AGRICULTURAL IMPACT STATEMENT

DATCP #4311

Western Wisconsin Natural Gas Expansion Project

Monroe County

PSC # 6680-CG-168

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

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The Review Process

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this Agricultural Impact Statement (AIS) for the proposed Western Wisconsin Natural Gas Expansion Project (DATCP #4311) in accordance with Wis. Stat. §32.035. Wisconsin Power and Light Company (WPL) initially submitted project information to DATCP in September and October of 2019. WPL proposes to construct 12 miles of new 10-inch pipe in Monroe County that would connect an existing Northern Natural Gas (NNG) pipeline to an existing WPL pipeline. The project includes two route choices with a lengthy common portion in the center. Two new aboveground facilities would be required.

The Public Service Commission (PSC or Commission) is the authority that will approve, deny, or make modifications to this project and will choose the route that the project will follow.

As part of its review of the project, DATCP sent questionnaires to agricultural property owners who may have three or more acres of easement acquired, if the project is approved by the PSC. Of the 66 potentially affected property owners, 52 are agricultural property owners and 25 of those could have 3 or more acres of easement acquired. 13 landowners completed the DATCP questionnaire. Their comments and concerns are discussed in detail in Section VI, Agricultural Landowner Impacts.

DATCP Recommendations

Having reviewed all of the materials provided by WPL and the comments from property owners, DATCP recommends the following to the PSC, WPL, and to agricultural property owners to help mitigate impacts on farmland and farm operations.

Recommendations to the Public Service Commission

- Almost all of this project would affect agricultural properties. DATCP recommends that WPL retains an agricultural inspector to assist with pre-construction discussions between the utility and the agricultural property owners, conduct inspections of construction activities through agricultural properties, and monitor the implementation of the project-specific Agricultural Mitigation Plan (AMP) and Best Management Practices (BMPs). DATCP further recommends that the Agricultural Inspector share periodic construction reports with DATCP staff.

- For most of this project, the proposed permanent easements would be 25 feet wide and temporary easements would be 75 feet wide. Typical natural gas construction projects require only a full 100-foot width easement when constructing through agricultural areas to accommodate the storage of segregated excavated soils. DATCP

recommends that WPL use narrower temporary easements, where practicable to minimize impacts to private properties.

- Most of the proposed project, regardless of the route chosen, crosses through agricultural fields and would create significant impacts to agricultural properties. DATCP recommends that, where practical, WPL site the propose project along field boundaries.

- Two aboveground facilities are proposed to be located on the David A. Moake Revocable Trust/Randall Livestock Inc. properties. DATCP recommends that WPL work with landowners to site all new aboveground facilities to minimize impacts to actively farmed lands.

- DATCP recommends that WPL work with landowners to avoid impacting structures within the right-of-way (ROW) and, if necessary, compensate the landowner for any loss of property. Desktop review suggests a few buildings may to be within potential ROWs. They are as follows:
  - Segment 1A, Charles Betthauser property, along CTH M
  - Common Segment 4, Duane W. Damrow property, along CTH CA
  - Segment 5A, Jerry Bloom property, along CTH CA

- Common Segment 4 would affect property owned by Sandra Chroninger who has 25 acres of the potentially affected land enrolled in the Conservation Reserve program (CRP) program. DATCP recommends that WPL work with any participant in a conservation or tax incentive program to avoid or mitigate impacts to these lands, as much as practicable. Landowners should be compensated if, because of the project, the landowner is removed from the program; required to pay financial penalties; or program payments are reduced. WPL should also pay for any repairs required by a program for any conservation practice damaged by project construction.

- The project would cross many wood lot as well as at least one Christmas tree farm. DATCP recommends that WPL limit, to the extent practicable, the amount of permanent tree clearing required.

Recommendations to the Applicants

- DATCP recommends that WPL work with agricultural landowners to minimize impacts to farmland and farm operations. Including drainage tiles, erosion controls, grassed waterways, fencing, and farm access roads.

- The AMP and BMPs submitted by WPL for this project are effective tools in mitigating potential impacts to farm properties. DATCP recommends that WPL implement appropriate training for all construction supervisors, inspectors, and crews to ensure

that they understand and properly implement the AMP and BMPs so that the integrity of agricultural lands and operations are protected during project construction and restoration.

- When the proposed project will require the removal of trees that are not fully mature, WPL should hire appraisers who have expertise in valuing such trees that have not yet reached a marketable stage. Other characteristics that should be considered include damage to windbreaks due to the loss of trees, loss of shade for livestock or other needs, loss of fruit or nut bearing trees, and the aesthetic values of trees that are removed.
- DATCP recommends that WPL should attempt to ensure that any renters of agricultural land affected by the proposed project are kept up-to-date and informed of construction schedules and potential impacts.
- WPL should work with landowners to restore agricultural properties impacted by construction activities to pre-construction function and address concerns resulting from construction.

Recommendations to the Agricultural Property Owners

- Landowners should examine the language of any easement contract carefully and verify that it contains all agreed-to terms. Landowners should be familiar with the utility's project-specific AMP and BMPs (Appendix E) so as to determine if additional conditions should be negotiated with the utility. Though landowners may choose to waive any or all of the practices and procedures described in the AMP and BMPs, DATCP recommends to only do so with careful consideration.
- Landowners/operators should keep records of the condition of their land within the ROW before, during, and after construction to document any impacts or damage that occurs due to the proposed project. Documentation could include crop yield records and photographs taken every season.
- Landowners should identify to WPL, prior to the start of construction, where construction activities may interfere with farm operations and where farm facilities are located including, drainage tiles, wells, watering systems, fencing, farm access roads, or grain bins. Landowners should work with WPL on how agricultural operations will continue during the different phases of pipeline construction. If any infrastructure such as drainage tiles or fencing is damaged by construction activities, landowners should document and photograph the damage and any repair efforts conducted on behalf of WPL to ensure the repair is adequate.

- After construction is completed, landowners and the utility should carefully monitor for the emergence of drainage problems. If problems are observed that can be attributed to pipeline construction, the landowner and the utility should work together to develop a mutually agreeable solution.

I. INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this agricultural impact statement (AIS) in accordance with Wis. Stat. §32.035. The AIS is an informational and advisory document that describes and analyzes the potential effects of the project on farm operations and agricultural resources, but it cannot stop a project. The 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 five acres of land from any farm operation. 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.

The AIS reflects the general objectives of the DATCP in its recognition of the importance of conserving important agricultural resources and maintaining a healthy rural economy. 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. As stated in Wis. Stat. §32.035(4)(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.

The full text of Wis. Stat. §32.035, as well as additional references to statutes that govern eminent domain and condemnation processes are included in Appendix B. Links to other sources of information can be found in Appendix C.

The proposed project requires a Certificate of Authority (CA) from the Public Service Commission of Wisconsin (PSC or Commission) before construction can begin. The PSC will analyze the need for the project and the potential environmental and community impacts in an Environmental Assessment. The Commission will approve, modify, or deny the utility's application. Additional information about this project and the PSC review process can be found on the PSC web site: http://psc.wi.gov under the PSC docket number 6680-CG-168.

Wisconsin Power and Light Company (WPL) has developed an Agricultural Mitigation Plan (AMP) and Best Management Practices (BMPs) for this project. The AMP and BMPs describe the policies to be followed and methods to be used by WPL to avoid or mitigate the potentially adverse impacts on agricultural productivity from the construction of this pipeline. The AMP and BMPs are included in Appendix E of this report.

During construction, WPL may designate one or more individuals as the project Agricultural Inspector. The Agricultural Inspector would be familiar with agricultural operations, the AMP and BMPs, as well as gas pipeline construction. DATCP encourages the use of an Agricultural Inspector for this project.

II. PROJECT DESCRIPTION

Overview

WPL proposes to construct a new natural gas pipeline east and south of the city of Tomah in Monroe County. The project, known as the Western Wisconsin Gas Expansion (WWGE) project would be located within the towns of Adrian, Greenfield, La Grange, Oakdale, and Tomah. One temporary work space would be located within the city of Tomah. If approved, the pipeline would connect a Northern Natural Gas (NNG) pipeline at a new Tomah Gate Station to an existing WPL pipeline at the existing Oakdale Gate Station. New construction would be required for the NNG Tomah Gate Station, but this construction is not part of this project. Required modifications to the Oakdale Gate Stations would be conducted inside the existing station easement.

WPL proposes to install 12 miles of new 10-inch steel natural gas pipeline along one of two potential routes. The two routes in this report are referred to as the Route A (applicant's preferred route) and Route B (applicant's alternate route). A map of the project is provided in Figure 1. The routes start at one of two sites for the new NNG Tomah Gate Station. Route A starts in the town of Greenfield and Route B starts about one mile to the east in the town of La Grange. The two routes extend south and then east around the city of Tomah. They share about 7 miles in common and would end at the existing WPL Oakdale Gate Station in the town of Oakdale.

Project Purpose and Need

Forecast data indicated to WPL a shortage of natural gas service in the project area that would constrain economic development opportunities. This project would ensure reliable natural gas service to current and future customers by expanding the natural gas system for the west-central counties of Wisconsin. WPL states that it would also allow for additional economic development in the region.

Description of Potential Routes

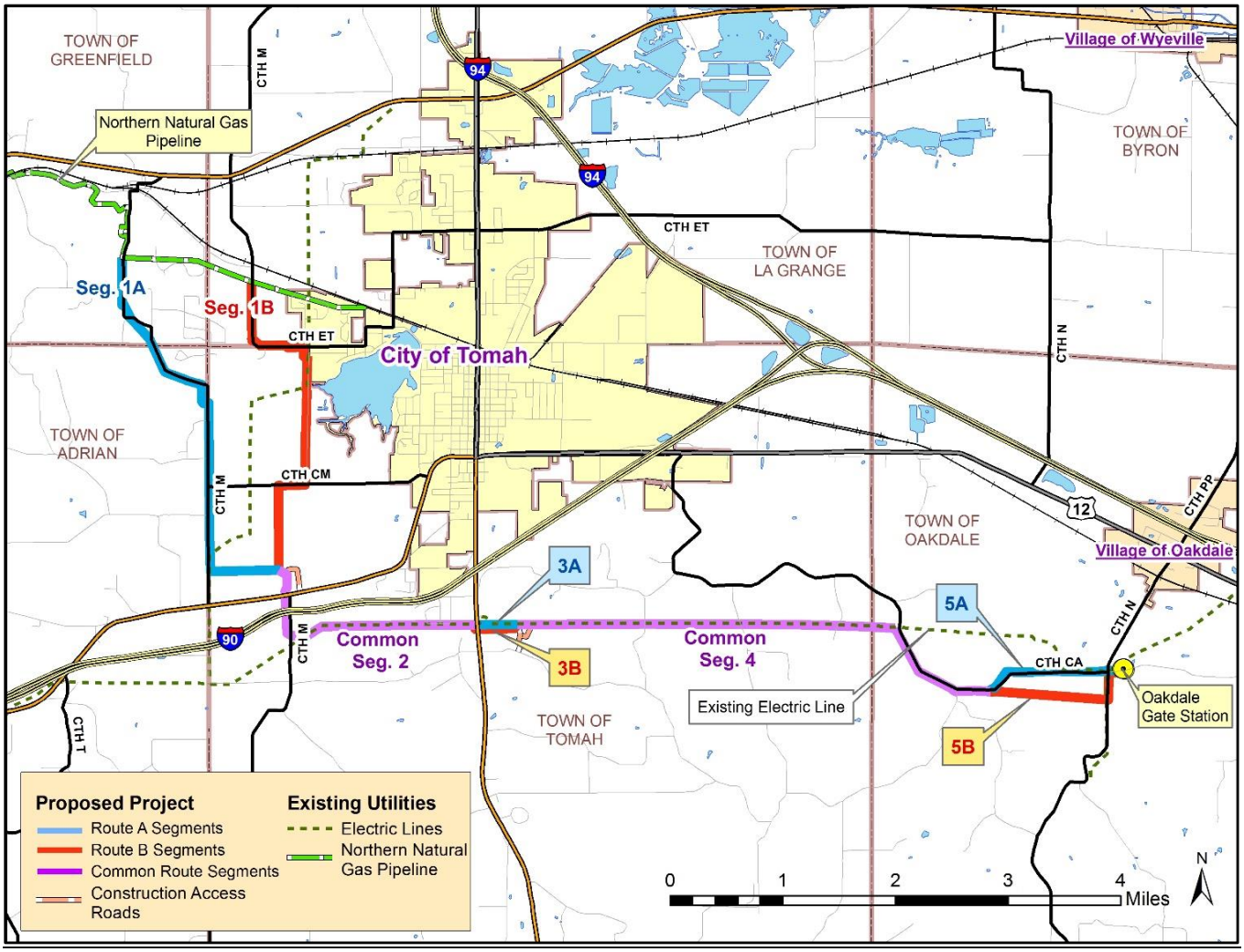
Route A (applicant's proposed route)

Segment 1A

Segment 1A starts with a connection to the NNG pipeline, along the west side of County Trunk Highway (CTH) M and about 0.3 miles north of Flat Iron Avenue in the town of Greenfield. The segment is about 3.8 miles long and crosses the towns of Greenfield, Adrian, and Tomah. Segment 1A travels primarily south, following CTH M for all but the last 0.6 miles. It starts along the west side of CTH M, crosses the highway three times and ends on the east side of CTH M. Where CTH M curves, at its intersection with Flat Top Road, the route leaves the highway and diagonally crosses two agricultural properties owned by Mr. Moseley and the Boaks. Further

south, the route briefly departs from CTH M again and stays on the Chapman Farms Land LLC property to avoid impacts to two residential properties. Segment 1A then crosses to the east side of CTH M and continues south for another 1.5 miles. Approximately one-half mile north of CTH M and State Trunk Highway (STH) 16, Segment 1A briefly parallels a Dairyland Power Company (DPC) electric line for about 770 feet. It then turns east along parcel boundaries for about 0.6 miles and ends at the start of Common Segment 2. All of Segment 1A is routed across private property and does not overlap the right-of-way (ROW) of any road. It only briefly overlaps a small portion of the DPC electric line ROW.

Figure 1: Project Map



Common Segment 2

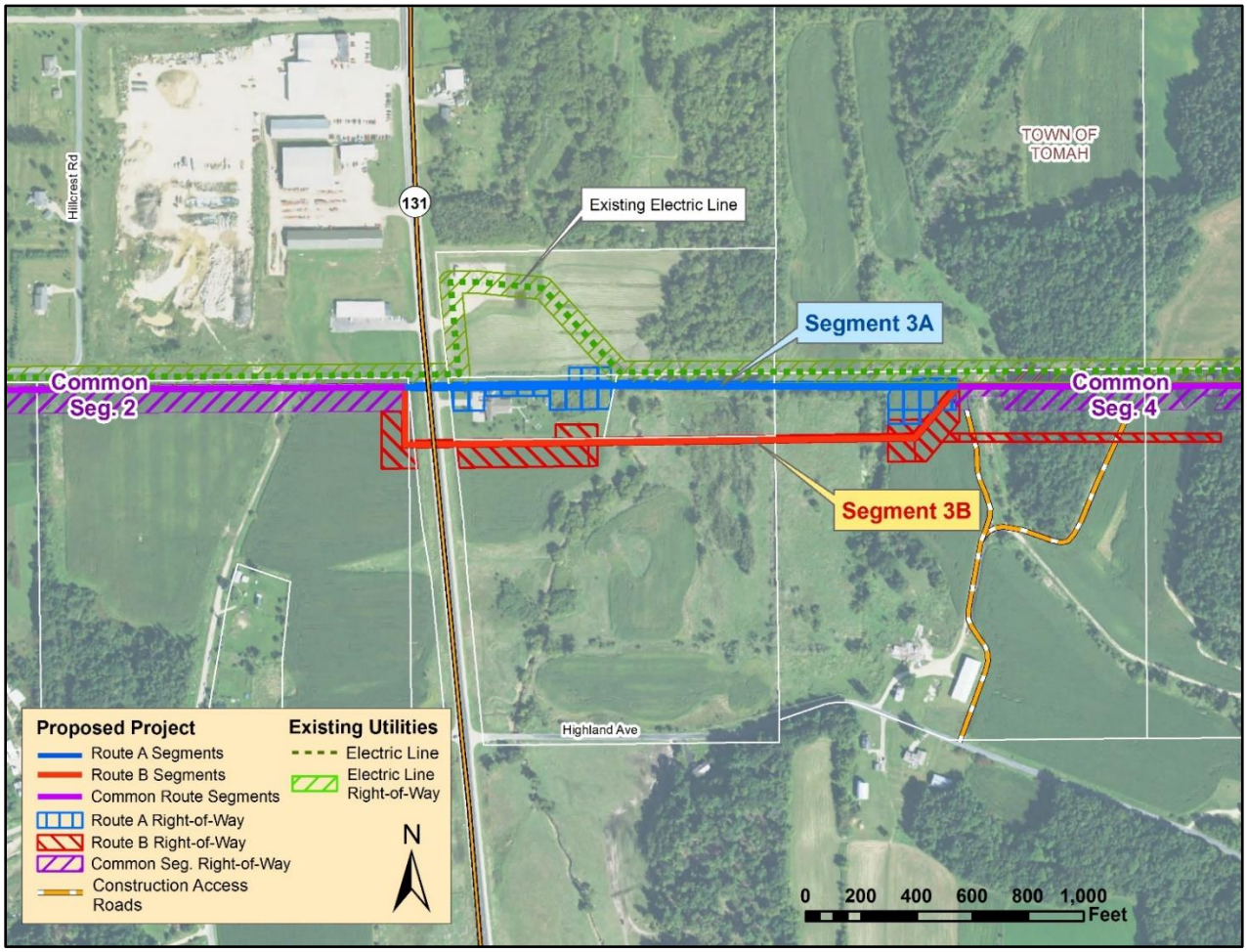
Common Segment 2 is approximately 2.3 miles long within the town of Tomah. The segment is mostly cross-country, with only some of the route paralleling parcel boundaries. It starts at the southern end of Segments 1A and 1B. The route crosses diagonally through the northwest corner of the Zimmerman farm. Then traveling along the Zimmerman/Hicks property boundary,

the route crosses back onto the Zimmerman property before reaching STH 16. The pipeline would then be bored under STH 16, property owned by Mr. Shivler, and Interstate 90 (I-90). Continuing south through the middle of parcels owned by Ms. Vandermeer, Common Segment 2 angles southeast, crosses CTH M, travels east briefly, and then northeast cross-country paralleling an existing DPC electric line. Continuing along the south side of the electric line, the segment travels east near parcel boundaries. The proposed project ROW width overlaps the existing electric line ROW by about 10 feet for a distance of about 1.5 miles. Common Segment 2 ends on the west side of STH 131 where it would connect to two newly constructed aboveground facilities, a mainline valve and a blow-off facility. Both aboveground facilities are small fenced areas and would be located on cropland owned by Randall Livestock, Inc.

Segment 3A

Common Segment 2 briefly splits into either Segment 3A or Segment 3B. Segment 3A crosses under STH 131 and continues east along parcel boundaries for about 2,000 feet, mostly paralleling the existing DPC electric lines. The proposed ROW width partially overlaps the existing electric line ROW by about 10 feet.

Figure 2: Segments 3A and 3B

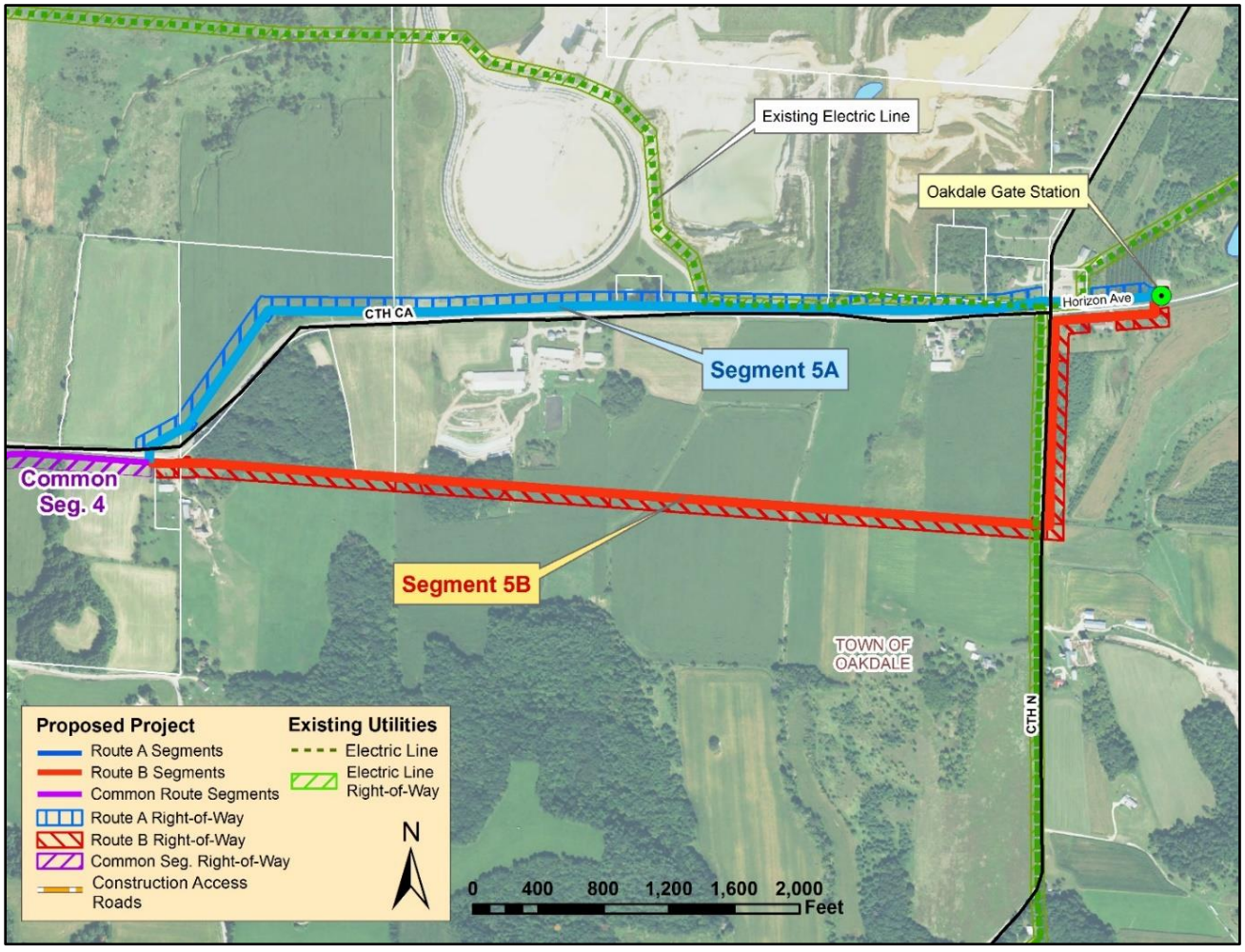


Common Segment 4

Segments 3A and 3B meet up to continue east for the next 4.5 miles as Common Segment 4. For the first 3.5 miles, the route is cross-country adjacent and south of the ROW of the existing DPC electric line. The DPC ROW straddles parcel boundaries, which are mostly located along field edges. No portion of the proposed project natural gas ROW overlaps the existing electric line ROW that it parallels. The proposed project ROW width is offset from the parcel boundaries as little as a few feet and up to 25 feet. Some of the parcel boundaries along this stretch of the route are not field boundaries, causing the proposed ROW to cut through several fields. Additionally, the route cuts through many woodblocks. This portion of the route crosses Hickory Road, Holiday Road, and Hollow Road.

Approaching CTH CA, Common Segment 4 turns southeast to parallel the western and southern sides of the highway for a distance of about 1.1 miles. Segment 4 crosses Holly Avenue and ends just east of Bear Creek. From there the project would be routed along either Segment 5A or Segment 5B.

Figure 3: East End of Project - Segments 5A and 5B



Segment 5A

Segment 5A is approximately 1.3 miles long and roughly parallels the north side of CTH CA/Horizon Avenue. The segment crosses CTH CA and CTH N. The segment ROW width partially overlaps a portion of the existing DPC electric line ROW and an Oakdale distribution natural gas pipeline. The route ends at the existing WPL Oakdale Gate Station.

Route B (applicant's alternate route)

Segment 1B

Segment 1B is approximately 3.3 miles long. It starts about 0.1 mile south of the intersection of CTH ET and Flagship Avenue at the NNG pipeline, in the town of La Grange. Segment 1B stair-steps south, east, and west, paralleling CTH ET, Gondola Road, and CTH CM.

Segment 1B travels south along the west side of CTH ET for about 0.5 miles. Where the CTH ET curves east, the route crosses to the north side of the highway. After 1,300 feet, the route crosses to the south side of CTH ET and enters the town of Tomah. As it approaches the city limits of Tomah, the segment avoids two residential properties and then continues south paralleling the west side of Gondola Road and an existing DPC electric line. Small parts of the proposed ROW would be within the city of Tomah.

About 1,900 feet south of CTH ET, the electric line turns west and the proposed pipeline would no longer parallel the existing electric line. Segment 1B continues south paralleling Gondola Road until crossing to the south side of CTH CM. Turning west briefly, the route then turns south cross-country along parcel boundaries for a distance of about 4,000 feet. The segment ends at the start of Common Segment 2.

Common Segment 2

See previous description under Segment A.

Segment 3B

Segment 3B is a short alternative to Segment 3A. It is about 0.4 miles long and runs parallel and to the south of Segment 3A. Just west of STH 131, the route turns south for about 600 feet and then east, under STH 131, and continues east for a distance of about 1,800 feet. At that point the route turns northeast and connects with Common Segment 4.

Common Segment 4

See previous description under Segment A.

Segment 5B

Segment 5B is an alternative to Segment 5A and is about 1.4 miles long. From Common Segment 4, it extends east cross-country. The segment crosses CTH N and turns north for a short distance. At CTH CA/Horizon Avenue, Segment 5B turns east and parallels the south side

of Horizon Avenue for about 600 feet and then north across the avenue to connect to the existing WPL Oakdale Gate Station.

ROW Requirements

Easement Rights and Responsibilities

If this project is approved, WPL will be acquiring easements for permanent ROW and temporary construction areas. Easements are private contracts between a landowner (grantor) and the utility (grantee). Additional information about the appraisal and compensation process is included at the end of Section VI of this document.

The easement contract grants the utility the right to construct, operate, maintain, inspect, and repair the pipeline. Furthermore, by statute (Wis. Stat. §196.745), the utility is required to maintain the natural gas pipeline in an adequate and safe manner. All vegetation will be removed from the easement for construction of the pipeline. In addition, maintenance of the in-service pipeline will require continuing management of vegetation that grows within the easement. The type of vegetation that is allowed to grow within the easement and how vegetation is maintained are all subject to the easement contract. Regarding liability, the landowner is not liable for the construction, operation, maintenance, or repair of the pipeline, provided the landowner has not damaged any project facilities.

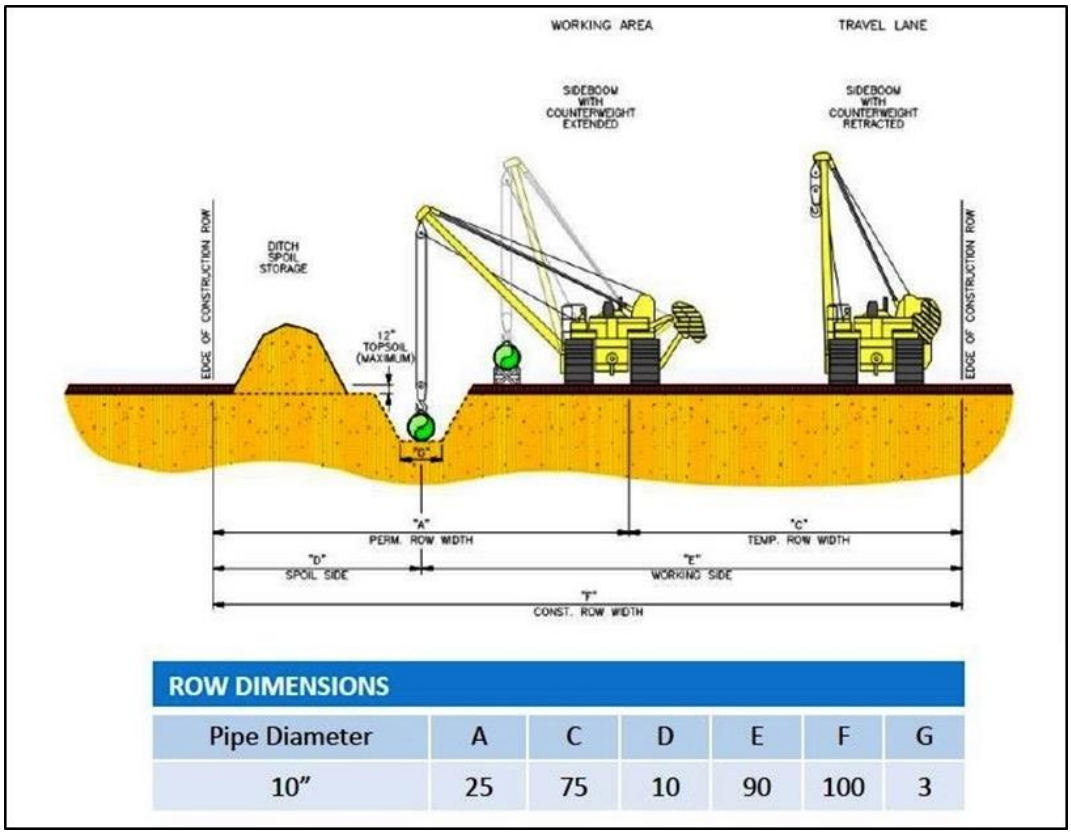
After the easement is acquired by the utility, the property owner still owns the land under easement and the land does not become public property. No member of the public, other than utility employees or representatives have access to the easement without the landowner's permission. While in the case of an emergency, the utility has the right to access the easement without any permission from the landowner, during normal conditions, utilities typically make every effort to notify landowners when they anticipate the need to access the easement. The easement contract will contain all specifics regarding access, rights, responsibilities, and liabilities and should be thoroughly reviewed by the landowner prior to signing.

Project ROW Requirements

This new natural gas pipeline would require a 25-foot wide permanent easement for much of the route. WPL proposes an additional 75 feet of temporary easement width to accommodate construction activities. The total ROW width that could be disturbed by this project's construction activities is 100 feet. After construction is completed, the temporary easement would be restored and then terminated.

Typical temporary construction easements for natural gas projects are 25 to 50 feet wide with the wider temporary easement of 50 feet used only in agricultural areas to accommodate the storage of segregated excavated soils. DATCP recommends that WPL use narrower temporary construction easements, where practicable, to minimize impacts to private properties.

Figure 4: WPL Easement and Workspace Requirements



ROW DIMENSIONS						
Pipe Diameter	A	C	D	E	F	G
10”	25	75	10	90	100	3

SOURCE: April 10, 2019 WPL project presentation, Western Wisconsin Gas Expansion Project, Natural gas pipeline informational meeting.

The natural gas pipeline would be constructed in an open trench for much of the route, although horizontal directional drilling (HDD) and jack and bore construction is proposed to avoid impacts to man-made and natural resources including highways, roads, residential and commercial developments, rivers, wetlands, and woodlands.

In areas where horizontal directional drilling (HDD) or jack and bore construction would be used instead of open trenching, only the permanent 25-foot wide ROW is necessary. However, often other areas of off ROW temporary easement are required, especially for HDD construction.

Sections VII and VIII of this report for more information about potential construction impacts.

Project Siting

Utilities can be sited to minimize impacts to farm fields and farming operations. Utilities constructed adjacent to roads are typically, the least impactful to agricultural operations as it keeps construction activities to field edges. Also, parts of road ROWs can often be used for construction workspace, minimizing the acres of land impacted from farm fields. Temporary interference with access to buildings and fields, while still a concern, can be worked out with the farmer.

The next most beneficial utility siting location is along field edges because the construction impacts are limited to the outer edges of agricultural operations.

Utilities sited through fields and agricultural operations can create the most impacts to farmers. This can occur when utilities are sited along parcel boundaries that aren't aligned with field edges or adjacent to existing utilities that also don't follow field edges. Constructing through a field may divide cropland and hinder access to parts of a field. This could be particularly disruptive during planting or harvesting times. Also, additional temporary access roads may be required to reach locations that are not accessible by roads.

Less than 30 percent of this project would be routed directly adjacent to roads. In total, Route A is routed more along roads (28 percent) than Route B (21 percent). However, there is little to no overlap of the proposed construction ROW with the roads. In some areas such as Segment 1B along Gondola Road, parts of the proposed ROW are offset from the road by about 40 feet due to an existing electric line, increasing potential impacts to farming operations.

A very small percentage (less than 5 percent) of the project's proposed ROW would overlap an existing utility ROW. Of that, only a few of these acres are along agricultural field boundaries.

Table 1: Project Easements Overlapping Existing Utility and Highway ROWs

Route	Total Easements (acres)	Agricultural Easements (acres)	Project Easements Overlapping Existing ROWs (acres)	Agricultural Easements Overlapping Existing ROWs (acres)
Route A	59.22	56.23	4.04	3.73
Route B	52.84	52.03	0.81	0.81
Common Segments	81.94	77.67	3.15	2.35

Most of the ROW proposed for this project, regardless of the route chosen, crosses through agricultural fields and would create significant impacts to agricultural properties. DATCP recommends that, where practical, WPL site the propose project along field boundaries.

Trench Dimensions

The excavated trench would be approximately 5 feet deep and 3 feet wide at the base and up to 18 feet wide at ground surface. In some areas where there are obstacles, such as existing pipelines, steep topography, or shallow bedrock, the excavated trench may need to be deeper and wider. In agricultural lands, trench depth will be sufficiently deep to allow a minimum of 4 feet of soil cover over the top of the pipeline to avoid possible interference with farming equipment.

Service Connections

No new customers would be serviced by the approval and construction of this project.

III. Project Impacts to Agricultural Properties

Easements

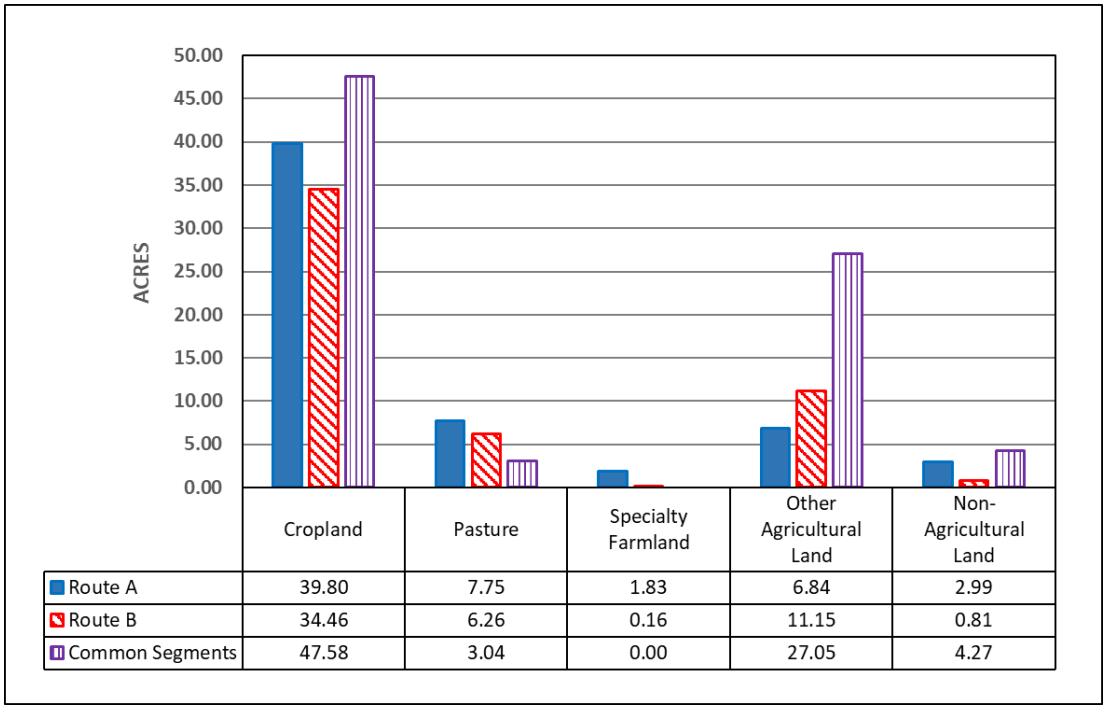
If the Commission approves the project, the Commission has the option to choose either Route A (WPL-preferred route), Route B (WPL-alternate route), or a hybrid combination of the two. The length and acres of easements required for each route option is very similar. Route A plus the common segments would require about 141 acres of easements. Route B plus the common segments would require about 135 acres of easements. The table below shows that if the Commission approves Route A or Route B, at least 95 percent of the route would affect agricultural properties, significantly impacting farm operations.

Table 2: Acres of Agricultural Land Affected by the Project

Route	Total Easements (acres)	Agricultural Easements (acres)	Percent Agriculture
Route A	59.22	56.23	95%
Route B	52.84	52.03	98%
Common Segments	81.94	77.67	95%

Of the agricultural acres potentially affected, a majority is cropland with a lesser amount in pasture, specialty farmland, or other land uses. Less than 8 acres of either route is non-agricultural land. The specialty farmland that would be affected by the project crosses tree farms.

Figure 5: Types of Potentially Affected Farmland



Potential ROW Impacts to Agricultural Buildings

Desktop review suggests that a few buildings may be within potential ROWs. They are as follows:

- Segment 1A, Charles Betthauser property, along CTH M
- Common Segment 4, Duane W. Damrow property, along CTH CA
- Segment 5A, Jerry Bloom property, along CTH CA

DATCP recommends that WPL work with any landowner to avoid impacting structures within the ROW and if necessary compensate the landowner for any loss of property.

Aboveground Facilities

The project pipeline starts in the west at one of two new Tomah Gate Station sites. The two sites would connect the NNG pipeline to either Route A (WPL-preferred route) in the town of Greenfield on property owned by the Unimin Corporation or Route B (WPL-alternate route) in the town of La Grange on cropland owned by the Clay Family Trust. The Tomah Gate Station is not part of this pipeline project. If this project is approved, it will be constructed by NNG and as such, the exact location and dimensions of the facility are unknown at this time

In the town of Tomah, along the west side of STH 131, two aboveground facilities are proposed for this project. The mainline valve would be a fenced facility of approximately 20 x 20 feet. The blow-off facility would have a fenced area of approximately 15 x 15 feet. Two locations are provided for both facilities, one set for Route A and another set for Route B. All proposed facilities are located on cropland owned by Randall Livestock, Inc.

The pipeline would end at the existing Oakdale Gate Station in the town of Oakdale, along the north side of Horizon Avenue. All project-required modifications to the station would be constructed within the existing easement.

Temporary Construction Roads

Two temporary construction roads are required for this project, regardless of the route approved. The roads would be 20 feet wide.

Access Road 1 would require 0.75 acres and connect STH 16 to Common Segment 2 through the Robert E. Hicks property. The first 1,000 feet is along a farm road. The remaining 690 feet would affect cropland.

Access Road 2 would require a total of 0.80 acres and would connect Highland Avenue to Common Segment 4 in two locations across property owned by the David A. Moake Revocable Trust (part of Randall Livestock, Inc.). Most of the route appears to be along existing farm roads.

Compensation for Easements and Crop Damage

The amount of compensation for the easement is established during the negotiation process between the utility (or its representative) and the individual landowner. The easement contract is binding to the landowner and any future owners of the land until the contract is dissolved.

WPL has stated that farmers will be compensated for the loss of crop production due to the pipeline project. Farmers who rent or lease project-affected fields may be compensated in lieu of the landowner. WPL will attempt to communicate the agreement of compensation to both the tenant farmer as well as the landowner.

A different formula will be used for compensating crop damage/loss on permanent easements versus temporary construction easements. This is because the soils on the permanent easement will be disturbed by the trenching process, while the soils on the temporary easement will only be compacted. For both types of easements, WPL proposes to use a formula, simply put, that would be the acres of the easement multiplied by the expected bushels per acre yield multiplied by the expected price per bushel. In addition, WPL will pay a total of 200 percent of that amount for the permanent easements and an additional 80 percent of that amount for the temporary easements. Refer to BMP 08 in Appendix E for more details about crop compensation.

DATCP recommends that farmers document the condition of the land and yields to compare with post-construction conditions for use in negotiations with the utility.

IV. AGRICULTURAL SETTING

The following information is intended to describe the existing agricultural sector of Monroe County in general terms and to aid agricultural property owners in their easement negotiations with the utility. Section VI, Agricultural Landowner Impacts discusses the specific potential impacts from this project and the concerns of agricultural property owners. The majority of the data provided in this section was obtained from the USDA, National Agricultural Statistic Service.

Agricultural Productivity

Dairy farming is the major agricultural industry in Monroe County. Top commodities for the county include dairy, cranberries, beef, and cash grain. In 2018, Monroe County produced more than 490 million pounds of milk. The county is also fifth in the state in the number of acres of alfalfa hay harvested. The table below shows the acres of selected crops harvested annually in Monroe County from 2014 to 2018. Over this five year period, the acres harvested of corn for grain and soybeans increased while corn for silage and alfalfa hay decreased.

Table 3: Acres of Selected Crops from 2014 to 2018

	Harvested Acres				
Crop	**2014**	**2015**	**2016**	**2017**	**2018**
Corn for Grain	41,000	42,900	47,200	44,800	47,800
Corn for Silage	19,400	19,200	12,700	14,100	NA
Soybeans	20,400	22,400	24,800	26,600	NA
Alfalfa Hay	27,000	29,100	27,600	23,000	23,600

NA = data not published

Land in Agriculture

Monroe County is classified as a rural county with 52 persons per square mile. Rural counties have 100 or fewer residents per square mile. According to the USDA NASS 2017 Census of Agriculture, Monroe County is over 41 percent farmland. Monroe County is slightly more intensively farmed than the state-wide average of 42 percent land in farms. Agricultural land uses include woodland, wetland, and other uses not actually under cultivation or used for pasture or grazing.

Over the 20-year period, the number of agricultural acres in Monroe County as well as for the state as a whole decreased. The percentage decrease was greater for Monroe County than for the state. Decreases in farmland are likely due to the conversion of farmland for residential and commercial development.

Table 4: Percent Change in Acres in Farms, 1997 to 2017

Location	**1997**	**2002**	**2007**	**2012**	**2017**	**Percent Change**
Monroe County	329,561	351,775	351,306	337,895	300,659	-8.77%
Wisconsin	14,900,205	15,741,552	15,190,804	14,568,926	14,318,630	-3.90%

Number and Size of Farms

The changes in the number and the size of farms between 1997 and 2017 in Monroe County mirrored the changes observed across the state. Monroe County gained 359 farms between 1997 and 2012 and then returned to approximately 1997 levels in 2017. While, the number of farms in Monroe County fluctuated greatly over the 20-year period, the net change was minor.

Table 5: Change in the Number of Farms between 1997 and 2017

Location	Number of Farms 1997	Number of Farms 2012	Number of Farms 2017	Change in the Number of Farms	Percent Change
Monroe County	1,567	1,926	1,555	12	-0.01%
Wisconsin	65,602	69,754	64,793	-809	-1.2%

From 1997 to 2017, both Monroe County and the state showed a dramatic increase in the number and percentage of small farms (0 to 49 acres). There was also a decrease in the number of medium large farms (180 to 499 acres) and an increase in the number of the largest farms (more than 500 acres).

Table 6: Farm Size Distribution in Monroe County and Wisconsin

Location and Year	0 to 49 Acres		50 to 179 Acres		180 to 499 Acres		More than 500 Acres	
	Number	%	Number	%	Number	%	Number	%
Monroe C., 1997	224	14.3%	703	44.9%	530	33.8%	110	7.0%
Monroe C., 2012	495	25.7%	886	46.0%	428	22.2%	117	6.1%
Monroe C., 2017	454	29.2%	634	40.8%	331	21.3%	136	8.7%
Wisconsin, 1997	12,815	19.5%	24,546	37.4%	22,228	33.9%	6,013	9.2%
Wisconsin, 2012	22,428	32.2%	25,502	36.6%	15,688	22.5%	6,136	8.8%
Wisconsin, 2017	22,842	35.3%	21,254	32.8%	14,177	21.9%	6,520	10.1%

Property Taxes and Values

The following table details the 2018 average property tax, assessed value, and sale price per acre of agricultural land for Monroe County, rural counties, and Wisconsin. The assessed values and property taxes are based on the use value of "agricultural land." Agricultural land is defined by statute as, "… land, exclusive of buildings and improvements, and the land necessary for their location and convenience, that is devoted primarily to agricultural use." (Wis. Stat. §70.32(2)(c)1g).

Monroe County's per acre average tax, assessed value, and sale value of farmland were all substantially lower than the average rural county and the average value for Wisconsin.

Table 7: Farmland Taxes and Values

Location	2018 Dollars per Acre of Farmland		
	Average Tax	**Assessed Value***	**Sale Value**
Monroe County	$2.40	$124	$3,634
Rural Counties	$3.05	$166	$4,502
Wisconsin	$4.77	$180	$5,586

Source: USDA, National Agricultural Statistic Service (NASS) and Wisconsin Department of Revenue.
* The assessed value is an "equalized value" calculated by DOR to correct for variability in estimating the taxable value of real property across municipalities.

Farmland Preservation

Wisconsin's Farmland Preservation Program (FPP) 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. The plans identify farmland preservation areas in the county, and local governments may choose to adopt an exclusive agricultural zoning ordinance to ensure that landowners covered by the ordinance are eligible to claim farmland preservation tax credits. Such an ordinance must also be certified by DATCP.

Most of the rural land affected by the proposed project routes are part of areas designated for farmland protection and covered by the Monroe County Farmland Protection Plan certified in 2014.

DATCP is not aware of any lands with current Farmland Preservation Agreements that would be affected by the project.

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. None of the land that could be impacted by this project is part of an AEA

Conservation Reserve Program

The USDA, Natural Resources Conservation Services (NRCS) offers farmers financial incentives to convert highly erodible or environmentally sensitive cropland to permanent vegetative cover by planting species that will enhance the environment. This is called the Conservation Reserve Program or CRP. Common Segment 4 would affect property owned by Sandra Chroninger. Approximately 25 acres of the affected land is enrolled in the CRP program.

DATCP recommends that WPL work with any participant in a conservation program to avoid or mitigate impacts to these lands, as much as practicable. The landowner should be compensated if, because of the project, the landowner is removed from the program; required to pay financial penalties; or program payments are reduced. WPL should also pay for any repairs required by a program for any conservation practice damaged by project construction.

Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) pays landowners to install filter strips along waterways or to return continually flooded fields to wetlands while leaving the remainder of the adjacent land in agricultural production. CREP is a joint effort between the federal, state, and county governments. DATCP is not aware that any land crossed by the project is enrolled in the CREP.

Drainage Districts

Drainage districts are formed to manage excess water on participating lands. At the far eastern end of the project (Segments 5A and 5B), the Kevin T. Hoag property is within the Lemonweir Drainage District. However, the district is inactive.

V. FARMLAND SOILS

Farmland Soil Definitions

Farmland soil is classified by the USDA based on its ability to produce crops. Protecting prime farmland, prime farmland if drained, and farmland of statewide importance should be a priority for construction projects.

Prime Farmland

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. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have 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. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Prime Farmland if Drained

This farmland is prime farmland but requires draining in order to have the best combination of physical and chemical characteristic for producing food, feed, forage, fiber, and oilseed crops.

Farmland of Statewide Importance

The criteria for defining and delineating this soil are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

Non-prime soils

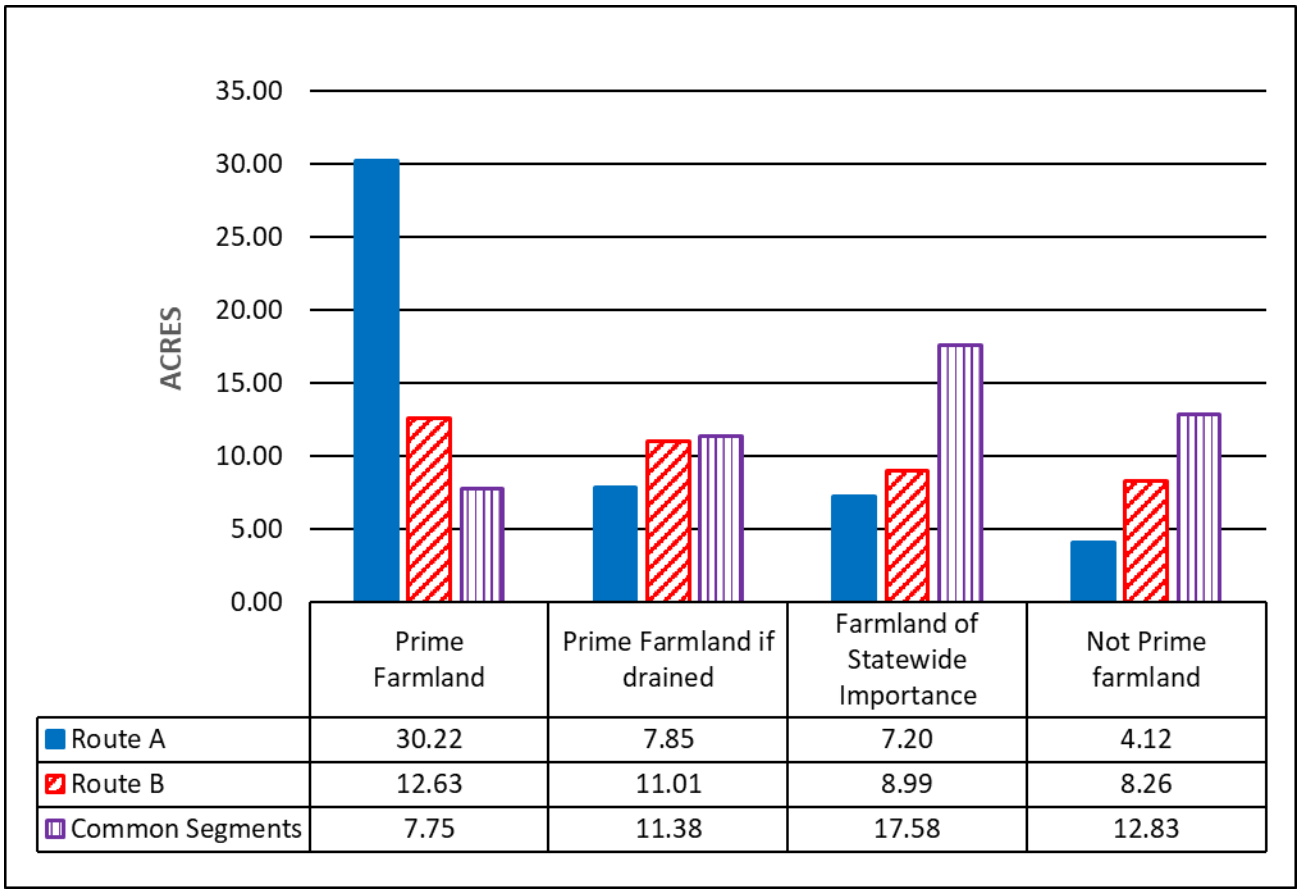
Non-prime soils have limitations in terms of agricultural production and may be more susceptible to damage from pipeline construction.

Farmland Soils Affected by the Proposed Project

If the project is approved by the PSC, the project could impact between 130 and 134 acres of agricultural land. Cropland, pasture, and specialty tree farms account for approximately three-quarters of the potentially affected agricultural land.

Figure 6 shows that for Route A, approximately 43 percent of the potentially affected agricultural land is classified as prime or prime if drained. For Route B, approximately 33 percent of the potentially-affected agricultural land is classified as prime or prime if drained.

Figure 6: Soil Classifications for Cropland and Pasture by Route



Project soils in the area are mostly silt loams and sandy loams. Table 8 lists the soils that would be affected by the project by route.

Table 8: Soil Classifications of Potentially Affected Cropland and Pasture

Symbol	Soil Name	Soil Classification	Potentially Affected Acres		
			Route A	Route B	Common Segments
126B	Barremills silt loam, 1-6% slopes	P	- -	2.67	- -
382B	Bertrand silt loam, 1-6% slopes	P	- -	0.61	- -
382C2	Bertrand silt loam, 6-12 % slopes, mod. eroded	S	1.00	6.18	- -
456A	Bilmod sandy loam, 0-3% slopes	P	1.21	0.60	0.89
434B	Bilson sandy loam, 1-6% slopes	P	2.79	1.51	3.98
434C2	Bilson sandy loam, 6-12% slopes, mod.eroded	S	2.02	2.56	- -
1224F	Boone-Elevasil complex, 15-50% slopes	N	0.92	- -	- -

Symbol	Soil Name	Soil Classification	Potentially Affected Acres		
			Route A	Route B	Common Segments
116D2	Churchtown silt loam, 12-20% slopes, mod. eroded	N	- -	- -	0.77
116C2	Churchtown silt loam, 6-12% slopes, mod. eroded	S	- -	- -	1.20
743D2	Council fine sandy loam, 12-20% slopes, mod. eroded	N	1.44	- -	0.95
743B2	Council fine sandy loam, 2-6% slopes, mod. eroded	P	- -	0.75	0.36
743C2	Council fine sandy loam, 6-12% slopes, mod. eroded	S	3.37	0.23	3.62
1743F	Council-Elevasil-Norden complex, 30-60% slopes	N	- -	- -	2.08
387A	Curran silt loam, 0-3% slopes, rarely flooded	P-D	1.70	1.03	0.61
377A	Curran silt loam, lake terrace, 0-3% slopes, rarely flooded	P-D	0.86	1.43	- -
224D2	Elevasil sandy loam, 12-20% slopes, mod. eroded	N	0.05	1.34	0.03
224E2	Elevasil sandy loam, 20-30% slopes, mod. eroded	N	0.37	0.37	0.94
224C2	Elevasil sandy loam, 6-12% slopes, mod. eroded	S	- -	- -	0.45
629A	Ettrick silt loam, 0-2% slopes, frequently flooded	P-D	3.33	6.49	8.39
679A	Ettrick silt loam, 0-2% slopes, shallow, frequently flooded	P-D	0.07	0.52	- -
214D2	Gale silt loam, 12-20% slopes, mod. eroded	N	0.02	- -	- -
214C2	Gale silt loam, 6-12% slopes, mod. eroded	S	- -	0.02	0.00
253D2	Greenridge silt loam, 12-20% slopes, mod. eroded	N	- -	- -	0.06
253C2	Greenridge silt loam, 4-12% slopes, mod. eroded	S	- -	- -	4.69
458A	Hoop sandy loam, 0-3% slopes	P-D	1.35	0.88	- -
498A	Hoop sandy loam, loamy substratum, 0-3% slopes	P-D	0.16	0.37	- -
386A	Jackson silt loam, 0-2% slopes,	P	12.53	- -	- -
386B	Jackson silt loam, 2-6% slopes	P	5.48	4.77	1.49
676A	Kickapoo fine sandy loam, 0-3% slopes, occasionally flooded	P	8.21	- -	- -
202D2	Lambeau silt loam, 12-20% slopes, mod. eroded	N	0.37	- -	- -
202C2	Lambeau silt loam, 6-12% slopes, mod. eroded	S	0.81	- -	- -
15A	Loxley peat, 0-1% slopes	N	0.20	0.31	- -
568A	Majik loamy fine sand, 0-3% slopes	N	- -	2.59	- -
1548A	Majik-Ponycreek complex, lake terrace, 0-3% slopes	N	- -	0.35	- -
446A	Merimod silt loam, 0-3% slopes	P	- -	0.59	- -
137B	Mickle silt loam, 2-6% slopes	P	- -	1.13	- -
569A	Newlang muck, 0-2% slopes, occasionally flooded	N	- -	0.12	- -
254D2	Norden silt loam, 12-20% slopes, mod. eroded	N	- -	- -	6.41
254E2	Norden silt loam, 20-30% slopes, mod. eroded	N	- -	- -	0.68
254C2	Norden silt loam, 6-12% slopes, mod. eroded	S	- -	- -	6.72
628A	Orion silt loam, 0-3% slopes, occasionally flooded	P-D	0.28	0.29	1.00
20A	Palms and Houghton mucks, 0-1% slopes	N	0.74		- -
115B2	Seaton silt loam, ridge phase, 2-6% slopes	P	- -	- -	1.02
448A	Sooner silt loam, 0-3% slopes	P-D	0.10		1.38
561B	Tarr sand, 1-6% slopes	N	- -	0.35	- -

Symbol	Soil Name	Soil Classification	Potentially Affected Acres		
			Route A	Route B	Common Segments
561C	Tarr sand, 6-15% slopes	N	- -	0.53	- -
566A	Tint sand, 0-3% slopes	N	- -	2.29	- -
255D2	Urne fine sandy loam, 12-20% slopes, mod. eroded	N	- -	- -	0.91
255C2	Urne fine sandy loam, 6-12% slopes, mod. eroded	S	- -	- -	0.89

Soil Classification Abbreviations: P = Prime farmland, P-D = Prime farmland if drained, S = Farmland of Statewide Importance, N = Not prime farmland

Most of the potentially project-affected soils are:

- Ettrick silt loam, 0-2 percent slopes, frequently flooded
- Jackson silt loams, 0-6 percent slopes
- Bilson sandy loam, 1-6 percent slopes
- Kickapoo fine sandy loam, 0-3 percent slopes, occasionally flooded
- Council fine sandy loam, 6-12 percent slopes, moderately eroded
- Bertrand silt loam, 6-12 percent slopes, moderately eroded

Three-Lift Soil Handling

The three-lift soil handling procedure is recommended for cropland and pasture where the mixing of the subsoil layers may result in persistent crop yield reductions. For agricultural soils, the typical pipeline construction practice is to remove and stockpile the topsoil (usually the top 12 inches) from the entire ROW. In contrast, three-lift requires the stockpiling of the topsoil, subsoil, and substratum in three separate piles. The last material removed from the trench is the first material backfilled into the trench.

The three-lift soil handling method is useful when the proposed trench will intersect both the B and C horizons of a soil profile and the C horizon is of poorer quality (gravel, rock, and/or sand) than the B horizon (silt, clay, and/or loam). Alternatively, this practice may be applicable to soil profiles with a distinct upper and lower B horizon, as opposed to a B and C horizon. Additional factors such as slope, soil drainage, thickness of the soil horizons, and acres of soil units crossed by the project are important in determining soil candidates for which the three-lift method could be beneficial for protection of crop yields. A key for identifying soil candidates for three-lift soil handling is provided in Appendix D.

Using the soil characteristics and descriptions compiled by the USDA Natural Resources Conservation Services (NRCS) Web Soil Survey, a desktop review of the project area did not identify any soils or potential areas that would benefit from three-lift soil handling procedures. For a final determination, the Agricultural Inspector would verify the existence of three-lift soils in the field Appendix E (BMP 09).

VI. Agricultural Landowner Impacts

DATCP Survey of Agricultural Property Owners

A list of the property owners that could be affected by this project and the acres of easement required for each route is listed below in Table 9. Additional non-agricultural acres would be required for this project.

Table 9: Acres of Potentially Affected Farmland

Agricultural Landowner	Route A (easement acres)		Route B (easement acres)		Common Segments (easement acres)	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
BEAR CREEK ENTERPRISES LLC	- -	- -	- -	- -	1.51	4.63
BETTHAUSER, CHARLES	1.23	3.68	- -	- -	- -	- -
BOAK, TERRY L. and JEAN A.	0.91	2.88	- -	- -	- -	- -
CHAPMAN FARMS-LAND LLC	2.09	6.91	- -	- -	- -	- -
CHRONINGER, SANDRA K.	- -	- -	- -	- -	1.76	5.41
CIRCLE S INC	2.42	7.40	- -	- -	- -	- -
CLARK, LEO V.	- -	- -	- -	- -	0.45	1.37
CRAIG M HEROLD REVOCABLE LIVING TRUST	0.78	1.28	- -	- -	- -	- -
DAMROW, DUANE W.	- -	- -	- -	- -	2.00	5.87
DAVID A MOAKE REVOCABLE TRUST	0.37	0.64	0.43	1.38	1.92	6.30
FAIRVIEW CRANBERRY COMPANY, LLC	1.39	4.12	- -	- -	0.25	0.72
FISCHER, RICHARD B. and KATHLEEN M.	- -	- -	1.15	2.88		
GORDON H KOENINGER LIVING TRUST	- -	- -	- -	- -	0.65	2.03
HARTUNG INVESTMENTS LLC	0.23	0.67	- -	- -	- -	- -
HARVERD A WAGNER TRUST	- -	- -	- -	- -	2.28	6.89
HICKS, ROBERT E.	- -	0.03	1.53	0.36	0.42	2.00
HILL FARM INCORPORATED	- -	- -	2.30	5.39	- -	- -
HOAG, KEVIN	0.27	0.67	0.45	0.93	- -	- -
HOEFS REVOCABLE LIVING TRUST	- -	- -	0.70	2.15	- -	- -
JACOBS, JEFFERY D.	- -	- -	- -	- -	0.94	2.01
JOHNSON, DARRICK T.	- -	- -	- -	- -	0.84	2.37
JOHNSON, KATHLEEN M.	0.36	0.54	- -	- -	- -	- -
LESTER HOAG IRREVOCABLE TRUST	0.75	2.31	- -	- -	- -	- -
LUDEKING, DALE R.	0.15	0.54	0.03	0.25	0.58	2.11
LUEBCHOW, JOHN	0.88	3.17	- -	- -	- -	- -
MEYER, JEFFREY L.	- -	- -	0.85	2.54	- -	- -
MOSELEY, GARY	0.38	0.86	- -	- -	- -	- -
PHILLIPS, WILLIAM A.	- -	- -	1.00	2.91	- -	- -
RANDALL LIVESTOCK, INC	- -	- -	0.67	0.90	0.80	2.28
RISCHETTE, JOHN	- -	- -	1.10	2.58	- -	- -
SCOTT, ALLAN H.	- -	- -	- -	- -	1.50	4.49
SOMMERFIELD, OTTO C.	- -	- -	- -	- -	0.74	2.06
SORENSON, STEVEN G.	0.75	2.20	- -	- -	- -	- -

Agricultural Landowner	Route A (easement acres)		Route B (easement acres)		Common Segments (easement acres)	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
THOMAS E CLAY FAMILY IRREVOCABLE TRUST	- -	- -	0.23	0.69	- -	- -
VANDERMEER, NANCY L.	- -	- -	- -	- -	0.59	2.07
WAEGE, GARY F.	- -	- -	- -	- -	0.77	2.30
WEDEMEIER FARMS LLC	0.97	2.96	1.53	4.57	0.61	1.82
WELLENKOTTER JR., HARRY W. and NANCY J.	- -	- -	0.77	2.29	- -	- -
ZASTOUPIL, THOMAS H.	- -	- -	1.78	7.12	- -	- -
ZIMMERMAN, DE WITT	0.97	0.07	- -	- -	0.28	1.24
Acquisitions from 12 landowners, each less than 0.5 acres	0.22	0.18	0.04	0.06	0.49	0.34
TOTALS	**15.12**	**41.11**	**14.55**	**37.01**	**19.36**	**58.31**

Property Owner Comments

DATCP sent questionnaire to the 25 farmland owners who could have three or more acres of land affected by the proposed project. Owners of 13 properties responded with comments. Those comments are summarized below and are listed in alphabetical order for each route.

Route A

Farmland Owners: Terry L. and Jean A. Boak

Segment 1A would affect the 37 acres of cropland, pasture, and woodland owned by the Boaks. They grow hay and raise beef cattle and poultry on the farm. The project could affect a grassed waterway that runs through their cropland and pasture fencing that borders their property. They are especially concerned about the removal of pasture trees that shade their cattle, erosion caused by the removal of trees, and impacts to their nearby septic system and drainage field.

Farmland Owner: Chapman Farms-Land LLC

Chapman Farms own 2,338 acres of land and rent 200 additional acres from Circle S, which is owned by Steve and Brede Sorenson. They grow corn and hay and milk 1,000 cows. They also raise 800 head of replacement dairy cattle and 700 head of beef cattle. Segment 1A would cross cropland that is flat and very productive. It could affect a grassed waterway and the productivity of the cropland. The owners would like the opportunity for natural gas service to the property in the future.

Farmland Owner: Peter Hartung, Hartung Investments LLC

Mr. Hartung grows 3 acres of Christmas trees on this property. Segment 1A might affect cropland, 4-year old Christmas trees, and a septic field. Mr. Hartung has 2,500 Fraser Fir Christmas trees that should be harvested in five to seven years. They currently range in height from 18 inches to 3 feet. He anticipates that each tree would bring $55 to $85 when it is

harvested. The project would create a loss of trees, as well as remove land from tree-growing in the future. The landowner should be compensated for both types of losses.

Farmland Owner: Robert E. Hicks
Mr. Hicks owns 117 acres of cropland, pasture, and woodland, including 17 acres for hay. He also raises a few head of beef cattle. His property might be affected by Segment 1A or 1B and Common Segment 2. He is concerned about the project potentially affecting his hay field.

Farmland Owners: David A. Moake Revocable Trust and Randall Livestock, Inc.
Segment 3A, Segment 3B, Common Segments 2 and 4, construction access roads, and two permanent aboveground facilities could affect these properties. The David A. Moake Trust and Randall Livestock own 435 acres of land and rent 200 acres to Paul Zastoupil. Mr. Zastoupil grows corn and soybeans. The project would affect cropland and potentially two drainage ditches. The owner is very concerned about the potential location of the mainline valve and blow-off aboveground facilities proposed on this property. In a phone conversation, Mr. Randall stated that he would prefer the facilities be built on the east side of STH 131. He also reported that WPL assured him that all construction access would occur on existing farm roads and not require the construction of new off-ROW roads across his properties.

Farmland Owner: Lester Hoag Irrevocable Trust
The trust owns 9 acres of idle farmland. Segment 5A would cross this property.

Route B

Farmland Owner: Robert E. Hicks
See Route A comment.

Farmland Owner: Hill Farm Incorporated
Segment 1B would affect Hill Farm cropland and its farmstead. The company owns 380 acres of cropland, pasture, and woodland. They grow corn, soybeans, and hay and raise 30 beef cattle. The cropland has excellent productivity. The owners of Hill Farm want the route to be located next to Gondola Road instead of outside of the road ROW. They are also concerned that the construction of this project will cause disruption and scarring of their very productive farmland.

Farmland Owner: William A. Phillips
Mr. Phillips rents all of his 133 acres of cropland to the Chapman Brothers. Corn and hay are grown on the farm.

Farmland Owner: John Rischette
Mr. Rischette owns 96 acres of land and rents 40.7 acres of cropland to the Chapman Brothers. The Chapman Brothers grow corn and hay in rotation. Mr. Rischette indicated that the project could affect cropland and woodland with mature oak trees.

Common Segments

Farmland Owner: Sandra K Chroninger

Ms. Chroninger owns 125 acres of cropland and pasture. She rents part of her farm to Daran and Leanne Burnstad for cattle grazing from May through November. In addition, 25 acres are enrolled in CRP. Common Segment 4 would cross pasture and CRP-enrolled land. Impacts from this project could affect pasture shade trees, two creeks, and pasture fencing. The owners are concerned about flooding that could result from the blocking of the two creeks and damage to the creek beds from construction activities. The fencing consists of steel posts with wooden corner braces, four lines of barbed wire, and two metal swing gates. The fencing holds cattle from spring through fall, as well as horses year-round. The owner is concerned about damage to the fence and its gates, as well as interference with pasturing cattle and horses on the property.

Farmland Owners: Duane W. and Laura Damrow

The Damrows own 157 acres of land in crops, pasture, and woodland. 45 acres are rented to Robert Wappler who grows corn and soybeans. The Damrows raise a few horses and donkeys on the property. Common Segment 4 could affect grass-covered waterways, property drainage, pasture fencing, mature apple trees, access to the farm from CTH CA, and plans for additional uses of the property for organic agriculture and a vineyard. Drainage for the property requires the continued functioning of two grassed waterways, one that runs from the ridgetop down to the lower field and follows CTH CA and a second farm road to the upper field. Another concern of the landowners is access to all parts of the property during construction and afterwards when the pipe is in-service. Additionally, future plans for the property include the use of organic practices for the crops and additional development of the land with housing, a vineyard, and an event venue. The owners are concerned about how the proposed pipeline would affect their planned use of the land.

Farmland Owner: Robert E. Hicks

See Route A comment.

Farmland Owners: David A. Moake Revocable Trust and Randall Livestock, Inc.

See Route A comment.

Farmland Owner: Harverd A. Wagner Trust

Common Segment 4 could affect some of the 500 acres owned by the trust. The project would cross cropland and woodland that is used for recreation and firewood. The owner is concerned about the project's potential impacts on fencing and cropland productivity as well as disruption of farm work.

The Agricultural Inspector

WPL will employ a construction manager and an environmental manager to provide oversight and enforcement of permits, approvals, and the AMP and BMPs. WPL may also retain one or more

individuals designated as the project agricultural inspector. If retained, the agricultural inspector will be familiar with the project and pipeline construction processes as well as issues regarding agricultural operations and soil conservation. The role of the agricultural inspector is crucial in enforcing the AMP and BMPs; reporting incidents of noncompliance; and recommending methods to limit or mitigate agricultural impacts. The role of the agricultural inspector is discussed in the AMP and included in Appendix E of this document.

WPL has stated that it would use an agricultural inspector on this project if 1) the presence of agricultural property that by their nature may require specific construction requirements, *i.e.,* dairy farms, organic farms, fruit and vegetable farms; and 2) the presence of agricultural properties where construction needs to be coordinated with owners, farm operators or tenants.

DATCP has identified in this report a number of agricultural property concerns for which an agricultural inspector would be useful. We recommend that WPL use an agricultural inspector for this project.

Appraisal and Compensation

The acquisition of easements by utilities with eminent domain authority in Wisconsin is stipulated under Wis. Stat. §32.06. Additional information about the appraisal process and landowners rights can be found in a Wisconsin Department of Administration publication, "The Rights of Landowners under Wisconsin Eminent Domain Law," at the website: https://doa.wi.gov/Pages/AboutDOA/RelocationAssistance.aspx.

Landowners have the right to obtain an appraisal of their property under Wisconsin's eminent domain laws (Wis. Stat. §32.06). A jurisdictional offer will include an appraisal of the fair market value for the easement and any anticipated damages to the property. The fair market value means the price that a willing buyer would pay to a willing seller in the market. This will be based on at least one full narrative appraisal for each property the utility intends to acquire. The appraisal must be presented to the landowner.

Additionally, landowners have the right to obtain their own appraisal of their property. They will be compensated for the cost of this appraisal by the utility if the following conditions are met:

- The appraisal must be submitted to the utility or its designated real estate contractor within 60 days after the landowner receives the initial utility appraisal.
- The appraisal fee must be reasonable.
- The appraisal must be a full, narrative appraisal
- The appraisal must be completed by a qualified appraiser.

The amount of compensation for the easement is established during the negotiation process between the utility and the individual landowner. Landowners may also attempt to negotiate additional stipulations from the utility and additional payments.

The utility is required to provide landowners with information about their rights in this process before negotiations begin. Wis. Stat. §32.035(4)(d) additionally requires that the utility not negotiate with a landowner or make a jurisdictional offer until 30 days after the AIS is published.

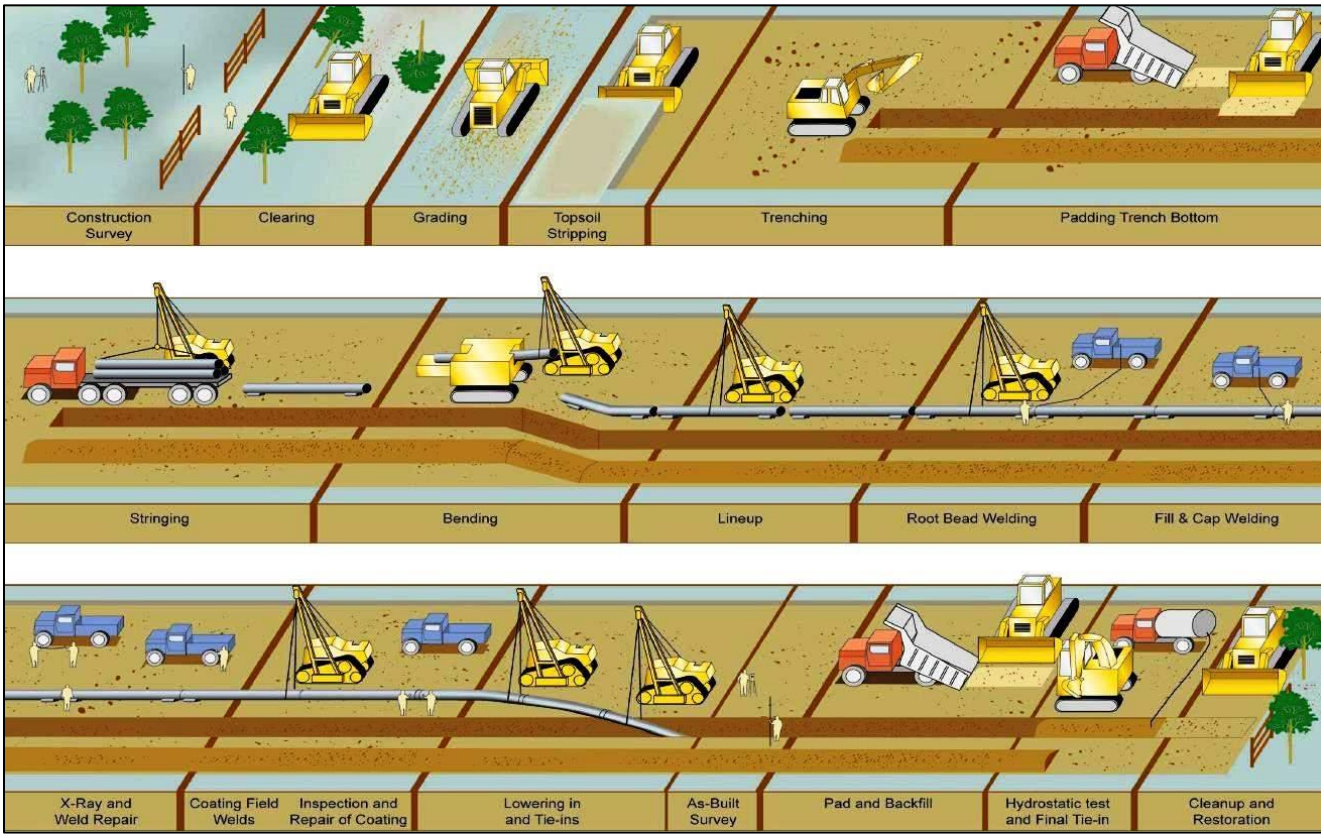
Landowners should keep in mind that any easement they sign with a utility is an individual contract. The easement contract is binding to the landowner and any future owners of the land, until the contract is dissolved. When considering whether or not to sign an easement, landowners should examine the language carefully and verify that it contains all agreed-to terms. Landowners should be familiar with the utility's project-specific AMP and BMPs (Appendix E) so as to determine if additional conditions should be negotiated with the utility. Though they can choose to waive any or all of the practices and procedures described in the AMP and BMPs, DATCP recommends to only do so with careful consideration. Landowners may want to seek legal advice if they have any questions about this process, and should make sure that any attorneys hired have expertise and experience in eminent domain law and procedures. More reference information can be found in Appendix B.

VII. CONSTRUCTION PROCESS

If the project is approved by the PSC, construction on the gas pipeline will likely begin after the utility has secured all necessary permits and ROW easements. Typical natural gas pipeline construction sequence proceeds in the manner of an outdoor assembly line; comprised of specific activities that make up the linear construction sequence. These operations include surveying and staking the ROW, clearing and grubbing (digging up roots and stumps), grading, pipe stringing, welding and bending, trenching, lowering-in, backfilling, re-grading, cleanup, hydrostatic testing, and restoration (Figure 7). While most of this project would use open trench construction, horizontal directional drilling (HDD) or bore installation will be used in some locations to avoid impacts to features such as roads, driveways, and natural resources.

Typical construction equipment used on pipeline projects includes: dozers, graders, excavators, trenchers, dump trucks, backhoes, side booms, ATV's, road bore rigs, horizontal directional drill rigs, pickup trucks, rock trenchers, vacuum excavators, rippers, tillers, rock picking machines, welding rigs and trucks, and x-ray trucks.

Figure 7: WPL Construction Sequence



SOURCE: April 10, 2019 WPL project presentation, Western Wisconsin Gas Expansion Project, Natural gas pipeline informational meeting.

Surveying and Staking

The first construction step involves surveying and staking the pipeline centerline, construction ROW limits, temporary workspace areas, and known underground facilities that cross or parallel the proposed pipeline. Construction activities and equipment travel requires the use of temporary work space in addition to the permanent easement.

Access roads to the pipeline ROW are typically along existing ROWs such as public roads and farm roads. Additional temporary access roads may be necessary, and some of these may cross agricultural lands. Temporary work space needed for access roads on private lands will be negotiated with the landowner. Construction of these roads will follow practices detailed in the utility's AMP and BMPs including where appropriate, soil segregation, proper maintenance of existing surface drainage patterns, and restoration of the land. If the property owner approves, access roads will be left in place.

Clearing, Grubbing, and Grading

The construction ROW (easements and temporary work spaces) is cleared, grubbed, and graded to provide a level area for pipe-laying operations and the transport of construction equipment. Clearing involves the removal of all trees and brush from the work area. Grubbing, the removal of stumps and roots, occurs over the area where the trench will be excavated. Non-woody vegetation is removed by mowing. However, crops such as small grains with a limited amount of biomass may be left in place to minimize soil erosion. A fence crew operates with the clearing crew to cut and brace existing fencing and install temporary gates along the ROW. This crew also installs necessary fencing along identified sensitive areas as required by agencies and along pastures that contain livestock.

The utility will work with affected landowners when the cutting of merchantable timber on their property is necessary for construction of the pipeline. Timber may be cut and left along the edge of the ROW for the landowner's use. If the landowner does not want to retain ownership of the material, it will be properly disposed. The disposal of trees, brush, and stumps may include burning, burying, or chipping at a landowner-approved location or removal to another authorized location.

Vegetation from wild black cherry and black walnut trees can be toxic to livestock. All debris from these trees are to be removed from actively pastured areas to prevent its contact with livestock. This material will not be stockpiled on-site.

The utility strips the topsoil (typically the top 12 inches) from the full width of the ROW in agricultural areas. The topsoil is stockpiled along the edge of the easement to minimize damage to the productivity of the topsoil. In some locations, maintaining pre-construction soil

productivity requires that the subsoil be segregated not only from the topsoil but also from the underlying parent material. This is known as three-lift soil managing.

Erosion control methods and materials vary depending on the specific construction activities, time of year, and site soil and slope conditions at the time of construction. A general description of construction phases will be outlined in the utility's Erosion Control Plan and the project-specific AMP and BMPs. These documents include details about clearing and grubbing (digging up roots and stumps), pipe and associated facility installation, and restoration.

Pipe Stringing

After clearing, grubbing, and grading, sections of pipe are transported by truck from pipe storage areas to the construction ROW and positioned along the pipeline route. This is called pipe stringing. Pipe stringing can be conducted either before or after trenching.

Bending and Welding

After pipe stringing, the sections of pipe are bent, as necessary, to fit the contours of the terrain. The pipe is then placed on temporary supports along the edge of the trench, aligned, and welded together. A qualified inspector visually and radiographically inspects the completed welds. Following inspection, a coating is field-applied to each weld joint. An external coating, applied at the mill protects the rest of the pipe. This pre-applied coating is also inspected and repaired as necessary.

Trenching

Open trenching is the primary method for new gas pipeline construction. Alternatively, in some locations, the utility will use HDD or boring installation to avoid impacts to features such as roads, driveways, and natural resources. HDD is discussed in more detail later in this section.

Figure 8: WPL Trench Excavation

SOURCE: April 10, 2019 WPL project presentation, Western Wisconsin Gas Expansion Project, Natural gas pipeline informational meeting.

Trenches are typically excavated using a backhoe, or in some cases a track hoe, or a trenching machine. Topsoil and subsoil excavated during trenching of agricultural land is segregated and temporarily stored within the construction ROW for use during restoration. Any material not suitable for backfill, or in excess, is hauled to a suitable location. Proper erosion control practices are employed to minimize erosion during trenching and construction activities. The trench bottom is inspected to ensure it is free of rock and debris. If required, sand or soil bedding material is placed in the trench bottom. Any necessary dewatering of the trench is done in accordance with applicable permits and regulations.

Lowering-In

The pipeline is then lowered into the trench using side-boom tractors. A final inspection ensures the pipeline is properly placed on the trench bottom, that all bends conform to trench alignment, and that the pipe coating is not damaged.

Figure 9: WPL Lowering-In Pipeline

SOURCE: April 10, 2019 WPL project presentation, Western Wisconsin Gas Expansion Project, Natural gas pipeline informational meeting.

Trench Breakers and Tile Repairs

Upon completion of lowering-in activities, trench breakers (plugs) are installed as needed in sloped areas to prevent subsurface water from moving along the pipe. Permanent tile repairs are also completed during this phase.

Backfilling

After the pipeline is installed in the trench, the trench is first backfilled with the subsoils and then the topsoil is redistributed over the trench and working area. To minimize the potential for soil compaction in agricultural areas, certain construction techniques may be suspended due to wet

weather conditions or post-construction soil decompaction techniques may be required to return the soil to productivity.

Figure 10: WPL Pipeline Installed in Trench

SOURCE: April 10, 2019 WPL project presentation, Western Wisconsin Gas Expansion Project, Natural gas pipeline informational meeting.

Rocks removed from the trench but not suitable for backfill are properly disposed of. Rock content of the ROW is managed so that the size and distribution are similar to the adjacent land. The ROW is graded as near as practicable to preconstruction contours, except as needed for soil stability purposes and the installation of erosion control measures.

Horizontal Directional Drilling (HDD) and Boring Installation

Both jack and boring and HDD construction are alternatives to open trench construction.

Jack and bore may be used to cross under roadways or railways with minimal disruption to traffic. Typically the construction area is first stripped of topsoil that is set aside. Bore pits are then excavated on each side of the obstruction. Any groundwater is pumped into a dewatering structure. The auger boring machine and a casing pipe are jacked under the obstruction while the earth is removed by an auger inside a casing pipe. The new carrier pipe is attached to the casing pipe and is either pushed or pulled under the road or railway. After the new carrier pipe is installed and tied into the rest of the pipeline, the bore pits are backfilled and restored.

HDD is often used to avoid disturbance to environmentally sensitive areas such as wetlands and waterways. HDD construction through wooded areas requires fewer trees to be removed than for open trench construction. An entry and exit bore pit are typically excavated on either side of the feature to be avoided. Typically, additional ROW is needed to accommodate these entry and exit bore pits. First, a drill machine is set up and a small diameter pilot hole is drilled under the

obstacle. The pilot hole is then enlarged using reaming tools. During this process, drilling mud composed of clean water, bentonite clay, and synthetic polymers are pumped into the hole to lubricate the reaming tool, remove soil cuttings, and maintain the integrity of the hole. When the hole is the appropriate size, the welded pipe is pulled through the hole. Used drilling mud is taken to an approved upland area or disposed of in accordance with applicable permits and regulations. Exit and entrance bore pits are restored.

Cleanup and Initial Restoration

Following the completion of construction activities, the area is restored to preconstruction conditions. Surface grading is done to reestablish natural contours. Disturbed areas are revegetated to be compatible with preconstruction conditions and adjacent vegetation patterns.

Where necessary, soil compaction is alleviated and any segregated topsoil replaced. Additional detail and information about soil compaction and restoration is included in Section VIII: Potential Adverse Impacts of Pipeline Construction on Agriculture. Trash and debris are removed and disposed of in approved areas in accordance with federal, state, and local regulations.

Fences cut or removed during construction are repaired or replaced. Pipeline markers are installed along the length of the pipeline in accordance with Department of Transportation (DOT) specifications. If drain tiles were damaged by construction activities, they are repaired.

Hydrostatic Testing

The completed pipeline is then hydrostatically tested and caliper-pigged prior to service. A pig is a mechanical device that is sent through the pipeline to perform tests on the pipeline. After backfilling is completed, sections of the pipeline are filled with water and tested to pressure levels greater than the maximum design operating pressure of the pipeline in accordance with DOT standards. These procedures are repeated along the entire length of the new pipeline. After completion of testing, the test water is disposed of in accordance with permit requirements.

Final Restoration

Revegetation is completed in areas where vegetation was disturbed by construction activities. Typically active or rotated croplands are not seeded unless specifically requested to do so in writing by the landowner or land management agency.

Erosion and sediment controls are implemented as needed and maintained until final restoration.

VIII. Potential Impacts of Transmission Line Construction on Agriculture

Agricultural operations and productivity can be adversely affected during the construction of the electric line. These impacts include but are not limited to:

- Interference with farm operations in the ROW and adjacent areas
- Interruption of or damage to irrigation systems
- Alteration of surface and subsurface drainage systems
- Impacts to grazing areas, row crops, and existing fencing
- Flooding due to dewatering activities during construction
- Use of prohibited substances on farms that are following organic practices

After construction is completed, some impacts may affect agricultural productivity years afterwards, not only in the ROW but in the adjacent fields as well. These long-term potential impacts include but are not limited to:

- Topsoil inversion and mixing of the subsoil with spoil materials
- Soil subsidence
- Erosion
- Deep compaction of subsoils
- Ponding and drainage seeps from altered surface and subsurface drainage profiles
- Inadequate restoration resulting in increased rock content or alteration to the original land contours
- Spread of weed seeds and diseases from parcel to parcel unless proper protocols are observed.

To avoid or minimize agricultural impacts, WPL has prepared project-specific AMP and BMPs (see Appendix E). These documents identify technical and performance standards for construction and restoration, and are essential to the protection of agricultural land. However, their value can be realized only to the extent that they are faithfully implemented during the construction and restoration process. The goal of the AMP and BMPs is to protect the agricultural resources and farmland owners along the route. However, nothing in the AMP or BMPs prevents landowners from negotiating stronger measures to address property-specific concerns.

The following sections discuss the potential agricultural impacts from a natural gas construction project and the measures that would minimize or mitigate the impacts. Additionally, it references the appropriate sections of the project AMP and BMPs that address these issues.

Topsoil Mixing

Potential Adverse Impact

Good agricultural topsoil is an invaluable resource that should be preserved. Mixing of topsoil with the underlying subsoil and/or parent material will reduce tilth, organic matter content and cation exchange capacity, and alter soil structure and distribution of particle sizes (particularly water stable aggregates). The mixing of soil layers can also increase the number of rocks and increase the concentrations of harmful salts near the surface. Rocks larger than three inches can damage farm equipment and reduce soil productivity. Once mixed, full restoration may require transporting new topsoil of similar quality from an off-site location. This will add costs to the project and may still not fully return the agricultural field to pre-construction productivity.

Topsoil mixing can occur under wet or dry conditions, during the grading and re-grading of the pipeline ROW. Significant long-term agricultural productivity impacts can occur as a result of soil mixing if deep ruts are created during construction and the topsoil layer is shallow. To avoid these types of impacts, topsoil is typically stripped to a depth of at least 12 inches.

Soil mixing is a greater danger when soils are wet. The moisture and precipitation pattern expected during construction must be taken into account in planning adequate mitigation measures to protect topsoil from mixing. In some soils, one inch of summer rainfall over five out of ten days can cause significant rutting with normal construction equipment traffic.

Measures to Avoid Topsoil Mixing/Inversion

To prevent the mixing of topsoils with subsoil layers, the topsoil is stripped from the full width of the ROW to a depth of 12 inches across agricultural lands (Appendix E, AMP, pp. 5-6and BMP 02). This is done prior to grading and any construction activities. Topsoil does not need to be removed from the topsoil storage area on the edge of the working side of the trench or areas where construction mats are laid on the surface for material storage and equipment travel. The stripped topsoil is then stored separately from the subsoil material until construction is complete and the topsoil can be replaced during restoration of the ROW. With the topsoil removed, work may continue under wetter conditions; however subsoils may still be at risk for compaction and rutting. If compaction occurs or is suspected, subsoils should be de-compacted during the restoration process.

Fertile Subsoil Mixing with Underlying Soils (Three-Lift Soil Handling)

Potential Adverse Impact

Long-term crop productivity losses may result from mixing lower soil layers of glacial till/outwash or sandy soil with upper layers of better quality subsoils. The subsoil layer in many parts of Wisconsin is often of relatively high quality. Estimates for yield loss may be as significant

immediately after construction for areas where poorer quality subsoils are mixed with better quality upper soil horizons.

Measures to Avoid Mixing of Fertile Subsoils Mixed with Underlying Parent Material

To avoid mixing the fertile subsoil with underlying gravelly material, three-lift soil handling can be used to greatly mitigate construction impacts to agricultural soils. Details about three-lift soil handling for this project can be found in Section V of this report, under "Three-Lift Soil Handling." For this method, the subsoil is not only segregated from the topsoil but also from the underlying soil horizons. Three separate storage piles are required: one for the topsoil to a depth of 12 inches; a second for the subsoil to its depth of up about to 2 or 3 feet; and a third for the underlying soil horizons. All three soil layers are stored separately for reuse during backfilling of the trench and restoration. In order for this method to be of value, there must be a significant difference between the upper subsoil layer and the lower subsoil layer or parent material. Candidate soils are identified through desktop soil analysis and verified by subsequent on-site sampling. This type of soil segregation would only be used over the trench and through lands that are and will be returned to crop and pasture use (Appendix E, BMP 09).

Increased Rock Content of Soil

Potential Adverse Impacts

Large stones at the surface can damage farm machinery and lead to added costs to landowners for removal. Many subsoil layers have a greater rock content than the topsoil. Trench excavations may bring up lower soil horizons with rocky subsoil, which might be mixed with upper soil layers. Even where the three-lift method is used, additional rocks may be spread through the subsoil layer during backfilling.

Pipeline companies typically pad the area around the pipe with sand or stone-free subsoil to avoid damage to the pipe. Due to the subsurface soil volume displaced by the pipe and by the padded stone-free area, the restored upper subsoil profile may end up containing a higher rock content than was present before excavation. Through frost heave dynamics, these rocks may eventually end up near the soil surface.

Mitigation Measures

To avoid increasing the rock content of the subsoil, WPL will ensure that the size, density, and distribution of rock in the restored construction work areas will be similar to the adjacent areas not disturbed by construction. Excess rocks should not be spread across the ROW, added to the topsoil pile, or added to other farm fields.

Soil Compaction

Potential Adverse Impact

Compaction of subsoil and topsoil is a major adverse impact that can result from pipeline construction. Compaction reduces the uptake of water and nutrients by crops, restricts rooting depth, decreases soil temperature, increases the proportion of water-filled pore space at field moisture capacity, decreases the rate of decomposition of organic matter, decreases pore size and water infiltration, and increases surface runoff. The greater the depth at which soil compaction occurs, the more persistent it is.

Yield loss caused by soil compaction may range between 10 and 50 percent for a variety of crops (Wolkowski, R. & Lowery, B., (2008), Soil Compaction: Causes, Concerns, and Cures, University of Wisconsin Extension, publication A3367). The magnitude of yield loss is dependent on a number of factors including, soil type, degree of compaction, and water availability. Compaction is most evident when the crop is under additional stress such as drought or excessively wet conditions.

The factors that influence whether a soil becomes compacted include the weight of the construction equipment traveling over the soil, soil moisture, and soil texture. As axle load increases, the depth of compaction can increase. When traffic loads are relatively lightweight, less than 10 tons per axle, the soil generally does not compact below the 8-10 inch range. Compaction at this depth can usually be decompacted with typical farm tillage equipment. Heavier construction equipment can compact soils to a depth that cannot be removed by conventional tillage. Wet soils can also increase the risk for compaction. Sometimes, the plow layer may appear dry, but the subsoil can still be saturated resulting in the potential for significant compaction during construction. Also, soil texture may be a good indicator of potentially sensitive soils. Fine soils, such as clay or silty clay loams have a greater risk of becoming compacted.

Soil Restoration: Removing Compaction in Subsoil and Topsoil

Pipeline construction can cause long-term damage to agricultural productivity from deep soil compaction if proper construction methods are not implemented or proper decompaction is not performed. However, with the proper techniques, timing, and equipment, there are few subsoils that cannot be adequately decompacted.

Prevention of rutting and compaction is easier than restoring the soil structure after it has been damaged. The most effective method to reduce compaction and rutting in construction ROWs is to avoid the use of heavy construction equipment when the soils are wet.

After construction is completed, the ROW will be compacted to some degree. Deep tillage equipment are typically used on the exposed subsoil of the construction ROW, after the trench has been backfilled and time has been allowed for trench settling.

One common option for deep ripping is an industrial V-ripper, which should have 4 to 5 heavy-duty shanks, spaced 30 to 36 inches apart and be pulled with 40 to 50 horsepower per shank. It is recommended to use this with an articulated, 4-wheel drive tractor with the bulk of the weight in front. Such rippers are often not readily available to typical farm operators. Other types of equipment such as chisel plows or paraplows may also be effective under some conditions. Multiple passes with the deep decompaction device are essential over the compacted subsoil in the ROW until sampled penetrometer readings in the ROW match those in adjoining fields that were not disturbed by construction. The typical depth of ripping is 18 to 24 inches below the exposed subsoil. Multiple straight and zigzag patterns of ripping need to be used on different passes. The type of equipment used and the depth of rip may be adjusted as appropriate for different soil types or for a deeply and severely compacted soil.

In lacustrine soils with intensive tile drain systems, deep ripping may be limited to the top 6 to 8 inches of the subsoil layer because soil compaction from pipeline construction is usually undetectable below 8 inches and deeper ripping could destroy the load-bearing capacity of the subsoil. However, the presence of tile lines is no reason to avoid completing the deep ripping phase of the soil restoration process. Any damage to tiles during the deep ripping process must be repaired/replaced by the utility at the utility's expense. Deep ripping and other subsequent restoration steps must only be done during low soil moisture conditions to prevent irreparable damage to soils from mixing or additional compaction.

Following decompaction, penetrometer measurements are taken as per a sampling protocol to ensure proper decompaction has occurred at representative sites throughout the topsoil and subsoil profile. Moisture conditions should be comparable on and off the construction ROW and throughout the soil horizon at the time of sampling since the same bulk density will result in a much lower penetrometer resistance reading when the soil is wet as opposed to when it is dry.

Once effective deep decompaction of subsoil has been accomplished as indicated by penetrometer readings, rocks have been removed and topsoil replaced, a final subsoil shattering may be necessary to correct the compaction caused by the heavy decompaction equipment. This is done using an angled 3- or 4-leg tool bar, with leg spacing set no greater than 2 feet. Equipment commonly used for this includes a four-legged paratill or paraplow with the depth wheels disengaged to allow for maximum adjustment of depth of penetration. The angled legs are pulled slowly at an 18-inch depth (up to a maximum of 24 inches) using 50 horsepower per leg by a 4-wheel drive articulated tractor with the bulk of the weight in front traveling at a rate of 2.5 to 3 mph. This must be done only in conditions of low moisture to prevent damage to the

soil profile and sloughing or mixing. Disking should not be used for subsoil shattering because it can mix and re-compact the subsoil and topsoil.

In most cases, DATCP does not recommend the delegation of decompaction to farm operators. Farm operators generally lack the proper equipment to correctly restore productivity after pipeline construction. The necessary scope and depth for successful decompaction of agricultural lands typically exceeds standard farming equipment and practices.

Drainage

Potential Adverse Impacts

Proper field drainage is vital to a successful farm operation. Pipeline construction can permanently disrupt improvements such as drainage tiles, grassed waterways, and drainage ditches, which regulate the flow of water on farm fields. Compaction can also alter the soil profile, and cause ponding or seeps, where none existed prior to construction. The pipeline may exacerbate existing drainage problems in fields by increasing surface flows within the construction area and in adjacent fields.

If drainage is impaired, water can settle in fields and cause substantial damage such as retarding the growth of crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock.

It may take several years for these problems to become apparent, or even longer if there is a dry year. It is also possible for pipeline construction to interfere with future plans for drainage systems in a field.

Mitigation Measures

DATCP recommends that landowners work with the utility about the existence and location of drainage systems or planned drainage systems that could be affected. Field conditions should be documented by the landowner prior to the start of construction so it can be compared with post-construction conditions.

The utility should note and monitor the location of significant seeps along the trench walls during the open construction phase of the project. Temporary ditch plugs and permanent trench breakers can be used to help deter the pipeline corridor from acting as a channel for underground water flows.

The AMP and BMP 04 (Appendix E) requires that the excavated pipeline trench be a minimum of 12 inches from the drainage tile, where practicable. All damaged tiles will be permanently repaired prior to backfilling. Repaired tiles on or adjacent to the ROW must be equivalent to its prior condition. Local tile contractors should be used wherever possible.

After construction is completed, landowners and the utility should carefully monitor for the emergence of drainage problems. If problems are observed that can be attributed to pipeline construction, the landowner and utility should work together to develop a mutually agreeable solution.

Where construction activities have altered the natural stratification of the soils resulting in new wet areas, DATCP recommends WPL work with the landowner to determine the means to return the agricultural land either in the ROW or on adjoining lands to pre-construction function. New drainage tiles, regrading, or additional fill may be required to correct the problems that arise after construction is completed.

Trench Dewatering

Potential Adverse Impacts

Before lowering the pipe into the trench, dewatering of the trench may be necessary so that the bottom of the trench can be inspected for rocks. Any combination of weather, topography and/or hydric soils (i.e. land with a shallow water table) can result in conditions of wet trenching. Extra care must be taken when wet trenching to avoid mixing, compacting, and erosion of the subsoil. Trench dewatering is typically done in such cases. Improper trench dewatering can result in soil erosion; sedimentation and deposition of gravel, sand, or silt onto adjacent agricultural lands; and inundation of crops.

Mitigation Measures

The BMPs (Appendix E, BMP 05: Trench Dewatering) requires WPL to identify 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 pipe trench or other excavated areas. The utility must ensure that work is structured to minimize the accumulation of water within the trench and create discharge locations that are in compliance with current drainage laws, local ordinances, DNR permit conditions, and the provisions of the Clean Water Act. 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 not deposit gravel or sediment onto fields, pastures, or watercourses. If deposition of trench water onto cropland is unavoidable, crops should not be inundated for more than 24 hours. Crops inundated for more than 24 hours may incur severe damage. Discharge of water from non-organic farms or from hydrostatic testing should never be allowed to flow onto organic farm operations.

Silt or sediment extraction from the trench is required to be minimized by preventing the intake from touching the bottom or sides of the trench, and by ensuring that the intake is supported by a flotation device. Dewatering will be monitored and stopped whenever necessary to correct conditions and practices inconsistent with BMP 05. When construction in hydric soils creates wet trenching and dewatering activities that cause unavoidable damage, WPL will reasonably

compensate the landowner for damages and restore the land and crops to pre-construction conditions.

Erosion and Conservation Practices

Potential Adverse Impacts

Both topsoil and subsoil along the project routes are valuable resources. Construction activities can destabilize soil horizons and cause top soil to erode and potentially migrate off of the ROW. During wet conditions, risks to soil from erosion are increased. However, in parcels with a shallow water table, wet conditions may be the normal soil condition as exposed soils form rills and the soil travels downslope. In these areas wet trenching may be necessary. Areas with steeper slopes can be subject to greater soil loss from erosion by water. Silt and very fine sand, and certain clay textured soils tend to be more susceptible to erosion. Trench dewatering can also result in flooding, erosion, and sedimentation on farm fields off the ROW unless appropriate measures are applied.

Significant erosion can have an adverse effect on long-term productivity of agricultural lands. Where a pipeline ROW runs up and down gently sloping soils, the collection of surface runoff in the tracks left by construction equipment can erode significant amounts of soil in fields.

Many agricultural fields have existing erosion control practices such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. These can be damaged by construction activities.

Soil erosion can affect crop yields 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 eroded soil.

Mitigation Measures

To avoid erosion, construction and restoration should not proceed if conditions are excessively wet. The AMP p.8 (Appendix E), requires that the construction contractor meet or exceed DNR standards for erosion control on construction sites. These standards are described on the DNR's website at: http://dnr.wi.gov/topic/stormwater/standards/index.html. Erosion control practices must be carefully followed to minimize construction-related impacts.

The AMP (Appendix E) allows the Agricultural Inspector to temporarily halt construction or restoration activities when work activities do not appear to meet the AMP requirements. This authority may be used when the soil conditions are unfavorable due to weather conditions.

Existing erosion control practices such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. damaged by construction activities must be restored to pre-construction condition.

Temporary erosion controls must be properly maintained on agricultural lands on a daily basis throughout construction and restoration. Whenever necessary, they must be reinstalled until permanent erosion controls are installed or restoration is completed. The details of erosion controls are described in AMP pp 8-9 and in BMP 03 (Appendix E).

The best method to control erosion is the growth of a vegetative cover. As soon as practicable the land should be returned to cropland or seeded with the appropriate species mix.

The utility must structure work in a manner consistent with the requirements of the AMP and BMPs and maintain an adequate supply of approved erosion control materials on hand.

Crop Rotation and Dairy Operations

Potential Adverse Impacts

A common dairy rotation may include 2 to 3 years of field corn, followed by soybeans, and then 3 years of alfalfa. Construction activities across fields may affect the yield and/or quality of the alfalfa crop that the farming operation needs to feed its herd. If construction activities cause a delay in alfalfa seeding, it may cause a shortage of alfalfa forage or the field may contain an increase percentage of grass. Some operators may choose to alter their crop rotation schedule and plant extra years of row crops to avoid the likelihood of an alfalfa crop that doesn't meet the operation's quantity or quality forage needs. If any of these occur, the operator will be negatively impacted due to a shortage of alfalfa forage and the operator would need to adjust the herd's diet by doing any or all of the following: buy haylage or hay, obtain more corn silage, and/or provide protein supplements such as soybean oil meal. All these activities would increase costs to the dairy operator.

Mitigation Measures

Dairy operators need to know the construction schedule well in advance in order to make adjustments to their crop rotation schedule. Due to the high cost of seeding alfalfa, some operators may decide to plant a row crop during the year of construction and maybe even the year following construction to have an additional opportunity for tillage to further decompact the soils. Other operators may choose to keep a field in alfalfa but may have decreased quality or quantity of yields from construction impacts. Fertilization (top-dress) of the forage field with potassium (K20) may enhance alfalfa plant density. With advance knowledge of the construction schedule, dairy operators can determine how best to provide forage for the herd and the associated costs for these adjustments.

The utility should provide dairy operations with as much advance information as possible about the construction schedule on individual properties and compensate the landowner for any increased costs associated with construction impacts to forage requirements.

Temporary Access Roads

Potential Adverse Impacts

Temporary access roads may need to be created during the construction process to allow personnel and equipment to access the construction corridor. Where possible, existing public or private roads are used. However, in some locations these are not available or suitable.

Temporary access roads may cross agricultural fields. The potential negative effects of building access roads across agricultural lands include the potential mixing of topsoil with subsoil, soil compaction, erosion, and interference with existing drainage, irrigation, and farming operations. Any of these impacts can result in the loss of agricultural productivity on affected soils after construction is completed.

Mitigation Measures

The utility will use existing public roads and farm roads to access the ROW whenever possible. The utility must consult with landowners before siting temporary access roads on their property. (Appendix E, AMP p. 7) In places where temporary access roads are constructed over agricultural land, the utility will work with the landowner to determine if the topsoil needs to be stripped and temporarily stockpiled. Access roads should be designed to allow proper drainage and minimize soil erosion. Geotextile construction fabric may be placed below any imported rock used to build the road, in order to protect the subsoil. If desired by the landowner, temporary roads will be left in place after construction. If access roads are removed, adequate soil restoration practices should be used to return the agricultural field to pre-construction function. Any disturbance to drainage tiles or drainage patterns should be remediated by the utility or its contractors. During the restoration phase, temporary and existing access roads should be restored to preconstruction conditions. If additional top soil is necessary to restore the farmland, top soil should be of similar quality to adjacent soils. All construction temporary access roads will be removed unless there is an agreement in writing between the landowner and the utility for them to remain.

Trees and Other Woody Vegetation

Adverse Impacts

All trees will be removed from the full width of the ROW (temporary and permanent ROW) prior to the start of construction. Agricultural property owners have trees on their property for many uses. They may have:

- a woodlot for income, firewood, or recreational use
- tree crops (nurseries, orchards, Christmas tree farms)
- a fencerow used as a windbreak to reduce erosion
- trees to shade livestock
- trees planted as a visual and/or sound barrier from a highway or other land uses
- ornamental, shade, fruit and nut trees for personal use, or other landscaping around the residence and other buildings for aesthetic purposes

Typically, tree stumps are only excavated and removed from the trench area. Stumps in other parts of the ROW are usually cut at or near ground level.

Both the existence of a woodlot or tree crops provide financial benefit to the landowner. Windbreaks in the form of a single row of trees may protect for a distance downwind for 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. Tree lines can serve as a herbicide barrier between organic farm parcels and farm operations not under organic management. Removal of this barrier may allow herbicide drift to affect an organic farm operation. Shade trees in pastures benefit livestock. Heat above 75 degrees Fahrenheit can negatively affect livestock by inhibiting feed intake, which can result in lower milk production in dairy animals and lower weight gain in meat animals. Planted trees can have sentimental value or add aesthetic enjoyment to the property. Removal of any trees from a property can decrease overall market value of the property.

Trees may be permitted to regrow or be replanted in the temporary easement areas. However, the permanent easement (between 20 to 50 feet of ROW width) must remain clear of trees for pipeline safety and access purposes. The utility may elect to minimize the "tree-free" corridor to a width of 20 feet so that impacts to tree crops are minimized.

Where the ROW crosses through wooded areas, the landowners may choose to keep the cut timber, which will be cut and stacked at the edge of the construction corridor. If they decline, the cut wood will be removed from the site.

Some parts of trees contain compounds that are toxic if eaten by livestock. Cornell University identifies these potential risks to livestock (http://poisonousplants.ansci.cornell.edu/php/plants.php?action=display&ispecies=cattle):

- Seeds, leaves, and bark from wild cherries, black cherry, bitter cherry, choke cherry, and pin cherry trees (Prunus spp.) to all grazing animals
- Acorns and young leaves from oak trees (Quercus spp.) for all grazing animals
- Bark, leaves, and seeds from a black locus trees (Robinia pseudoacacia) to horses and cattle

- Leaves, twigs, roots, unripe fruit from elderberry bushes (Sambucus canadensis) to cattle and goats
- Fruit from horse chestnut, buckeye trees (Aesculus spp.) to cattle and goats
- Needles and young shoots from Ponderosa pine (Pinus ponderosa) to cattle

Chipped wood from these trees or other tree parts may present a danger to livestock when the ROW is returned to pasture after construction is completed.

The utility will dispose of any trees or brush that the landowner doesn't want by burying, burning, or removing the woody vegetation off-site. Refer to the AMP p.7 (Appendix E) for additional details about vegetation removal.

Mitigation Measures

Landowners are compensated for the loss of trees and may also be compensated for the future loss of tree crop within the permanent easement. If these properties are removed from agricultural use in the future, the utility may decide to remove all trees within the 50 foot permanent easement corridor, as those trees would no longer be an agricultural crop. Before an easement is signed, landowners should determine from the utility where trees will and will not be permitted to re-grow within the ROW. The utility should consult with landowners before disposing of any trees or stumps that need to be removed from the pipeline ROW.

Additionally, WDNR guidelines should be strictly adhered to for preventing the spread of exotic invasive plant species and diseases such as oak wilt and Heterobasidion root disease.

Where trees serve an agricultural function such as livestock shade or windbreaks, or if they provide an aesthetic value, landowners should be adequately compensated for the full loss of the function of the trees. 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.

If some of the trees might be considered toxic to livestock and the ROW would be returned to pasture use, the utility should work with the landowner to identify potential risks. If the landowners has specific livestock concerns, trees such as wild cherry and black walnut must not be stockpiled or disposed so that the wood or wood parts could be accessible to livestock.

Irrigation

Potential Adverse Impacts

Pipeline construction can interfere with the operation of field irrigation systems. Crops outside of the proposed pipeline ROW could also be negatively affected when irrigation is interrupted.

Mitigation Measures

The utility has the right to temporarily disrupt irrigation systems that intersect the pipeline during construction. However, the landowner must be notified beforehand and establish a mutually acceptable amount of time that the system will be taken out-of-service. The maximum period of time that irrigation systems can be taken out-of-service without reducing yields on field corn is 5 to 7 days during the period from silking - tasseling to the finished crop. Earlier delays in meeting irrigation requirements may result in smaller plants, but should not reduce grain production significantly. Vegetable crops will have a shorter period between irrigations.

DATCP recommends that all irrigators along the pipeline route document irrigation information for their fields, including amount of water and frequency of irrigation; and weather conditions such as rainfall and temperature for the growing season prior to the start of pipeline construction. Pre- and post- construction records will assist the landowner in identifying stressed crops caused by the utility's disruption of the irrigation system. Stressed crops could potentially result in reduced yields.

Any damages to the system (well, pumping plant, irrigation system – center pivot, traveling large volume sprinkler, buried supply lines, electrical supply lines) caused by construction activities will be repaired by the utility as soon as possible (Appendix E, AMP p.8).

Fencing

Potential Adverse Impacts

The construction process may necessitate severing fences that are located across pipeline construction areas. Changes to existing fences can interfere with grazing activities, particularly for rotational grazing operations, which depend on precise, scheduled grazing in particular areas.

Mitigation Measures

Prior to construction, the utility will identify grazing operations adjacent to the pipeline route, including rotational grazing. The utility has stated that they will work with landowners to determine if fences may be in the way of construction activities. Severe disruption of grazing operations should be avoided as much as possible by modifying routes or by consultation with the landowner regarding timing of construction activities.

Permanent fences severed by the utility will be restored as close as possible to their previous condition. Temporary fences and gates will also be installed where necessary at landowner request to allow continued grazing by livestock across the ROW. Tension on such fences must be adequate to prevent sagging. Bracing of fences to trees or other vegetation is prohibited. Temporary fences will be removed following construction, unless the landowner approves otherwise. These measures are described in the Appendix E, AMP p.7.

Weed Control

Potential Adverse Impacts

Disturbance of the land by construction activities may allow opportunistic weeds to take root where none existed prior to the construction activities. The introduction of weeds and invasive species may reduce crop yields as they compete with the crop for the same resources. They can interfere with harvesting or harbor problem insects and crop diseases. Weeds, once established, tend to spread if they are not managed through mechanical or chemical actions. Weed management can be especially troubling for organic farms for which the use of most herbicides is not an option.

Stockpiled soils can become an opportunistic place for weeds to flourish because they remain undisturbed for most of the construction period.

Mitigation Methods

Agricultural property owners should be aware that construction activities may cause weed growth where none existed prior to construction. The utility should, based on the wishes of the landowner, re-establish vegetation in the ROW as soon as possible after construction is completed and the mats are removed. Vegetated ROWs will reduce the likelihood of weeds establishing themselves in the newly disturbed area. Weed growth on stockpiled topsoil could present a problem to adjacent cultivated fields. The utility will remove or kill weeds observed on the stockpile. If herbicide is used on the topsoil pile, the landowner will be consulted in regard to the choice of herbicide. All herbicide application will be done by a state-licensed applicator (Appendix E, AMP p.8).

Seeding and Seedbed Preparation

Potential Adverse Impacts

Seeding over the ROW without consulting the landowner may interfere with cropping plans, or may result in a cover crop that is not consistent with the landowner's plans.

Mitigation Measures

As described in BMP 07: Seeding and Seedbed Preparation, the utility will reseed areas disturbed by construction activities following final clean-up. Seed mixes will be determined in consultation with the landowner, if appropriate. Any seedbed preparation and seeding done by the utility must be done at the correct time and at the proper depth to promote adequate seed-soil contact on cropland or pasture requiring seeding. Seeding is to be completed immediately after seedbed preparation, if weather permits. Temporary erosion controls will be used if weather does not permit immediate seeding. If seeding is done outside of recommended windows, temporary erosion control methods such as mulching or temporary cover will be used.

Bio-security

Potential Adverse Impacts

Construction activities can spread weeds, diseases, chemicals, and genetically-modified organisms (GMO's) that can cause significant economic losses to farms, and may have greater negative impacts on certified organic farms.

Mitigation Measures

The utility should 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 the utility should work with the farmers to develop protocols specific to the landowner's farm operation. The utility's personnel and contractors should follow all posted directives regarding bio-security on farms.

DATCP recommends that any affected farm operation that has a written bio-security plan, provide this plan to the utility. The utility's employees and contractors should become familiar with these plans and develop appropriate procedures to comply with these plans.

Organic Farms

Potential Adverse Impacts

For certified organic farms and farms working towards certification, contamination concerns can involve a broad range of substances. Prohibited substances may be spread to organic farms directly via construction machinery or carried indirectly by water flowing onto organic fields. Pesticides can also drift onto adjacent organic farm properties, if wind direction and speed are not appropriately monitored.

Mitigation Measures

Care must be taken by the utility and its contractors where construction crosses farmland with organic practices. Organic top soil is difficult to replace. Where soil is excavated on these farms in particular, the topsoil should be segregated from subsoils and set aside to be used during restoration activities. No herbicide should be used on organic farms without the operator's written consent. Additional precautions must be taken with herbicide use on adjacent land in order to prevent herbicide drift or to prevent herbicide-dissolved water from flowing onto organic fields. Wis. Admin. Code § ATCP 29.50(2) states that no pesticides may be used in a manner that results in pesticide overspray or significant pesticide drift. Any oil or fuel spill on these farms could also jeopardize organic certification, so care must be taken to avoid such spills or clean them up immediately and thoroughly if they happen.

DATCP recommends that landowners with organic certifications and those working towards organic certification discuss the range and type of substances that are and are not permitted on

their land by their certifying entity. This list should be shared with the utility and its contractors. Any substances that are not approved for use in organic production should not be used on these properties. Additionally, prior to the start of construction, appropriate methods should be agreed to by the landowner and the utility to avoid the potential for any unintentional contacts. This could include herbicide applications from adjacent ROW acreage drifting onto the organic farm. Also, the utility should not apply seed to certified organic farms without approval of the operator.

Induced Current on the Pipe

A small direct current (DC) is applied to pipelines for cathodic protection to prevent corrosion of the pipe material. Because pipelines, particularly if located in electric transmission line corridors, can be carriers of induced alternating current (AC), the pipeline industry takes precautions to discharge AC current along the pipe into the ground. This is necessary to both protect the integrity of the DC cathodic protection system as well as to prevent continued flow of AC current in the pipe. If induced AC current is not adequately grounded, it can cause long-term serious metal loss from the pipe wall, potentially resulting in gas leaks.

Construction Noise and Dust

Potential Adverse Impacts

During each phase of construction, noise and dust is generated. Noise may cause cattle to stampede, break through fences, and escape from the farm property. Fur animals and poultry are particularly sensitive to noise.

Mitigation Measures

The utility should work with farmers to determine if they have any potentially sensitive animals. Where sensitive animals exist, the utility should provide appropriate advance warning of construction activities so that farmers can take the necessary steps to safeguard their animals. Dust should be kept at a minimum when practicable.

IX. AIS Distribution List

State Government

NAME	GOVERNMENT BRANCH
TONY EVERS	STATE OF WISCONSIN GOVERNOR
REPRESENTATIVE GARY TAUCHEN	COMMITTEE ON AGRICULTURE, CHAIR
SENATOR HOWARD L MARKLEIN	COMMITTEE ON AGRICULTURE, REVENUE AND FINANCIAL INSTITUTIONS, CHAIR
	WISCONSIN DOCUMENT DEPOSITORY PROGRAM
	THE LIBRARY OF CONGRESS STATE DOCUMENTS SECTION

City, Village, Town, and County Governments

NAME	GOVERNMENT
GAIL CHAPMAN	TOWN OF ADRIAN CHAIR
KATHY SCHMITZ	TOWN OF ADRIAN CLERK
DAVID A PIERCE	TOWN OF GREENFIELD CHAIR
TAMMY SANKEY	TOWN OF GREENFIELD CLERK
JOHN GUTHRIE	TOWN OF LA GRANGE CHAIR
ART TRALMER	TOWN OF LA GRANGE CLERK
JERRY BLOOM	TOWN OF OAKDALE CHAIR
ALEX WILSON	TOWN OF OAKDALE CLERK
HOWARD HANSON	TOWN OF TOMAH CHAIR
BREANNE ZAREMBA	TOWN OF TOMAH CLERK
JOANN M CRAM	CITY OF TOMAH CLERK
SHIRLEY K CHAPIEWSKY	MONROE COUNTY CLERK
BOB MICHEEL	MONROE COUNTY CONSERVATIONIST
BILL HALFMAN	MONROE COUNTY UWEX
ROXIE ANDERSON	MONROE COUNTY LAND CONSERVATION DEPARTMENT

Project Area Library and Newspaper

NAME	ORGANIZATION
IRMA KELLER	TOMAH PUBLIC LIBRARY
PAT MULVANEY	MONROE COUNTY HERALD EDITOR

Landowners and Interested Parties

NAME
TERRY L. and JEAN A. BOAK
CHAPMAN FARMS-LAND LLC
SANDRA K CHRONINGER
DUANE W DAMROW AND LAURA DAMROW
HARTUNG INVESTMENTS LLC, PETER HARTUNG

NAME
ROBERT E HICKS
HILL FARM INCORPORATED
JOHN RISCHETTE
HARVERD A WAGNER TRUST, C/O CINDY L ENGSTROM

APPENDIX A: ACRONYMS

AIS	Agricultural Impact Statement
AEA	Agricultural Enterprise Area
AMP	Agricultural Mitigation Plan
BMP	Best Management Practices
CA	Certificate of Authority
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CTH	County Trunk Highway
DATCP	Department of Agriculture, Trade, and Consumer Protection
DPC	Dairyland Power Company
FPP	Farmland Preservation Program
FSA	Farm Service Agency
HDD	Horizontal Directional Drilling
NASS	National Agricultural Statistics Service
NNG	Northern Natural Gas
NRCS	Natural Resources Conservation Service
PSC	Public Service Commission of Wisconsin
ROW	Right-of-Way
STH	State Trunk Highway
USDA	U.S. Department of Agriculture
Wis. Admin. Code	Wisconsin Administrative Code
Wis. Stat.	Wisconsin Statutes
WPL	Wisconsin Power and Light Company

APPENDIX B: STATUTES FOR AGRICULTURAL IMPACT STATEMENTS

DATCP is required to prepare an AIS whenever more than five acres of land from at least one farm operation will be acquired for a public project if the agency/company acquiring the land has the authority to use eminent domain for property acquisitions. DATCP has the option to prepare an AIS for projects affecting five or fewer acres from each farm if the proposed project would have significant effects on a farm operation. The entity proposing a construction project is required to provide DATCP with the necessary details of the project so that the potential impacts and effects of the project on farm operations can be analyzed. DATCP has 60 days to make recommendations, and publish the AIS. DATCP provides 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 project initiator may begin negotiating with the landowner(s) for the property.

Wisconsin Statute § 32.035 is provided below and describes the Wisconsin Agricultural Impact Statement procedure and content.

(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 (2), 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 condemnor 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 condemnor 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 condemnor to compile and submit information about an affected farm operation. The department shall charge the condemnor 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. 82 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 that 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 that has demonstrated an interest and has requested receipt of such information.

(g) The condemnor.

STATUTES GOVERNING EMINENT DOMAIN

The details governing eminent domain as it relates to utility projects are included in Wis. Stat. ch. 32 (http://docs.legis.wisconsin.gov/statutes/statutes/32.pdf).

DATCP recommends that farmland owners concerned about eminent domain powers and the acquisition of land should review this statute in its entirety. Additionally, landowners may wish to consult with an attorney who should have expertise in eminent domain proceedings. Any Wisconsin licensed appraiser should be knowledgeable in partial takings.

APPENDIX C: INFORMATION SOURCES

DATCP (datcp.wi.gov)

- Farmland Preservation
- Agricultural Impact Statements
- Wisconsin Farm Center: provides services to Wisconsin farmers including financial mediation, stray voltage, legal, vocational, and farm transfers

Department of Administration (doa.wi.gov)

Relocation Assistance includes several publication on landowner rights under Wisconsin eminent domain law

- Wisconsin Relocation Rights Residential
- Wisconsin Relocation Rights for Businesses, Farm and Nonprofit Organizations
- The Rights of Landowners under Wisconsin Eminent Domain Law,

Public Service Commission of Wisconsin (psc.wi.gov)

- PSC project webpage for docket #6680-CG-168

Department of Natural Resources (dnr.wi.gov)

- Energy and utility projects
- Managed Forest Law

U.S. Department of Agriculture (www.usda.gov)

- National Agricultural Statistics Service
- Web Soil Survey
- Soil Quality – Urban Technical Note No. 1, Erosion and Sedimentation on Construction Sites

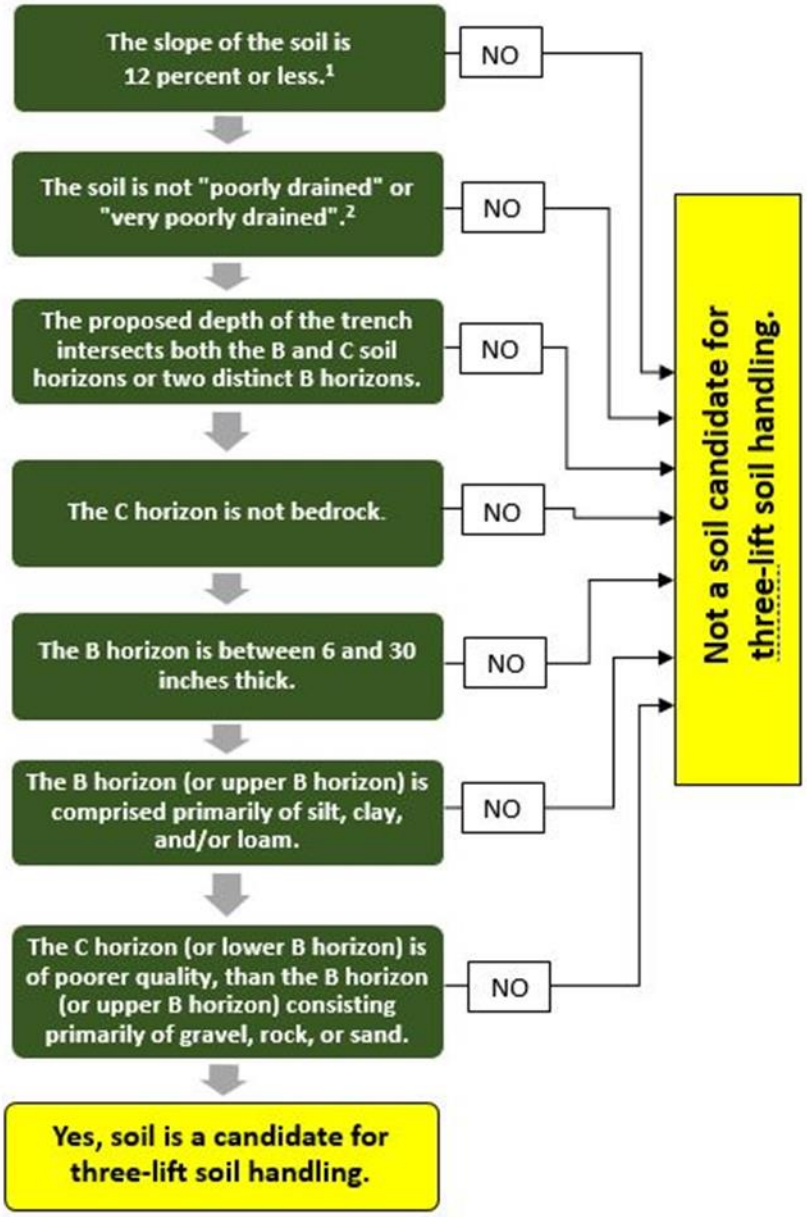
State Bar of Wisconsin (www.wisbar.org) :For general legal information and assistance in finding a lawyer

Background Resources

- Wolkowski, R., Soil Compaction: Causes, concerns and cures
  University of Wisconsin-Extension, A3367, 2008.
- Hughes, Jodi D., Tires, traction and compaction, University of Minnesota Extension, website (http://www.extension.umn.edu/agriculture/tillage/tires-traction-and-compaction/)

APPENDIX D: THREE-LIFT SOIL CANDIDATE KEY

This key is applicable to soil profiles with distinct B and C horizons or alternatively to soil profiles with distinct upper and lower B horizons.



1. Soils with a slope greater than 12 percent are Class IV soils, likely to be eroded with shallow topsoil, and marginally suited for crop production. As such, they are unlikely to meet the criteria for soils that would benefit from three-lift soil handling.
2. Poorly drained soils tend to be too wet to use three-lift soil handling successfully. They are also likely to be deep soils.

APPENDIX E: PROJECT AMP AND BMPS

WISCONSIN POWER AND LIGHT
AGRICULTURAL MITIGATION PLAN
WESTERN WISCONSIN GAS EXPANSION PROJECT

Wisconsin Power and Light (WPL), a subsidiary of Alliant Energy (Alliant), proposes to construct an approximately 12-mile-long 10-inch diameter natural gas line that will connect an existing Northern Natural Gas (NNG) line that runs through western Tomah, Wisconsin, to an existing WPL natural gas line that terminates south of Oakdale, Wisconsin (Project). The Project will be 100 percent owned and operated by WPL and located in Monroe County, Wisconsin.

WPL has a longstanding commitment to working with landowners that may be affected by construction of their utility projects throughout the State of Wisconsin. WPL has a vested interest in working with landowners that may be affected by the Project construction and post-construction restoration.

WPL continues to be committed to restoring construction areas to pre-construction conditions and to minimizing and avoiding Project related impacts. This Agricultural Mitigation Plan (AMP) was prepared specifically to prevent or mitigate potential adverse impacts of the project on agricultural productivity, using construction and restoration procedures from other WPL projects and modifying them as necessary.

Project Description

There are two route alternatives under consideration and will be proposed to the Public Service Commission of Wisconsin (PSCW) for their review and selection of a route. Both the “Preferred Route” and “Alternate Route” are approximately 12 miles in length and would be constructed within a new right-of-way and along an existing overhead electrical transmission line corridor owned and operated by ATC.

AMP Purpose

The purpose of this AMP is to:

- provide a description of effective agricultural construction mitigation and restoration methods to be used on the project;
- establish personalized communication with agricultural landowners to ensure their unique concerns are addressed;
- provide agricultural landowners and tenants with a hotline for convenient contact access to a WPL Representative; and

- describe the job duties of the WPL Agricultural Inspector (AI).

Scope of Agricultural Mitigation

This AMP applies to those activities occurring on agricultural lands (tilled land row crops). "Agricultural land" as used in this AMP includes all cultivated land including cropland, haylands, and specialty crops. "Permanent pasture" as used in this AMP includes land devoted exclusively to pasture use, and not suited to tillage or crop rotation, as determined by the lack of any sustained crop history. "Construction area" as used in this AMP includes all permanent or temporary workspace areas to be used by WPL for the purpose of constructing and operating the project, as well as lands on which aboveground facilities or other appurtenances related to the project will be located.

Agricultural Inspector (AI) Role and Qualifications

WPL will have a project Construction Manager (CM) and an Environmental Manager (EM) for the project. WPL may also have one or more individuals designated as the project AI to assist with on-site inspection and monitoring. WPL would determine if an AI would be required based on the presence of agricultural properties that by their nature may require specific construction requirements (i.e., dairy farms, organic farms, fruit and vegetable farms) and where construction needs to be coordinated with owners, farm operators or tenants.

The person designated as the AI will be a qualified individual who will monitor the implementation of the AMP. The AI will have familiarity with agricultural operations and general construction, as well as knowledge of agronomy and soil conservation. The AI will be thoroughly familiar with the following:

- Agricultural Mitigation Plan; and
- gas lateral construction sequences and processes.

The AI will also:

- be familiar with techniques of soil conservation;
- be familiar with agricultural operations;
- possess good oral and written communication skills; and
- be able to work closely with the agricultural landowners, tenants and applicable agencies.

WPL's construction contractors will be required to structure their construction activities to be consistent with the AMP.

Agricultural Mitigation: Planning and Pre-Construction Phase

WPL will communicate as needed with affected landowners and tenants of agricultural land to keep them informed of overall progress, explain mitigation actions, and to learn of any additional problems noted by landowners. No later than 30 days prior to the start of construction, WPL will provide landowners with a telephone number and address that can be used to contact a representative of WPL (also known as the Hotline Number). The phone number will include provisions for taking calls on evenings and weekends by use of an answering machine or voicemail system. WPL will respond promptly to calls or correspondence from landowners or tenants along the utility easement and/or right-of-way. Where WPL needs to consult or obtain concurrence from both the landowner and tenant of a property, they will make a good faith effort to do so. In the event, there is a disagreement between landowner and tenant with regards to a decision, WPL's obligation will be satisfied by securing an agreement with the landowner.

WPL will develop training and implementation plans prior to construction.

WPL will notify the Wisconsin Department of Agriculture, Trade, & Consumer Protection (DATCP) of any changes to project facilities, land uses, and additional areas that are required for temporary construction use (e.g., temporary access roads and laydown/storage areas) that are different from the project information submitted as part of application materials to the PSC and DATCP. WPL will provide this information to DATCP in a timely manner. This information will be provided with the understanding that the location of some facilities or their dimensions may be adjusted at a later date based on site specific conditions.

WPL will work with landowners to ascertain existing agricultural operations that may require special attention, such as conservation practices, location of above and below ground structures or obstructions, such as drain tile, irrigation systems, fencing, livestock, certified organic lands, proposed new drainage systems or other farm technology.

During the pre-construction phase, WPL will:

- Contact each landowner to obtain property specific information (such as drain tiles, conservation practices, etc.) to ensure these structures/ operation practices are noted on construction documents;

- Review agricultural related project documents such as descriptions or maps of leased lands, permits, draft construction alignment sheets, and relevant plans prior to construction;

- Review information supplied by affected farm operators, conservation districts, agricultural extension agents, and others;

- Educate construction crews through an environmental training session, to ensure they are familiar with AMP, agricultural concerns and issues that may occur; and

- Negotiate with the farmland owner/operators to avoid the spreading manure over all areas within the proposed construction area prior to construction.

If any construction activities occur on a Certified Organic Farm, WPL will work with the landowner or tenant, the landowner and/or tenant's certifying agent to identify site-specific construction practices that will minimize the potential for decertification as a result of construction activities. Possible practices may include: surveying/staking methods prior to construction (specifically non paint methods), equipment cleaning, use of drop cloths during welding and coating activities; removal and storage of additional topsoil; planting a deep-rooted cover crop in lieu of mechanical decompaction; applications of composted manure; or similar measures. WPL recognizes that Organic System Plans are proprietary in nature and will respect the need for confidentiality.

Agricultural Mitigation: Construction and Restoration Phase

During construction and restoration, the AI's role is to monitor the implementation of this AMP to avoid negative impacts to agricultural lands by advising the appropriate WPL representative, either the EM or the CM, in the event incorrect construction methods are being used. The AI will generally be present on-site during construction and will have access to all work areas in agricultural lands. The AI will travel between various construction activities in agricultural lands and spot check construction operations. If the AI discovers actions that do not appear to meet the AMP requirements, the AI may stop-work at that location if necessary and will immediately contact the EM or the CM who will determine if site-specific restoration action is necessary. The AI will also provide additional training in the appropriate construction methods to contractors that are not implementing the methods outlined in this AMP correctly.

In the event adverse weather conditions cause soil conditions to become unfavorable for construction or restoration activities at a given site, the AI will consult with the EM or the CM to temporarily halt activity at that location and will confer with them as to when activities should be resumed at the site.

Agricultural Mitigation: Crop Compensation

WPL will compensate the landowner for crop loss; compensation will be based on crop prices and yields for Monroe County at the time of construction. Crop loss will occur during the construction of the project,

which, depending on the timing of construction activities, may include one or two growing seasons. Payments will be made to landowners as soon as possible after construction is completed.

If the landowner rents or leases out the land to a tenant farmer (renter), then the renter will be compensated in lieu of the landowner.

Best Construction Management Practices

WPL requires those working on the project to research, plan, implement, monitor, and assure the proposed results are obtained. WPL relies on these methods to identify agricultural concerns and implement measures to maintain agricultural productivity throughout construction and restoration. Appropriate use of these measures would be overseen and monitored by key field personnel such as the AI and the WPL EM, CM, and Construction Inspector (CI). Additionally, WPL seeks to only use contractors with a consistent favorable history of installing and maintaining measures according to the best management practices (BMPs). Thus, permit conditions, landowner satisfaction, and natural resources are preserved. WPL will incorporate the applicable provisions of this AMP and accompanying BMPs into all bid documents and contracts with each contractor retained on this Project by WPL for construction, restoration, mitigation or post-restoration monitoring. Each contractor retained by WPL for the Project must also incorporate the applicable provisions of the AMP into their contracts with each subcontractor.

WPL would implement construction techniques within agricultural areas that would avoid and minimize impacts to future agricultural productivity. The following construction methods are to be utilized in agricultural areas.

Topsoil Segregation

During construction of the natural gas line, topsoil will be removed from the construction area and stockpiled separately from any other excavated soils. This will preserve the topsoil resource by eliminating the potential for topsoil/subsoil mixing. Topsoil is defined to include the upper most portion of the soil commonly referred to as the plow layer, the A horizon, or its equivalent in uncultivated soils. It is the surface layer of the soil that has the darkest color or the highest content of organic matter. All of the topsoil to a depth of 12 inches, or the entire original topsoil depth if it is less than 12 inches, will be removed from excavated areas; however, topsoil will not be removed from under the topsoil storage piles. WPL has the option to remove amounts of topsoil in excess of 12 inches at its discretion. Landowners will be asked to refrain from manure spreading prior to topsoil removal. Erosion control measures will be used as necessary.

The natural gas line will primarily be installed using an open cut trench method. Construction equipment used on this Project will include dozers, excavators, pipe layers, pipe benders, semi-trucks with pipe string trailers, farm tractors and pick-up trucks. Dozers will remove topsoil over the trench area for the natural gas line and store topsoil adjacent to trench. Excavators will excavate the trench for the natural gas line and store the soil adjacent to the trench. The topsoil and trench soils will be segregated. The trench will be approximately 36 inches wide at the bottom and a minimum of 5 feet in depth. Semi-trucks with stringing trailers will bring pipe adjacent to the trench area and will off-load pipe with excavators or pipe layers. Pipe layers will position the pipe end to end and a bending team will follow the pipe layers to make slight bends in the pipe for elevation changes and horizontal turns using a pipe bending machine. A welding team will follow the bending team to assemble the pipe into sections and weld the sections together. Once assembled, the long sections of welded pipe will be lowered into the trench using a series of pipe layers. After a section is placed in the trench, the pipe will be covered with excavated trench soils and then covered with topsoil using both excavators and dozers. Prior to the final welded connections of the pipe a pressure test will be conducted to test the pipe's integrity.

The horizontal directional drill (HDD) method and jack and bore method consists of pipe installation using an auger to drill an underground tunnel, into which the pipe is drawn. The HDD method does not disturb the soil horizons. The jack and bore method requires the excavation of pits at either end of the bore. Soil horizons are only disturbed were the pits are excavated. HDD allows for construction across a landscape without the excavation of a trench by drilling a hole significantly below conventional pipeline depth and pulling the pipeline through the pre-drilled hole. Entry and exit points along the pipeline are used to create a point-to-point construction method, with minimal at grade disturbance between the entry and exit points. Machinery used at HDD and jack and bore drill sites would include the rig unit, excavator, frac tanks, a drill pipe, water pump, power generates, and cuttings separation equipment and containment. Several HDD and jack and bore locations are proposed in order to avoid wetlands and roadways along the Project.

Temporary Access Road

WPL will attempt to utilize existing farm roads for access to and from the right-of-way where possible. In places where temporary access roads are constructed over agricultural land, topsoil will be stripped and temporarily stockpiled. If the temporary roads in agricultural lands require gravel stabilization, geotextile construction fabric will be placed below imported rock material for additional stability and to provide a distinct barrier between imported rock material and the subsoil surface.

Temporary roads will be designed to accommodate existing surface drainage patterns and to minimize soil erosion. During the restoration phase, both temporary and pre-existing access roads will be removed and the areas will be restored as close as reasonably possible to its pre-construction conditions. In the event the landowner wants the road left intact, a written mutual agreement between the Landowner and WPL will be established.

Clearing Brush and Trees from the Easement

WPL will work with each landowner for the cutting of merchantable timber necessary for construction of the natural gas line. Timber may be cut and left along the edge of the utility right-of-way for the landowner's use or disposed of in various methods. Methods of disposal of trees, brush, and stumps may include off-site burning, burial, chipping, or removal. Vegetation from cherry and walnut trees can be toxic to livestock. All debris from these trees will be removed from areas that are actively pastured such that it will not be allowed to come into contact with livestock and may not be stockpiled on site.

Fencing

Prior to construction, WPL will work with landowners to determine if fences may be in the way of access for construction equipment. If necessary, existing fences may be removed and temporary fencing will be installed. Wire tension on temporary fences must be adequate to prevent sagging. Bracing of fences to trees or vegetation is prohibited. Fence materials, such as paint, must not be used as it is toxic to livestock.

Where livestock graze adjacent lands to construction areas, arrangements will be made with the landowner prior to construction to determine if temporary fences are necessary. WPL's contractors will be responsible to close any gates as used throughout the workday.

Existing fence crossings removed due to construction activities will be repaired. Following construction, any temporary gates and fences installed for use by construction crews must be removed, unless the landowner approves otherwise. Permanent fences will be restored as closely as reasonably possible to their pre-construction condition.

Irrigation Systems

If project construction intersects an operational irrigation system on agricultural land, WPL and the landowner will establish a mutually acceptable amount of time that the affected irrigation systems may be taken out of service during construction. Water flow in irrigation systems on agricultural land is not to be disrupted by construction without first notifying affected landowners. Any damage to an irrigation system caused by construction will be repaired as soon as reasonably possible.

Erosion Control and Dewatering

Erosion controls such as silt fence, staked hay bales, and erosion matting will be used to prevent surface runoff from carrying sediment laden water onto adjacent lands. Dewatering may be required to remove standing water from trench or bore pit areas. Erosion control and dewatering technical standards are described on the Wisconsin Department of Natural Resources (WDNR) website (http://dnr.wi.gov/topic/stormwater/standards/). These standards will always be met or exceeded. It is not permissible to allow soil or water runoff to occur from non-organically farmed fields onto organically farmed fields at any time even if both fields are owned by the same landowner.

Drain Tile

WPL will work with each Landowner through the pre-construction process to determine location of known drain tiles. If a drain tile is damaged or severed in the course of construction, the tile will be repaired. A temporary repair with solid tubing to allow drainage while construction activities are completed may be used, or a permanent repair immediately installed.

Prior to backfilling soils at that location, the drain tile will be permanently repaired. Repairs may include support of the tile to maintain proper drainage gradient, replacement of tile and placement of subsoils free of large rocks and clumps around the tile to cushion it, and/or placement of filter cloths. Each repair will be documented to show proper actions have been taken to ensure future drainage and GPS coordinates of the repair location recorded.

Weed Control

Where the AI sees evidence that weed growth on stockpiled topsoil could present a problem to adjacent cultivated fields the AI will consult with a WPL Representative to have the weeds removed or killed prior to topsoil replacement. If WPL chooses to spray the topsoil pile with herbicide, the landowner will be consulted regarding the choice of herbicide to be used, taking into account their preference for cover crop and plans for the next year’s crop. If any herbicide spraying is completed, it will be done by a state licensed applicator.

Repair of Existing Agricultural Erosion Control Facilities

Existing agricultural facilities, such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc., damaged due to construction activities will be restored to pre-construction conditions. Photographs and elevation surveys may be taken as necessary prior to construction activities at the site to ensure final restoration is satisfactory.

Soil Restoration

The purpose of soil restoration is to ensure that soil strata are replaced in the proper order, de-compacted, and that rock content of the upper 24 inches of soil is not increased. WPL will discuss rock and excess soil disposal with the landowner to determine acceptable disposal location(s) on the property. Heavy equipment will not be allowed to cross those agricultural areas that have been de-compacted and restored.

De-compacting the Subsoil:

De-compaction of the subsoil will only be done when the subsoil condition is friable/tillable in the top 18 inches of the subsoil profile, using the Atterbeg Field Test as guidance (Attachment A). The AI may recommend to WPL and its construction contractors specific locations for the decompaction of the subsoil in locations where soils appear to be either predominantly wet or in low lying areas where water ponding has occurred due to the "trench effect" as a result of topsoil removal. In these cases, WPL may consult with the landowner to determine the appropriate decompaction needs.

Equipment that can be used for soil decompaction may include a v-ripper, chisel plow, paraplow, or equivalent. Typical spacing of the shanks varies with equipment but is typically in the 8- to 24-inch range. The normal depth of tillage is 18 inches. The type of equipment used and the depth of rip may be adjusted as appropriate for different soil types or for a deeply and severely compacted area.

Subsoil compaction will normally be alleviated with three passes of the decompaction equipment. Multiple passes refers to the implement passing over the same soil band. That is, three passes of a 10-foot-wide implement will treat a 10-foot-wide band of soil, not a 30-foot-wide band. Passes must be made in multiple directions. This can be achieved in the narrow areas by having the implement weave back and forth across the area being ripped.

Topsoil Replacement:

The topsoil will be replaced to its original depth across the spoil storage, trench, work, and traffic areas. The layer of replaced topsoil should be uniform across the right-of-way width, including any crowning. Topsoil should be replaced with wide tracked machinery or equivalent light loaded equipment to avoid compaction of the topsoil and subsoil layers. Rubber tired motor graders may be used to spread and level topsoil to address unevenness in the field. In areas where minimal tillage, no-till, or level land farming practices are employed, a tracked machine will be required to establish final grades.

De-compacting Through the Topsoil:

De-compaction through the topsoil may be necessary, if the subsoil and/or topsoil are compacted during topsoil replacement activities. A penetrometer will be used to determine if additional decompaction is necessary through the topsoil.

Final Rock Removal:

Replacing the topsoil (or de-compacting through the topsoil) may free some rocks and bring them to the surface. The size, density and distribution of rock remaining on the construction work area should be the same as adjacent areas not disturbed by construction.

Final Cleanup:

All previously restored construction area should not be traversed by unnecessary equipment traffic. All construction related debris, including litter generated by the construction crews, will be removed from the landowner's property and disposed of appropriately. Final clean-up begins immediately after all the other above-mentioned sequence of restoration activities operations are completed, and not before. Final clean-up includes installation of permanent erosion control measures if necessary and disposal of construction debris and will be completed as soon as practicably possible (weather permitting), or as soon as possible thereafter. If final clean-up is delayed, temporary erosion controls will be installed as necessary.

ATTACHMENT A

Purpose: To determine when soil is suitable for tillage operations.

Process: The AI will determine the soil's consistency using the following:

1. Pull a sample soil plug at the maximum depth to be tilled, or from within the topsoil pile.

2. Roll a portion of the sample between the palms of the hands to form a wire with a diameter of one-eighth inch.

3. The soil consistency is:
   a. Tillable if the soil wire breaks into segments not exceeding 3/8 of an inch in length.
   b. Plastic (not tillable) if the segments are longer than 3/8 of an inch before breaking.

4. This procedure is to be used prior to de-compacting the subsoil; on the topsoil pile prior to stripping and stockpiling; on the topsoil prior to replacement; and prior to de-compacting through the topsoil.

5. One determination of soil consistency is adequate until the next rain event.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 01 - Right-of-Way Width

Purpose: To define the locations and limits of rights-of-way and additional temporary workspaces, in order to minimize the impacts to agricultural lands.

Organization: WPL onsite construction inspection personnel will monitor and enforce the measures described, in concert with the AI, for pipeline construction operations within agricultural lands.

Installation Planning

1. WPL will determine the required right-of-way widths over the length of lands traversed by the pipeline, including extra workspaces.

2. WPL will show the specific limits of rights-of-way on alignment sheet drawings which will be provided to the construction contractor, environmental consultants and inspection personnel.

3. WPL will provide the construction contractor, environmental consultants and inspection personnel with the right-of-way configuration drawings and other figures referred to by the BMPs developed for the project.

4. WPL will obtain the appropriate environmental and right-of-way clearances prior to entry on any land affected by construction of the pipeline or notify all parties of areas of special concern or areas for which clearance is withheld.

Construction

1. The limits of the right-of-way and all additional temporary workspaces will be staked prior to work commencing at that location.

2. For easements in agricultural lands a construction right-of-way width of 100-foot is required and topsoil stripping will be the complete right-of-way width excluding the topsoil stockpile area. This consists of a 75-foot temporary construction easement and a 25-foot permanent utility easement. The running centerline of the pipeline will generally be 12 feet from one side of the 25-foot permanent easement.

3. For easements in non-cultivated wooded lands or wetlands a construction right-of-way width of 100 feet is required. This consists of a 75-foot temporary construction easement and a 25-foot permanent utility easement. However, the 75-foot temporary construction easement would be reduced where feasible. Where feasible the existing road and overhead electrical transmission line corridors are being utilized to reduce the impact of tree clearing and wetlands. In areas where the natural gas line will be installed by horizontal directional drilling a 25-foot permanent easement will be required but the 75-foot temporary easement will not be necessary.

4. Additional temporary workspace will be required for stream crossings, road bore crossing areas, uplands on either side of wetlands, and equipment turnaround areas. WPL will determine the amount of additional right-of-way needed for construction and restoration on agricultural land as per these BMPs.

5. Should a situation arise where the approved workspace is not adequate to implement the agricultural BMPs, work will be stopped at the respective location until WPL determines an appropriate course of action. For example, triple lift soil segregation may require an additional 25 feet of temporary construction easement area as necessary to allow separation of the three stockpile areas.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 02 - Topsoil Segregation

Purpose: To preserve the topsoil resources by eliminating the potential for topsoil / subsoil mixing in agricultural lands.

Installation Planning

1. During right-of-way negotiations for easements on agricultural lands, WPL will identify full topsoil removal as the only alternative.
2. The topsoil is defined to include the upper most portion of the soil commonly referred to as the plow layer, the A horizon, or its equivalent in uncultivated soils. It is the surface layer of the soil that has the darkest color or the highest content of organic matter.

Construction

Full Topsoil Removal

1. The WPL operator or construction contractor will oversee determination of the topsoil depth. This will be completed as construction progresses.

2. All of the topsoil to a depth of 12 inches, or the entire original topsoil depth if it is less than 12 inches, will be removed from the subsoil storage area, the trench area, and the rest of the temporary right-of-way (work and traffic areas); however, topsoil will not be removed from under the topsoil storage piles or areas where construction mats are laid on the surface for material storage or equipment travel. WPL has the option to remove amounts of topsoil in excess of 12” at its discretion.

3. All subsoil material removed from the pipeline trench will be stockpiled separate from the topsoil stockpile. The subsoil material will be stockpiled in the subsoil storage area.

4. Additionally, all topsoil to a depth of 12-inches will be stripped from newly constructed temporary access roads, temporary storage areas, and temporary construction areas associated with stations, mainline valves, and pig launchers located on agricultural land. It is intended that existing field access roads will not be stripped of any existing cover.

5. Topsoil will be removed prior to cut/fill grading operations.

Partial Topsoil Removal

1. There will be no Partial Topsoil Removal on agricultural lands.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands
BMP 03 - Erosion Control

Purpose: To minimize the effects of erosion to lands affected by construction, and adjacent properties, and to prevent silts and sediments from being transported off the right-of-way or into natural resources.

Installation Planning

1. WPL will conduct training of inspection personnel and contractors so that all parties have a thorough understanding of the erosion control requirements to be utilized on the project. The training will include a review of the requirements of WPL WWGE Project Construction Diagrams AMP, and BMPs. Such training will identify the authorities of the inspection personnel, the criteria for placement of the particular erosion structures, and the procedure to be followed in the event that a violation of these practices appears to have occurred.

2. WPL will advise the construction contractor of all known areas of special concern.

3. WPL will require its construction contractor to structure its work in a manner that is consistent with the requirements of the documents listed in Paragraph 1 above, and to maintain an adequate supply of approved erosion control materials necessary for providing an appropriate level of control.

Construction

<u>Temporary Erosion Control</u>

1. Temporary erosion controls will be implemented after initial disturbance of the soil and will be properly maintained throughout construction. The erosion control structures will be inspected as described below and reinstalled as necessary (such as after backfilling of the trench) until they are either replaced by permanent erosion controls or restoration is complete.

2. Temporary slope breakers will be constructed where necessary to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, sandbags, or wattles.

3. Unless otherwise specified as a permit condition, temporary slope breakers will generally be installed using the following spacing:

Slope %	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

4. The outfall of each temporary slope breaker will be directed off the construction right-of-way to a stable, well-vegetated area or energy-dissipating device at the end of the slope breaker and off the construction right-of-way. Discharge of water shall not be made in a way that can runoff from non-organic farm operations onto adjacent organic farm operations.

5. The integrity of slope breakers will be confirmed, during active construction on a daily basis and during inactive construction on a weekly basis. In areas with no construction or equipment operation, integrity of slope breakers will be confirmed within 24 hours of each 0.5-inch of rainfall. Slope breakers found to be ineffective will be repaired within 24 hours of identification.

6. The placement of temporary slope breakers will be coordinated with the placement of trench/ditch plugs. Trench/ditch plugs will be installed at the boundaries of certified organic farming to ensure that the pipeline does not provide a surface or subsurface drainage path from the surrounding area to the certified organic farm during construction.

7. Slope breakers will be of adequate height and width to contain and divert a significant rain event. Additionally, slope breakers will be constructed with a two to eight percent outslope to a stable area. In the absence of a stable area, appropriate energy-dissipating devices will be used to direct the flow off the construction right-of-way. The slope breaker will be compacted during its construction to prevent the water from eroding through the berm. The inlet end of the berm will be located to prevent water from traveling around the berm.

8. The outlet of the slope breaker will be stable enough to filter sediment from the water and retain the sediment within the existing vegetation.

Sediment Barriers

1. Sediment barriers will be installed to stop the flow of sediment. They may be constructed of materials such as silt fence, staked hay or straw bales, sandbags, wattles, or equivalent.

2. Temporary sediment barriers will be installed at the base of slopes adjacent to road crossings until disturbed vegetation has been reestablished and at appropriate locations to prevent siltation into water bodies or wetlands crossed by, or near, the construction work area.

3. Temporary sediment barriers will be maintained until permanent revegetation measures are successful or the upland areas adjacent to wetlands, water bodies, or roads are stabilized. Temporary sediment barriers will be removed from an area when that area is successfully restored

Mulch

1. In general, mulch will not be used as an erosion control measure in agricultural lands. In the event mulch is required by WPL in consultation with the landowner in agricultural lands, the mulch will be applied according to WPL Erosion Control Standards and Procedures.

Permanent Erosion Control Devices

1. To prevent subsurface flow of water through the pipe trench, trench breakers will be installed.

2. The following reference table can be used to locate trench breaker spacing on areas with slopes greater than 5%.

Slope %	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

3. When permanent trench breakers are installed in the trench prior to backfilling, they will consist of sandbags, earth-filled sacks or other approved material. Topsoil will not be used for trench breakers. Trench breakers are required to have a minimum bottom width of two sacks wide.

4. Trench breakers will be installed to a minimum elevation of one foot above the top of the pipe. The top of the trench breaker must be two feet or more below the restored surface on agricultural land.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands
BMP 04 - Drain Tile

Purpose: To ensure that any tile line damaged during construction is repaired to a condition that is functionally equivalent to its condition prior to construction and to avoid adverse impacts to planned or proposed drainage systems.

Installation Planning

1. Identify fields containing drain tiles through contact with landowners, the local Land Conservation District, and the USDA-Natural Resources Conservation Service staff. All drain tiles will be photographed and GPS documented pre-construction and post-construction.

2. Flag all identified drain tiles within the right-of-way after clearing and grading, and prior to trenching.

3. WPL will document proposed drain tile plans that the landowner may plan to install within the three years following construction.

4. WPL will identify local drain tile installation contractors and consult with the landowner to determine whether the landowner would prefer repair/replacement services (if necessary) be provided by a local contractor.

5. WPL will document existing moisture content.

Construction

1. The excavated pipeline trench shall provide a minimum of 12 inches clearance, where practicable, between the pipe and the drainage tile.

<u>General Conditions</u>

1. WPL will use the construction contractor or their sub-contractor to replace, relocate or reconfigure existing tile lines as may be required.

2. WPL will take the necessary actions to ensure the functioning of the tile lines will be equivalent to its prior condition where tile lines adjacent to the pipeline's right-of-way are adversely affected by the construction of the pipeline. This may include the relocation, reconfiguration, and replacement of the

existing tile lines within the construction corridor. The repaired drain tile will be verified that it was installed correctly and WPL will make an effort to understand the existing conditions within the limited pipeline ROW.

3. The quality of all clay and concrete drain tile and corrugated polyethylene tubing to be installed shall be appropriate for the work as determined by the AI and/or qualified drain tile repair contractor. Material to be installed will meet American Society of Testing Materials (ASTM) standards.

4. Any drain tile removed from the pipeline trench will not be reused.

5. WPL will repair or correct tile or drainage problems caused by construction of the pipeline immediately, upon written notice from the landowner to WPL of such a problem, unless WPL can demonstrate that the problem identified by the landowner was not caused by actions performed during such construction or restoration. WPL may arrange a pay settlement to the landowner.

Locating Damaged Drains

1. All drains found during trenching will be flagged.

2. Drains that are located within the right-of-way, but are not located within the trench, will be probed (examined) for damage.

Temporary Repairs

1. All exposed tiles will be capped or screened with window screen or equivalent to protect against soil intrusion when the trench is dug, whether repaired immediately or later.

2. Any flowing tile line will be repaired as soon as practicable with solid tubing, until permanent repairs can be made.

3. Temporary repairs are needed if a flowing drain will be stopped for longer than 24 hours.

Permanent Repairs

1. All permanent tile line damaged within the trench area will be repaired prior to backfilling at the respective location.

2. Where tile lines are severed by construction of the pipeline trench, angle iron, three-sided steel channel iron, I-beams, full round slotted pipe, perforated plastic pipe or half pipe will be used to

support the repaired tile line. The support members must extend a minimum of 2-feet into previously undisturbed soil. If the tile repairs involve clay tile, the support member will extend to the first tile joint beyond the minimum 2-foot distance.

3. Each tile drain's slope (gradient) will be maintained by providing sufficient support to prevent the drain line from sagging. Sandbags, bags of concrete, Sakrete, or equivalent can be used as support under repaired tile lines. The grade of the tile line should remain unchanged.

4. If the tile is clay, ceramic or concrete, any connection with new material must be made with commercially available connectors, or wrapped with plastic or effectively sealed to prevent soil intrusion.

5. To avoid the risk of damaging (crushing) the tile lines with large soil clumps or stones during backfilling loosened native subsoil free of large soil clumps and stones should be placed on top of, and to the sides of, the tile line. Where appropriate native subsoil is not available, imported subsoil free of clumps and stones, or pea gravel, can be used to cushion the tile line.

6. Filter-covered drain tiles will be used where the existing tile line is covered with a filter.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 05 - Trench Dewatering

Purpose: Pump water from an open trench or other excavated area while controlling the rate of discharge to avoid:

- Permanent or temporary erosion and scour;
- Damage to adjacent agricultural land, crops, or pastureland;
- Inundating crops for more than 24 hours, including rainfall;
- Depositing sand, silt, or sediment in or near a wetland or waterbody;
- Depositing gravel in fields, pastures, or watercourses; and
- Damaging cultural resources sites, locations of sensitive plant species and organic farming operations.

Typically, the trench will need to be dewatered for purposes of, but not limited to, tie-ins, measuring the trench for bends, lowering-in pipe, trench inspection, and back-filling the trench. Water discharge from hydrostatic testing following backfilling shall follow the same protocols described here when applicable.

Installation Planning

1. Water will be discharged in an upland area so any sediment, stones, and silt-laden water will not deposit material in a sensitive area adversely impacting the hydrology or plant communities. The contractor should have sufficient intake or outlet hose (250 - 350 feet) to reach the nearest appropriate upland area.

2. WPL and their construction contractors will identify during construction activities:

    - Low areas along the pipeline route that are likely to collect water during construction, and
    - Suitable areas for the discharge of water accumulated within the pipe trench or other excavated area
    - Identify accumulated water that needs to be discharged as construction progresses

3. WPL will require its construction contractors to obtain:

    - WPL approval of all off-right-of-way and on-right-of-way discharge locations and techniques, and all trench dewatering discharge locations and techniques

- WPL may obtain voluntary permissions with landowners

4. WPL will require its construction contractors to structure the work to minimize the accumulation of water within the trench.

5. In the event it is not possible to avoid water-related damages as described above, WPL will:

   - Reasonably compensate the landowner for the damages, and
   - Restore the cropland and crops, pastureland, water courses, and any other damaged lands to their pre-construction condition.

Construction

1. All dewatering activities will be conducted in compliance with current drainage laws, local ordinances relating to such activities, WDNR permit conditions, and the provisions of the Clean Water Act.

2. Rainwater or groundwater that collects in the trench will be pumped:

   - Onto a well-vegetated area that will prevent the water from returning to the right-of-way, or
   - Into a filter bag or a settling basin constructed of straw bales when adequate vegetation is absent or when in the vicinity of a wetland or waterbody.

   Additionally, sediment barriers or similar erosion control measures may be used as necessary to divert the flow of pumped water.

3. To minimize the extraction of silt or sediment from the trench the intake will be prevented from touching the bottom or side of the trench. A flotation device or a support will be attached to the intake of the suction line to prevent sucking up soil and other debris from the trench.

4. All structures will be located in a stabilized and vegetated area with a minimum buffer width of 100 feet between it and any adjacent water body or wetland area. Sediment barriers or similar erosion control measure will be installed if an adequate buffer is not available.

5. Preferably, dewatering efforts will not deliver water onto cropland. If it is absolutely necessary to do so, the crops will be inundated (flooded) less than 24 hours.

6. The dewatering activities will not deposit gravel, sediment (mud) or other debris in fields, pastures, or watercourses.

7. Dewatering sites will be selected, and structures and slope breakers will be installed, to ensure that water is not directed into known cultural resources sites or locations of sensitive plant communities.

8. Backfill activities will begin as soon as possible after pipe installation to prevent the trench from refilling with water in high water table conditions. Attempts to dewater as far from the back-filling activity as possible will be made.

9. Dewatering will be monitored and stopped, if necessary, to correct conditions and practices that do not comply with this best management practice.

10. Discharge of water from the trench of non-organic farm operations and hydrostatic testing shall not be made in a way that can runoff onto adjacent organic farm operations.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 06 - Soil Restoration

Purpose: To restore the contour and to ensure the quality and agricultural productivity of the soil by:

- Avoiding the mixing of the topsoil with the subsoil, and
- Eliminating compaction from the subsoil and topsoil layers, and
- Affirm the rock content of the upper 12-inches of topsoil and subsoil is not increased after completion of the construction and restoration process.

Installation Planning

1. WPL will identify, through consultation with the landowner, all rock disposal location(s) on the right-of-wayor adjacent to the ROW. This location can be on the construction right-of-way of the landowner's property. Written permission from the landowner is required for disposal at another site on the farm.

2. WPL will consult the landowner about properly disposing of excess excavated material to maintain agricultural productivity.

3. Successful restoration of the soil requires that the proper equipment be used, in the proper sequence, under the correct soil moisture content conditions. Each step in the restoration process is completed before moving to the next step. De-compaction will occur as determined necessary by the AI and in consultation with the contractor and landowner.

4. Heavy equipment will not be allowed to cross those agricultural areas that have been de-compacted. In the event any area of previously restored right-of-way that is traversed by equipment for any reason (e.g. to reach a hydrostatic test location) which results in further compaction, the area will be appropriately restored.

Construction:

<u>Backfilling</u>

1. After installation of the pipeline is complete, the trench materials will be backfilled in the order in which they were removed.

Crowning the Trench

1. Crowning the trench area will compensate for ground settling or subsidence. The crown shall be constructed with native topsoil material. Topsoil from adjacent right-of-way areas will be used (if needed) for crowning to avoid the potential for mixing of subsoil and topsoil in the event settling is overestimated. The AI will determine the height of the crown based on soil type and moisture content. Breaks will be left in the crown to accommodate existing surface drainage systems while the crown settles over the first year post construction.

2. Crowning the trench will be used when necessary and performed per WPL standards.

3. If in the first growing season post-construction the landowner determines that the crown area may have settled too much or too little and is causing a problem with agricultural activity, WPL will consult with the landowner to determine what corrective action may be needed to restore the crown area to its pre-construction topography and productivity.

De-compacting the Subsoil

1. Deep subsoil ripping shall be carried out on all traffic and work areas of agricultural right-of-way where full corridor stripping of topsoil occurred. This includes the pipeline workspaces, temporary workspaces, and temporary access roads. It does not include the area over the trench.

2. De-compaction of the subsoil will only be done when the subsoil condition is friable/tillable in the top 18-inches of the subsoil profile as determined by the AI. The AI, using their best judgment, may need to allow the de-compaction of the subsoil in areas where soils appear to be either predominantly wet or in low lying areas where water ponding has occurred due to the “trench effect” as a result of topsoil removal. In these cases the AI will consult with, and receive approval from, the landowner or tenant.

3. Ripping equipment to be used will be selected based on successful use on previous pipeline projects such as the v-ripper, chisel plow, paraplow, or an equivalent. WPL may, at their discretion, choose to compensate the landowner to chisel plow his impacted land(s).

4. The normal depth of tillage is 18-inches. The AI will provide guidance on the appropriate depth of rip in special situations or soil types. For example, a depth of 6 to 8-inches may be appropriate on intensively drained mineral (lacustrine/alluvial) soils. A depth of 22-inches may be appropriate for a deeply and severely compacted area.

5. The optimal spacing of the shanks will depend on the ripping equipment, soil type and moisture content, but will typically be in the range of 8 to 24-inches. Shanks are at their optimum spacing when the implement shatters the soil area between the shanks. Shatter is evidenced by the soil lifting between the shanks as the implement passes. The AI can assist the contractor in selecting the appropriate shank spacing.

6. Subsoil compaction will normally be alleviated with three passes of the de-compaction equipment. Multiple passes refers to the implement passing over the same soil band. That is, three passes of a 10-foot wide implement will treat a 10-foot wide band of soil, not a 30-foot wide band.

7. Passes must be made in multiple directions. This can be achieved in the narrow pipeline right-of-way by weaving the implement back and forth across the area being ripped.

8. If de-compaction was not successful, the de-compaction effort will continue. The contractor is required to make as many passes as necessary to alleviate compaction. If the de-compaction effort is not successful after additional passes, a change in the de-compaction equipment used would be appropriate and determined with guidance from the AI.

Topsoil Replacement

1. The topsoil will be replaced to its original depth across the spoil storage, trench, work, and traffic areas. The layer of replaced topsoil should be uniform across the right-of-way width, including the crown over the trench.

2. Topsoil should be replaced with small tracked machinery or equivalent light loaded equipment to avoid compaction of the topsoil and subsoil layers. Rubber tired motor graders may be used to spread and level topsoil to address unevenness in the field due to pipeline construction. In areas where minimal tillage, no-till, or level land farming practices are employed, a motor grader will be required to establish final right-of-way grades.

De-compacting Through the Topsoil

1. De-compaction through the topsoil may be necessary if the subsoil and/or topsoil are compacted during topsoil replacement activities.

Final Rock Removal

1. Replacing the topsoil (or de-compacting through the topsoil) may free some rocks and bring them to the surface.

2. The size, density and distribution of rock remaining on the construction work area should be the same as adjacent areas not disturbed by construction

Final Cleanup

1. Any area of previously restored right-of-way should not be traversed by unnecessary equipment traffic. All construction-related debris, including litter generated by the construction crews, will be removed from the landowner's property and disposed of appropriately.

2. Final clean-up begins immediately after all the other above-mentioned sequence of restoration activities operations are completed, and not before. Final clean-up includes installation of permanent erosion control measures and disposal of construction debris and will be completed within 14 days after backfilling in the area, weather permitting, or as soon as possible thereafter. Final clean-up shall not be delayed until the end of the next seeding season. If final clean-up is not completed within the 14-day time period, temporary erosion controls will be installed.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 07 - Seeding and Seed Bed Preparation

Purpose:

1. To place the seed into the soil at the correct time and proper depth to promote sufficient seed-soil contact on cropland or pasture requiring seeding.

2. To prepare the soil surface of an exposed area by natural or artificial means, such as tilling and fertilizing.

3. To minimize topsoil erosion on disturbed agricultural areas.

Installation Planning

WPL will reseed over the entire right-of-way following final clean-up. WPL will not apply seed to certified organic farms, prior to consulting with the landowner regarding how reseeding will be accomplished.

1. WPL will attempt to identify properties during the pre-construction phase where cropland seeding procedures or pasture seeding procedures will be used.

2. During recommended seeding periods, seedbed preparation should immediately follow soil restoration as soon as weather conditions and individual right-of-way requirements permit.

3. Seeding will be completed immediately after finishing seedbed preparation, weather permitting. Temporary erosion control measures will be used if this timeframe cannot be met.

4. For seeding outside of the recommended seeding periods, temporary erosion control methods will be used.

5. WPL will consult with the landowner to determine the seed mix, if appropriate.

Construction

Seed Selection

1. An annual oat, wheat, or similar grain will be used for erosion control on crop land and a special pasture seeding mix will be used for all pastures.

Seedbed Preparation for Conventional, Broadcast and Hydroseeding

1. The ideal condition for conventional seeding is a smooth, firm, clod-free soil for optimum seed placement with drills or cultipacker seeders, if appropriate for that type of seed. The soil should be firm enough at planting for an adult footprint to sink no deeper than 3/8-inch. Avoid overworking the soil because rainfall following seeding may crust the surface, preventing seedling emergence.

2. If the area to be seeded has been recently loosened, and will provide an adequate seedbed, no additional tillage will be required.

3. If the area to be seeded has been compacted or crusted, the top layer of soil will be tilled.

4. Spike–toothed harrows may also be used during seedbed preparation. The spikes of the harrow will dig lightly into the soil to break up soil masses. Harrows may also be used to cover broadcast seed.

5. The seedbed will be scarified to create sites for seed to lodge and germinate where broadcasting the seed or hydroseeding will be used.

Seeding

1. Seeding of permanent cover will be done, whenever possible, during the recommended seeding date ranges for west central Wisconsin.

2. If seeding cannot be accomplished before the recommended October 15 seeding deadline, it will be done in conformity with the Critical Area Planting conservation practice standard of the NRCS, or temporary erosion controls will be implemented and the seeding of permanent cover done at the beginning of the next seeding season.

3. Any soil disturbance occurring outside of the recommended October 15 seeding deadline date, or any bare soil left unstabilized by vegetation, will be treated as a winter construction condition and appropriate erosion controls will be installed to minimize erosion over winter and spring thaw.

4. After seedbed preparation, the seed mixes of all the permanent grasses or legume plantings will be applied at the rate determined from the, AI, landowner or recommended by the USDA-Natural Resources Conservation Service (NRCS).

5. In areas where a different seed mix is proposed, seeding will conform to the Critical Area Planting conservation practice standard of the NRCS, Conservation Reserve Program or any other similar federal program.

6. Grass waterways and terraces will be seeded to reestablish grass cover similar to preconstruction conditions. Erosion control measures, such as mulch or erosion control fabric, will be used in conjunction with seeding.

7. If a Certified Organic Farm will be impacted by construction, WPL will coordinate with the affected landowner to ensure that an appropriate seed mix and planting methods are used as required by the farm's Certification Plan.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 08 - Crop Compensation

Purpose: To ensure that agricultural landowners are fairly compensated for loss of crop production due to the pipeline project. Two formulas will be used for compensating for crop damage/loss; one for permanent easement areas and one for the temporary construction easement areas.

Planning:

1. If the landowner rents or leases out the land to a tenant farmer, then the tenant farmer may be compensated in lieu of the landowner. There will be an attempt to communicate the agreement of compensation to both the tenant farmer as well as the landowner.

2. **Permanent Easements:**

   (a) The amount paid in year one for permanent easement areas will equal the product of the impacted crop area (in acres or percent of an acre), crop yield per acre (based upon farmer's estimate and average crop yields per county), and market price per bushel (or other applicable unit of measure) of crop for the month when the farmer would have sold the crop. Thus, the formula that WPL will use to calculate the dollar amount paid in year one for permanent easement areas is equal to:

(product of impacted crop area) x (crop yield per acre) x (market price per bushel) = dollar amount year 1

   (b) Compensation for crop damage/loss for the subsequent four years is based on a graduated scale due to disturbance of the soil and soil compaction caused by the heavy equipment used to dig bore pits or excavate the trench segments for the pipeline and transport/stage/install the pipe along the route:

   - Year 2 compensation = 80% of amount calculated for year 1.
   - Year 3 compensation = 60% of amount calculated for year 1.
   - Year 4 compensation = 40% of amount calculated for year 1.
   - Year 5 compensation = 20% of amount calculated for year 1.

3. **Temporary Easements:** For the temporary construction easement areas, the amount of compensation WPL will use for year one is calculated the same as in 2(a) above, but a different graduated scale is used to calculate compensation for subsequent years as the soil is not disturbed, only compacted:

- Year 2 compensation = 50% of amount calculated for year 1.
- Year 3 compensation = 30% of amount calculated for year 1.

4. Compensation for crop damage/loss will be made in lump sum payment to the landowners/tenant farmers following completion of construction/installation of the pipeline, with such payments including amounts for the subsequent years' crop loss. The landowners/tenant farmers would signify agreement by signing a damage release form.

If specialty crops cannot be avoided, crop compensation plans for specialty crops would be prepared by a third-party consultant that has experience with the specialty crop. The third-party consultant would prepare a "before" and "after" appraisal of the proposed specialty crop and land value damages due to the project.

Western Wisconsin Gas Expansion Project Best Management Practices for Construction within Agricultural Lands

BMP 09 - Three-Lift Soil Handling

Purpose: To maintain the root zone over the trench area to the extent practicable through management of the topsoil, and subsoil layers in areas where the subsoil qualifies for this three-lift protocol.

Organization: The contractor will be responsible for implementing the three-lift soil-handling method. The AI will be available to assist in making “field calls” such as identifying boundaries between soil layers and to monitor compliance with this BMP.

Installation Planning:

1. In areas where the AI determines the need to apply the triple-lift soil handling practice during trenching operations, an attempt will be made in preconstruction planning to ensure that adequate construction right-of-way space is made available. WPL will compile a list of potentially affected farmland owners whose land is eligible for triple lift soil handling during excavation of the trench. This will be obtained from NRSC Soil Maps and/or original soil maps for Monroe County. This list of qualifying "candidate" soils and parcels will be provided to the DATCP and to the AIs.

2. The criteria for soils qualifying as "candidates" for the three-lift soil handling procedure are determined by DATCP on lands that involve cultivated croplands, rotated pastureland, or government set-aside program land. Locations of tree-lift soil handling will be confirmed by the AI.

3. Where applicable, WPL will inform landowners possessing lands containing soils within the construction right-of-way that meet the three-lift soil handling criteria and offer landowners the option of implementing the three-lift soil trenching procedure on their property during construction.

4. WPL will include in the construction bid documents explanation of the three-lift soil handling procedure along with the potential locations. WPL will also review the process and the potential locations with the bidders during the pre-bid job showing to ensure the potential contractor is well acquainted with the expectations. WPL will also review this process and the potential locations with the selected construction contractor during the construction “kick-off” meeting. The three-lift soil handling process will also be included in WPL’s environmental training sessions required for all field personnel prior to working on the construction right-of-way.

Construction:

1. WPL may perform additional soil sampling to confirm the depth and extent of soil layers.

2. All topsoil up to a depth of at least 12 inches of will be stripped and stockpiled along the edge of the working side of the construction ROW.

3. After topsoil has been removed (first lift) and trenching begins, a backhoe will remove the upper portion of the subsoil (second lift) and place this layer as far from the trench as the reach of the equipment permits on side of the construction ROW.

4. Where the subsoil material changes the backhoe operator will place this underlying material (third lift) between the trench and the second-lift pile on the side of the right-of-way. Since the depth at which the underlying material is encountered will vary from location to location, the boundary between the upper subsoil and the underlying material will be determined visually by the construction and inspection team, with the advice of the AI when necessary.

5. WPL will attempt to maintain separation between the two piles. Depending on the available workspace and the volume of soil involved, maintaining complete separation between these two piles may not be possible.

6. During backfilling, the operator will make every effort to place the lower subsoil pile material (third layer) of the spoil material in the trench first, and will only then replace the upper subsoil layer (second layer) of the spoil material in the trench.

7. WPL will perform field adjustments as necessary in conjunction with the contractor and AI to ensure lower subsoil or parent material does not become mixed with the upper subsoil by the proper placement of the spoil piles to the extent practicable.

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