BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Plymouth	**County:** Hennepin
Applicant Name: Xcel Energy **Applicant Representative:** Cardno, Inc. c/o Dan Salas	
Project Name: Hollydale Distribution Project **LGU Project No. (if any):** 2020-01	
Date Complete Application Received by LGU: 01-10-2020	
Date of LGU Decision: 02-21-2020	
Date this Notice was Sent: 2-21-2020	

WCA Decision Type - check all that apply

☐ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☒ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☒ Approve ☐ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions:

Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☒ Attachment(s) (specify): **Xcel Energy - City of Plymouth Hollydale Distribution Project Wetland Delineation Report - September 2019Joint Application Form for Activities Affecting Water Resources in Minnesota**
☒ Summary: **BWSR staff commented on the exemption and did not have concerns with the project meeting the exemption status.**

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify):

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☒ Yes[1] ☐ No

[1]*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: **Ms. Stacey Lijewski, HCA, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600** ☒ BWSR TEP Member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN 55401**
☒ LGU TEP Member (if different than LGU contact): **Ben Scharenbroich, 3400 Plymouth Blvd, Plymouth MN 55447**
☒ DNR Representative: **Leslie Parris, MnDNR, 1200 Warner Road, St. Paul, MN 55106** **Jason Spiegel, MnDNR, 1200 Warner Road, St. Paul, MN 55106**
☒ Watershed District or Watershed Mgmt. Org.: **BCWMC, c/o Laura Jester, 16145 Hillcrest Lane, Eden Prairie, MN 55346**
☒ Applicant: **Xcel Energy, c/o Ellen Heine 414 Nicollet Mall, 414-6A, Minneapolis, MN 55401** ☒ Agent/Consultant: **Cardno, Inc. c/o Dan Salas, 6130 West Cottonwood Drive, Fitchburg, WI 53719**

Optional or As Applicable:

☒ Corps of Engineers: **US Army Corps of Engineers c/o Aiden Schore 180 Fifth Street East, Suite 700m St. Paul MN 55101-1678**
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature:	**Date:** 2/21/2020

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit: City of Plymouth	**County:** Hennepin
Applicant Name: Xcel Energy	**Applicant Representative:** Cardno, Inc. c/o Dan Salas
Project Name: Hollydale Distribution Project **LGU Project No. (if any):** 2020-01	
Date Complete Application Received by LGU: 10-25-2019	
Date this Notice was Sent by LGU: 01-10-2020	
Date that Comments on this Application Must Be Received By LGU[1]: 2-4-2020	

[1] *minimum 15 business day comment period for Boundary & Type, Sequencing, Replacement Plan and Bank Plan Applications*

WCA Decision Type - check all that apply

☐ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☒ Exemption (8420.0420)
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Replacement Plan Impacts (replacement plan decisions only)

Total WCA Impact Area Proposed:

Application Materials

☒ Attached ☒ Other[1] (specify):
Xcel Energy - City of Plymouth Hollydale Distribution Project Wetland Delineation Report - September 2019
Joint Application Form for Activities Affecting Water Resources in Minnesota

[1] Link to ftp or other accessible file sharing sites is acceptable.

Comments on this application should be sent to:

LGU Contact Person: Ben Scharenbroich, Interim Water Resources Manager
E-Mail Address: bscharenbroich@plymouthmn.gov
Address and Phone Number: 3400 Plymouth Blvd, Plymouth, MN 55447
Decision-Maker for this Application:
☒ Staff ☐ Governing Board/Council ☐ Other (specify):

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: **Ms. Stacey Lijewski, HCA, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600**
☒ BWSR TEP Member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN 55401**

☐ LGU TEP Member (if different than LGU contact):

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☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature:	**Date:** 1/10/2020

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Xcel Energy

City of Plymouth Hollydale Distribution Project Wetland Delineation Report

September 2019

Cardno®

Document Information

Prepared for	Xcel Energy
Project Name	City of Plymouth Hollydale Distribution Project Wetland Delineation Report
Xcel Project #	4500390136
Cardno Project #	J153001M13
Project Manager	Dan Salas, Cardno
Date	September 2019

Prepared for:

8701 Monticello Lane N, Maple Grove, MN 55369-4550

Prepared by:

Cardno, Inc.
6130 West Cottonwood Drive, Fitchburg, WI 53719 USA

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1 Introduction

Cardno was contracted by Xcel Energy to complete a wetland delineation and classification of wetland resources between Lawndale Ln N and Highway 55, then paralleling HWY 55 in Hennepin County, Minnesota. The surveys included approximately 0.3 miles of Xcel Energy right-of-way (ROW) and historically disturbed land that total approximately 3.65 acres. The survey area is depicted with the associated delineation boundaries (survey area) in Figures 1-5.

Based on field investigations conducted by Cardno on July 25, 2019, and desktop review of related resource maps, it is our professional opinion that two wetland complexes, totaling 1.03 acres (44,773 square feet) are located within the existing Plymouth ROW survey area. No waterbodies or waterways were identified within or immediately adjacent to the survey area.

This report has been compiled by the following staff that are trained and experienced in delineation methodologies and applicable regulations:

- **Will Taylor – Project Scientist; Field Lead:** Will has worked in the field of wetland restoration and ecology with Cardno for the past 7 years and has been leading wetland delineations, habitat surveys, and wildlife surveys for Cardno for the past 5 years throughout the Upper Midwest. He holds a Bachelor of Science degree in Biological Aspects of Conservation from the University of Wisconsin – Madison. Other related training and experience includes completion of the WDNR and USACE basic wetland delineation training, NRCS hydric soils identification training, NASECA erosion control inspection training courses, and multiple plant and wildlife identification and survey technique certificates. Will is responsible for wetland delineations, wildlife and habitat surveys, landscape restoration and planning, project management, report writing, habitat management planning, and construction permitting and oversight.

- **Shannon McClusky - Staff Ecologist;** Shannon has over 4 years of experience working in the field of restoration and ecology, including 2 years as a restoration technician for Cardno. She holds a Bachelor's of Science in Environmental Studies from the University of Wisconsin-Oshkosh. Currently, Shannon's job responsibilities include assistance in field surveys efforts including wetland delineations, stream surveys, threatened and endangered species and habitat, report writing, permitting, and environmental monitoring for a variety of linear corridor projects.

- **Michael Smith – GIS Analyst:** Michael has over 5 years of experience in ecology and conservation biology, including four years applying his GIS expertise in the natural resources field. He holds a Bachelor of Science in Conservation Biology, a certificate in Environmental Studies, and a graduate-level certification in GIS, all from the University of Wisconsin-Madison. His experiences range from field and laboratory work to data management, GIS analysis, process development, cartography, data visualization and aerial imagery interpretation. He has experience developing wetland and water data layers for consumer mapping applications. Since joining Cardno, Michael provides GIS support to a variety of projects by conducting spatial analysis, managing data, and maintaining web maps. He is also responsible for creating project deliverables including figures, maps, and tables from data collected in the field.

2 Methods

Cardno conducted a field wetland determination and delineation on July 25, 2019 to identify wetland and waterway limits within the survey area provided by Xcel Energy. Prior to the field investigation, Cardno conducted a desktop review to determine the likelihood and potential location of wetlands and waterways. Sources reviewed include:

- United States Geological Survey (USGS) Topographical Map (Figure 2)
- USDA-NRCS Web Soil Survey Database for Hennepin, MN (Figure 3)
- National Wetland Inventory (NWI) Mapping (Figure 4)
- Hennepin County Wetland Inventory (Figure 5)

These maps display wetland indicators, including hydrology and hydric soil units, within the survey area. Locations that exhibited wetland signatures from aerial imagery review were further reviewed in the field to make a final determination on wetland limits. The sole use of any of these maps to make wetland determinations is not acceptable to the regulating agencies.

The delineation of wetlands and waterways was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* Version 2.0 (Environmental Laboratory, 2010) as required by current policy.

2.1 Survey Method

During site reconnaissance, Cardno walked the extent of the survey area with the specific intent of determining wetland and waterway limits. Data points were collected within and near potential wetland areas to document soil characteristics, evidence of hydrology, and vegetation. Wetland ditch systems that were connected through culverted access drives and contained like communities were typically grouped with a representative pair of data points.

Cardno crews surveyed all data point locations and wetland boundaries using GPS technology. Data collection settings for the GPS units use available satellites, including two DGPS (Differential Global Positioning System) satellites, to capture location data. Cardno's GPS units acquire multiple readings per data point and use the Wide Area Augmentation System (WAAS) satellite readings to increase accuracy, usually to sub-meter. While Cardno's GPS surveys provide reasonably spatial accuracy, they do not provide the same accuracy as a professional land survey.

2.2 Naming Protocol

Feature naming for spatial data collected in field followed the following conventions:

- DP-xx = Data Point (may also include photos)
- PP-xx = Photo Point
- W-xx = Wetland

2.3 Site Photographs

Representative site photographs were taken at wetland and upland sample point locations as well as for general documentation throughout the survey area and are included in Appendix A. These photographs represent site conditions at the time of field delineation.

2.4 Delineation Data Sheets

The USACE Midwest Region routine wetland delineation data sheets used in the wetland delineation process are included in Appendix B. These forms are the written documentation of how representative data point locations meet or do not meet each of the wetland criteria. Plant species nomenclature follows the 2016 National Wetland Plant List (Lichvar et al., 2016). Soils were identified using the methods outlined in the *USDA NRCS Field Indicators of Hydric Soils in the United States*, *Version 8.1* (USDA-NRCS 2017). Wetland communities follow the naming conventions described by Eggers and Reed (1997).

3 Results and Discussion

3.1 Desktop Review

3.1.1 Recent Climatic Conditions and Precipitation Data

Recent precipitation data was compared with historic precipitation data from a 47-year dataset (1971-2018) from a nearby weather station (Minneapolis-St. Paul International Airport, MN) to determine if normal hydrologic and climatic conditions were present on-site during the delineation. When compared to the WETS Station data, the observed precipitation data from three months prior to the delineation indicated normal precipitation conditions at the time of the delineation. The antecedent hydrologic condition analysis is provided below:

		Long-term rainfall records (1971 - 2018)							
WETS Station: Minneapolis-St. Paul International Airport, MN	**Month**	**<30%**	**Mean**	**>30%**	**Actual**	**Condition**	**Condition Value**	**Month Weight Value**	**Condition Value X Month Weight**
3rd Prior Month	May	2.45	3.54	4.22	**6.68**	Wet	3	1	3
2nd Prior Month	June	3.01	4.46	5.33	**2.72**	Dry	1	2	2
1st Prior Month	July	2.46	3.90	4.71	**6.48**	Wet	3	3	9
								Sum:	**14**
								Conditions Onsite:	**Normal**

If sum is:	
6 to 9	then prior period has been drier than normal
10 to 14	then prior period has been normal
15 to 18	then prior period has been wetter than normal

Condition Values:
(1) Dry
(2) Normal
(3) Wet

3.1.2 Topography

A review of the USGS Topographical Map (Figure 2) for the survey area shows higher elevations in the western half of the survey area that gradually slope downward as the ROW continues east.

3.1.3 Soil Survey

The USDA-NRCS Web Soil Survey Maps (Figure 3) identified eight soil types, two of which are considered hydric within the survey areas. Areas where hydric soil indicators exist were given priority for data collection, however data points were collected in all areas as necessary despite existing hydric rating

if wetland hydrological or topographical characteristics were present. A summary of mapped soil types and their hydric and wetland soil indicator status are outlined in Table 3-1 below.

Table 3-1 Mapped Soil Units

Symbol	Map Unit Name	Hydric Rating	Acreage	Percent of Survey Area
L37B	Angus loam, 2 to 6 percent slopes	None	0.97	26.71%
L36A	Hamel, overwash-Hamel complex, 1 to 4 percent slopes	None	0.28	7.71%
L22D2	Lester loam, morainic, 12 to 18 percent slopes, eroded	None	0.39	10.70%
L24A	Glencoe loam, depressional, 0 to 1 percent slopes	Hydric	0.25	6.85%
L50A	Houghton and Muskego soils, depressional, 0 to 1 percent slopes	Hydric	0.53	14.41%
L44A	Nessel loam, 1 to 3 percent slopes	None	0.69	18.80%
L37B	Angus loam, 2 to 6 percent slopes	None	0.40	10.85%
L22C2	Lester loam, morainic, 6 to 12 percent slopes, eroded	None	0.15	3.98%
Total			**3.65**	100.00%

3.1.4 National Wetland Inventory

The NWI (Figure 4) was reviewed to identify potential wetlands mapped within the survey area. Areas where mapped wetland features exist were given priority; however data points were collected in all areas as necessary despite existing mapped wetland features if wetland hydrological, topographical, or vegetative characteristics were present. The NWI data identified the approximately 0.96 acres of wetlands outlined in the table below. A summary of mapped NWI wetlands is outlined in Table 3-2 below.

Table 3-2 Mapped NWI Wetlands

Symbol	Wetland Type	Square Feet	Acreage	Percent of Survey Area
PEMCd	Freshwater Emergent Wetland	41,988.75	0.96	100.00%
Total		**41,988.75**	**0.96**	100.00%

3.1.5 Hennepin County Wetland Inventory

The Hennepin County Wetland Inventory (HCWI) was developed from a combination of remote sensing, NRCS slide reviews. The HCWI is intended to help locate wetlands and does not classify wetlands, whereas the NWI classifies wetlands based on the Cowardin classification system. The HCWI only identifies *potential* and *probable* wetlands. Based on the HCWI map review of the survey area, both *potential* and *probable* wetlands were identified in the project area.

3.2 General Site Conditions

The parcels contained within the survey area consist primarily of maintained residential lawns with wetlands connected by culverts, bordered by highway and the continuing industrial and residential landscape. Upland areas are dominated by old field grasses and goldenrod.

3.3 Wetlands

Based on this field investigation and desktop review of related resource maps, it is our professional opinion that two wetland complexes that consist of two wetland communities are present within the survey area. These wetlands total 1.03 acres within the survey area. These features are further described below.

Delineated wetlands (Figure 6) were assigned community types according to the Eggers and Reed (1997) community classification system. The wetlands that were identified were generally located in lowland areas or geomorphically positioned to collect water and drain more slowly, such as in valleys bordered by

impermeable surfaces and man-made basin features. Factors in determining wetland boundaries included topography of the landscape, dominant vegetation, soil, and hydrology observation. Documentation of these features, including wetland community type, associated data points, observed hydrology and hydric soil indictors, and dominant vegetation may be found in the wetland determination forms found in Appendix B, while general descriptions for observed wetland communities are found in Table 3-3 below.

3.3.1 Shallow Marsh

Approximately 0.98 acres (26% of survey area) of Shallow Marsh community was identified and was the most abundant wetland type found. Vegetation in the shallow marsh community was dominated by narrow leaved cattail (*Typha angustifolia*). Non-dominant vegetation observed included jewelweed (*Impatiens capensis)* and reed canary grass (*Phalaris arundinacea*). Dominant soils across the shallow marsh ranged from silt loam to silty clay loam. The most common hydric soils indicators for these areas were found to be Depleted Below Dark Surface (A11), Loamy Gleyed Matrix (F2), Depleted Matrix (F3), Redox Dark Surface (F6), and Redox Depressions (F8). Hydrology indicators consisted of Geomorphic Position (D2), FAC Neutral Test (D5), Surface Water (A1), High Water Table (A2), and Saturation (A3).

3.3.2 Fresh Wet Meadow (Degraded)

Approximately 0.05 acres (1.4% of survey area) of wet meadow community was identified and was the second most abundant wetland type identified within the survey area. Dominant vegetation in the wet meadow community included reed canary grass (*Phalaris arundinacea*), and narrow-leaved cattail (*Typha angustifolia*). There was no non-dominant vegetation observed in the wet meadow community. The dominant soils across the wet meadow communities was clay loam. Indicators of hydric soils present included Depleted Matrix (F3). Hydrology indicators consisted of Surface Water (A1), Geomorphic Position (D2), and FAC Neutral Test (D5).

Table 3-3 Delineated Wetland Summary Table

Wetland ID	Wetland Type	Square Feet	Acreage	Percent of Total Wetland
W-01	Shallow Marsh	42,812.68	0.98	95.62%
W-03	Fresh (Wet) Meadow (Degraded)	289.02	0.01	0.65%
W-02	Fresh (Wet) Meadow (Degraded)	1,671.48	0.04	3.73%
Total		**44,773.19**	**1.03**	100.00%

3.3.3 Naturally Problematic and Significantly Disturbed Wetlands

Based on the guidance provided in Section 5: Difficult Wetland Situations in the Midwest Region, of the Regional Supplement to the USACE Delineation Manual: Midwest Region, Version 2.0, it was determined that DP-01 of the recorded wetland data points contained naturally problematic soils despite faint or no hydric soil indicator presence. Soils in this area are being considered hydric due to strong hydrophytic vegetation and wetland hydrology characteristics. The wetland is in an area that will collect water and the water table was at the surface at the time of the survey.

4 Summary and Conclusion

Cardno was contracted by Xcel Energy to complete a wetland delineation and classification of wetland resources between Lawndale Ln and Highway 55, then paralleling HWY 55 in Hennepin County, Minnesota. The survey included approximately 0.3 miles of ROW including historically disturbed land that total approximately 3.65 acres. Based on field investigations conducted by Cardno on July 25, 2019, and desktop review of related resource maps, it is our professional opinion that 2 wetland complexes, totaling 1.03 acres (44,773 square feet), zero waterways, and zero waterbodies are located within the existing Plymouth ROW survey area.

This report represents our best professional judgment based on our knowledge and experience. The field wetland determination and delineation was conducted within the survey area provided to Cardno. The project corridor is described generally above and is depicted on all figures that accompany this report.

The wetlands identified for this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers, state regulation under the jurisdiction of Minnesota DNR, and local jurisdiction under the county, town, city or village.

5 Literature Cited

Eggers, Steve D. and Donald M. Reed. 1997. *Wetland Plants and Plant Communities of Minnesota & Wisconsin*. Second Edition. U.S. Army Corps of Engineers – St. Paul District.

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers' Wetland Delineation Manual*, Technical Report Y-87-1, U.S. Waterways Experiment Station, Vicksburg, MS.

Environmental Laboratory. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (version 2.0)*, ERDC/EL TR-12-01, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List:* 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. http://www.phytoneuron.net/.

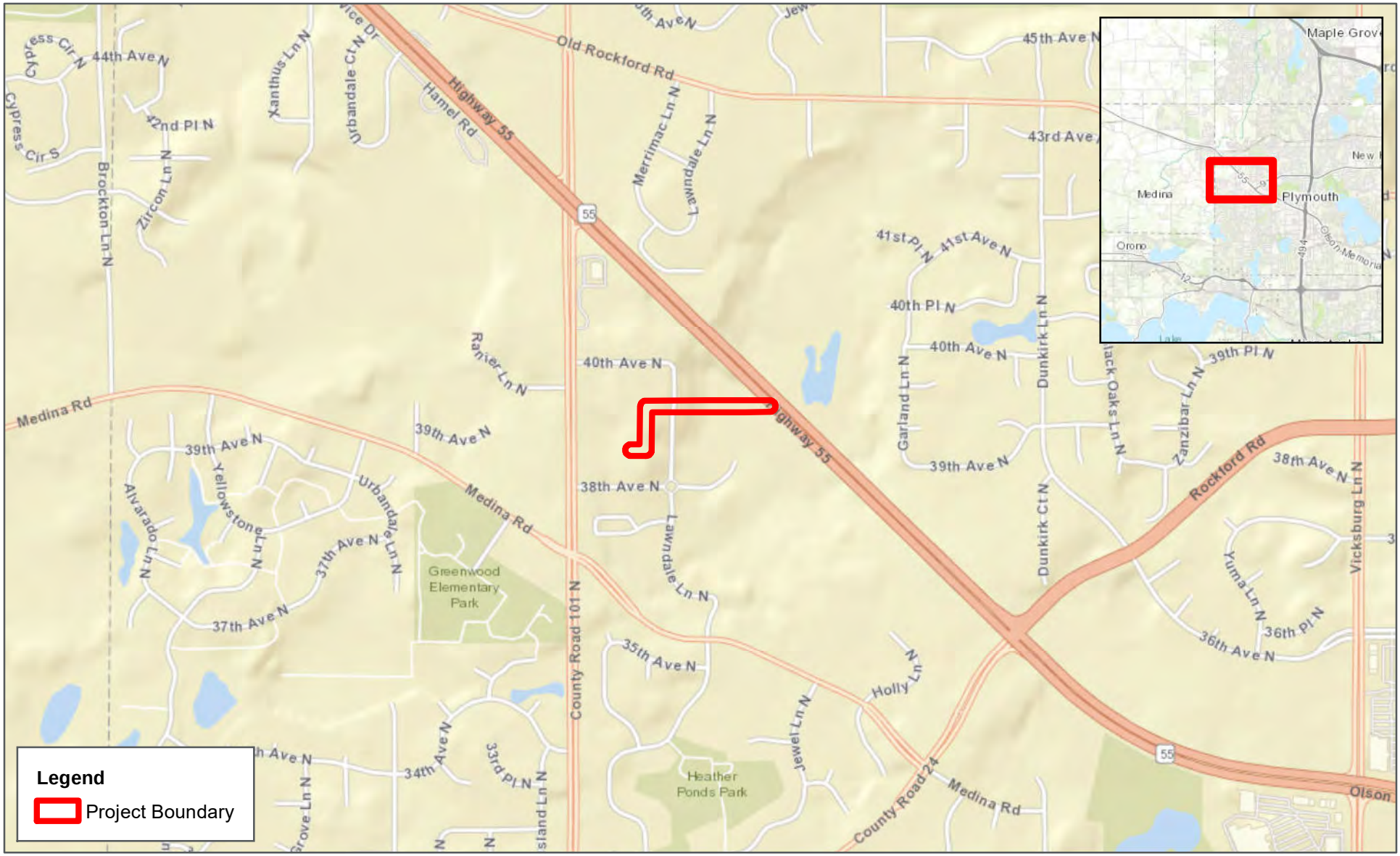
NRCS-USDA Web Soil Survey. *Soil Survey of Hennepin County, MN*
Available online at the following link: https://websoilsurvey.sc.egov.usda.gov/. Accessed July 2019 (Figure 3).

USDA Field Office Climate Data. http://agacis.rcc-acis.org/?fips=55095. Accessed August 2019.

USDA-NRCS. 2017. Field Indicators of Hydric Soils in the United States. A Guide for Identifying and Delineating Hydric Soils, Version 8.1. Edited by L.M. Vasilas, G.W. Hurt, and C.V. Noble.

United States Fish and Wildlife Service (USFWS) National Wetland Inventory. Accessed August 18, 2019. Imagery date May 1980.

United States Geological Survey (USGS) Topographical Map (Figure 2).



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Project No. J153001M13

Figure 1: Location Map

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 500 1,000 2,000
Feet

Cardno
6140 Cottonwood Dr., Suite A, Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Date Created: 8/13/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\Location_Map.mxd
GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT

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Project No. J153001M13

Figure 2: Topographic Map

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 250 500 1,000
Feet

Cardno
6140 Cottonwood Dr., Suite A, Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Date Created: 8/13/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\Topographic_Map.mxd
GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT

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W E
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Project No. J153001M13

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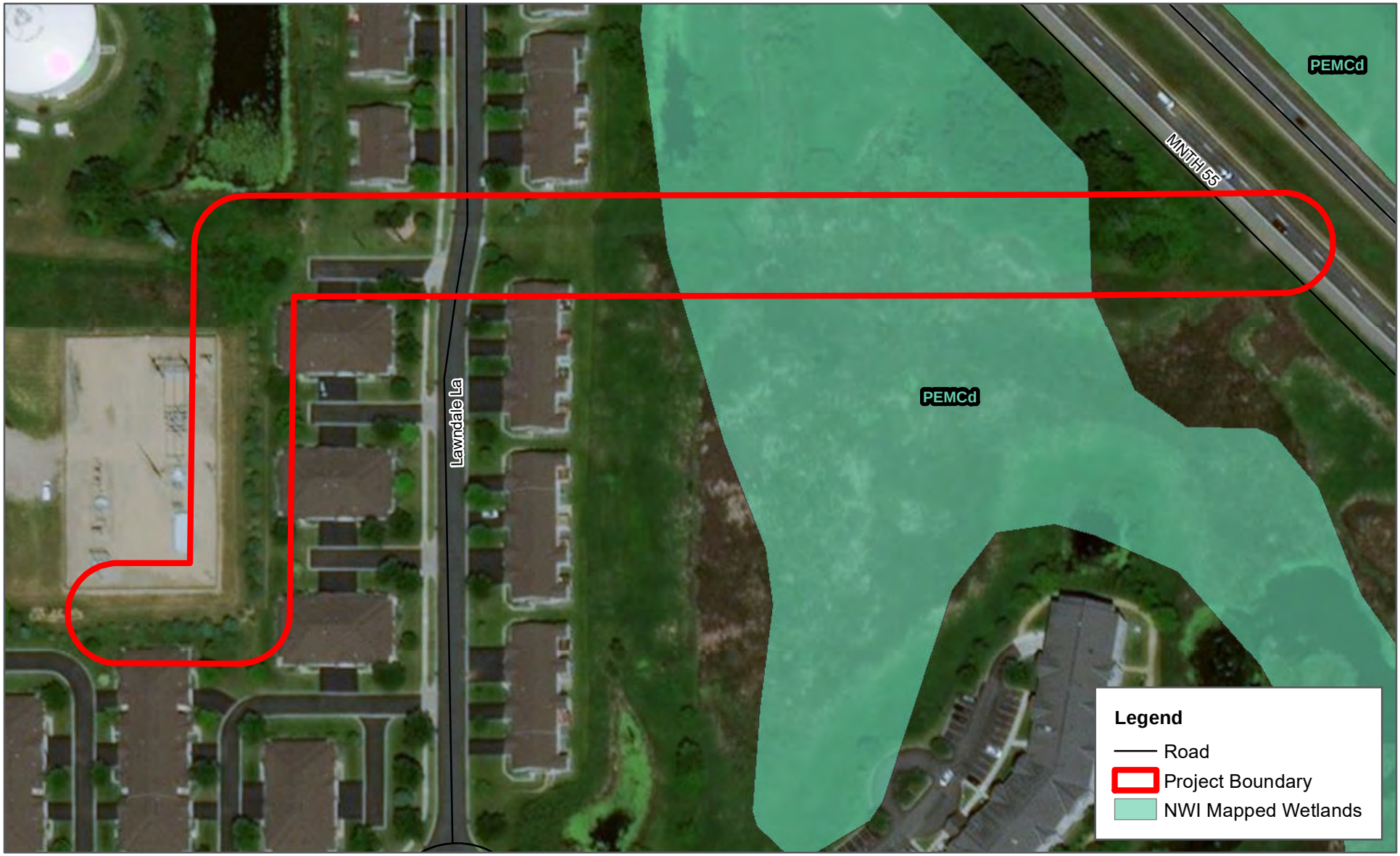
Figure 3: Mapped Soil Units

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 50 100 200
Feet

Cardno
6140 Cottonwood Dr., Suite A, Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Date Created: 8/13/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\Soils_Map.mxd
GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT



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Project No. J153001M13

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Figure 4: NWI Mapped Wetlands

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 50 100 200
Feet

Cardno
6140 Cottonwood Dr., Suite A, Fitchburg, WI 53719 USA
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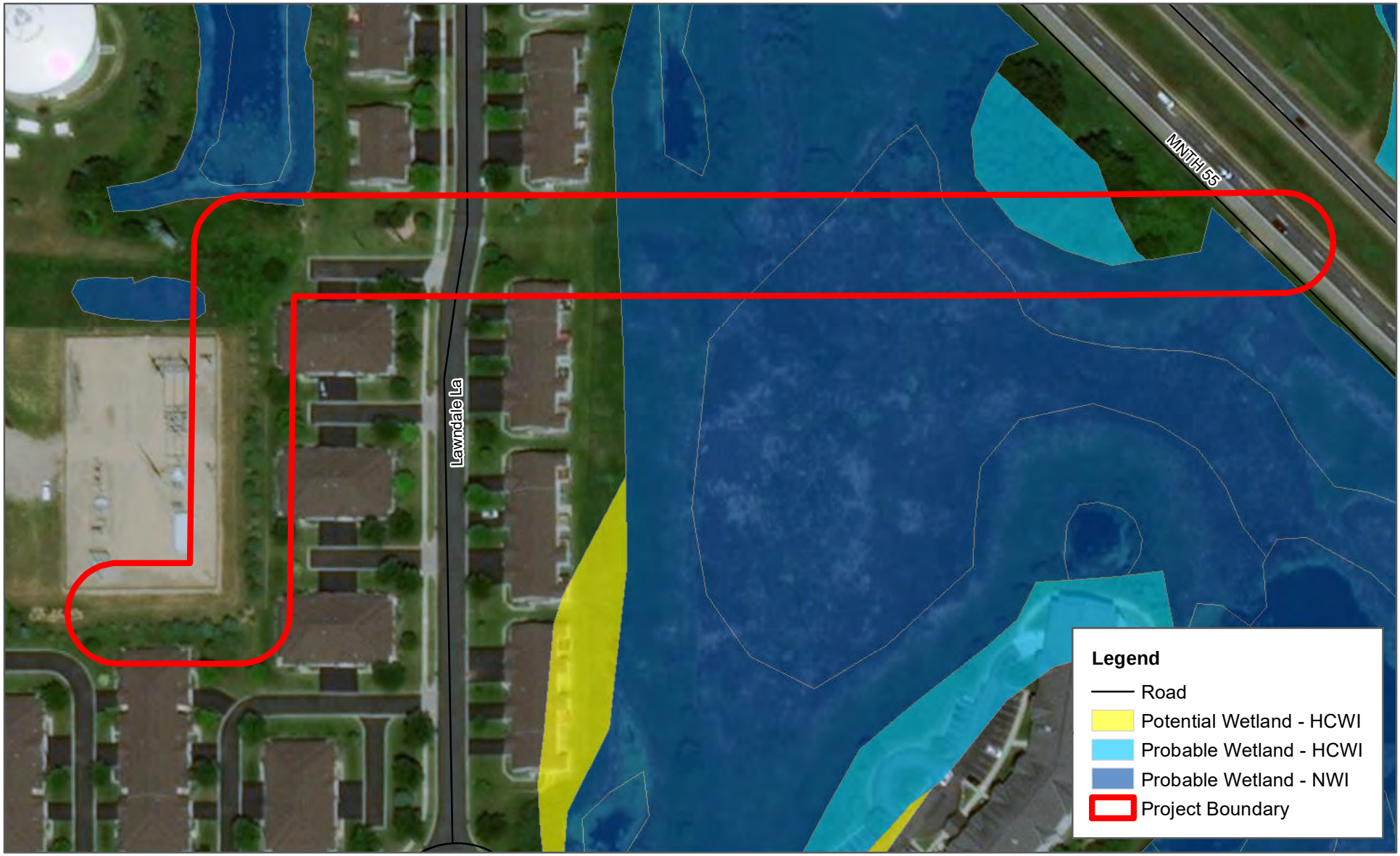
Date Created: 8/13/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\NWI_Map.mxd
GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT



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Project No. J153001M13

Figure 5: Hennepin County Wetland Inventory

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 50 100 200
Feet

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Date Created: 9/4/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\Hennepin_County_Wetland_Inventory.mxd GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT

N
W E
S

Project No. J153001M13

Figure 6: Wetland Delineation

Plymouth Wetland Delineation
Xcel Energy
Hennepin County, Minnesota

0 50 100 200
Feet

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Date Created: 8/13/2019 Date Revised: 9/4/2019 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\153\153001M00_XcelEnergy_Master\M13_Plymouth Delineation\GIS\MXD\Delineation\Delineation_Map.mxd
GIS Analyst: michael.smith
Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT

City of Plymouth Hollydale
Distribution Project Wetland
Delineation Report

APPENDIX

A

Site Photographs

Photograph DP-01 - View South

Photograph DP-02 - View South

Photograph DP-03 - View North

Photograph DP-04 - View West

Photograph DP-05 - View West

Photograph DP-06 - View West

Photograph PP-01 - View East

Photograph PP-01 - View West

Photograph PP-02 - View East

Photograph PP-02 - View West-Southwest

Photograph PP-03 - View Northeast

Photograph PP-03 - View Northwest

Photograph PP-03 - View Southwest

Photograph PP-04 - View North

Photograph PP-04 - View South

City of Plymouth Hollydale Distribution Project Wetland Delineation Report

APPENDIX

B

Wetland Delineation Forms – Midwest Region

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Hennepin County | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-01

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, SEC 18

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 45.0273 | Long: -93.50329 | Datum: NAD83

Soil Map Unit Name: L22D2-Lester loam, morainic, 12 to 18 percent slopes, eroded | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Soil not meeting a hydric soil indicator, but area features strong hydrophytic vegetation and hydrology. Soils are dark but lack features to give hydric rating. Point taken within cattail marsh affected by runoff and surrounding impermeable surfaces.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Typha angustifolia*	90%	Yes	OBL
2. *Impatiens capensis*	10%	No	FACW
3. *Phalaris arundinacea*	5%	No	FACW
4. *Solanum dulcamara*	1%	No	FAC
5. *Persicaria amphibia*	1%	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	107%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	91%	x1 =	0.91
FACW species	15%	x2 =	0.3
FAC species	1%	x3 =	0.03
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.07 (A)		1.24 (B)

Prevalence Index = B/A = 1.16

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/1	100					Silt Loam	
8-34"	10YR 2/1	95	10YR 6/1	5	D	M	Silt Loam	
34-36"	10YR 2/1	100					Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Soil lacks features for typical hydric soil category, but is dark throughout and community features strong wetland hydrology and hydrophytic vegetation. D

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes X No ___	Depth (inches):	Surface
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	Surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Hennepin | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-02

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, SEC 18

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 3-5% | Lat: 45.0273 | Long: -93.5034 | Datum: NAD83

Soil Map Unit Name: L22D2-Lester loam, morainic, 12 to 18 percent slopes, eroded | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes X	No ___	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
Backslope above cattail marsh. Hydrophytic vegetation creeps far upslope but area lacks hydrology.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Solidago canadensis*	30%	Yes	FACU
2. *Phalaris arundinacea*	25%	Yes	FACW
3. *Impatiens capensis*	25%	Yes	FACW
4. *Typha angustifolia*	15%	No	OBL
5. *Parthenocissus quinquefolia*	10%	No	FACU
6. *Cirsium arvense*	5%	No	FACU
7. *Urtica dioica*	5%	No	FACW
8. *Persicaria amphibia*	5%	No	OBL
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	120% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	20%	x1 =	0.2
FACW species	55%	x2 =	1.1
FAC species		x3 =	
FACU species	45%	x4 =	1.8
UPL species		x5 =	
Column Totals:	1.20 (A)		3.1 (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

- ___ 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- ___ 3-Prevalence Index is ≤3.0[1]
- ___ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

SOIL

Sampling Point: DP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9"	10YR 3/2	95	10YR 5/6	5	C	M	Silt Loam	
9-19"	10YR 5/3	93	7.5YR 4/6	7	C	M	Silty Clay Loam	
19-30"	10YR 2/1	100					Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes X No ___	Depth (inches):	24"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	N/A

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Plymouth, Hennepin County | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-03

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, SEC 18

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 2-3% | Lat: 45.0272 | Long: -93.50489 | Datum: NAD83

Soil Map Unit Name: L37B- Angus loam, 2 to 6 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
Community is on what appears to be a man-made berm above housing development. Area is mowed adjacent to the naturally vegetated shrub community the point was taken within.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhus glabra*	90%	Yes	UPL
2. *Celtis occidentalis*	30%	Yes	FAC
3.			
4.			
5.			
	120% = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Poa pratensis*	30%	Yes	FAC
2. *Phalaris arundinacea*	5%	No	FACW
3. *Solidago canadensis*	5%	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	40% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	5%	x2 =	0.1
FAC species	60%	x3 =	1.8
FACU species	5%	x4 =	0.2
UPL species	90%	x5 =	4.5
Column Totals:	1.60 (A)		6.6 (B)

Prevalence Index = B/A = 4.13

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7"	10YR 3/3	100					Loam	
7-12"	10YR 3/2	80	10YR 4/3	20	C	M	Loam	
12-20"	10YR 2/1	60	10YR 4/3	30	C	M	Loam	
			10YR 3/1	10	C	M	Loam	Mixed Matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	N/A

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Plymouth, Hennepin County | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-04

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, SEC 18

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-2% | Lat: 45.0272 | Long: -93.50495 | Datum: NAD83 UTM16N

Soil Map Unit Name: L44A-Nessel loam, 1 to 3 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Wetland appears to be a man-made basin on top of a berm to collect runoff.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90%	Yes	FACW
2. *Typha angustifolia*	10%	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	10%	x1 =	0.1
FACW species	90%	x2 =	1.8
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.00 (A)		1.9 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/1	60	10YR 5/8	10	C	M	Clay Loam	
	10YR 2/1	20						mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 7"

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Plymouth, Hennepin County | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-05

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, SEC 17

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 3-5% | Lat: 45.0273 | Long: -93.50133 | Datum: NAD83

Soil Map Unit Name: L37B-Angus loam, 2 to 6 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
Community is along a man-made berm, connected to the road by a grave drive. Area is impacted but indicators or lack thereof are evident.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tilia americana*	40%	Yes	FACU
2. *Quercus rubra*	20%	Yes	FACU
3.			
4.			
5.			
	60%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Festuca rubra*	30%	Yes	FACU
2. *Phalaris arundinacea*	20%	Yes	FACW
3. *Solidago canadensis*	15%	Yes	FACU
4. *Poa pratensis*	10%	No	FAC
5. *Vitis riparia*	5%	No	FACW
6. *Cirsium arvense*	5%	No	FACU
7. *Panicum virgatum*	5%	No	FAC
8. *Rhus glabra*	5%	No	UPL
9. *Parthenocissus quinquefolia*	3%	No	FACU
10. *Rhamnus cathartica*	3%	No	FAC
11. *Agrostis gigantea*	3%	No	FACW
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	104%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	28%	x2 =	0.56
FAC species	18%	x3 =	0.54
FACU species	113%	x4 =	4.52
UPL species	5%	x5 =	0.25
Column Totals:	1.64 (A)		5.87 (B)

Prevalence Index = B/A = 3.58

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9"	10YR 3/2	97	10YR 4/6	3	C	M	Silt Loam	
9-20"	10YR 6/1	80	7.5YR 5/6	20	C	PL	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	N/A

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Plymouth Wetland Delineation | City/County: Plymouth, Hennepin County | Sampling Date: 7/25/2019

Applicant/Owner: Xcel Energy | State: MN | Sampling Point: DP-06

Investigator(s): W. Taylor; S. McClusky | Section, Township, Range: TWP 118N, RNG 22W, Sec 17

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-2% | Lat: 45.02726 | Long: -93.50137 | Datum: NAD83

Soil Map Unit Name: L24A-Glencoe loam, depressional, 0 to 1 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
shallow marsh community fed by storm water drains

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Calamagrostis canadensis*	60%	Yes	OBL
2. *Typha angustifolia*	40%	Yes	OBL
3. *Scirpus cyperinus*	5%	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	105%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	105%	x1 =	1.05
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.05 (A)		1.05 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 2/1	100					Silt Loam	
6-12"	N 5/	95	10YR 5/8	5	C	M	Silty Clay	
12-20"	N 5/	70	10YR 5/8	30	C	M	Silty Clay	gravel inclusions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- X Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes X No ___	Depth (inches):	11"
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	8"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

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Joint Application Form for Activities Affecting Water Resources in Minnesota

This joint application form is the accepted means for initiating review of proposals that may affect a water resource (wetland, tributary, lake, etc.) in the State of Minnesota under state and federal regulatory programs. Applicants for Minnesota Department of Natural Resources (DNR) Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. Applicants can use the information entered into MPARS to substitute for completing parts of this joint application form (see the paragraph on MPARS at the end of the joint application form instructions for additional information). This form is only applicable to the water resource aspects of proposed projects under state and federal regulatory programs; other local applications and approvals may be required. Depending on the nature of the project and the location and type of water resources impacted, multiple authorizations may be required as different regulatory programs have different types of jurisdiction over different types of resources.

Regulatory Review Structure

Federal

The St. Paul District of the U.S. Army Corps of Engineers (Corps) is the federal agency that regulates discharges of dredged or fill material into waters of the United States (wetlands, tributaries, lakes, etc.) under Section 404 of the Clean Water Act (CWA) and regulates work in navigable waters under Section 10 of the Rivers and Harbors Act. Applications are assigned to Corps project managers who are responsible for implementing the Corps regulatory program within a particular geographic area.

State

There are three state regulatory programs that regulate activities affecting water resources. The Wetland Conservation Act (WCA) regulates most activities affecting wetlands. It is administered by local government units (LGUs) which can be counties, townships, cities, watershed districts, watershed management organizations or state agencies (on state-owned land). The Minnesota DNR Division of Ecological and Water Resources issues permits for work in specially-designated public waters via the Public Waters Work Permit Program (DNR Public Waters Permits). The Minnesota Pollution Control Agency (MPCA) under Section 401 of the Clean Water Act certifies that discharges of dredged or fill material authorized by a federal permit or license comply with state water quality standards. One or more of these regulatory programs may be applicable to any one project.

Required Information

Prior to submitting an application, applicants are **strongly encouraged** to seek input from the Corps Project Manager and LGU staff to identify regulatory issues and required application materials for their proposed project. Project proponents can request a pre-application consultation with the Corps and LGU to discuss their proposed project by providing the information required in Sections 1 through 5 of this joint application form to facilitate a meaningful discussion about their project. Many LGUs provide a venue (such as regularly scheduled technical evaluation panel meetings) for potential applicants to discuss their projects with multiple agencies prior to submitting an application. Contact information is provided below.

The following bullets outline the information generally required for several common types of determinations/authorizations.

- For delineation approvals and/or jurisdictional determinations, submit Parts 1, 2 and 5, and Attachment A.
- For activities involving CWA/WCA exemptions, WCA no-loss determinations, and activities not requiring mitigation, submit Parts 1 through 5, and Attachment B.
- For activities requiring compensatory mitigation/replacement plan, submit Parts 1 thru 5, and Attachments C and D.
- For local road authority activities that qualify for the state's local road wetland replacement program, submit Parts 1 through 5, and Attachments C, D (if applicable), and E to both the Corps and the LGU.

Submission Instructions

Send the completed joint application form and all required attachments to:

U.S Army Corps of Engineers. Applications may be sent directly to the appropriate Corps Office. For a current listing of areas of responsibilities and contact information, visit the St. Paul District's website at: http://www.mvp.usace.army.mil/Missions/Regulatory.aspx and select "Minnesota" from the contact Information box. Alternatively, applications may be sent directly to the St. Paul District Headquarters and the Corps will forward them to the appropriate field office.

Section 401 Water Quality Certification: Applicants do not need to submit the joint application form to the MPCA unless specifically requested. The MPCA will request a copy of the completed joint application form directly from an applicant when they determine an individual 401 water quality certification is required for a proposed project.

Wetland Conservation Act Local Government Unit: Send to the appropriate Local Government Unit. If necessary, contact your county Soil and Water Conservation District (SWCD) office or visit the Board of Water and Soil Resources (BWSR) web site (www.bwsr.state.mn.us) to determine the appropriate LGU.

DNR Public Waters Permitting: In 2014 the DNR will begin using the Minnesota DNR Permitting and Reporting System (MPARS) for submission of Public Waters permit applications (https://webapps11.dnr.state.mn.us/mpars/public/authentication/login). Applicants for Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. To avoid duplication and to streamline the application process among the various resource agencies, applicants can use the information entered into MPARS to substitute for completing parts of this joint application form. The MPARS print/save function will provide the applicant with a copy of the Public Waters permit application which, at a minimum, will satisfy Parts one and two of this joint application. For certain types of activities, the MPARS application may also provide all of the necessary information required under Parts three and four of the joint application. However, it is the responsibility of the Applicant to make sure that the joint application contains all of the required information, including identification of all aquatic resources impacted by the project (see Part four of the joint application). After confirming that the MPARS application contains all of the required information in Parts one and two the Applicant may attach a copy to the joint application and fill in any missing information in the remainder of the joint application.

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Xcel Energy, Attn: Ellen Heine
Mailing Address: 414 Nicollet Mall, 414-6
Phone: 612-330-6073
E-mail Address: Ellen.L.Heine@XcelEnergy.com

Authorized Contact (do not complete if same as above):
Mailing Address:
Phone:
E-mail Address:

Agent Name: Dan Salas, Cardno
Mailing Address: 6130 Cottonwood Drive, Ste B, Fitchburg, WI 53719
Phone: 608-620-0745
E-mail Address: dan.salas@cardno.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Plymouth**
Parcel ID and/or Address: Between County Hwy 101 and Highway 55
Legal Description (Section, Township, Range):
Lat/Long (decimal degrees): 45° 1'38.43"N, 93°30'8.24"W
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): Linear: 0.3 miles (1520 feet) (wetland crossing length is approximately 430 feet)

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

The project involves installation of an underground electric distribution duct line running along Highway 55 then crossing the shallow marsh wetland described in this application and then connecting to the

Hollydale Substation located west of Lawndale Ln N. The duct line will be installed via open trench installation, and the trench will be closed and restored following completion of the installation. The area of wetland to be impacted is estimated to be 430 feet in length and approximately 4-10 feet in width. The project was initially expected to be done in the fall of 2019, but may end up being completed in the spring of 2020 instead. The construction is expected to take approximately 3 months to complete. The duct will not impact the small degraded fresh wet meadow located on the north side of the substation.

Project Name and/or Number:

PART FOUR: Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]
w-01	wetland	excavate	T	2150 sq ft	N/A	Shallow marsh	20
w-03	wetland	excavate	T	100 sq ft	N/A	Fresh wet meadow (degraded)	20

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: ellen.l.heine@xcelenergy.com Digitally signed by ellen.l.heine@xcelenergy.com DN: cn=ellen.l.heine@xcelenergy.com Date: 2019.10.04 09:40:33 -05'00' Date:

I hereby authorize to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

[1] The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Project Name and/or Number:

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☐ **Wetland Type Confirmation**

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Attachment B
Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part ***if*** you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR ***if*** you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

The project qualifies under MN WCA rule 8420.0420 Exemption Standards, Subpart 6 Utilities

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

The project involves the installation of a distribution (utility) line as described in 8420.0420 Subp. 6 and the impacts have been minimized to the extent possible and modify or alter less than one-half of an acre of wetland. The duct line will be placed within an existing overhead transmission line corridor.

Attachment C
Avoidance and Minimization

Project Purpose, Need, and Requirements. Clearly state the purpose of your project and need for your project. Also include a description of any specific requirements of the project as they relate to project location, project footprint, water management, and any other applicable requirements. Attach an overhead plan sheet showing all relevant features of the project (buildings, roads, etc.), aquatic resource features (impact areas noted) and construction details (grading plans, storm water management plans, etc.), referencing these as necessary:

This project is needed to connect the distribution system to the Hollydale Substation which is located west of the location where the wetland impacts will occur.

Avoidance. Both the CWA and the WCA require that impacts to aquatic resources be avoided if practicable alternatives exist. Clearly describe all on-site measures considered to avoid impacts to aquatic resources and discuss at least two project alternatives that avoid all impacts to aquatic resources on the site. These alternatives may include alternative site plans, alternate sites, and/or not doing the project. Alternatives should be feasible and prudent (see MN Rules 8420.0520 Subp. 2 C). Applicants are encouraged to attach drawings and plans to support their analysis:

The wetland being crossed is fairly large and there is an existing utility easement and overhead line which crosses the wetland in the location of the proposed distribution duct bank. An alternative of routing the distribution line further north around the wetland would require the acquisition of new land rights and increased project costs.

The no-build option would not accomplish the goals of the project to improve the electric distribution system in the area.

Minimization. Both the CWA and the WCA require that all unavoidable impacts to aquatic resources be minimized to the greatest extent practicable. Discuss all features of the proposed project that have been modified to minimize the impacts to water resources (see MN Rules 8420.0520 Subp. 4):

The proposed location minimizes impacts by placing the duct bank within an existing electric utility easement beneath existing overhead power lines. Installation of the duct bank will result in temporary impacts to the wetland which will be restored once construction is complete. There will be no permanent structures above ground within the wetland.

Off-Site Alternatives. An off-site alternatives analysis is not required for all permit applications. If you know that your proposal will require an individual permit (standard permit or letter of permission) from the U.S. Army Corps of Engineers, you may be required to provide an off-site alternatives analysis. The alternatives analysis is not required for a complete application but must be provided during the review process in order for the Corps to complete the evaluation of your application and reach a final decision. Applicants with questions about when an off-site alternatives analysis is required should contact their Corps Project Manager.


40th Ave
Highway 55
W-01
W-02
W-03
HOLLYDALE SUBSTATION
Lawndale Ln N
Proposed UG distribution
69 kV Transmission Line
Delineated wetlands
Fresh (Wet) Meadow (Degraded)
Shallow Marsh
N
0
100
200
400 Feet

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT
180 FIFTH STREET EAST, SUITE 700
ST. PAUL, MN 55101-1678

November 8, 2019

Regulatory File MVP-2019-02715-AIS

Ellen Heine, Xcel Energy
c/o Dan Salas, Cardno
6130 Cottonwood Drive, Suite B
Fitchburg, Wisconsin 53719

Dear Ms. Heine:

We are responding to your request for authorization to install an underground electric distribution duct line from Highway 55 to the Hollydale Substation. The proposed work is located in Sections 17 & 18, Township 118 North, Range 22 West, Hennepin County, Minnesota.

The regulated activity associated with the project described above includes the temporary discharge of fill material into 2,250 square feet of wetlands. The work appears to be authorized by a Nationwide Permit (NWP) and/or a Regional General Permit (RGP), specifically, the Utility RGP. No application or notification to the St. Paul District Corps of Engineers is required for your project.

This letter does not verify permit eligibility, but indicates that your project may meet the requirements of this permit. It is your responsibility to ensure that the work is performed in accordance with the terms and general conditions of this permit before starting work. **It is also incumbent upon you to verify that your activity has received any necessary Water Quality Certification or waiver prior starting work in waters of the U.S.** If a Water Quality Certification has not been issued for your activity, you are responsible for contacting the water certifying agency. A full list of applicable terms, conditions, issued Water Quality Certifications, and certifying agencies may be found by visiting our website at http://www.mvp.usace.army.mil/Missions/Regulatory/Permitting-Process-Procedures/.

A change in location or project plans may require re-evaluation of your project. Proposed changes should be coordinated with this office prior to construction. Failure to comply with all terms and conditions of this permit invalidates this authorization and could result in a violation of Section 301 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Regulatory Branch (File No. MVP-2019-02715-AIS)

If you have any questions, please contact me in our St. Paul office at (651) 290-5266 or by email at Aiden.Schore@usace.army.mil.

Sincerely,

Aiden Schore
Regulatory Specialist

CC:
Ben Scharenbroich, LGU
Ben Carlson, BWSR