AGRICULTURAL IMPACT STATEMENT

DATCP #4255

Lakeshore Capacity Improvement Natural Gas Pipeline Racine and Kenosha Counties

PSC #6630-CG-137

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

PUBLISHED MAY 8, 2018

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WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

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Published May 8, 2018

TABLE OF CONTENTS

TABLES

FIGURES

DATCP SUMMARY OF ANALYSIS AND RECOMMENDATIONS

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this Agricultural Impact Statement (AIS) for the proposed Lakeshore Capacity Improvement Natural Gas Pipeline Project (DATCP #4255) in accordance with Wis. Stat. §32.035. We Energies submitted project information to DATCP in March of 2018. We Energies proposes to construct approximately 7.0 miles of 24-inch and 1.7 miles of 12-inch pipeline through the village of Mount Pleasant and the town of Yorkville in Racine County. No alternative routes are proposed. Two potential sites are proposed for the project's one gate station. One site is located in the town of Yorkville in Racine County and a second site in the town of Paris, Kenosha County. Two valve assembly facilities are also proposed as part of the project, one located at the eastern end of the project in the village of Mount Pleasant and another within the Foxconn Electronics Information Technology Manufacturing (EITM) zone.

Approximately 2.9 miles of the proposed 24-inch pipeline along with all of the proposed 12-inch pipeline would be located within the EITM zone. Agricultural impacts within the EITM zone have been described and analyzed in an AIS published on November 10, 2017 (DATCP #4229). Therefore this AIS excludes all aspects of the project that would be located within the EITM zone.

Outside of the EITM zone, twelve agricultural property owners could be affected by this project. Four of these property owners could have 2 or more acres impacted, if the project is approved by the Public Service Commission (PSC or Commission). The Public Service Commission of Wisconsin (PSC or Commission) is the authority that will approve, deny, or make modifications to this project. We Energies anticipates submitted an application to the PSC in April of 2018. DATCP will submit agricultural recommendations to and participate in the PSC process.

Having reviewed all of the materials provided by We Energies and the comments from property owners, DATCP recommends the following to the Public Service Commission, We Energies and to agricultural property owners to mitigate impacts on farmland and farmland operations.

Recommendations to the Public Service Commission

- If the project is approved by the PSC, DATCP recommends that We Energies work with Daryl Poisl and Benjamin Coughlin on the final location of the gate station so that impacts to both of their farming operations from the gate station and the connecting pipeline are minimized, to the extent practicable.

Recommendations to We Energies

- The Agricultural Mitigation Plan (AMP) and Best Management Practices (BMPs) supplied by We Energies are effective tools in mitigating potential impacts to farm properties. DATCP recommends that We Energies implement appropriate training for all construction supervisors, inspectors, and crews to ensure that they understand the

implementation of the AMP and BMPs so that the integrity of agricultural lands and operations during project construction and restoration are protected.

- We Energies should inform and work with all agricultural property owners regarding the potential for natural gas service connection to all properties along the route so that future development potential is optimized for the affected landowners.
- We Energies should ensure that any renters of agricultural land crossed by the proposed project are kept up-to-date and informed of construction schedules and potential impacts.
- We Energies should work with property owners and renters to minimize construction impacts to farming operations and infrastructure.
- We Energies should work with landowners to restore agricultural properties impacted by construction activities to pre-construction function and address concerns resulting from construction.
- Where construction activities have altered the natural stratification of the soils resulting in new wet areas, We Energies should 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.

Recommendations to Agricultural Property Owners

- We Energies may offer landowners compensation to sign an appraisal waiver form and offer an easement based on a market study. Landowners have the right to see an appraisal from We Energies and be compensated for an appraisal prepared by an appraiser of the landowner's choice (Wis. Stat. §32.06). Landowners should examine the language of any waiver or easement contract carefully and verify that it contains all agreed-to terms.
- 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 company'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 right-of-way (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 for We Energies where drainage tiles may be located in the vicinity of the ROW. If drainage tiles are damaged by construction activities, landowners should observe and photograph any drain tile repairs to ensure that they are adequately repaired.
- 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 6630-CG-137.

We Energies 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 We Energies 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, We Energies 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.

We Energies anticipates acquiring easements in May 2018, prior to receiving approval from the Public Service Commission (PSC or Commission). Construction would start in October 2018, if it is approved by the Commission. The utility anticipates that the pipeline would be placed in service in November 2021.

II. PROJECT DESCRIPTION

Overview

We Energies proposes to construct the following for the Lakeshore Capacity Improvement project including the area within the Electronics and Information Technology Manufacturing (EITM) zone):

- Either 7.0 miles or 6.8 miles of 24-inch new steel natural gas pipeline through the town of Yorkville and village of Mount Pleasant, depending on the Gate Station site selected.
- 1.7 miles of 12-inch new steel natural gas pipeline within the EITM zone.
- Two aboveground valve assemblies - one located within the EITM Zone and one located at the eastern end of the pipeline, north of County Trunk Highway (CTH) KR and along CTH Y (see Figure 4).
- One Gate Station to be located at either Site A in the town of Yorkville, Racine County or Site B within the town of Paris, Kenosha County (see Figure 2).

Figures 1 through 4 show maps of the proposed project.

Approximately 2.9 miles of the 24-inch pipeline, all of the 12-inch pipeline, and one of the aboveground valve assembly facilities would be located within the EITM zone. No analysis is included in this document for the portion of the project that would be located within the EITM zone as impacts to properties within the EITM zone were analyzed in the, "Village of Mount Pleasant, Foxconn Project AIS", published on November 10, 2017 (DATCP #4229).

The aboveground valve assembly located at the eastern end of the project would require approximately 100 feet x 100 feet of land. The gate station sites are located at the western end of the project and the facility would require 200 x 200 feet of land and include a 30 x 30-foot building. All aboveground facilities would be fenced.

The project route, from west to east, starts at either Gate Station A or Gate Station B. It then extends along the north side of CTH KR crossing under Interstate (I)-94, through the EITM zone, across CTH EA, a railroad, State Trunk Highway (STH) 31, and CTH M, until reaching CTH G. At CTH G, the route turns north along the west side of Wood Road for approximately 1,000 feet and then crosses to the east side of Wood Road. The route continues east again cross-country until reaching CTH Y and the proposed site of the valve assembly facility.

Project Purpose and Need

The primary purpose of the Lakeshore Capacity Improvement project is to increase the capacity and reliability of natural gas service in Racine, Kenosha and Milwaukee County areas.

Figure 1: Project Overview Map

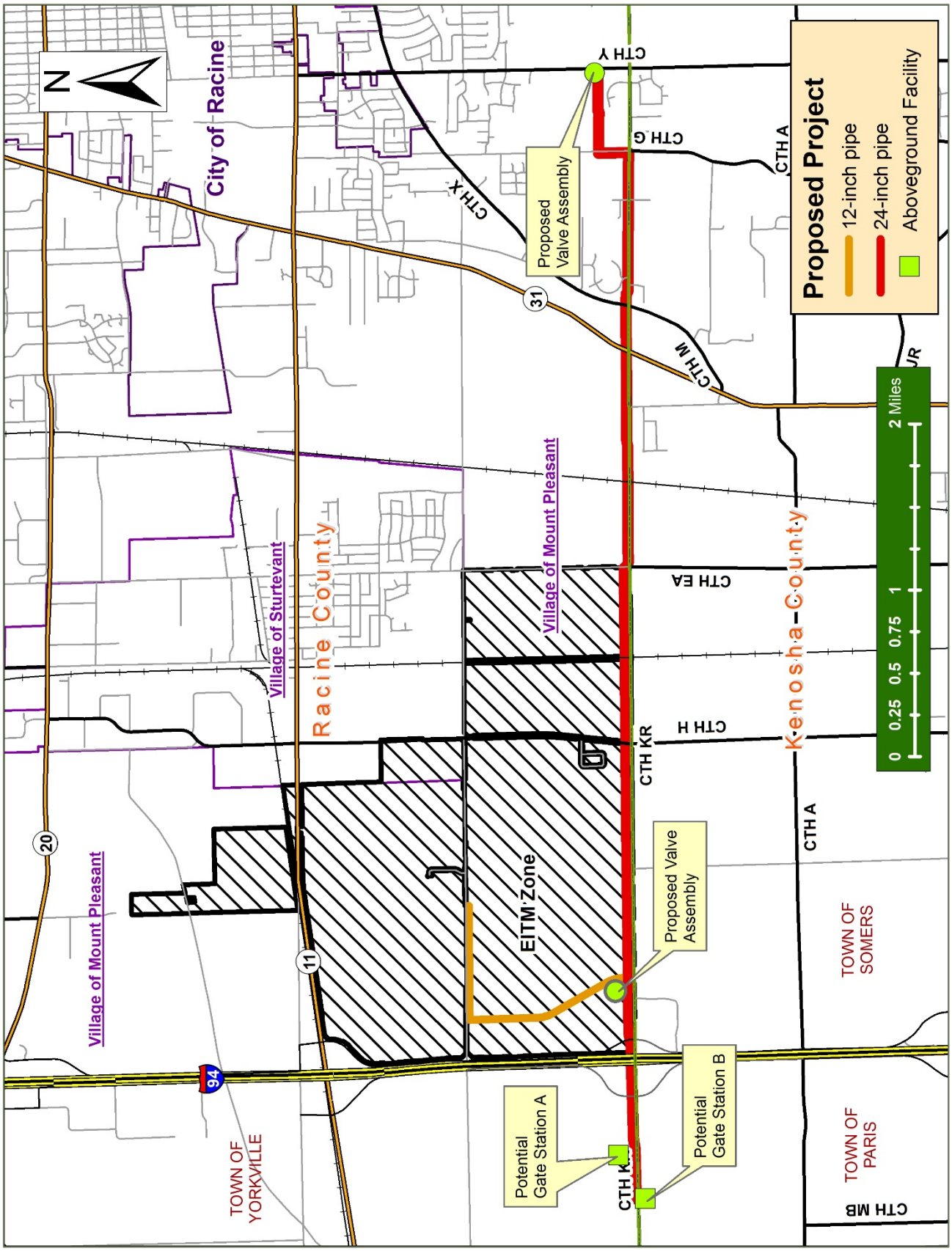


Figure 2: West End of the Proposed Project

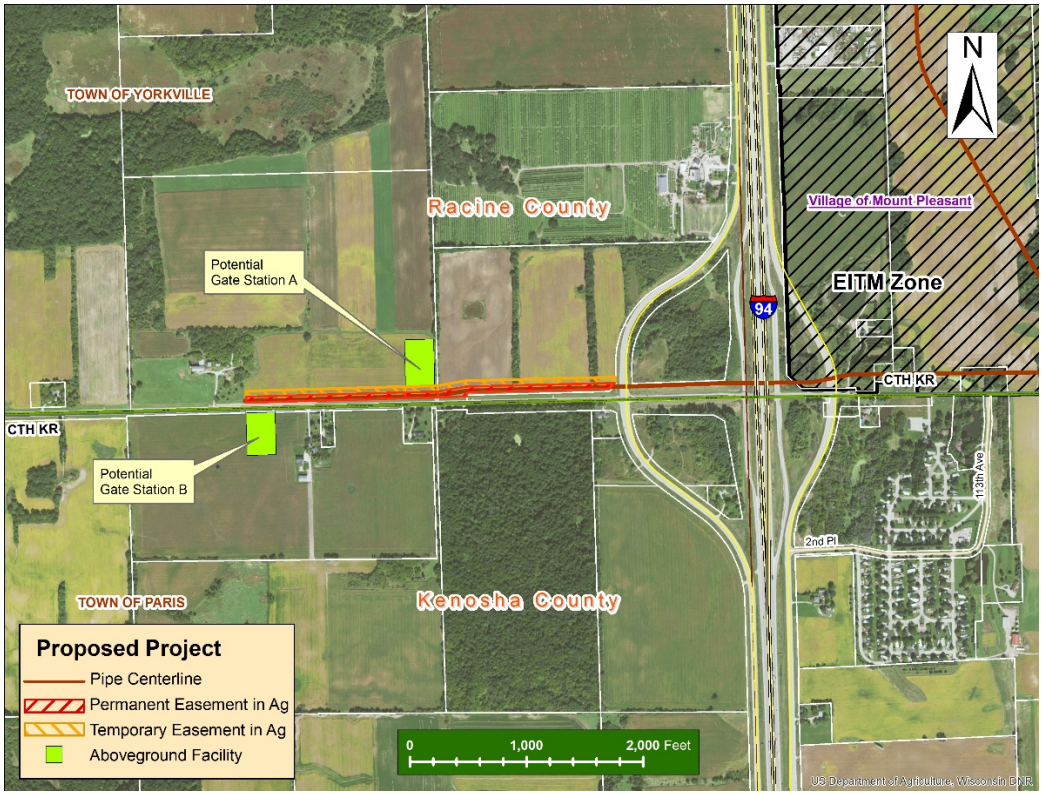


Figure 3: Project Proposed East of the EITM Zone

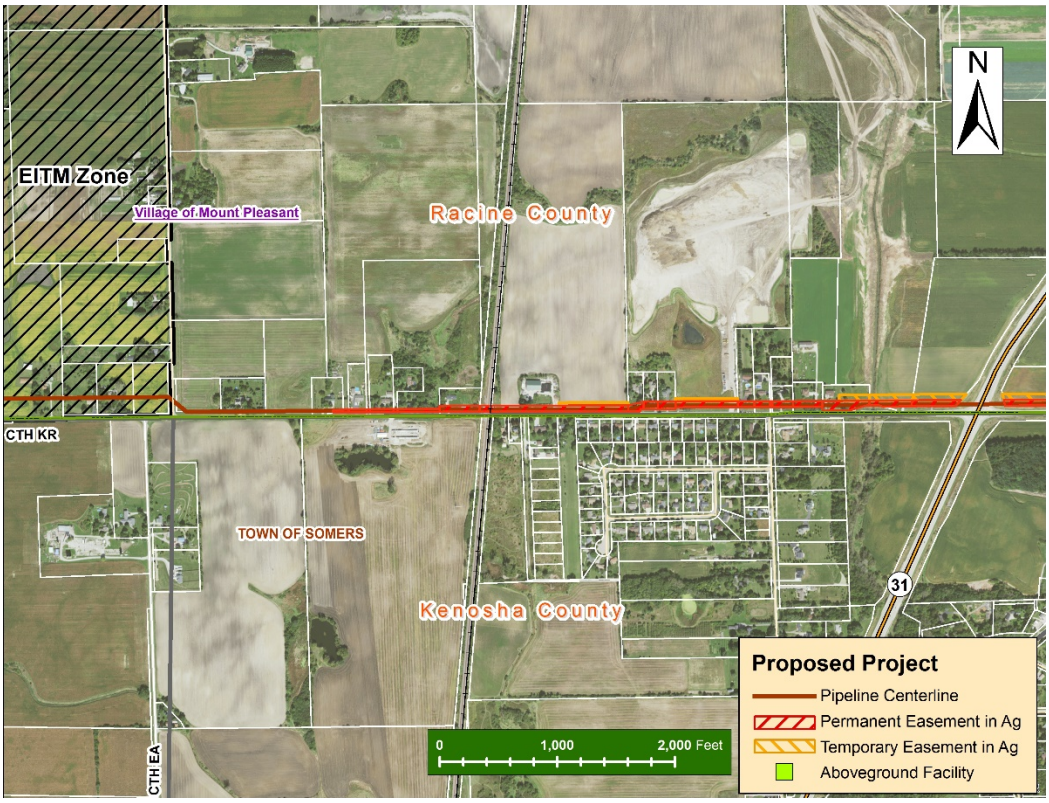
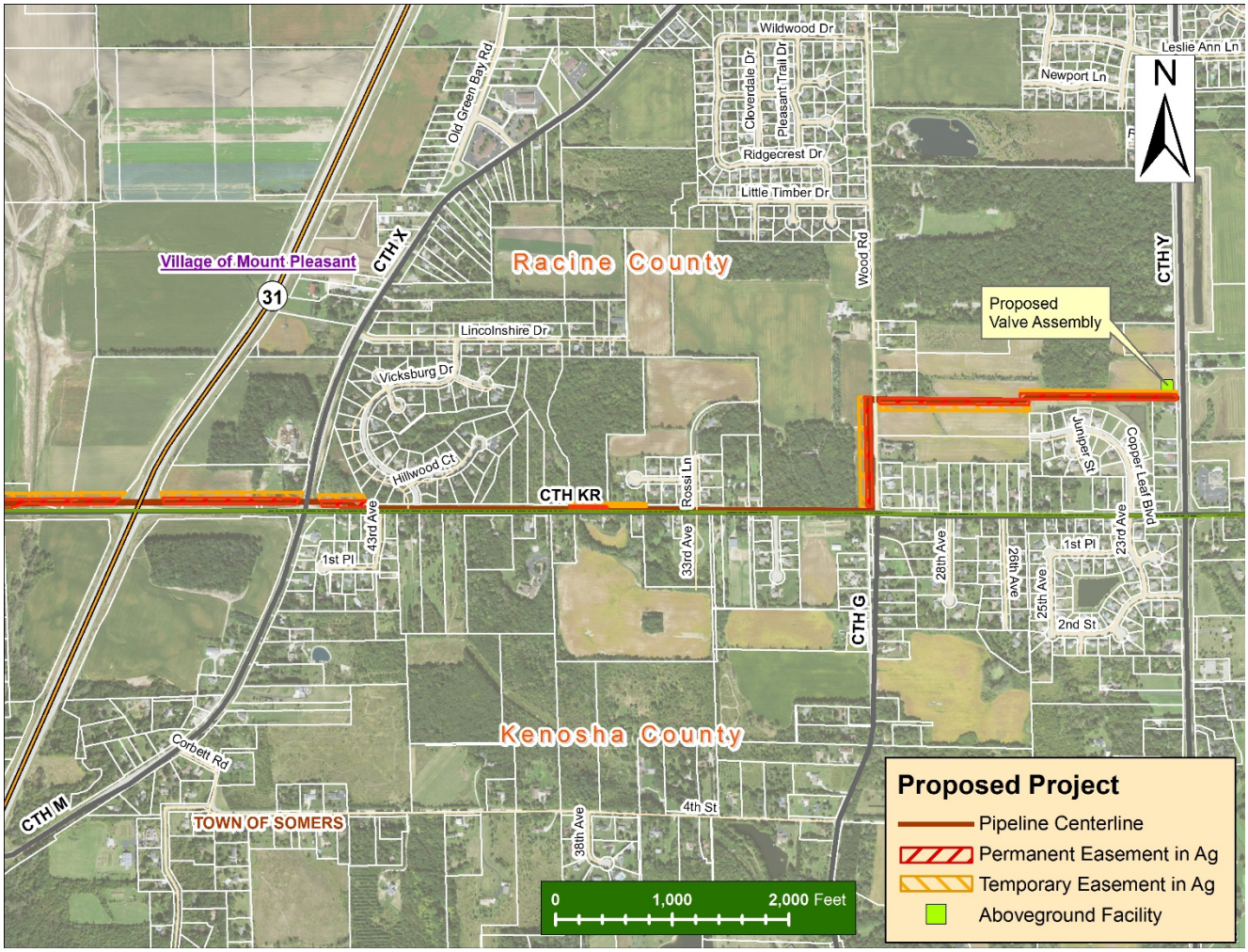


Figure 4: East End of the Proposed Project



ROW Requirements

The project would use current or future road right-of-way (ROW), wherever possible to minimize impacts to private properties.

The natural gas pipeline trench would require a 50-foot wide permanent easement for much of the route. Temporary construction easements with widths of either 25 or 50 feet would also be required. The wider temporary easement in agricultural areas is necessary to accommodate the storage of segregated excavated soils. The typical ROW width that could be disturbed by construction activities would be between 75 and 100 feet.

The temporary easement would be restored and released when construction is completed.

The natural gas pipeline would be constructed in an open trench for much of the route, although horizontal directional drilling (HDD) or jack and bore construction is proposed for crossing under highways, railroads, and the Pike River. The use of boring construction avoids many of the

impacts typically caused by trench construction. For the portions of the route that would be directionally bored instead of open trench construction, narrower ROW widths would be required.

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

Trench Dimensions

The excavated trench would be approximately 7 feet deep and 8 feet wide. In some areas where there are obstacles, such as existing pipelines, 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.

Service Connections

We Energies states that the proposed natural gas main will have distribution in the area to provide service to all properties directly along the route.

III. PROJECT IMPACTS TO AGRICULTURAL PROPERTIES

Easements

The project could affect a maximum of 24 acres of agricultural land (not including the land within the EITM zone) and 12 property owners. Two of the agricultural property owners (Elaine Sherry and Zachary Schulz) would have land acquired by either the village, county, or the state prior to the construction of this natural gas project.

Depending on the location of the gate station, between 18 and 21 acres of easement would be required from agricultural property owners, including:

- either 9.6 or 11.2 acres of permanent easements
- either 6.7 or 8.3 acres of temporary easement
- approximately 2.2 acres from one of two property owners for the gate station
- 0.2 acres required for a valve assembly.

No farm buildings or structures will be acquired for this project.

Of the easements required from farmland, most of the land is cropland (23.2 acres) with the remainder used for other agriculture land uses. Most of the farmland is prime farmland.

Aboveground Facilities

If the project is approved, one gate station would be constructed on one of two sites at the west end of the project and one aboveground valve assembly facility would be constructed at the east end of the project. Both facilities would be constructed on private properties and would take agricultural land out of production.

Figures 5 through 8 show typical images of gate stations and valve assembly facilities along with a diagram of the proposed gate station. The aboveground facilities proposed for this project would be surrounded by a fence as shown in Figure 5. The gate station would include a 30 x 30-foot building (Figures 7 and 8).

The aboveground valve assembly facility would be a fenced area approximately 100 x 100 feet in size. The facility would be located at the eastern end of an agricultural parcel owned by the Bruce W & Vicki L Funk Trust, along CTH Y, in the village of Mount Pleasant. The field has been used to grow soybeans for the past several years.

Figure 5: Typical Gate Surrounding Aboveground Facilities

Figure 6: Typical Valve Assembly Facility

Figure 7: Gate Station Diagram

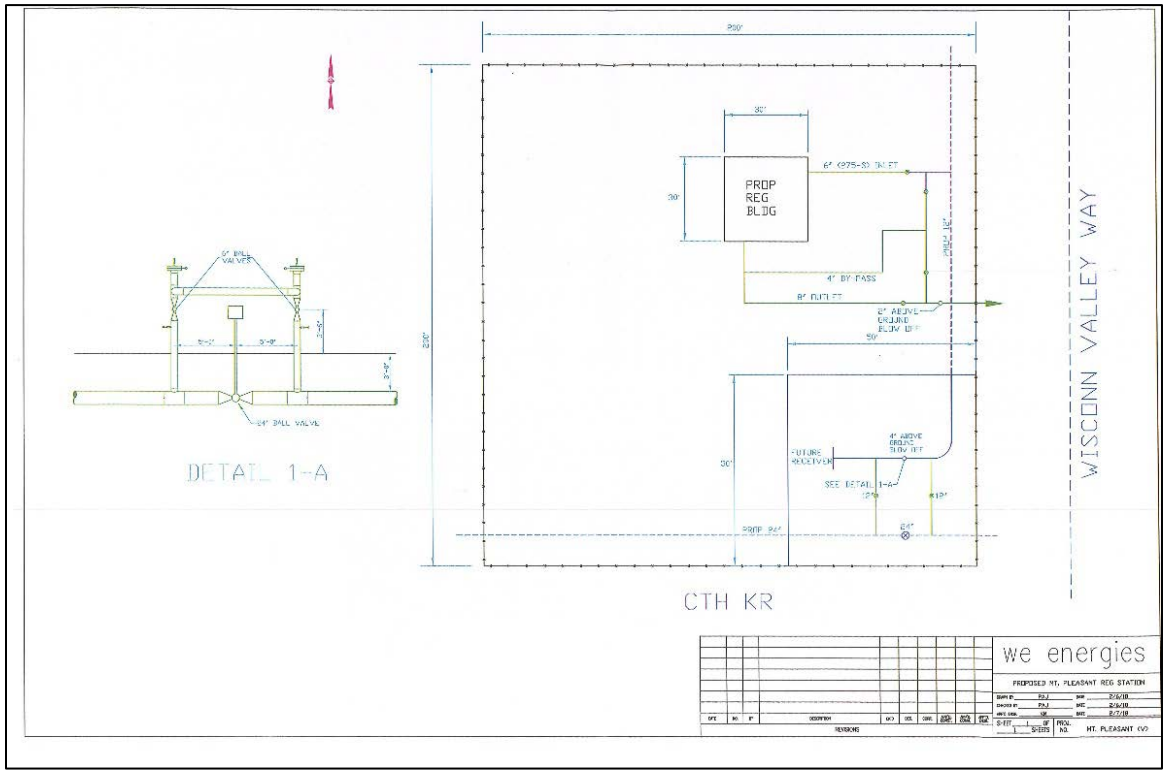


Figure 8: Typical Building to be Located in the Gate Station

The two potential gate station sites are Gate Station A and Gate Station B.

Gate Station Site A is located on the north side of CTH KR, in the town of Yorkville, Racine County. Approximately 2.3 acres would be required from Daryl Poisl for the 200- x 200-foot facility. The land is used to grow corn and soybeans.

Gate Station Site B is located on the south side of CTH KR, in the town of Paris, Kenosha County. Approximately 2.1 acres would be required from Benjamin Coughlin and the Coughlin Trust for the 200 x 200-foot facility. The gate station would be located within 200 feet of the Coughlin residence and may be disruptive to his field operations. The land is used as cropland for corn and soybeans.

The connection to Gate Station B site requires approximately 1,370 feet of additional gas pipeline. The route proposed would require 3 acres of easements along the north side of CTH KR on cropland owned by Daryl Poisl before crossing to the south side of CTH KR and connecting to the gate station site on cropland owned by Mr. Coughlin.

We Energies has indicated that if Gate Station B is chosen by the PSC, the site could be moved further east, potentially reducing the impacts to both the Poisl and Coughlin properties. Additionally, the utility is seeking to purchase a larger parcel for the gate station site to accommodate future pipeline facilities.

Based on the potential impacts of the gate station location, DATCP recommends that We Energies work with Mr. Poisl and Mr. Coughlin so that impacts to both their farming operations from the gate station and the pipeline are minimized to the extent practicable.

IV. AGRICULTURAL SETTING

The following information is intended to describe the existing agricultural sector of Racine 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

Racine County had the thirteenth highest yield per acre for corn in 2016 among all of Wisconsin's 72 counties, at 184.6 bushels per acre, while the statewide average yield was 178.0 bushels per acre (USDA NASS Annual Wisconsin Agricultural Statistics Bulletin 2017). However, due to the size of Racine County, its overall production of corn for grain was 34th in the state.

Table 1 shows the number of annually harvested selected crop acreages in Racine County from 2012 through 2016. Acreages for the crops listed are relatively consistent during this five-year

period. The low acreage of hay and silage harvested imply that the dairy sector is small in the county.

Table 1: Acres of Selected Crops Harvested in Racine County

Crop	2012	2013	2014	2015	2016
Corn for Grain	33,900	30,700	32,700	33,100	34,500
Corn for Silage	NP	NP	2,220	NP	NP
Soybeans	33,000	33,400	37,100	35,500	36,800
Winter Wheat	8,400	8,920	7,170	7,100	7,290
Alfalfa Hay	5,360	6,970	NA	6,370	5,630

* NA = data not published

Land in Agriculture

Racine County is classified as an urban county, which means it is a county with an average of more than 100 residents per square mile. The current population of the county is 195,146 residents. According to the 2012 Census of Agriculture, Racine County had 109,964 acres of land in farms or approximately 52 percent of the total land area. On average, 56 percent of urban counties are covered by farmland. Land in farms consists primarily of land used for crops, pasture, or grazing; however, it also includes woodland and undeveloped land not cropped or grazed, providing it is part of the overall farm operation.

From 1997 to 2012, Racine County's land in farms declined by 10.6 percent. In Wisconsin as a whole, the amount of land in farms declined by 2.2 percent. This shows that, on average, Racine County is losing farmland faster than the state as a whole, likely as a result of development.

Table 2: Acres of Land in Farms

Location	1997	2012
Racine County	123,012	109,964
Wisconsin	14,900,205	14,568,926

Number and Size of Farms

Between 1997 and 2012, the number of farms increased by 3.8 percent in Racine County, and by 6.3 percent in Wisconsin as a whole (2012 Census of Agriculture). The average size of farms fell by 31 acres in Racine County and by 18 acres in Wisconsin from 1997 to 2012. Changes in the size of farms can indicate a change in commodities produced on those farms. Small farms tend to grow specialty and organic produce while larger farms tend to grow cash crops and raise large numbers of livestock.

Table 3: Number of Farms and the Average Size of Farms, 1997 and 2012

Location	1997		2012	
	Number of Farms	Average Size of Farms (acres)	Number of Farms	Average Size of Farms (acres)
Racine County	554	222	575	191
Wisconsin	65,602	227	69,754	209

Property Taxes and Values

Table 4 details the 2016 average property tax, assessed value, and sale price per acre of agricultural land in Racine County, urban counties, and in 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)

In 2016, average property taxes on Racine County farmland were 2.0 percent higher than the average for urban counties and 13.6 percent higher than the average for Wisconsin (Wisconsin Department of Revenue). This higher than average tax rate may be one of the drivers causing farmland owners to convert their property to non-farm uses in Racine County.

Table 4: Farmland Taxes and Values

Location	2016 Dollars per Acre of Farmland		
	Average Tax	Assessed Value	Sale Value for Continued Ag Use
Racine County	$3.60	$210	$6,770
Urban Counties	$3.53	$181	$7,199
Wisconsin	$3.17	$173	$5,221

Source: USDA, National Agricultural Statistic Service 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.

The average assessed value of farmland in Racine County was 16.0 percent higher than the average for urban counties and 21.4 percent higher than the average for Wisconsin as a whole (Wisconsin Department of Revenue).

In Racine County, the average sale price of agricultural land was 6.0 percent lower than the average for urban counties and 29.7 percent higher than the average for Wisconsin (NASS Wisconsin 2017 Agricultural Statistics). These values do not include farmland sold and converted to nonfarm use and do not include farmland with buildings or improvements. Additionally, these values are from 2016 and may not accurately reflect the current market for farmland.

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. The project area is not currently under exclusive agricultural zoning.

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 Conservation Reserve Program (CRP) offers farmers financial incentives to convert highly erodible or environmentally sensitive cropland to permanent vegetative cover by planting species that will enhance the environment. None of the easements for this project appear to cross properties enrolled in the CRP.

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 in the project area is enrolled in either the CRP or the CREP programs.

Drainage Districts

Drainage districts are formed to manage excess water on participating lands. The project does not cross any drainage districts.

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 18 and 21 acres of agricultural land, of which most is cropland. None of the land was identified as pasture or idle farmland.

All of the agricultural cropland potentially affected by the project is either prime farmland (7.94 acres) or prime farmland if drained (15.25 acres).

A list of the agricultural soils that may be affected by the proposed project's construction activities and are currently in crops is shown below in Table 5.

Table 5: Agricultural Soils Potentially Affected by Project

Soil Name	Soil Classification	Acres
Ashkum silty clay loam, 0 to 2 % slopes	Prime farmland if drained	5.71
Aztalan loam, 2 to 6 % slopes	Prime farmland if drained	0.43
Beecher silt loam, 1 to 3 percent slopes	Prime farmland if drained	2.60
Elliott silty clay loam, 2 to 6 percent slopes	Prime farmland if drained	5.56
Markham silt loam, 2 to 6 percent slopes	Prime farmland	1.47
Morley silt loam, 2 to 6 percent slopes	Prime farmland	1.64
Morely silt loam, 2 to 6 percent slopes, eroded	Prime farmland	2.89
Navan silt loam	Prime farmland if drained	0.95
Symerton loam, 2 to 6 percent slopes	Prime farmland	0.86
Varna silt loam, 2 to 6 percent slopes	Prime farmland	1.08
Total		**23.19**

The majority of the soils crossed by the route are level, well-drained, silt loam soils.

Three-Lift Soil Handling

The three-lift soil handling procedure is recommended for cropland or 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 segregate the topsoil (typically the top 12 inches) from the remainder of the excavated subsoils. In contrast, the three-lift method 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 significantly poorer in quality. For example, the three-lift method would be used if the C layer is gravel, rock, and/or sand, and the B layer is silt, clay, and/or loam. 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 where the three-lift method would be useful in maintaining crop yields. A key for identifying soil candidates for three-lift is provided in Appendix D. We Energies' best management practice for three-lift soil handling is included in Appendix E (BMP 09).

Using the soil characteristics and descriptions compiled by the USDA, Natural Resources Conservation Service's (NRCS) Web Soil Survey, a desktop review of the project area identified no soils that would potentially benefit from this type of soil management.

VI. AGRICULTURAL LANDOWNER IMPACTS

DATCP Survey of Agricultural Property Owners

A summary of the property owners that could be affected and the associated acres of easement required for this project is presented in Table 6. Additional non-agricultural acres would be required and/or impacted for the construction of this project.

Table 6: Acres of Potentially Affected Farmland

Property Owner	Permanent Easement (acres)	Temporary Easement (acres)	Permanent Facilities (acres)	Total Easement (acres)
Chiapete – Rossi 6 LLC R & P		0.20		0.20
Coughlin, Benjamin and Coughlin Trust			2.09	2.09
Fink, Eugene	0.45	0.50		0.95
Fink, Eugene and Nancy L	0.29			0.29
Fink, Everett and Crystal A	1.28	1.37		2.65
Funk Trust, Bruce and Vicki	3.02	2.24	0.23	5.49
Murphy, Michael A and Kathleen M	1.35	0.34		1.69
Neu, Judith A and Lawrence P Ricchio	0.12			0.12
Neu, Judith A and Neu et. al.	0.23			0.23
Poisl, Daryl	3.70	3.64	2.30	9.64
Schulz, Zachary J and Mary M	0.28			0.28
Sherry, Elaine and Elsie Anderson Goulding	0.45			0.45
Totals	**11.17**	**8.29**	**4.62**	**24.08**

DATCP attempted to contact by phone and letter all affected agricultural property owners who could have easement acquisitions and/or impacts of two acres or more.

Owners of three properties responded with comments.

Property Owner Comments

Farmland Owner: Benjamin Coughlin
Proposed Acquisition: Potential Gate Station Site B: 2.1 acres

Mr. Coughlin grows cash crops on the property. The potentially impacted field has drain tiles in the vicinity of the proposed project facilities. Mr. Coughlin stated that he is opposed to siting the project on his property. He doesn't think it makes sense to have the pipeline on the north side of the road and then cross to the south side of CTH KR for the gate station. Furthermore, it would be very inconvenient to farm around the gate station.

Farmland Owner: Daryl Poisl
Proposed Acquisition: Potential Gate Station Site A: 2.3 acres / Permanent Easement: 3.7 acres / Temporary Easement: 3.6 acres.

Daryl Poisl owns 425 acres of land including 187 acres of cropland and 8 acres of pasture. He grows corn, soybeans, and hay. He also raises 30-head of beef cattle. The proposed project would cross along the southern edge of the Poisl fields, on the north side of CTH KR and is one of the potential sites for a gate station (Gate Station A). Mr. Poisl is concerned that the project will affect the drainage tiling and pasture fencing on his property. He is also concerned that the project will be placed close to his home. He would prefer to not have the pipeline on his property.

Farmland Owner: Eugene and Nancy Fink
Proposed Acquisition: Permanent Easement: 0.7 acres / Temporary Easement: 0.5 acres.

In an effort to reach Everett Fink, DATCP staff spoke with his brother and wife, Eugene and Nancy Fink. Eugene and Nancy Fink farm land adjacent to the Everett Fink property and would also be affected by this project. Mr. and Mrs. Eugene Fink stated that in 2015, 20 tillable acres of their land was taken by the village. They described how roadway expansion and utility construction in support of the Foxconn development will require even more of their land. Mrs. Fink stated that she averages 15 hours per week defending what's left of their property, making sure that all of their remaining land will have sewer, water and electrical service. This is necessary so their land can be sold in the next year or two for development as they don't believe that agriculture in this area can stay viable as a business in the near future.

AMP and BMPs and the Role of the Agricultural Inspector

We Energies will employ a construction manager and an environmental manager to provide oversight and enforcement of permits, approvals, and the AMP and BMPs. We Energies may also retain one or more individuals designated as the project Agricultural Inspector. If retained, the Agricultural Inspector will be thoroughly familiar with the project and pipeline construction processes as well as issues regarding agricultural operations and soil conservation. DATCP recommends that the project have at least one individual designated as the Agricultural Inspector for this project during construction and that he/she share periodic reports with DATCP for review.

Contractors will be required to structure their construction activities to be consistent with the AMP and the BMPs. Refer to Appendix E for the full text of these documents. We Energies will work with landowners to ascertain existing agricultural operations that may require special attention during construction and restoration. Topics that are covered by the AMP and BMPs include restoration of any damaged conservation practices, tiling, and fences.

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: http://doa.wi.gov/Documents/DEHCR/Relocation/WI_Eminent_Domain_Law32_06.pdf

We Energies may conduct a market study to determine current area property values of affected property. If the landowner signs an appraisal waiver form, the market study will be the basis for the utility's offer of compensation and no individual property appraisal will be conducted. We Energies may also offer additional compensation to landowners who choose to sign the appraisal waiver form.

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. More information about the appraisal process and landowners rights can be found on the DOA website at: http://doa.wi.gov/Divisions/Energy-Housing-and-Community-Resources/Relocation-Assistance.

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 company'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 4). While most of this project would use open trench construction, horizontal directional drilling (HDD) 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.

Surveying and Staking

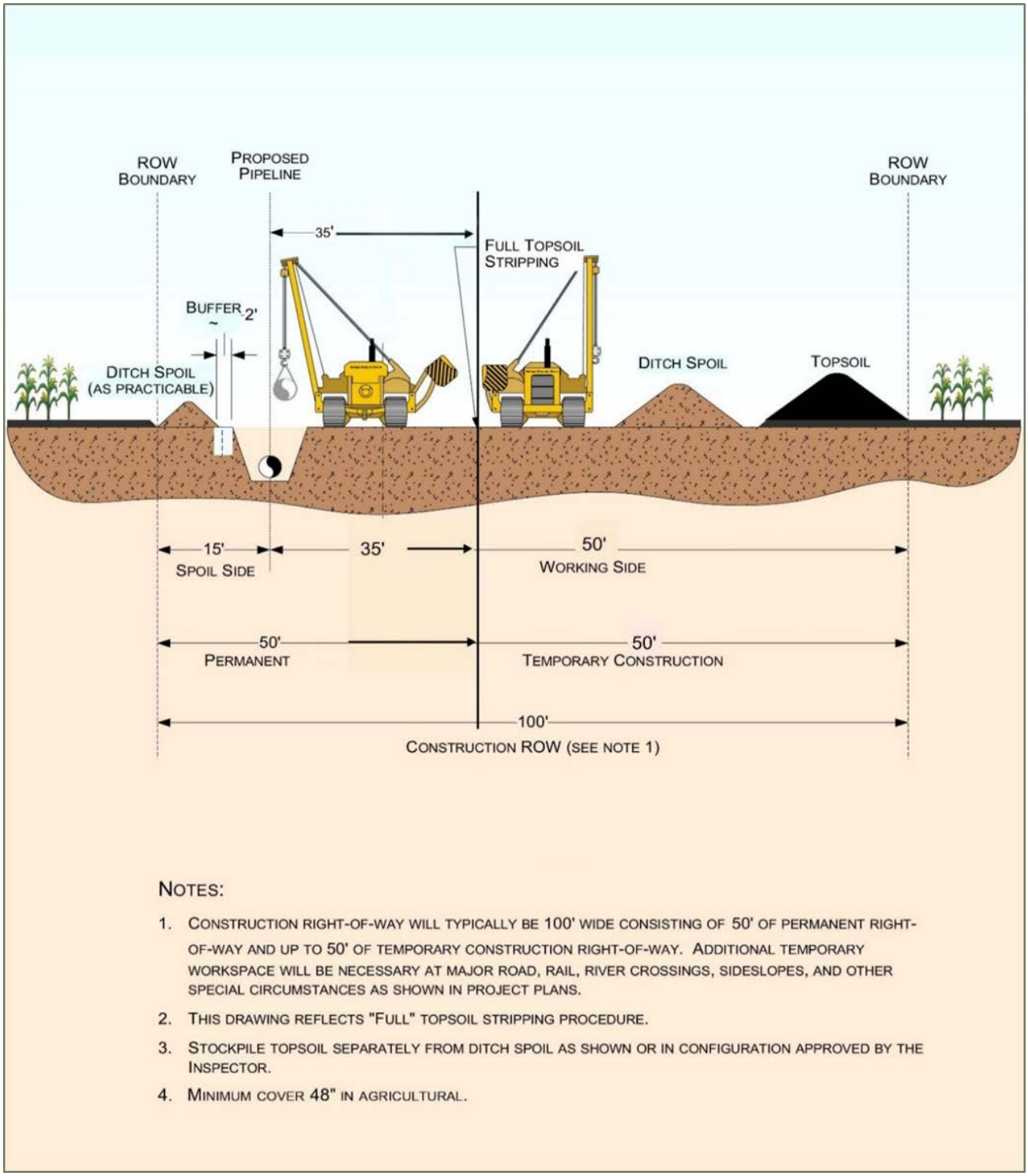
The first construction step involves surveying and staking the pipeline centerline, construction ROW limits, temporary workspace areas, and known underground facilities that cross or parallel the proposed pipeline. Construction activities and equipment travel requires the use of temporary work space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

Figure 9: Typical Pipeline Construction Cross-Section on Agricultural Land



Source: We Energies

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 to avoid impacts to features such as roads, driveways, and natural resources. HDD is discussed in more detail later in this section. Trenches are typically excavated using a backhoe, or in some cases a trackhoe, 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.

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.

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 Jack and Boring

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. The bore pits are typically 20 feet by 30 feet and 6 to 12 feet deep. 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 and stabilization are achieved.

VIII. POTENTIAL ADVERSE IMPACTS OF PIPELINE CONSTRUCTION ON AGRICULTURE

Agricultural operations and productivity can be adversely affected by pipeline construction. These impacts include but are not limited to:

- Interference with farm operations in the ROW and adjacent areas
- Soil erosion and runoff
- 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

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

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 Section a and 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, We Energies 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 We Energies 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 We Energies 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, We Energies 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 We Energies AMP, Section f (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 Sections f and i, 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, Section b) Where new access roads are constructed on agricultural land, the utility will strip the topsoil and temporarily stockpile it. 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, Section c (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, Section e).

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, Section d.

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, Section h).

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. CONCLUSIONS

Construction of the proposed pipeline replacement project would require approximately 24 acres of easements from agricultural properties. Pipeline construction has the potential to adversely impact farmland in many ways including but not limited to the following:

- Several years of crop yield reductions;
- Mixing of topsoil and subsoil;
- Compaction of topsoil and subsoil;
- Excess rocks brought to the surface interfering with farm machinery
- Changes in field drainage due to the introduction of the underground pipeline channels;
- Interference with surface and subsurface drainage, irrigation, fencing, and grazing; as well as flooding of fields to discharge excess trench water;
- Soil erosion;
- Interference with field operations from temporary access roads;
- Removal of trees and other woody vegetation leaving stumps and debris
- Migration of weeds along the pipeline ROW during construction;
- ROW restoration that is inconsistent with landowners cropping plans;
- Use of prohibited substances on farms with organic practices; and
- Spread of weed seeds and diseases from parcel to parcel unless proper protocols are observed.

To avoid or minimize agricultural impacts, We Energies has prepared an AMP and BMPs. 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 in their individual negotiations with We Energies. In addition, there may be areas of concern to landowners that are not addressed by the AMP or BMPs.

The role of the Agricultural Inspector is crucial in enforcing the AMP and BMPs; reporting incidents of noncompliance; recommending corrections when processes are being carried out in ways that violate the AMP or BMPs; and stopping the construction task when serious violations occur.

DATCP supports the hiring of individuals with knowledge of agricultural issues during all phases of the construction process.

Many construction impacts can be minimized or avoided when utilities, prior to the start of construction, consult with landowners. DATCP supports consultations with the landowners to

ensure that impacts to agricultural lands as a result of the proposed project are avoided, minimized, or mitigated.

Following the completion of initial restoration, We Energies should respond to landowner concerns and take steps to mitigate observed problems in the field caused by the pipeline project, as soon as practicable.

X. MAILING LIST

GOVERNOR SCOTT WALKER 115 E CAPITOL	SEN TERRY MOULTON AGRICULTURE COMMITTEE 310 S CAPITOL
REP LEE NERISON AGRICULTURE COMMITTEE 310 N CAPITOL	RESOURCES FOR LIBRARIES (15) DOCUMENT DEPOSITORY PROGRAM 2109 SOUTH STOUGHTON ROAD
STATE DOCUMENTS SECTION THE LIBRARY OF CONGRESS 10 FIRST ST S E WASHINGTON DC 20540-0001	JONATHAN DELAGRAVE RACINE COUNTY EXECUTIVE 730 WISCONSIN AVE RACINE WI 53403
WENDY CHRISTENSEN RACINE COUNTY CLERK 730 WISCONSIN AVE RACINE WI 53403	JIM KREUSER KENOSHA COUNTY EXECUTIVE ADMINISTRATIVE BUILDING 1010 56TH ST KENOSHA WI 53140-3738
REBECCA MATOSKA-MENTINK KENOSHA COUNTY CLERK KENOSHA COUNTY COURTHOUSE 912 56TH ST KENOSHA WI 53140	PETER HANSEN TOWN OF YORKVILLE CHAIR 4728 57th DR STURTEVANT WI 53177
VIRGIL GENTZ TOWN OF PARIS CHAIR 16906 38TH ST KENOSHA WI 53144	STEPHANI KOHLHAGEN VILLAGE OF MOUNT PLEASANT CLERK 8811 CAMPUS DR MT PLEASANT WI 53406
GRAHAM PUBLIC LIBRARY 1215 MAIN ST UNION GROVE WI 53182	RACINE PUBLIC LIBRARY 75 7TH ST RACINE WI 53403
UW-EXTENSION AG AGENT 300 N PINE ST BURLINGTON WI 53105	CHAD SAMPSON RACINE COUNTY CONSERVATIONIST 14200 WASHINGTON AVE STURTEVANT WI 53177
DAN TRELOAR KENOSHA COUNTY CONSERVATIONIST 19600 75TH ST, STE 185-3 BRISTOL WI 53104	LEIGH PRESLEY UW-EXTENSION AGRICULTURE EDUCATOR 19600 75TH ST BRISTOL, WI 53104
RACINE MIRROR 6233 DURAND AVE MT PLEASANT WI 53406	THE JOURNAL TIMES 212 FOURTH ST RACINE WI 53403
SEWRPC W239 N1812 ROCKWOD DRIVE WAUKESHA, WI 53187	MILWAUKEE JOURNAL SENTINEL 333 W STATE MILWAUKEE WI 53203
JOEL BRIESKE WEC ENERGY GROUP 333 WEST EVERETT ST MILWAUKEE WI 53203	SARAH KRASZEWSKI PWS STANTEC, SENIOR ECOLOGIST PO BOX 128 COTTAGE GROVE WI 53527-8955
DARYL POISL 15111 BRAUN ROAD STURTEVANT WI 53177	

Copies of the final AIS will be emailed to the Newspapers: Agri-View and Country Today.

APPENDIX A: ACRONYMS

AIS	Agricultural Impact Statement
AEA	Agricultural Enterprise Area
AMP	Agricultural Mitigation Plan
BMPs	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
EITM	Electronics and Information Technology Manufacturing Zone
FPP	Farmland Preservation Program
HDD	Horizontal Directional Drilling
NASS	National Agricultural Statistics Service
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
WDNR	Department of Natural Resources
WisDOT	Wisconsin Department of Transportation

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, Procedures under sec. 32.06 Wis. Stats. (Condemnation procedures in matters other than highways, streets, storm & sanitary sewers, watercourses, alleys, airports and mass transit facilities)

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

- PSC project webpage for docket #6650-CG-137

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

We-Energies (www.we-energies.com)

- We Energies Agricultural services
- Natural gas pipeline replacement project

Wisconsin Department of Safety and Professional Services (dsps.wi.gov)

- Look-up for state certification status of different types of real estate appraisers

State Bar of Wisconsin (www.wisbar.org)

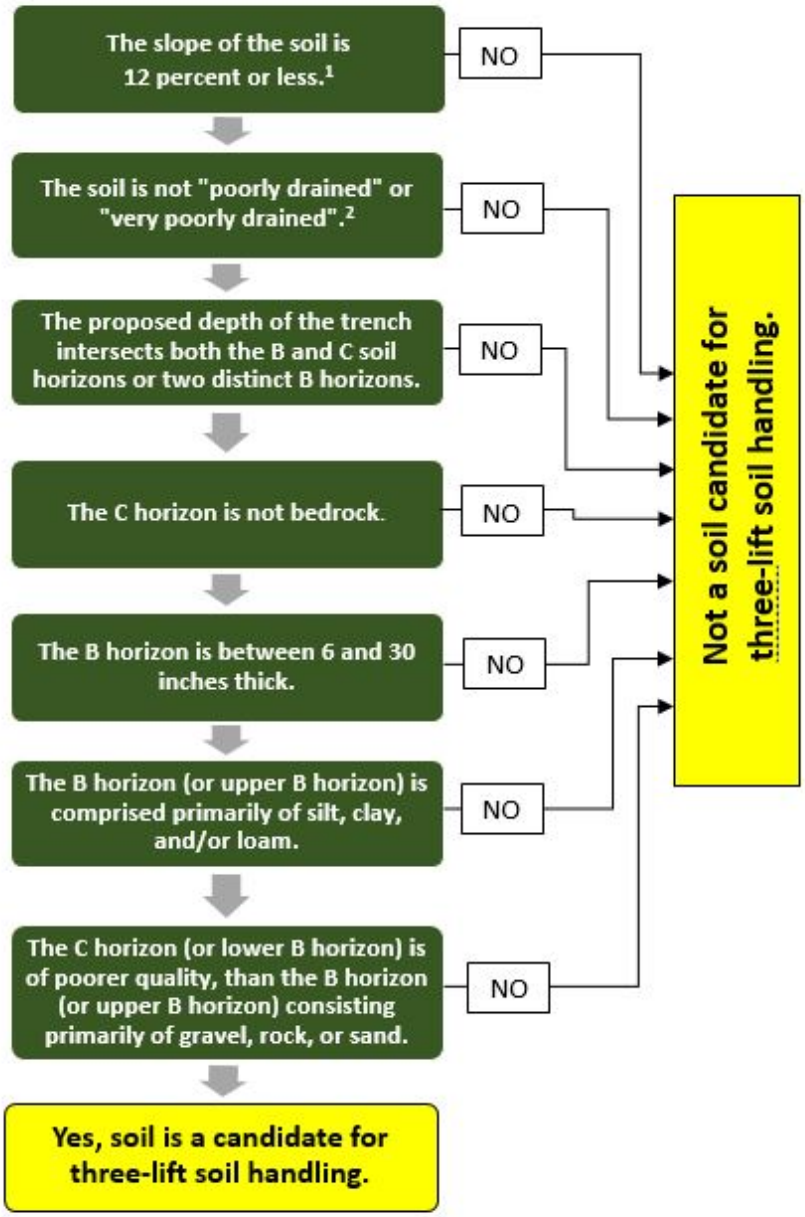
For general legal information and assistance in finding a lawyer

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: WE ENERGIES PROJECT-SPECIFIC AMP AND BMPS

LAKESHORE CAPACITY IMPROVEMENT PROJECT AGRICULTURAL MITIGATION PLAN

INTRODUCTION

Wisconsin Electric Power Company, dba We Energies ("the Company"), proposes to install approximately 8.8 miles of 24-inch and 12-inch steel 300 psig maximum allowable operating pressure distribution main in the towns of Yorkville and Paris and villages of Sturtevant, Mount Pleasant, and Somers, in Racine and Kenosha Counties. This project will be called the "Lakeshore Capacity Improvement Project".

The Company has a longstanding commitment to working with landowners who may be affected by construction of various utility projects throughout the State of Wisconsin. The Company has a vested interest in working with landowners within the project to ensure their satisfaction with utility project construction and post-construction restoration.

The Company continues to be committed to restoring construction areas to pre-construction conditions with all our construction projects. We believe this Agricultural Mitigation Plan (AMP) will help to assure this outcome within agricultural areas in the proposed gas main replacement corridor. The Company has prepared this AMP specifically to prevent or mitigate potential adverse impacts of the project on agricultural productivity, using construction and restoration procedures from other Company projects and modifying them as necessary.

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 the Company Representative; and
- describe the job duties of the Company 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 here is understood to include rotated pastureland (except permanent pasture), all presently cultivated land including cropland, haylands, truck gardens, specialty crops, and land in government agricultural set-aside programs.

"Permanent pasture" as used here 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(s)" as used here includes all permanent or temporary workspace areas to be used by the Company 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 ROLE AND QUALIFICATIONS

The Company will have a project Construction Manager (CM) and an Environmental Manager (EM) for the project. To assist with on-site inspection and monitoring, the Company may also have one or more individuals designated as the project Agricultural Inspector (AI).

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.

They also will:

- 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.

Contractors will be required to structure their construction activities to be consistent with the AMP.

AGRICULTURAL MITIGATION: PLANNING AND PRE CONSTRUCTION PHASE

The Company 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, the Company will provide landowners with a telephone number and address that can be used to contact the Company (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. The Company will respond promptly to calls or correspondence from landowners or tenants along the utility easement and/or right-of-way. Where the Company 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, the Company's obligation will be satisfied by securing an agreement with the landowner.

Prior to the start of construction, the Company will provide the Wisconsin Department of Agriculture, Trade, and Consumer Protection (WDATCP) with any information about the project corridor or the location of project facilities that is substantially different from the information submitted as part of the Agricultural Impact Notice (AIN), including:

- Different agricultural land uses (cropland, pasture, specialty crops);

- Previously unknown locations of fields with irrigation or drainage systems that could be impacted by the project;
- New impacts to agricultural buildings or field access; and
- Different or new temporary access roads and laydown/storage areas.

This information will be provided to WDATCP in a timely manner with the understanding that additional changes to project facilities and/or impacts may become necessary during construction due to site-specific conditions.

The Company 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, the Company 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, the Company 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. The Company 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 the Company AMP to avoid negative impacts to agricultural lands by advising the appropriate Company 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, he 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. They will also ensure that the erring contractors are trained in the appropriate construction methods.

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

The Company will compensate the landowner for crop loss; compensation will be based on crop prices and yields for the 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

The Company requires those working on the project to research, plan, implement, monitor, and assure the proposed results are obtained. The Company relies on these methods to identify agricultural concerns and implement measures to maintain agricultural productivity throughout construction and restoration. Appropriate use of these measures are assured by key field personnel such as the AI and the Company EM, CM, and Construction Inspector (CI). Additionally, the Company 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. The Company 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 the Company for construction, restoration, mitigation or post-restoration monitoring. Each contractor retained by the Company for the Project must also incorporate the applicable provisions of the AMP into their contracts with each subcontractor.

The Company utilizes construction techniques within agricultural areas that will insure future agricultural productivity. The following construction methods are to be utilized in agricultural areas:

a. Topsoil Segregation

During construction of the gas main, 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. The Company has the option to remove amounts of topsoil in excess of 12 inches at its discretion.

The gas main will be installed via open cut trench, "plow" method and directional boring. The plow method of installation consists of using a vibratory plow which slices the soil open, allows installation of the pipe into the trench, and then replaces the soil into its original location. The horizontal directional bore method consists of pipe installation using an auger to drill an underground tunnel, into which the pipe is drawing. The plow and bore method do not disturb the soil horizons. Open cut trenching will require separation of top and subsoils during excavation. For all excavations, top and subsoils will be replaced in their original soil horizons when backfilling. Landowners will be asked to refrain from manure spreading prior to topsoil removal. Erosion control measures will be used as necessary.

b. Temporary Access Road

The Company 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 the Company will be established.

c. Clearing of Brush and Trees from the Easement

The Company will work with each landowner for the cutting of merchantable timber necessary for construction of the gas distribution system. 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.

d. Fencing

Prior to construction, the Company 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. The Company'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.

e. Irrigation Systems

If project construction intersects an operational irrigation system on agricultural land, the Company 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.

f. 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 website (http://dnr.wi.gov/topic/stormwater/standards/). These standards will be met or exceeded at all times. 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.

g. Drain Tile

The Company 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.

h. 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 the Company Representative to have the weeds removed or killed prior to topsoil replacement. If the Company chooses to spray the topsoil pile with herbicide, the landowner will be consulted in regard to 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.

i. 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.

j. Soil Restoration

The purpose of soil restoration is to ensure that soil strata are replaced in the proper order, decompacted, and that rock content of the upper 24 inches of soil is not increased. The Company 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 decompacted and restored.

<u>De-compacting the Subsoil:</u>

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 the Company 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, the Company 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 Agricultural Inspector 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 decompacting the subsoil; on the topsoil pile prior to stripping and stockpiling; on the topsoil prior to replacement; and prior to decompacting through the topsoil.

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

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: The COMPANY onsite construction inspection personnel will monitor and enforce the measures described, in concert with the Agricultural Inspector (AI), for pipeline construction operations within agricultural lands.

Installation Planning

1. The COMPANY will determine the required right-of-way widths over the length of lands traversed by the pipeline, including extra workspaces.
2. The COMPANY 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. The COMPANY 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. The COMPANY 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 Construction Easements in Agriculture Lands a 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 50 foot temporary construction easement and a 50 foot permanent easement. The running centerline of the pipeline will generally be 15' from one side of the 50 foot permanent easement. See Construction Figures, Detail 27.

3. For Construction Easements in non-cultivated Wooded Lands or Wetlands a right-of-way width of 75 feet is required. This consists of a 25 foot temporary construction easement and a 50 foot permanent easement. Where feasible existing corridors are being utilized to reduce the impact of tree clearing. In areas where the gas main will be installed by horizontal directional drilling a 50 foot permanent easement will be required but the 25 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. The COMPANY 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 The COMPANY determines an appropriate course of action. For example, triple lift soil segregation may require an additional 25 feet in the temporary construction easement as necessary to allow separation of the three stockpile areas.

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, the COMPANY 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 COMPANY 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. The COMPANY 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.

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. The COMPANY will conduct training of inspection personnel and contractors to ensure 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 the COMPANY's 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. The COMPANY will advise the construction contractor of all known areas of special concern.

3. The COMPANY 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

Temporary Erosion Control

1. Temporary erosion controls will be constructed 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 of the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, sand bags, 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 of 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, sand bags, 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 the COMPANY in consultation with the landowner in agricultural lands, the mulch will be applied according to the COMPANY'S 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 Recommendations (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.

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

4. The COMPANY 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. The COMPANY 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.

General Conditions

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

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

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. The COMPANY 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. The COMPANY will require its construction contractors to obtain:

    - COMPANY approval of all off-right-of-way and on-right-of-way discharge locations and techniques, and all trench dewatering discharge locations and techniques
    - The COMPANY may obtain voluntary permissions with landowners

4. The COMPANY 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, the COMPANY 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.

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
- Assuring 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. The COMPANY will identify, through consultation with the landowner, all rock disposal location(s) on the ROW or 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. The COMPANY 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 Agricultural Inspector (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:

Backfilling

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 ROW 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 COMPANY 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, the COMPANY 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. The COMPANY 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 ROW 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.

BMP 06 - Soil Restoration - continued

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.

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

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

1. The COMPANY 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. The COMPANY will consult with the landowner to determine the seed mix, if appropriate.

Construction

<u>Seed Selection</u>

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.

<u>Seedbed Preparation for Conventional, Broadcast and Hydroseeding</u>

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.

<u>Seeding</u>

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.

BMP 07 – Seeding and Seed Bed Preparation – continued

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 , Agricultural Inspector, 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, the COMPANY 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.

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.

Planning:

1. The COMPANY will compensate the landowner for crop loss once at the beginning or the end of the project. If the landowner rents or leases out the land to a renter, then the renter may be compensated in lieu of the landowner. There will be an attempt to communicate the agreement of compensation to both the renter as well as the landowner.

2. The value of the crop will be determined by the Payment Worksheet in the Easement Agreement Package. Crop compensation will be based on current futures and will be adjusted upward in year of construction if crop prices increase, but will not change if crop prices decline.

3. The landowner/renter will be compensated a total of 200% of the value of the crop based on the calculation in Item 2 above. 100% of the value of the crop during the year of construction, 60% the first year after construction, and 40% the second year after construction.

4. The landowner/renter would signify agreement by signing a damage release form.

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 Agricultural Inspectors (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. The COMPANY 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 NRCS Soil Maps and/or original soil maps for each county. This list of qualifying "candidate" soils and parcels will be provided to the Wisconsin Department of Agriculture, Trade, & Consumer Protection (WDATCP) and to the AI.
2. The criteria for soils qualifying as "candidates" for the three-lift soil handling procedure are determined by WDATCP on lands that involve cultivated croplands, rotated pastureland, or government set-aside program land. Locations of three-lift soil handling will be confirmed by the AI.
3. Where applicable, the COMPANY will inform landowners possessing lands containing soils within the construction right-of-way (ROW) 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. The COMPANY will include in the construction bid documents explanation of the three-lift soil handling procedure along with the potential locations. The COMPANY 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. The COMPANY 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 The COMPANY's environmental training sessions required for all field personnel prior to working on the construction right-of-way.

Construction:

1. The COMPANY 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. The COMPANY 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. The COMPANY 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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