawano loamy fine sand, 6 to 12 percent slopes	Not prime farmland
N18	ShA	10.68	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
N18	SoA	105.18	Solona loam, 0 to 3 percent slopes	Prime farmland if drained
N18	SyB	45.00	Solona-Onaway complex, 1 to 6 percent slopes	Prime farmland if drained
N4	AeA	0.33	Allendale fine sandy loam, 0 to 3 percent slopes	Farmland of statewide importance
N4	Au	0.00	Alluvial land	Prime farmland if protected from flooding or not frequently flooded during the growing season
N4	Aw	1.04	Alluvial land, wet	Not prime farmland
N4	Ax	3.52	Angelica silt loam	Prime farmland if drained
N4	BrB	1.63	Boyer loamy fine sand, 2 to 6 percent slopes	Farmland of statewide importance
N4	Bs	1.58	Brevort mucky loamy sand, 0 to 2 percent slopes	Not prime farmland
N4	Es	3.31	Ensley mucky loam, 0 to 2 percent slopes	Prime farmland if drained
N4	FpB	6.97	Fairport fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N4	Gp	2.29	Gravel pits	Not prime farmland
N4	IsA	0.27	Iosco loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
N4	Ke	1.66	Keowns silt loam	Prime farmland if drained
N4	KnA	3.70	Kibbie silt loam, 1 to 3 percent slopes	Prime farmland if drained
N4	MoB	2.28	Menominee loamy fine sand, 2 to 6 percent slopes	Farmland of statewide importance
N4	MsB	8.59	Menominee loamy fine sand, 2 to 6 percent slopes	Farmland of statewide importance
N4	OcB	0.19	Oconto fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N4	OcC	0.53	Oconto fine sandy loam, 6 to 12 percent slopes	Farmland of statewide importance
N4	OcD	0.56	Oconto fine sandy loam, 12 to 20 percent slopes	Not prime farmland
N4	OeB	53.03	Onaway sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N4	OeC2	6.87	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N4	OeD2	4.98	Onaway fine sandy loam, 12 to 20 percent slopes, eroded	Not prime farmland
N4	OhA	7.94	Onaway loam, 0 to 2 percent slopes	All areas are prime farmland
N4	OhB	2.03	Onaway loam, 2 to 6 percent slopes	All areas are prime farmland
N4	OlB	17.44	Onaway-Solona complex, 2 to 6 percent slopes	Prime farmland if drained
N4	OsB	1.31	Onaway fine sandy loam, sandy substratum, 2 to 6 percent slopes	All areas are prime farmland
N4	OvD	0.22	Onaway-Kiva-Menahga complex, 15 to 35 percent slopes	Not prime farmland
N4	PeA	1.52	Pelkie loamy fine sand, 1 to 3 percent slopes	Not prime farmland
N4	Pt	3.81	Pits	Not prime farmland

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N4	RsB	0.28	Rousseau fine sand, 1 to 6 percent slopes	Not prime farmland
N4	Sd	0.98	Seelyeville and Markey mucks, 0 to 1 percent slopes	Not prime farmland
N4	SfB	2.30	Shawano loamy fine sand, 2 to 6 percent slopes	Not prime farmland
N4	SfC	1.14	Shawano loamy fine sand, 6 to 12 percent slopes	Not prime farmland
N4	ShB	2.86	Sisson fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
N4	SoA	26.23	Solona fine sandy loam, 0 to 3 percent slopes	Prime farmland if drained
N4	SpA	28.48	Solona loam, 1 to 3 percent slopes	Prime farmland if drained
N4	SpB	8.83	Solona-Onaway fine sandy loams, 1 to 6 percent slopes	Prime farmland if drained
N4	TeA	5.14	Tedrow loamy fine sand, 0 to 3 percent slopes	Not prime farmland
N4	W	0.03	Water	Not prime farmland
N4	WrA	0.04	Worcester loam, 0 to 3 percent slopes	Prime farmland if drained
N4	YaA	3.69	Yahara fine sandy loam, 0 to 3 percent slopes	Prime farmland if drained
N4	YhA	4.73	Yahara silt loam, 0 to 3 percent slopes	Prime farmland if drained
N6	AxA	1.06	Au Gres variant loamy fine sand, 0 to 3 percent slopes	Not prime farmland
N6	Bs	2.07	Brevort mucky loamy sand	Prime farmland if drained
N6	Co	0.23	Cormant mucky loamy fine sand	Not prime farmland
N6	Es	1.03	Ensley mucky loam, 0 to 2 percent slopes	Prime farmland if drained
N6	Fu	0.35	Fordum loam	Not prime farmland
N6	IsA	5.73	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N6	LvB	2.25	Lorenzo variant sandy loam, 1 to 6 percent slopes	Farmland of statewide importance

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N6	Mk	1.52	Markey and Cathro mucks	Not prime farmland
N6	MsB	2.70	Menominee loamy sand, 1 to 6 percent slopes	Farmland of statewide importance
N6	OeB	23.49	Onaway fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
N6	OeC2	0.72	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N6	OeD2	0.12	Onaway fine sandy loam, 12 to 20 percent slopes, eroded	Not prime farmland
N6	OeE	0.75	Onaway fine sandy loam, 20 to 35 percent slopes	Not prime farmland
N6	SfB	0.20	Shawano loamy fine sand, 1 to 6 percent slopes	Not prime farmland
N6	SfC	0.92	Shawano loamy fine sand, 6 to 12 percent slopes	Not prime farmland
N6	ShA	1.84	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
N6	SoA	21.59	Solona loam, 0 to 3 percent slopes	Prime farmland if drained
N6	SpB	2.84	Solona-Onaway fine sandy loams, 1 to 6 percent slopes	Prime farmland if drained
N6	Wf	0.11	Winterfield fine sandy loam, 0 to 2 percent slopes	Not prime farmland
N7	Bs	6.46	Brevort mucky loamy sand	Prime farmland if drained
N7	Co	0.55	Cormant loamy fine sand, 0 to 1 percent slopes	Not prime farmland
N7	Es	0.15	Ensley mucky loam, 0 to 2 percent slopes	Prime farmland if drained
N7	IsA	3.04	Iosco loamy sand, 0 to 3 percent slopes	Prime farmland if drained
N7	MnD	0.25	Menahga sand, 15 to 35 percent slopes	Not prime farmland
N7	Mu	0.80	Minocqua mucky fine sandy loam, 0 to 2 percent slopes	Not prime farmland
N7	OeB	7.74	Onaway fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
N7	OeC2	1.25	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N7	OmB	5.59	Onaway fine sandy loam, moderately well drained, 1 to 6 percent slopes	All areas are prime farmland
N7	RsB	0.93	Rousseau loamy fine sand, 2 to 6 percent slopes	Not prime farmland
N7	Sd	0.65	Seelyeville and Markey mucks, 0 to 1 percent slopes	Not prime farmland
N7	SoA	11.81	Solona fine sandy loam, 0 to 3 percent slopes	Prime farmland if drained
N7	SpB	1.27	Solona-Onaway fine sandy loams, 1 to 6 percent slopes	Prime farmland if drained
N8	KvB	2.44	Kiva sandy loam, 2 to 6 percent slopes	Farmland of statewide importance
N8	OeB	25.56	Onaway fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
N8	OeC2	8.62	Onaway fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
N8	OeD2	1.77	Onaway fine sandy loam, 12 to 20 percent slopes, eroded	Not prime farmland
N8	OeE	5.69	Onaway fine sandy loam, 20 to 35 percent slopes	Not prime farmland
N8	Pt	0.15	Pits	Not prime farmland
N8	Sd	1.96	Seelyeville and Markey mucks, 0 to 1 percent slopes	Not prime farmland
N8	SoA	1.00	Solona fine sandy loam, 0 to 3 percent slopes	Prime farmland if drained
N8	SpB	0.88	Solona-Onaway fine sandy loams, 1 to 6 percent slopes	Prime farmland if drained
N8	WaA	1.08	Wainola loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
N8	Wf	0.21	Winterfield fine sandy loam, 0 to 2 percent slopes	Not prime farmland
S1	BnA	0.45	Bonduel silt loam, 0 to 3 percent slopes	Prime farmland if drained
S1	CnB	1.35	Channahon silt loam, 2 to 6 percent slopes	Farmland of statewide importance

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
S1	Fu	0.66	Fluvaquents	Not prime farmland
S1	HnB	1.26	Hortonville fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
S1	HrB	55.86	Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland
S1	HrC2	4.66	Hortonville silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
S1	HtB	13.59	Hortonville-Symco silt loams, 2 to 6 percent slopes	All areas are prime farmland
S1	KoB	2.25	Kolberg silt loam, 1 to 6 percent slopes	All areas are prime farmland
S1	MsB	0.31	Menominee loamy fine sand, loamy substratum, 2 to 6 percent slopes	Farmland of statewide importance
S1	Pe	2.17	Pella silt loam	Prime farmland if drained
S1	Po	0.21	Poygan silty clay loam, 0 to 2 percent slopes	Prime farmland if drained
S1	ShA	0.22	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
S1	SyA	19.19	Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained
S2	AdA	0.96	Allendale loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
S2	BnA	0.20	Bonduel silt loam, 0 to 3 percent slopes	Prime farmland if drained
S2	Cm	1.24	Cathro muck	Farmland of statewide importance
S2	HnB	0.10	Hortonville fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
S2	HrB	62.54	Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland
S2	HrC2	1.48	Hortonville silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
S2	HrD2	0.08	Hortonville silt loam, 12 to 20 percent slopes, eroded	Not prime farmland
S2	HtB	10.17	Hortonville-Symco silt loams, 2 to 6 percent slopes	All areas are prime farmland

Route Section	Map Unit Symbol	Acres	Map Unit Name	Farmland Class
S2	Ke	2.45	Keowns silt loam	Prime farmland if drained
S2	MsB	4.18	Menominee loamy fine sand, loamy substratum, 2 to 6 percent slopes	Farmland of statewide importance
S2	NaB	0.34	Namur silt loam, 1 to 6 percent slopes	Not prime farmland
S2	Pe	3.83	Pella silt loam	Prime farmland if drained
S2	RoB	0.16	Rousseau loamy fine sand, 2 to 6 percent slopes	Not prime farmland
S2	ShA	1.84	Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained
S2	SyA	19.87	Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained
S3	CnB	1.89	Channahon silt loam, 2 to 6 percent slopes	Farmland of statewide importance
S3	HrB	11.67	Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland
S3	HtB	15.82	Hortonville-Symco silt loams, 2 to 6 percent slopes	All areas are prime farmland
S3	KoB	7.41	Kolberg silt loam, 1 to 6 percent slopes	All areas are prime farmland
S3	Pe	1.13	Pella silt loam	Prime farmland if drained
S3	SyA	6.99	Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained

North Appleton to Morgan
Transmission Project

Agricultural Impacts Statement

APPENDIX IV

WISCONSIN STATUTE §182.017
"LANDOWNERS' BILL OF RIGHTS"

Appendix IV: *Wisconsin Statute* §182.017 "Landowners' Bill of Rights"

This statute is sometimes referred to as the "Landowners' Bill of Rights." It describes a utility's responsibilities and obligations as well as a landowner's rights when a transmission line is constructed on that landowner's property.

182.017 Transmission lines; privileges; damages.

(1g) DEFINITIONS. In this section:

(a) "Commission" means the public service commission.

(b) "Company" means any of the following:

1. A corporation, limited liability company, partnership, or other business entity organized to furnish telegraph or telecommunications service or transmit heat, power, or electric current to the public or for public purposes.

2. An independent system operator, as defined in s. 196.485 (1) (d).

3. An independent transmission owner, as defined in s. 196.485 (1) (dm).

4. A cooperative association organized under ch. 185 or 193 to furnish telegraph or telecommunications service.

5. A cooperative association organized under ch. 185 to transmit heat, power, or electric current to its members.

6. An interim cable operator, as defined in s. 66.0420 (2) (n).

7. A video service provider, as defined in s. 66.0420 (2) (zg).

(bm) "Municipal regulation" means any contract, ordinance, resolution, order, or other regulation entered into, enacted, or issued by a municipality before, on, or after July 2, 2013.

(c) "Municipality" means a city, village, or town.

(cq) "Telecommunications service" means the offering for sale of the conveyance of voice, data, or other information, including the sale of service for collection, storage, forwarding, switching, and delivery incidental to such communication regardless of the technology or mode used to make such offering.

(ct) "Urban rail transit system" means a system, either publicly or privately owned, which provides transportation by rail in a municipality to the public on a regular and continuing basis and which begins service on or after July 2, 2013.

(d) "Video service network" has the meaning given in s. 66.0420 (2) (zb).

(1r) RIGHT-OF-WAY FOR. Any company may, subject to ss. 30.44 (3m), 30.45, 86.16, and 196.491 (3) (d) 3m. and to reasonable regulations made by any municipality through which its transmission lines or systems may pass, construct and maintain such lines or systems with all necessary appurtenances in, across or beneath any public highway or bridge or any stream or body of water, or upon any lands of any owner consenting thereto, and for such purpose may acquire lands or the necessary easements; and may connect and operate its lines or system with other lines or systems devoted to like business, within or without this state, and charge reasonable rates for the transmission and delivery of messages or the furnishing of heat, power, or electric light.

(2) NOT TO OBSTRUCT PUBLIC USE. But no such line or system or any appurtenance thereto shall at any time obstruct or incommode the public use of any highway, bridge, stream or body of water.

(3) ABANDONED LINES REMOVED. The commission after a public hearing as provided in s. 196.26, and subject to the right of review as provided in ch. 227, may declare any line to have been abandoned or

discontinued, if the facts warrant such finding. Whenever such a finding shall have been made the company shall remove such line, and on failure for 3 months after such finding of abandonment or discontinuance, any person owning land over, through or upon which such line shall pass, may remove the same, or the supervisors of any town within which said lines may be situated, may remove the said lines from the limits of its highways, and such person or supervisors shall be entitled to recover from the company owning the lines the expense for labor involved in removing the property.

(4) LOCATION OF POLES. In case of dispute as to the location of poles, pipes or conduits, the commissioners appointed in condemnation proceedings under ch. 32 may determine the location. In no case, except where the owner consents, shall poles be set in front of or upon any residence property, or in front of a building occupied for business purposes, unless the commissioners find that the same is necessary and the court may review the finding.

(5) TREE TRIMMING. Any company which shall in any manner destroy, trim or injure any shade or ornamental trees along any such lines or systems, or, in the course of tree trimming or removal, cause any damage to buildings, fences, crops, livestock or other property, except by the consent of the owner, or after the right so to do has been acquired, shall be liable to the person aggrieved in 3 times the actual damage sustained, besides costs.

(6) MUNICIPAL FRANCHISE REQUIRED. No lighting or heating corporation or lighting or heating cooperative association shall have any right hereunder in any municipality until it has obtained a franchise or written consent for the erection or installation of its lines from such municipality.

(7) HIGH-VOLTAGE TRANSMISSION LINES. Any easement for rights-of-way for high-voltage transmission lines as defined under s. 196.491 (1) (f) shall be subject to the conditions and limitations specified in this subsection.

(a) The conveyance under ch. 706 and, if applicable, the petition under s. 32.06 (7), shall describe the interest transferred by specifying, in addition to the length and width of the right-of-way, the number, type and maximum height of all structures to be erected thereon, the minimum height of the transmission lines above the landscape, and the number and maximum voltage of the lines to be constructed and operated thereon.

(b) In determining just compensation for the interest under s. 32.09, damages shall include losses caused by placement of the line and associated facilities near fences or natural barriers such that lands not taken are rendered less readily accessible to vehicles, agricultural implements and aircraft used in crop work, as well as damages resulting from ozone effects and other physical phenomena associated with such lines, including but not limited to interference with telephone, television and radio communication.

(c) In constructing and maintaining high-voltage transmission lines on the property covered by the easement the utility shall:

1. If excavation is necessary, ensure that the top soil is stripped, piled and replaced upon completion of the operation.

2. Restore to its original condition any slope, terrace, or waterway which is disturbed by the construction or maintenance.

3. Insofar as is practicable and when the landowner requests, schedule any construction work in an area used for agricultural production at times when the ground is frozen in order to prevent or reduce soil compaction.

4. Clear all debris and remove all stones and rocks resulting from construction activity upon completion of construction.

5. Satisfactorily repair to its original condition any fence damaged as a result of construction or maintenance operations. If cutting a fence is necessary, a temporary gate shall be installed. Any such gate shall be left in place at the landowner's request.

6. Repair any drainage tile line within the easement damaged by such construction or maintenance.

7. Pay for any crop damage caused by such construction or maintenance.

8. Supply and install any necessary grounding of a landowner's fences, machinery or buildings.

(d) The utility shall control weeds and brush around the transmission line facilities. No herbicidal chemicals may be used for weed and brush control without the express written consent of the landowner. If weed and brush control is undertaken by the landowner under an agreement with the utility, the landowner shall receive from the utility a reasonable amount for such services.

(e) The landowner shall be afforded a reasonable time prior to commencement of construction to harvest any trees located within the easement boundaries, and if the landowner fails to do so, the landowner shall nevertheless retain title to all trees cut by the utility.

(f) The landowner shall not be responsible for any injury to persons or property caused by the design, construction or upkeep of the high-voltage transmission lines or towers.

(g) The utility shall employ all reasonable measures to ensure that the landowner's television and radio reception is not adversely affected by the high-voltage transmission lines.

(h) The utility may not use any lands beyond the boundaries of the easement for any purpose, including ingress to and egress from the right-of-way, without the written consent of the landowner.

(i) The rights conferred under pars. (c) to (h) may be specifically waived by the landowner in an easement conveyance which contains such paragraphs verbatim.

(8) COMMISSION REVIEW.

(a) Upon complaint by a company that a regulation by a municipality under sub. (1r) is unreasonable, the commission shall set a hearing and, if the commission finds that the regulation is unreasonable, the regulation shall be void. Subject to pars. (am) to (c), if the commission determines that a municipal regulation that was in effect on January 1, 2007, and immediately prior to January 9, 2008, or that a community standard, as demonstrated through consistent practice and custom in the municipality, that was in effect on January 1, 2007, and immediately prior to January 9, 2008, is substantially the same as the municipal regulation complained of, there is a rebuttable presumption that the latter regulation is reasonable.

(am) A municipal regulation is unreasonable if it has the effect of creating a moratorium on the placement of company lines or systems under sub. (1r) or on the entrance into the municipality of a video service provider, as defined in s. 66.0420 (2) (zg), or is inconsistent with the purposes of s. 66.0420.

(as) Notwithstanding sub. (2), a municipal regulation is unreasonable if it requires a company to pay any part of the cost to modify or relocate the company's facilities to accommodate an urban rail transit system.

(b) A municipal regulation is unreasonable if it requires a company to pay more than the actual cost of functions undertaken by the municipality to manage company access to and use of municipal rights-of-way. These management functions include all of the following:

1. Registering companies, including the gathering and recording of information necessary to conduct business with a company.

2. Except as provided in provided in par. (c), issuing, processing, and verifying excavation or other company permit applications, including supplemental applications.

3. Inspecting company job sites and restoration projects.

4. Maintaining, supporting, protecting, or moving company equipment during work in municipal rights-of-way.

5. Undertaking restoration work inadequately performed by a company after providing notice and the opportunity to correct the work.

6. Revoking company permits.

7. Maintenance of databases.

8. Scheduling and coordinating highway, street, and right-of-way work relevant to a company permit.

(c) A municipal regulation is unreasonable if it requires a company to be responsible for fees under s. 182.0175 (1m) (bm) that may be assessed to a municipality as a member of the one-call system under s. 182.0175.

(d) It is reasonable for a municipal regulation to provide for the recovery of costs incurred under par. (b) 1., 2., 3., and 7. through a preexcavation permit fee.

(e) It is reasonable for a municipal regulation to provide for the recovery of costs incurred under par. (b) 4., 5., and 6. only from the company that is responsible for causing the municipality to incur the costs.

(9) TIME LIMIT FOR PERMITS. If a municipality establishes a permit process under sub. (1r), the municipality shall approve or deny a permit application no later than 60 days after receipt of the application, and, if the municipality fails to do so, the municipality shall be considered to have approved the application and granted the permit. If a municipality denies a permit application, the municipality shall provide the applicant a written explanation of the reasons for the denial at the time that the municipality denies the application.

History: 1971 c. 40; 1975 c. 68, 199; 1979 c. 34, 323; 1985 a. 297 s. 76; 1989 a. 31; 1993 a. 213, 246, 371; 1997 a. 204; 2005 a. 441; 2007 a. 42; 2011 a. 22; 2013 a. 20 s. 1564m, 1978d to 1978t.

Sub. (2) is a safety statute, the violation of which constitutes negligence per se. An allegation that a power pole located within 4 feet of the traveled portion of a roadway violated this provision stated a cause of action. Weiss v. Holman, 58 Wis. 2d 608, 207 N.W.2d 660 (1973).

Sub. (5) is limited to damages arising from the construction, maintenance, or abandonment of facilities within a right-of-way. Vogel v. Grant-Lafayette Electric Cooperative, 195 Wis. 2d 198, 536 N.W.2d 140 (Ct. App. 1995), 94-0822.

Sub. (7) (a) governs what must be specified in a conveyance of an easement. Because the easements here were conveyed prior to the enactment of the statute, the conveyances were not subject to the statute's requirements. The circuit court's conclusion that the utility was required to obtain new easements complying with sub. (7) (a) was premised on its erroneous conclusion that the utility's easement rights were limited by the easements' current use. Wisconsin Public Service Corporation v. Andrews, 2009 WI App 30, 316 Wis. 2d 734, 766 N

North Appleton to Morgan
Transmission Project

Agricultural Impacts Statement

APPENDIX V

SAMPLE EASEMENT

Appendix V: Sample Easement

The following is a sample easement provided by American Transmission Company. This provides the general language that would be included in most easements for the Project.. It is possible there would be small tweaks to this language, but they are unlikely to be significant changes. The document references Exhibit B – that would be the easement exhibit that is specific to each parcel and illustrates the easement area.

Document Number

ELECTRIC TRANSMISSION LINE EASEMENT

CERTIFICATE OF COMPENSATION

NOTICE OF RIGHT OF APPEAL

Wis. Stat. Sec. 182.017(7)

The undersigned grantor(s)**, _____** for themselves and their respective heirs, successors and assigns **(hereinafter cumulatively referred to as "Landowner")**, in consideration of the sum of one dollar ($1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, does hereby grant, convey and warrant unto **American Transmission Company LLC, a Wisconsin limited liability company,** its successors, assigns, licensees and manager, **(hereinafter cumulatively referred to as "Grantee")**, the perpetual right and easement to construct, install, operate, maintain, repair, replace, rebuild, remove, relocate, inspect and patrol a line of structures, comprised of wood, concrete, steel or of such material as Grantee may select, and wires, including associated appurtenances for the transmission of electric current, communication facilities and signals appurtenant thereto (hereinafter referred to as the Electric Transmission Facilities), upon, in, over and across property owned by the Landowner in the **_____ of _____, County of _____, State of Wisconsin, described as follows:**

Record this document with the Register of Deeds

Name and Return Address:

Attn: Real Estate Department

A parcel of land being part of *1/4 section town range or lot/block etc.*

The legal description and location of the Perpetual Easement Strip is as described and shown on the Exhibit B, attached hereto and incorporated by reference in this easement document.

Parcel Identification Number(s)

The perpetual easement has the following specifications:

PERPETUAL EASEMENT STRIP:

Length: Approximately _____ feet

Width: Approximately _____ feet

TRANSMISSION STRUCTURES:

Type: _____

Number: __

Maximum height above existing ground level: _____ feet

TRANSMISSION LINES:

Maximum nominal voltage: _____ volts

Number of circuits: __

Number of conductors: __

Number of static wires: __

Minimum height above existing landscape (ground level): ____ feet

The Grantee is also granted the associated perpetual and necessary rights to:

1) Enter upon the Perpetual Easement Strip for the purposes of fully exercising and enjoying the rights conferred by this perpetual easement; and
2) Trim, cut down and remove any or all brush, trees and overhanging branches now or hereafter existing in, on and over the Perpetual Easement Strip; and
3) Cut down and remove such dead, dying, diseased, decayed, leaning trees or tree parts now or hereafter existing on the property of the Landowner located outside of said Perpetual Easement Strip that in Grantee's judgment, may interfere with Grantee's full use of the Perpetual Easement Strip for the purposes stated herein or that pose a threat to the safe and reliable operation of the Electric Transmission Facilities; together with the right, permission and authority to enter in a reasonable manner upon the property of the Landowner adjacent to said Perpetual Easement Strip for such purpose.

The Grantee shall pay a reasonable sum for all damages to property, crops, fences, livestock, lawns, roads, fields and field tile (other than brush, trees and overhanging branches trimmed or cut down and removed from the Perpetual Easement Strip), caused by the construction, installation, operation, maintenance, repair, replacement rebuilding, relocation, inspection, patrol or removal of said Electric Transmission Facilities.

Within the Perpetual Easement Strip, and without first securing the prior written consent of the Grantee, **Landowner** agrees that they will not:

1) Locate any dwelling or mobile home intended for residential occupancy; or
2) Construct, install or erect any structures or fixtures, including but not limited to swimming pools; or
3) Construct any non-residential type building; or
4) Store flammable goods or products; or
5) Plant trees or shrubs; or
6) Place water, sewer or drainage facilities; or
7) Change the grade more than one (1) foot.

The parties hereto do hereby agree to the terms and conditions set forth in Exhibit "A", "B" and "C", attached hereto and incorporated by reference herein. The term "utility" in Exhibit "A" shall mean Grantee.

This perpetual easement agreement is binding, in its entirety, upon the heirs, successors and assigns of the parties hereto, and shall run with the lands described herein.

As provided by PSC 113, the Landowner shall have a minimum period of five days to examine materials approved or provided by the Public Service Commission of Wisconsin describing the Landowner's rights and options in the easement negotiating process. The Landowner hereby voluntarily waives the five-day review period, or acknowledges that they have had at least five (5) days to review such materials.

Landowner warrants and represents that Landowner has good title to the property described herein, free and clear from all liens and encumbrances, except: _____

The Landowner hereby accepts a lump sum payment in consideration of the grant of this perpetual easement.

WITNESS the signature(s) of the Landowner this _____ day of _____, 20___.

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

Landowner

ACKNOWLEDGEMENT

STATE OF WISCONSIN)
) ss
COUNTY OF)

Personally came before me this _____ day of _____, 20___, the above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

_____
Signature of Notary

_____
Printed Name of Notary

Notary Public, State of Wisconsin

My Commission expires (is) _____

EXHIBIT "A"
[WI Sta. 182.017(7)]

1. In constructing and maintaining high-voltage transmission lines on the property covered by the easement, the utility shall:

   a) If excavation is necessary, ensure that the topsoil is stripped, piled and replaced upon completion of the operation.

   b) Restore to its original condition any slope, terrace, or waterway, which is disturbed by the construction or maintenance.

   c) Insofar as is practicable and when the landowner requests, schedule any construction work in an area used for agricultural production at times when the ground is frozen in order to prevent or reduce soil compaction.

   d) Clear all debris and remove all stones and rocks resulting from construction activity upon completion of construction.

   e) Satisfactorily repair to its original condition any fence damaged as a result of construction or maintenance operations. If cutting a fence is necessary, a temporary gate shall be installed. Any such gate shall be left in place at the landowner's request.

   f) Repair any drainage tile line within the easement damaged by such construction or maintenance.

   g) Pay for any crop damage caused by such construction or maintenance.

   h) Supply and install any necessary grounding of a landowner's fences, machinery or buildings.

2. The utility shall control weeds and brush around the transmission line facilities. No herbicidal chemicals may be used for weed and brush control without the express written consent of the landowner. If weed and brush control is undertaken by the landowner under an agreement with the utility, the landowner shall receive from the utility a reasonable amount for such services.

3. The Landowner shall be afforded a reasonable time prior to commencement of construction to harvest any trees located within the easement boundaries, and if the Landowner fails to do so, the Landowner shall nevertheless retain title to all trees cut by the utility.

4. The Landowner shall not be responsible for any injury to persons or property caused by the design, construction or upkeep of the high-voltage transmission lines or towers.

5. The utility shall employ all reasonable measures to ensure that the landowner's television and radio reception is not adversely affected by the high-voltage transmission lines.

6. The utility may not use any lands beyond the boundaries of the easement for any purpose, including ingress to and egress from the right-of-way, without the written consent of the landowner.

EXHIBIT "C"

CERTIFICATE OF COMPENSATION

SECTION 32.06 (2a) WISCONSIN STATS.

DATED THIS _____ DAY OF _____ , 20___ .

Pursuant to Section 32.06(2a) notice is hereby given of the acquisition of a certain Perpetual Easement attached hereto and made a part hereof by this reference. The names of all persons or parties having an interest of record in the property affected by such Perpetual Easement immediately prior to the acquisition of the Perpetual Easement are the following:

Landowner: _____

Mortgagee(s): _____

Land Contract Vendor(s): _____

Others: _____

Such Perpetual Easement grants unto Grantee, its successors and assigns, licensees and manager the right, permission and authority to construct, install, operate, maintain, repair, replace, rebuild, remove, relocate, inspect and patrol (an) electric transmission line(s) for the purpose of transmitting electric energy, communications and signals upon, in, over and across the Perpetual Easement Strip as described on the instrument to which this exhibit is attached.

The total consideration paid for such Perpetual Easement was $ _____.

NOTICE OF RIGHT OF APPEAL

In accordance with Section 32.06(2a) Wisconsin Stats., any of the above named persons or parties shall have six (6) months from the date of the recording of this certificate to appeal the amount of compensation herein stated by filing a petition with the Judge of the Circuit Court of _____ County, Wisconsin, who shall assign the matter to the Chairperson of the County Condemnation Commissioners for hearing under Sec. 32.06(8). Notification of such petition shall be made to all persons or parties having an interest of record in the above property, and the procedures prescribed under Secs. 32.06(9)(a) and (b), 32.06(10), 32.06(12); and Chs. 808 and 809 shall govern such appeals.

This instrument drafted by _____ and checked by _____ on behalf of American Transmission Company, PO Box 47, Waukesha, Wisconsin 53187-0047.

MAILING LIST

*GOVERNOR SCOTT WALKER
115 E CAPITOL

*SEN TERRY MOULTON
AGRICULTURE COMMITTEE
306 S CAPITOL

*REP LEE NERISON
AGRICULTURE COMMITTEE
310 N CAPITOL

*RESOURCES FOR LIBRARIES (15)
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WASHINGTON DC 20540-0001

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900 RESERVE ST
STEVENS POINT WI 54481

TERESA KOCHAVER (3)
AMERICAN TRANSMISSION
PO BOX 6113
DE PERE WI 54115

KEN RINEER (3)
PSC
PO BOX 7854
MADISON WI 57307-7854

LORI J OBRIGHT
OUTAGAMIE COUNTY CLERK
410 S. WALNUT ST
APPLETON WI 54911

LORI KLEVESAHL
CICERO TOWN CLERK
W5402 BRUGGER RD
BLACK CREEK WI 54106

BARBARA SEEGERS
FREEDOM TOWN CLERK
PO BOX 1007
FREEDOM WI 54131-1007

DARLENE SCHULTZ
OSBORN & SEYMOUR TOWN CLERK
N6362 BALLARD RD
SEYMOUR WI 54165

SANDY JUNO
BROWN COUNTY CLERK
PO BOX 23600
GREEN BAY WI 54305-3600

JANET BODART
PITTSFIELD TOWN CLERK
5771 TOWN HALL DR
PULASKI WI 54162-8918

ROSEMARY RUECKERT
SHAWANO COUNTY CLERK
311 N MAIN ST
SHAWANO WI 54166

JANET POWERS
ANGELICA TOWN CLERK
W1569 COUNTY ROAD C
PULASKI WI 54162-7437

JANALEE JENEROU
GREEN VALLEY TOWN CLERK
W977 SHAWANO LINE RD
GILLETT WI 54124

KATIE SPRANGERS
LESSOR TOWN CLERK
N662 HILL RD
PULASKI WI 54162

KATHY LUEBKE
MAPLE GROVE TOWN CLERK
W1236 MAIN LANEY DR
PULASKI WI 54162-9174

KIM PYTLESKI
OCONTO COUNTY CLERK
301 WASHINGTON ST
OCONTO WI 54153-1699

TAMERA WILLEMS
CHASE TOWN CHAIR
1529 COUNTY ROAD C
SOBIESKI WI 54171

CHARLENE BORGHESE
MORGAN TOWN CHAIR
3134 SCHROEDER RD
OCONTO FALLS WI 54154

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GILLETT WI 54124-0109

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GREEN BAY WI 54301-5139

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OCONTO WI 54153-1724

OCONTO FLS COMMUNITY LIB
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OCONTO FALLS WI 54154-1048

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SHAWANO WI 54166-2496

State of Wisconsin
Department of Agriculture,
Trade & Consumer Protection

Agricultural Resource Management

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Agricultural Impact Program
P.O. Box 8911
Madison, WI 53708-8911

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608/224-4646
Fax: 608/224-4615