Resource Report 2
Water Use and Quality

Resource Report No. 2

Water Use and Quality

Ventura to Farmington A-Line Abandonment and Capacity Replacement Project and Northern Lights 2027 Expansion Project

FERC Docket No. CP26-___-000

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RESOURCE REPORT NO. 2 – WATER USE AND QUALITY SUMMARY OF FILING INFORMATION

MINIMUM REQUIREMENT	LOCATION ADDRESSED
Identify all perennial surface waterbodies crossed by the proposed project and their water quality classification. (§ 380.12(d)(1)) • Identify by milepost • Indicate if potable water intakes are within 3 miles downstream of the crossing.	Section 2.2.3 and Table 2.2-4 and Table 2.2-5
Identify all waterbody crossings that may have contaminated waters or sediments. (§ 380.12(d)(1)) • Identify by milepost • Include offshore sediments.	Section 2.2.3
Identify watershed areas, designated surface water protection areas, and sensitive waterbodies crossed by the proposed project. (§ 380.12(d)(1)) • Identify by milepost	Section 2.2.1 and Table 2.2-2 and Table 2.2-3, Sections 2.1.4, and 2.2.4
Provide a table (based on NWI maps if delineations have not been done) identifying all wetlands, by milepost and length, crossed by the proposed project (including abandoned pipeline), and the total acreage and acreage of each wetland type that would be affected by construction. (§ 380.12(d)(1) and (4))	Section 2.3.2, Table 2.3-1 and Table 2.3.-2, and Appendix 2B
Discuss construction and restoration methods proposed for crossing wetlands and compare them to staff's *Wetland and Waterbody Construction and Mitigation Procedures*. (§ 380.12(d)(2))	Section 2.3.2
Describe the proposed waterbody construction, impact mitigation, and restoration methods to be used to cross surface waters and compare to the staff's *Wetland and Waterbody Construction and Mitigation Procedures*. (§ 380.12(d)(2)) • Although the Procedures do not apply offshore, the first part of this requirement does apply. Be sure to include effects of sedimentation, etc. This information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing. (See also Resource Report 3.)	Section 1.5.6.2 and Table 1.5-5 and Table 1.5-6
Provide original National Wetlands Inventory (NWI) maps or the appropriate state wetland maps, if NWI maps are not available, that show all proposed facilities and include milepost locations for proposed pipeline routes. (§ 380.12(d)(4))	Figure 2-1 and Figure 2-2, Appendix 2B
Identify all U.S. Environmental Protection Agency (EPA)- or state- designated aquifers crossed. (§ 380.12(d)(9)) • Identify the location of known public and private groundwater supply wells or springs within 150 feet of construction.	Section 2.1
ADDITIONAL INFORMATION	
Identify proposed mitigation for impacts on groundwater resources.	Section 2.1.6
Discuss the potential for blasting to affect water wells, springs, and wetlands, and associated mitigation.	Section 2.1.6
Identify all sources of water required for construction (e.g., hydrostatic testing, dust suppression, horizontal directional drills [HDD]), the quantity of water required and methods for withdrawal. Identify the treatment of discharge, discharge volumes, rates, and locations, and any waste products generated.	Sections 2.1.6 and 2.1.7, 2.2.11, 2.2.14

Table of Contents

2.0 RESOURCE REPORT 2 – WATER USE AND QUALITY 2-1

2.1 Groundwater Resources 2-3
2.1.1 Principal Aquifers 2-3
2.1.2 Sole Source Aquifers 2-5
2.1.3 Springs 2-5
2.1.4 Public and Private Water Supply Wells 2-6
2.1.5 Wellhead Protection Areas 2-10
2.1.6 Potential Sources of Groundwater Contamination 2-12
2.1.7 Groundwater Impacts and Mitigation 2-13
2.2 Surface Water Resources 2-16
2.2.1 Watersheds 2-17
2.2.2 Floodplains 2-21
2.2.3 Waterbodies Crossed 2-22
2.2.4 National Wild and Scenic Rivers System 2-31
2.2.5 Section 303 (d) List of Impaired Waters 2-31
2.2.6 Outstanding Resource Value Waters 2-32
2.2.7 Public Waters 2-33
2.2.8 U.S. Army Corps of Engineers Section 10 Waters 2-34
2.2.9 Other Special State and Local Waterbody Designations 2-34
2.2.10 Potable Surface Water Supply 2-35
2.2.11 Hydrostatic Test Water and Dust Suppression 2-35
2.2.12 Sensitive Surface Waters/Waterbody Quality Classification 2-36
2.2.13 Waterbody Impacts and Mitigation Measures 2-38
2.2.14 Water Use 2-40
2.3 Wetlands 2-41
2.3.1 Existing Resources 2-42
2.3.2 Construction and Operation Impacts 2-57
2.4 Wetland Restoration Plan 2-59
2.5 Agency Consultation 2-60
2.6 Requested Modifications to FERC Procedures 2-61
2.7 References 2-62

List of Tables

Table 2.0-1 V2F Project Facilities and Location
Table 2.0-2 NL27 Project Facilities and Location
Table 2.1-1 Water Supply Wells Surrounding the V2F Project
Table 2.1-2 Water Supply Wells Surrounding the NL27 Project
Table 2.2-1 NL27 Project Parcel Survey Status Summary
Table 2.2-2 Watersheds Crossed by the V2F Project
Table 2.2-3 Watersheds Crossed by the NL27 Project
Table 2.2-4 Waterbodies Crossed by the V2F Project
Table 2.2-5 Waterbodies Crossed by the NL27 Project
Table 2.3-1 Wetlands Crossed by the V2F Project
Table 2.3-2 Wetlands Crossed by the NL27 Project

List of Figures

Figure 2-1 V2F Project NWI Wetlands
Figure 2-2 NL27 Project NWI Wetlands
Figure 2-3 V2F Project Field Delineated Wetland and Waterbodies
Figure 2-4 NL27 Project Field Delineated Wetland and Waterbodies

List of Appendices

Appendix 2A Spill Prevention, Control and Countermeasure Plan for Both Projects
Appendix 2B Wetland Delineation Reports for Both Projects
Appendix 2C Wetland Restoration Plan for Both Projects
Appendix 2D Agency Correspondence

Abbreviations and Acronyms

A-line	Northern Natural Gas's 16-inch-diameter M500 A-Mainline
BMPs	Best Management Practices
C-line	Northern Natural Gas' 30-inch-diameter M500 C-line
CFR	Code of Federal Regulations
CWA	Clean Water Act of 1972
CWI	Minnesota County Well Index
D-line	Northern Natural Gas' 30-inch-diameter M500 D-line
DWSMA	Drinking Water Supply Management Area
EI	Environmental Inspector
E-line	Northern Natural Gas' 36-inch-diameter M500 E-line
EPA	U.S. Environment Protection Agency
ESB	environmental survey border
ETWS	extra temporary workspace
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
gpm	gallons per minute
HDD	horizontal directional drilling
IDNR	Iowa Department of Natural Resources
IGS	Iowa Geological Survey
IWIS	Iowa Well Information System
LGU	Local Government Unit
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MP	milepost
MPARS	MDNR Water Permitting and Reporting System
MPCA	Minnesota Pollution Control Agency
MSI	Minnesota Spring Inventory
NHD	National Hydrography Dataset
NL27 Project	Northern Lights 2027 Expansion Project
Northern	Northern Natural Gas
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ORNW	Outstanding Remarkable Natural Waters
ORVW	Outstanding Resource Value Waters
PCN	Pre-Construction Notifications
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
PLP	Permanent List of Priorities
Procedures	Northern's Wetland and Waterbody Construction and Mitigation Procedures
Projects	Ventura to Farmington A-line Abandonment and Capacity Replacement Project and Northern Lights 2027 Expansion Project
PRP	Petroleum Remediation Program
RCRA	Resource Conservation and Recovery Act
RGP	Regional General Permit

ROW	right of way
SA	Staging area
SDWA	Safe Drinking Water Act of 1974
SFHA	Special Flood Hazard Areas
SPCC	Spill Prevention, Control, and Countermeasures
SWAs	source water aquifers
SWAP	Source Water Assessment Program
SWDV	Surface Water Data Viewer
SWPPP	Storm Water Pollution Prevention Plan
TAR	temporary access road
TNWM	targeted non-watershed monitoring
TWS	temporary workspace
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
V2F Project	Ventura to Farmington A-Line Abandonment and Capacity Replacement Project
WCA	Wetland Conservation Act
WHPA	Wellhead Protection Area
WOTUS	waters of the U.S.

2.0 RESOURCE REPORT 2 – WATER USE AND QUALITY

Northern's application is composed of two discrete projects, the V2F Project and the NL27 Project. The two Projects will be built concurrently, and Northern has combined the two Projects into a single Section 7 application due to their geographic overlap and interdependence. Analysis and impacts are generally discussed separately for each Project throughout the environmental report.

Resource Report 2 contains information necessary to identify and quantify the construction impacts of Northern's proposed Project on water use and quality. Resource Report 2 also discusses special techniques that will be used to mitigate and/or avoid impacts on these resources during construction. Northern owns and operates a natural gas transmission pipeline system, including pipeline and associated aboveground facilities in Minnesota and Iowa. Northern is filing an application with FERC pursuant to section 7 of the Natural Gas Act. The V2F Project involves isolation and abandonment in-place of approximately 105.76 miles of 16-inch-diameter pipeline on Northern's M500 A and 25.35 miles of 16-inch-diameter M500 J pipeline systems (collectively referred to as the A-line) from Ventura, Iowa, to Farmington, Minnesota. To replace the capacity, Northern will construct three new pipeline extensions consisting of approximately 17.88 miles of 36-inch- and 30-inch-diameter pipelines and associated aboveground appurtenances in Freeborn, Steele and Dakota counties, Minnesota.

The NL27 Project consists of the installation of ten pipeline extensions totaling 28.43 miles, a compressor station uprate, and associated aboveground appurtenances in Minnesota for firm transportation requirements associated with Northern's customers. The NL27 Project is in Freeborn, Steele, Scott, Carver, Martin, Stearns, Jackson, Watonwan, Isanti, Morrison, and Washington counties, Minnesota.

Tables 2.0-1 and 2.0-2 provide a list of both Project components along with their associated Minnesota or Iowa counties.

Table 2.0-1 V2F Project Facilities and Location

Component	Project Facility	Facility Description	County, State
Lake Mills M500 E-line	8.29-mile pipeline	36-inch-diameter extension	Freeborn, MN
	Lake Mills compressor station	Temporary compression site	Worth, IA
Albert Lea M500 E-line	2.09-mile pipeline	36-inch-diameter extension	Steele, MN
	Owatonna compressor station	Temporary compression site	Steele, MN
Faribault M500 D-line	7.50-mile pipeline	30-inch-diameter extension	Dakota, MN
	Northfield #1	Temporary compression site	Dakota, MN
A-line Abandonment	Ventura compressor station	Pipeline disconnect site	Hancock, IA
	Farmington compressor station	Pipeline disconnect site	Dakota, MN
	La Crosse BL MNB73201 launcher /ABA05	Temporary compression site	Freeborn, MN

Table 2.0-2 NL27 Project Facilities and Location

Component	Project Facility	Facility Description	County, State
Lake Mills M500 E-line	2.32-mile pipeline	36-inch-diameter extension	Freeborn, MN
Albert Lea M500 E-line	3.42-mile pipeline	36-inch-diameter extension	Steele, MN
Willmar 3rd Branch Line Upstream	1.78-mile pipeline	24-inch-diameter extension	Scott, MN
Willmar 3rd Branch Line Downstream	4.78-mile pipeline	24-inch-diameter extension	Carver, MN
Welcome 2nd Line	1.24-mile pipeline	16-inch-diameter extension	Martin, MN
Paynesville 2nd Branch Line	2.45-mile pipeline	4-inch-diameter extension	Stearns, MN
Worthington 2nd Branch Line	2.17-mile pipeline	8-inch-diameter extension	Jackson, MN
Springfield 2nd Branch Line	7.40-mile pipeline	8-inch-diameter extension	Watonwan, MN
Minnesota Interconnect 2nd Branch Line	1.59-mile pipeline	12-inch-diameter extension	Isanti, MN
Alexandria 2nd Branch Line	1.28-mile pipeline	8-inch-diameter extension	Morrison, MN
Aboveground Facilities			
Hugo Compressor Station Uprate	Hugo compressor station	Turbine switch for newer model with increase of 700 horsepower	Washington, MN

Information for this resource report was derived from three principal sources: (1) Project-specific communication with federal and state agencies; (2) published and unpublished natural resources data pertaining to the regional Project area; and (3) field surveys.

Field surveys involved concurrent wetland delineation and habitat surveys for both Projects, including the construction workspace for the Projects (i.e., TWS, ETWS, access roads, and staging areas). The areas studied during environmental surveys consisted of approximately 4,292 acres for the V2F Project and approximately 4,039 acres for the NL27 Project. These total survey acreages encompass all workspaces included for both Projects, plus buffers surrounding workspaces for each of the V2F and NL27 Project components. The surveys were completed to identify any sensitive resources warranting protection within or adjacent to the proposed construction workspaces. Project areas remaining to be surveyed on the NL27 Project are listed in Table 2.2-1. Northern's wetland and waterbody determination and delineation reports for both Projects are provided in Resource Report 2, Appendix 2B, Wetland Delineation Reports.

All work for the Hugo compressor station uprate will be inside an existing graveled and previously disturbed facility that contains no surface water resources; therefore, the Hugo compressor station project component is not discussed further in Resource Report 2.

2.1 Groundwater Resources

2.1.1 Principal Aquifers

Groundwater resources in Iowa and Minnesota are generally abundant, but not evenly distributed, due to major glacial events and sedimentation processes. The groundwater aquifers used for public and private water sources within Iowa and Minnesota may be located in unconsolidated depositional units or lithified bedrock units, depending on the location.

V2F Project

In the state of Iowa, there are two major aquifer systems and three major aquifers that underlie the V2F Project. An aquifer system is defined as an aquifer that consists of two or more hydraulically connected aquifers which function similarly to changes in hydrologic conditions (USGS 1992). In descending order, the major aquifer systems and bedrock aquifers within the proposed V2F Project are as follows: the surficial aquifer system (regionally known as a glacial sand and gravel aquifer; the Silurian–Devonian aquifer, aka the Upper Carbonate aquifer; and the Cambrian-Ordovician aquifer system (also known as the St. Peter-Prairie du Chien-Jordan aquifer and the Mt. Simon aquifer). Of the four aquifers underlying the V2F Project, three are classified as bedrock aquifers that have expansive confining units and encompass large geographic areas which extend beyond the Iowa state border. The additional principal aquifer system within the V2F Project is a surficial aquifer system which overlies the bedrock and consists of an array of shallow sand and gravel deposits (IDNR 2003, 2004).

Iowa's surficial aquifer system (regionally known as the glacial sand and gravel aquifer) is the uppermost and most widely spread aquifer system in Iowa (USGS 1992). Unconfined and consisting of unconsolidated materials (primarily sand, gravel, silt, and clay) that were deposited during multiple continental glacial advances during the Quaternary Age, the glacial sand and gravel aquifer can reach a maximum thickness of approximately 400 feet (State of Iowa 1978). Because water within the aquifer is easily accessible through shallow wells and is hydraulically connected to every major bedrock aquifer within the outcrop areas, the glacial sand and gravel aquifer serves as the primary source of water for wells in Iowa and Minnesota (State of Iowa 1978, USGS 1992). Although the aquifer is extensively utilized as a primary water source for many states, due to its highly permeable nature, the aquifer is vulnerable to contamination from human activities (USGS 1992).

The glacial sand and gravel aquifer is primarily recharged by rainfall and water quality within the aquifer ranges between excellent and good with minimal amounts of mineralization. Human induced contaminants, such as highly soluble fertilizers or waste products, can compromise the water quality of the aquifer; similarly, a hydraulic connection between the glacial sand and gravel aquifer with an underlying aquifer containing a poorer water quality also can diminish the generally high quality of water within the glacial sand and gravel aquifer (State of Iowa 1978).

The bedrock aquifers underlying the V2F Project are comprised of strata that range in age from the Cambrian to Devonian Periods, with the aquifers identified by the geologic period in which the rocks were formed (Silurian-Devonian, and Cambrian-Ordovician Aquifers) (IDNR 2004).

Water quality and yield varies within the bedrock aquifers. In general, greater mineralization of the water occurs as a function of time within the formation. Therefore, the mineral content of the groundwater tends to be greater in deeper aquifers.

In the state of Iowa, the Cambrian-Ordovician principal aquifer system is the most extensive, productive, and highly utilized bedrock aquifer (IDNR 2020b). Well depths within the Cambrian-Ordovician aquifer system typically range between 300 to 2,000 feet, with some wells reaching depths of 3,000 feet. Well yields from the aquifer typically range from several hundred to over 1,000 gpm (IDNR 2004).

In the state of Minnesota, there are two major aquifer systems and three major aquifers that underlie the V2F Project. An aquifer system is defined as an aquifer that consists of two or more hydraulically connected aquifers that function similarly to changes in hydrologic conditions (USGS 1992). In descending order, the major aquifer systems and bedrock aquifers within the V2F Project are as follows: the surficial aquifer system (regionally known as a glacial sand and gravel aquifer; the Silurian–Devonian aquifer, aka the Upper Carbonate aquifer; and the Cambrian-Ordovician aquifer system (also known as the St. Peter-Prairie du Chien-Jordan aquifer and the Mt. Simon aquifer). Of the four aquifers underlying the V2F Project, three are classified as bedrock aquifers that have expansive confining units and encompass large geographic areas which extend beyond the Minnesota state border. The additional principal aquifer system within the V2F Project is a surficial aquifer system which overlies the bedrock and contains a limited extent of surficial and buried sand and gravel deposits (MDNR 2021).

The bedrock aquifers underlying the V2F Project in Minnesota are comprised of strata that range in age from the Cambrian to Ordovician Periods, with the aquifers identified by the geologic period in which the rocks were formed (Cambrian-Ordovician Aquifers) (USGS 1992).

Water quality and yield varies within the bedrock aquifers. In general, greater mineralization of the water occurs as a function of time within the formation. Therefore, the mineral content of the groundwater tends to be greater in deeper aquifers.

Within the V2F Project in Minnesota, the Cambrian-Ordovician principal aquifer system is the most extensive, productive, and highly utilized bedrock aquifer. Well depths within the Cambrian-Ordovician aquifer system typically range between 15 to 1,000 feet. Well yields from the aquifer typically range from several hundred to over 1,000 gpm (USGS 1992).

The Faribault M500 D-line is located with Ordovician bedrock at depths as shallow as 9.5[1] feet. As stated in Resource Report 6 (sections 6.1.3 and 6.7), results of the geotechnical boring investigation has identified the bedrock as the St. Peter Sandstone, which may contain karst features associated with current and buried valleys. Based on a review of the borehole logs, the bedrock surface does not indicate the presence of buried valleys or other karst features.

[1] Note that geotechnical boreholes BH01, BH10, BH11, and BH15 were completed for route alternatives or roads that will now be open cut. Several of these contain shallow bedrock at 12 feet; however, that terrain will not be part of the Project as part of Northern's efforts to minimize impacts on landowners and the environment.

NL27 Project

There are two major aquifer systems and three major aquifers that underlie components of the NL27 Project. An aquifer system is defined as an aquifer that consists of two or more hydraulically connected aquifers that function similarly to changes in hydrologic conditions (USGS 1992). The major aquifer systems and bedrock aquifers within the NL27 Project are as follows: the Upper Carbonate aquifer, which underlies the Lake Mills M500 E-line and the Albert Lea M500 E-line; the Cambrian-Ordovician aquifer system, which underlies the Willmar 3rd Branch Line Upstream and the Minnesota Interconnect 2nd branch line; the Crystalline-rock aquifer, which underlies the Paynesville 2nd branch line and the Alexandria 2nd branch line; and the Cretaceous aquifer, which underlies the Welcome 2nd line, the Worthington 2nd branch line, and the Springfield 2nd branch line. Of the four aquifers underlying the NL27 Project, three are classified as bedrock aquifers that have expansive confining units and encompass large geographic areas which extend beyond the Minnesota state border. The additional principal aquifer system underlying several NL27 Project components; including the Lake Mills M500 E-line, the Albert Lea M500 E-line, the Paynesville 2nd branch line, the Springfield 2nd branch line, the Minnesota Interconnect 2nd branch line, and the Alexandria 2nd branch line; is a surficial aquifer system which overlies the bedrock and contains a limited extent of surficial and buried glacial sand and gravel deposits (MDNR 2021).

The bedrock aquifers underlying the NL27 Project are comprised of strata that range in age from the Cambrian to Ordovician Periods, with the aquifers identified by the geologic period in which the rocks were formed (Cambrian-Ordovician Aquifers) (USGS 1992).

Water quality and yield vary within the bedrock aquifers. In general, greater mineralization of the water occurs as a function of time within the formation. Therefore, the mineral content of the groundwater tends to be greater in deeper aquifers.

The Cambrian-Ordovician principal aquifer system is the most extensive, productive, and highly utilized bedrock aquifer within the NL27 Project. Well depths within the Cambrian-Ordovician aquifer system typically range between 15 to 1,000 feet. Well yields from the aquifer typically range from several hundred to over 1,000 gpm (USGS 1992).

2.1.2 Sole Source Aquifers

The EPA defines sole source aquifers as aquifers that supply at least 50% of the drinking water consumed in the area overlying the aquifer, where contamination of the aquifer could create a significant hazard to public health, and where there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer (EPA 2020a). Neither project overlie any EPA-designated sole-source aquifers (EPA 2020b).

2.1.3 Springs

In Minnesota, the MSI is the most complete record of springs and spring locations and is updated and maintained by the MDNR. In Iowa, springs are regulated by the IDNR. MDNR-mapped springs are depicted on Figures 1-3a and 1-3b for the V2F and NL27 Projects, respectively.

V2F Project

The MSI did not identify springs within 150 feet of the V2F Project (MDNR 2025a) in Minnesota. Additionally, no records of springs are known to occur within 150 feet of the V2F Project in Iowa; and no springs were identified during field surveys within 150 feet of the V2F Project in Minnesota or Iowa. The closest spring is located approximately 670 feet west of MP 103.89 of the Faribault M500 D-line within delineated wetland FAR-W80; MDNR assigned it identifier of MN19:A00025 - unverified. Although no springs were identified within 150 feet of the V2F Project during field surveys, Northern will continue to communicate with landowners to identify any springs and additional wells near the vicinity of the V2F Project and will file additional information with FERC, MDNR and IDNR if any un-mapped springs are discovered during construction.

NL27 Project

The MSI did not identify springs within 150 feet of the NL27 Project (MDNR 2025a). The closest spring is located approximately 2,770 feet southeast of Paynesville 2nd branch line, staging area (PAY-SA-002). Northern recognizes the MSI does not provide comprehensive lists of springs. Wetland field staff did not observe any additional springs/seeps during field surveys and landowners have not provided any additional information regarding springs/seeps. Northern will continue to communicate with landowners to identify any springs near the vicinity of the NL27 Project and will file additional information with FERC and MDNR if any un-mapped springs are discovered during construction.

2.1.4 Public and Private Water Supply Wells

Public water supply wells are regulated by each state and their local health departments. Public water supply wells are registered, documented and monitored. In Minnesota, the CWI is the most complete record of well construction and location information. The CWI is updated and maintained by the MGS, in cooperation with the MDH. In Iowa, water supply wells are permitted through and regulated by the IDNR. Additionally, under the University of Iowa's IIHR—Hydroscience & Engineering Center, the IGS maintains records of private and public water wells in the state of Iowa, along with the IWIS, the IDNR Water Use Well database, respectively (UI IIHR—Hydroscience & Engineering Center 2021a).

Any potential unmapped wells discovered during easement and workspace negotiations with landowners for both Projects will be added to the alignment sheets provided to the contractors prior to construction. Northern does not anticipate blasting will be required; therefore, blasting will not impact water supply wells. For more information on the potential for blasting please see Section 6.3, Resource Report 6.

Based on a review of CWI, IDNR and IGS, there are no protected watersheds or locally zoned aquifer protection areas within either of the proposed Projects workspace.

V2F Project

Review of the IGS, IWIS and the IDNR Water Use Well database identified two commercially used wells located within 400 feet of the V2F Project in Iowa. No private wells were located within 150 feet of the V2F Project in Iowa (IDNR 2025a, 2025b; State of Iowa 2020a).

Two private wells and seven wells designated as "other" were located within 150 feet of the V2F Project in Minnesota. No public wells were located within 400 feet of the V2F Project in Minnesota (MDH 2025).

As described in Section 6.4.1, the majority of the V2F Project components are underlain by a thick layer of glacial drift, which significantly reduces the likelihood of the surface expression of karst bedrock features. With the exception of the 2.5 miles at the north end of the Faribault M500 D-line on the V2F Project, the USGS has identified no areas with carbonate bedrock that is underlain by less than 50 feet of unconsolidated material. Based on the site-specific geotechnical boring results, bedrock is not expected to be encountered during the construction of the Lake Mills M500 E-line or Albert Lea M500 E-line. Bedrock may be encountered during the construction of the Faribault M500 D-line. The geotechnical drilling encountered bedrock identified as sandstone as shallow as 9.5 feet from ground surface on the Faribault M500 D-line. The sandstone bedrock is consistent with the St. Peter Sandstone, which is known to contain karst features. St. Peter Sandstone may contain karst features associated with current and buried valleys; however, review of the depth to bedrock did not indicate the presence of buried valleys or other karst features. Additionally, per the geotechnical testing results provided within Resource Report 6 and summarized in Table 6.7-1, only two borehole locations along the Faribault M500 D-line contained bedrock. Bedrock was not encountered in any of the boreholes completed along the other V2F Project components.

Based on the results of the geotechnical borehole investigation, Northern will not be impacting karst bedrock formations during the V2F Project construction. Therefore, Northern reviewed the CWI, IGS, IDNR Water Use Well Database, and IWIS to obtain information on known private and public wells located within 150 feet and 400 feet, respectively, of the construction workspaces. This information is provided below in Table 2.1-1 (MDH 2025; IDNR 2025).

Table 2.1-1 Water Supply Wells Surrounding the V2F Project[1]

MP	Supply Type	Well Use	Feet from Project Boundary and Direction	Feet from Center Line and Direction	Adjacent Pipeline Construction Method
Lake Mills M500 E-line					
No private wells present within 150 feet and no public wells present within 400 feet.					
Albert Lea M500 E-line					
3.60	Other	Observation	266, East	365, East	ETWS/HDD
Faribault M500 D-line					
101.40	Other (2 records)	Test	26, South	235, West	TAR/Open Cut
102.20	Private	Domestic	99, West	174, West	ETWS
Temporary Compression Site - Lake Mills Compressor Station					
No private wells present within 150 feet and no public wells present within 400 feet.					
Temporary Compression Site - Owatonna Compressor Station					
N/A	Private – Owned by Northern	Domestic	0, N/A	N/A	ETWS
Temporary Compression Site – Northfield #1					
No private wells present within 150 feet and no public wells present within 400 feet.					
Temporary Compression Site – A-Line Abandonment at La Crosse BL MNB73201 Launcher/ABA 05					
No private wells present within 150 feet and no public wells present within 400 feet.					

MP	Supply Type	Well Use	Feet from Project Boundary and Direction	Feet from Center Line and Direction	Adjacent Pipeline Construction Method
Disconnect Site - Ventura Compressor Station					
N/A	Private -Owned by Northern	Commercial	167, N/A	N/A	ETWS
N/A	Private - Owned by Northern	Commercial	280, N/A	N/A	ETWS
Disconnect Site - Farmington Compressor Station					
N/A	Other	Monitoring	147, South	N/A	ETWS
N/A	Other	Monitoring/Sealed	71, North	N/A	ETWS
N/A	Other	Monitoring/Sealed	356, Northwest	N/A	ETWS
N/A	Other	Monitoring/Sealed	309, North	N/A	ETWS

Source: CWI – MGS, IGS, IWIS, and owner contact
[1] No wells on the Project were field verified by civil survey

A total of six monitoring, observation or test wells are located within 400 feet of the V2F Project workspaces. Three of the four monitoring wells within 400 feet of the Farmington compressor station are inactive and sealed. As such, Northern has determined the V2F Project will have no impact on the three sealed wells located within 400 feet of the Farmington compressor station. Furthermore, the two wells identified in Iowa, within the Ventura compressor station, are listed as commercial use only and are owned by Northern. All non-private wells identified within 400 feet of the Project are test, observation, monitoring or commercial use wells and are not used for public consumption.

Two private wells are located within 150 feet of the V2F Project workspaces; one private well is located within 150 feet of the Faribault M500 D-line, and one private well is located within the Owatonna compressor station and is registered to Northern. All private wells located within 150 feet of the V2F Project, are in proximity to ETWS and TWS, respectively. Mitigative actions and spill containment are discussed in Section 2.1.7 below.

NL27 Project

A total of 19 private wells and one well designated as “other” were located within 150 feet of the NL27 Project in Minnesota (MDH 2025). No public wells were located within 400 feet of the NL27 Project.

The USGS has identified no areas with carbonate bedrock that is underlain by less than 50 feet of unconsolidated material for the NL27 Project components. Based on the site-specific geotechnical boring results, bedrock is not expected to be encountered during the construction of the NL27 Project. Therefore, Northern reviewed the CWI to obtain information on known private and public wells located within 150 feet and 400 feet, respectively, of the construction workspaces. This information is provided below in Table 2.1-2 (MDH 2025).

Table 2.1-2 Water Supply Wells Surrounding the NL27 Project[1]

MP	Supply Type	Well Use	Feet from Project Boundary and Direction	Feet from Center Line and Direction	Adjacent Pipeline Construction Method
Lake Mills M500 E-line					
No private wells present within 150 feet and no public wells present within 400 feet.					
Albert Lea M500 E-line					
No private wells present within 150 feet and no public wells present within 400 feet.					
Willmar 3rd Branch Line Upstream					
3.42	Private	Domestic	29, North	373, Northeast	Staging area
3.43	Private	Domestic/Sealed	0, South	332, Southwest	TAR
3.43	Private	Domestic	0, South	325, Southwest	TAR
3.43	Private	Domestic	50, Southwest	430, Southwest	TAR
3.92	Private	Domestic	103, Southwest	138, Southwest	TWS/Open Cut
4.38	Private	Domestic	98, Northeast	101, Northeast	HDD
4.69	Private	Domestic	0, South	107, Southwest	ETWS
4.70	Private	Domestic	54, Southeast	145, South	TAR
4.74	Private	Domestic	128, Northeast	284, North	ETWS
4.81	Private	Domestic	130, Southwest	180, South	TAR
Willmar 3rd Branch Line Downstream					
9.08	Private	Domestic	64, East	375, Northeast	ETWS
10.24	Private	Domestic	78, Southeast	280, SSW	TAR
Welcome 2nd Line					
No private wells present within 150 feet and no public wells present within 400 feet.					
Paynesville 2nd Branch Line					
0.14	Private	Domestic	25, Northwest	138, Northwest	ETWS
Worthington 2nd Branch Line					
19.55	Private	Domestic	11, Northwest	654, North	TAR
21.56	Private	Domestic	120, North	145, North	TWS/Open Cut
Springfield 2nd Branch Line					
17.20	Private	Domestic	49, North	1,911 Southwest	TAR
Minnesota Interconnect 2nd Branch Line					
No private wells present within 150 feet and no public wells present within 400 feet.					
Alexandria 2nd Branch Line					
16.85	Private	Domestic	6, Northeast	31, Northeast	TWS/Open Cut
17.90	Private	Domestic	67, Southwest	70, Southwest	HDD
17.90	Private	Domestic	130, Southwest	133, Southwest	HDD
Hugo Compressor Station Uprate					
No private wells present within 150 feet and no public wells present within 400 feet.					

Source: CWI – MGS, IGS, IWIS, and owner contact
[1] No wells on the Project were field verified by civil survey

One monitoring well was identified within 400 feet of the Springfield 2nd branch line. The monitoring well is owned by the City of La Salle for environmental use and is not used for public consumption. All of the private wells are listed for domestic use; one of the 19 private wells identified is listed as inactive and sealed. All private wells located within 150 feet of the NL27 Project are in proximity to ETWS, TWS, SAs or TARs, with the exception of one private well located on Willmar 3rd branch line upstream and two private wells located on the Alexandria 2nd branch line that are in proximity to planned HDD drill paths. Mitigative actions and spill containment are discussed in Section 2.1.7 below.

2.1.5 Wellhead Protection Areas

Under the SDWA (42 U.S.C. §300f *et seq.* [1974]), each state is required to develop and implement a Wellhead Protection Program to identify the land and recharge areas contributing to public supply wells and prevent the contamination of drinking water supplies. The SDWA was updated in 1986 with an amendment requiring the development of a broader based source water assessment program, which includes the assessment of potential contamination to both groundwater and surface water through a watershed approach. A WHPA encompasses the area around a drinking water well where contaminants could enter and pollute the well. The SWDA was amended in 1996 to expand upon the WHPA program by requiring all states to identify source water areas and assess the potential risks to public water supply sources (both surface and groundwater) under the SWAP (42 U.S.C. §300f *et seq.* [1974]).

The IDNR is responsible for administering Iowa's SWAP and for regulating water allocation and water use through the issuance of water use permits. The goal of Iowa's SWAP is "to manage the areas through which water travels and the activities that occur on the land, in order to protect the quality of the resource. These protection efforts save the community money through improved water quality requiring less treatment, longer life cycle for a well, and less likelihood of having to seek an alternate source or replace the well due to contamination" (IDNR 2021a). In Iowa, source water protection is voluntary but the IDNR strongly encourages communities to develop a source water protection program to protect the water supply and proactively address existing concerns related to drinking water quality and quantity (IDNR 2021a). Upon review of the SWAP, no WHPAs or source water protection areas are crossed by the V2F Project (IDNR 2021b), and no Project work is proposed in Iowa for the NL27 Project

In Minnesota, the SWAP includes the assessment of potential contamination to both groundwater and surface water through a watershed approach by identifying WHPAs, SWAs and TNWMs. A WHPA encompasses the area around a drinking water well where contaminants could enter and pollute the well. WHPAs for public and community water-supply wells are defined by a zone of capture for a 10-year groundwater time-of-travel to the well. The WHPAs are available through a database maintained by the MDH (MDH 2025). An SWA is similar to a WHPA; however, an SWA is based on a three-year groundwater time-of-travel time to a public well. A TNWM is a 200-foot buffer around a public water supply. The protection of source water for public and non-public community water supplies in Minnesota is administered by the MDH through the Wellhead Protection Program. Additionally, Minnesota has established DWSMAs that surround both surface and subsurface public water supply wells that contain WHPAs (MDA 2020). DWSMAs are typically managed by cities, with managing entities outlined in associated Wellhead Protection Plans.

<u>V2F Project</u>

The Faribault M500 D-line lies within the Hastings DWSMA between MP 103.90 and the pipeline terminus; and within the Hastings WPA between MP 104.60 and the terminus in Dakota County, Minnesota. Planned temporary workspace for the disconnect site at the existing Farmington compressor station is also located within the Farmington DWSMA in Dakota County, Minnesota. No Minnesota V2F Project components are located within 400 feet of any mapped SWAs or

TNWMs. No SWAs or TNWMs were identified, and no other V2F Project components cross DWSMAs or WHPAs.

Northern contacted the MDH and Dakota County on December 19, 2025, requesting guidance on hazardous material restrictions within the Hastings public water supply areas. On December 29, 2025, Dakota County deferred to the state for recommendations regarding the Hastings DWSMA and WPA. The MDH responded on January 21, 2026, outlining emergency response, pollution prevention, and stormwater management requirements for work within these areas. The MDH confirmed that Northern's approach, following the Plan, Northern's Procedures and SPCC Plan, and MPCA construction stormwater permit requirements meets MDH expectations for preventing impacts to the public water supply. At the Farmington compressor station, planned work is limited to A-line disconnection and dewatering activities within the existing facility. Northern will obtain any required water appropriation permits prior to dewatering and will comply with MDNR MPARS and MDH requirements. Northern does not anticipate impacts to public drinking water, and no additional measures are needed beyond those already included in the Plan and Northern's Procedures. Agency correspondence is provided in Appendix 2D.

NL27 Project

The Springfield 2nd branch line crosses a portion of the La Salle WPA between MP 17.55 and MP 17.85 and the La Salle DWSMA between MP 17.53 and MP 17.95. The La Salle WPA and associated DWSMA are located just southwest of the City of La Salle in Watonwan County and is associated with the protection of the City of La Salle's primary public water supply well "La Salle #1" (ID: 145284). The closest planned NL27 Project HDD activities are the crossing of the Watonwan River between MP 17.39 and MP 17.55 and at the crossing of 290th Street/County Road 27 and 740th Avenue. Both planned HDD locations are approximately 1,300 feet away from the city's water supply well.

The City of La Salle has developed a wellhead protection plan per MN Rules 4720.5100-4720.5590, which was approved by the MDH March 1, 2006, and amended December 27, 2018. The entire La Salle DWSMA is listed as a high vulnerability surface water supply area. Additionally, the portion of the DWSMA that crosses the Springfield 2nd branch line between MP 17.53 and MP 17.76 is listed as a high vulnerability groundwater supply area. Per the SWA completed on the La Salle public water supply (ID: 1830009) November 7, 2023, no sources of contamination within 200 feet of the system's water sources were identified.

A portion of the Willmar 3rd branch line downstream between MP 10.29 and the terminus and the Minnesota Interconnect 2nd branch line are located within the Minneapolis Priority B DWSMA for surface waters. Additionally, the Paynesville 2nd branch line and Alexandria 2nd branch line are within the St. Cloud Priority B DWSMA for surface waters. These areas are further discussed in Section 2.2.10, Potable Surface Water Supply. No TNWMs were identified; and no other NL27 Project components cross DWSMAs or WHPAs.

Based on correspondence provided by MDH for the V2F Project, the emergency response, pollution prevention, and stormwater management requirements used for work within DWSMAs can generally be applied across other DWSMAs to protect public drinking water supplies. Accordingly, Northern will follow its Procedures, SPCC Plan, and the FERC Plan, and will adhere to the City of La Salle's Wellhead Protection Plan, to the extent practicable, to avoid and minimize potential

impacts on public water sources. Northern does not anticipate any effects to public drinking water, and no additional measures beyond those in the Plan and Northern's Procedures and SPCC Plan are expected to be needed.

2.1.6 Potential Sources of Groundwater Contamination

Northern completed a search of publicly available databases to identify various facilities with potential and/or actual sources of contamination within 500 feet of the V2F Project and NL27 Projects construction workspaces that could impact nearby groundwater. The EPA's Facility Registry Service map service (USEPA 2020c) was queried and includes sites that are listed on the Comprehensive Environmental Response, Compensation, and Liability Information System (also known as Superfund sites); RCRA Treatment, Storage, and Disposal; RCRA hazardous waste generators; the Assessment, Cleanup, and Redevelopment Exchange System; and the Leaking Underground Storage Tank—American Recovery and Reinvestment Act database. In addition, the search was expanded by reviewing databases maintained by the MPCA and the MDA in Minnesota. The MPCA provides a comprehensive database of potentially contaminated sites, including sites listed on the PLP (the state-equivalent of a superfund site), delisted PLP, voluntary investigation and cleanup, permitted solid waste facilities, unpermitted dumps, closed landfills, and sites under the state assessment program. The MDA maintains databases of spills and sites contaminated with agricultural chemicals such as pesticides and herbicides. Northern also reviewed the IDNR IWIS-Map, which provides a comprehensive list of contaminated sites, and leaking underground storage tanks available for public view. A search of the databases discussed above indicated no sources of contamination within 500 feet of workspaces associated with either Project.

<u>V2F Project</u>

The following types of sites/facilities listed in the database were eliminated from further consideration: sites permitted for construction or industrial stormwater discharge, feedlots, wastewater dischargers, and small to minimal hazardous waste generators regulated under RCRA. Additionally, tank sites (active and inactive) with no reported releases were eliminated from further review because the presence of tanks alone is not indicative of a release.

A search of the FRS, Minnesota and Iowa state databases, identified no known sites with potential for contamination within 0.25 mile of the V2F Project components. The MPCA PRP map also did not identify any PRP leak sites within 500 feet of the V2F Project. The closest PRP leak identified for the V2F Project is located approximately 0.19 mile west of the Albert Lea M500 E-line at MP 38.9. The leak was identified as a state regulated release of diesel. However, this site was closed July 31, 2003, and the direction of groundwater flow in the area is anticipated to be southeast. As the site is closed and groundwater from the site will not flow into the V2F Project vicinity; there is minimal potential for groundwater contamination. Additionally, the MPCA PRP map identified three PRP leak sites at the Farmington compressor station. These sites were associated with the release of motor oil or leaded and unleaded gasoline. All three sites were cleaned up and closed between 1994 and 2015. No other sites were identified on the MPCA PRP map or IDNR IWIS-Map within 0.25 mile of the V2F Project.

NL27 Project

The following types of sites/facilities listed in the database were eliminated from further consideration: sites permitted for construction or industrial stormwater discharge, feedlots, wastewater dischargers, and small to minimal hazardous waste generators regulated under RCRA. Additionally, tank sites (active and inactive) with no reported releases were eliminated from further review because the presence of tanks alone is not indicative of a release.

A search of the FRS Minnesota database identified no known sites with potential for contamination within 0.25 mile of the NL27 Project. The MPCA PRP map also did not identify any PRP leak sites within 500 feet of the NL27 Project. The closest PRP leak identified in proximity to the NL27 Project is located approximately 0.25 mile south of MP 0.00 (approximately 670 feet from PAY-TAR-001) of the Paynesville 2nd branch line. The leak was identified as a non-regulated release of fuel oil; and the site was closed May 27, 2025. The direction of groundwater flow in the area is anticipated to be southeast. As the site is closed and groundwater from the site will not flow into the NL27 Project area; there is minimal potential for groundwater contamination. No other sites were identified on the MPCA PRP map within 0.25 mile of the NL27 Project.

If any contaminated soil or groundwater is encountered during construction of the two Projects, contaminated materials will be sampled. On receipt of the laboratory analytical results, Northern will develop a site-specific contaminated soil and/or groundwater plan detailing how Northern proposes to handle and dispose of contaminated soil and/or water in accordance with applicable Minnesota regulations

2.1.7 Groundwater Impacts and Mitigation

Activities associated with both Projects have the potential to affect groundwater in various ways. Surface drainage and groundwater recharge patterns can be temporarily altered by clearing, grading, trenching, excavation at disconnect sites, and soil stockpiling activities, potentially causing minor fluctuations in groundwater levels and/or increased turbidity, particularly in shallow surficial aquifers. Additionally, soil compaction caused by heavy equipment can reduce infiltration and increase surface runoff and ponding. These impacts will be avoided or minimized through implementation of the construction practices as outlined in FERC's Plan and Northern's Procedures (FERC 2013a, 2013b).

V2F Disconnect Sites

Excavations required to expose the pipeline for disconnect activities will typically be confined to a depth of no more than ten feet. This is above the typical minimum depth of the bedrock aquifers underlying the V2F Project and is generally expected to be above the water table in surficial aquifers. Shallow surficial aquifers are typically comprised of relatively permeable alluvial sands and gravels that respond rapidly to changes in water level elevations or groundwater flow. If excavation occurs below the water table, the resulting changes in water levels and/or turbidity in these aquifers are expected to be localized and temporary because water levels quickly re-establish equilibrium and turbidity levels rapidly subside. Following disconnect activities, Northern will restore the ground surface to original contours as closely as practicable and restore vegetation in accordance with the Plan and Northern's Procedures (FERC 2013a, 2013b).

Pipeline Installation - Both Projects

Pipeline construction activities may affect groundwater resources through minor temporary impacts on shallow aquifers in proximity to the proposed facilities. These impacts may include increased turbidity, groundwater table fluctuations, short-term disruption of recharge, localized flow along the pipeline trench, or contamination from a spill or leak of hazardous substances. Most potential impacts will be avoided or minimized through the use of the standard construction methods and mitigation measures described in the Plan, Northern's Procedures and SPCC plan. Excavations required to install pipelines are typically to a depth of ten feet or less.

Shallow surficial aquifers are typically composed of relatively permeable alluvial sands and gravels that respond rapidly to changes in water level elevations or groundwater flow. If excavation occurs below the water table, the resulting changes in water levels and/or turbidity in these aquifers are expected to be localized and temporary because water levels quickly re-establish equilibrium and turbidity levels rapidly subside. Following construction activities, Northern will restore the ground surface to original contours as closely as practicable and restore vegetation and agricultural lands according to the Plan and Northern's Procedures, except for the new pipeline appurtenant facilities, which will be converted to industrial/commercial developed land.

HDDs and Karst

HDDs are planned for all eight waterbody crossings on the V2F Project, and 13 of the 19 waterbody crossings on the NL27 Project. The remaining six waterbodies on the NL27 Project will be crossed via open cut. Wetlands that are crossed by the Projects will be either HDD or open-cut. HDDs will exceed normal trench depths and likely penetrate the shallow water table. The drilling fluid is composed of water and non-toxic bentonite; therefore, HDD crossings are not expected to affect groundwater quality. Long-term water quality will not be affected by pipeline construction or subsequent operations as the pipe is free of chemicals when installed. By implementing the protective measures set forth in the SPCC plan and HDD Plan, long-term contamination due to construction activities is not anticipated. Table 2.2-4, Table 2.2-5, Table 2.3-1 and Table 2.3-2 detail each waterbody and wetland crossing method, respectively, for each Project.

During HDD activities, the possibility exists for drilling mud to reach the surface or encounter a void or fissure. In the event of the inadvertent release of drilling mud, Northern will implement measures in its HDD Plan. Specifically, Northern's contractor will attempt to seal the void using materials such as wood fibers, cotton seed husks, ground nut shells or other natural, environmentally inert materials. Special polymers that swell to several times their size when wet may be used. Grout or concrete plugs also may be used to fill subsurface voids or fissures. Concrete grout will typically harden quickly and have limited impact on groundwater flow or quality.

During construction, proper management of surface water will limit impacts of sedimentation on shallow groundwater resources and will lessen the potential for sinkhole dropouts during construction. Mitigation of surface runoff will be performed by silt fence, silt traps, sediment basins, and lined ditches where appropriate. Northern's EI staff will assist with on-site determinations regarding dewatering locations and directing the discharge flow directions.

Based on the site-specific geotechnical boring results provided in Resource Report 6, bedrock is not expected to be encountered during the construction of the V2F Project Lake Mills M500 E-line or

Albert Lea M500 E-line components. Bedrock may be encountered during the construction of the V2F Project Faribault M500 D-line component. The geotechnical drilling encountered bedrock identified as sandstone as shallow as 9.5[2] feet from ground surface on the V2F Project Faribault M500 D-line component in an area identified with carbonate bedrock within 50 feet of the surface. The sandstone bedrock is consistent with the St. Peter Sandstone, which may contain karst features. Karst features within the St. Peter Sandstone are strongly associated with current and buried valleys. Due to the shallow nature of the bedrock units, the bedrock located on the Faribault M500 D-line (V2F Project) is not associated with a bedrock valley or other karst features (MGS 2023). Based on Northern's experience operating and monitoring existing aboveground and pipeline facilities in these areas, Northern does not expect karst terrain to present a danger to the V2F Project facilities. Therefore, Northern has determined no mitigation measures for surface karst features will be required.

The NL27 Project does not cross any known karst geology areas and no bedrock is expected to be encountered on the NL27 Project components. Northern will be alert for surface expressions of potential subsurface features, and engineering controls, if needed, will be employed as appropriate.

Public and Private Wells

Activities such as refueling, maintaining equipment and construction of secondary containment will be conducted in accordance with the Plan and Northern's Procedures and SPCC plan. Northern will implement BMPs and procedures to avoid construction-related impacts on private and other wells within or near the workspaces of the V2F and NL27 Projects. Northern will not implement mitigation measures on wells owned by them. No active wells used for public consumption were identified within 400 feet of either Projects' workspaces. Therefore, Northern does not anticipate impacts on any wells used for public consumption. Northern will implement the following measures for the two private wells located within 150 feet of the V2F Project; and the 19 private wells located within 150 feet of the NL27 Project.

As discussed in Resource Report 1, Section 1.5.6.6, and based on well log information and soils data which indicate that bedrock does not occur within the excavation depths of either Project area, Northern does not anticipate that blasting will be necessary during any phase of the V2F or NL27 Projects construction activities. Additionally, sedimentary bedrock units would be weathered within excavation depths and, therefore, could be removed using conventional excavation methods. For more information on the potential for blasting please see Section 6.3, Resource Report 6.

Impacts on water quality during construction may be caused by an unanticipated release of petroleum fuel from equipment within the proposed workspaces for both Projects. Water quality testing of the adjacent wells will occur with landowner approval prior to and following construction activities. Wells will be tested through sample ports or through the nearest available yard hydrant or outside hose bib. Northern will test for the following parameters: well yield, total dissolved solids and volatile organic compounds. In the event that construction activities adversely affect a groundwater

[2] Note that geotechnical boreholes BH01, BH10A, BH11A, and BH15 were completed for route alternatives or roads that will now be open cut. Several of these contain shallow bedrock at 9.5 feet; however, that terrain will not be part of the Project as part of Northern's efforts to minimize impacts on landowners and the environment.

supply, a temporary source of potable water will be provided and the damaged well will be restored to its former capacity and quality, to the extent practicable.

Signs will be posted within both the V2F Project and NL27 Project workspaces to prohibit overnight parking of equipment. Refueling or storage of hazardous liquids will not be allowed within a 200-foot radius of private wells. Due to the nature of the construction operation, certain equipment (e.g., HDD and boring rigs) cannot be moved for refueling and may therefore be located within a well's setback radius. In cases where refueling needs to occur within the setback radius, Northern will have an EI present for the operation and will have spill response equipment on-site and readily available. Secondary containment will be required for stationary equipment within the setback radius per Minnesota and Iowa regulations. Specific refueling, spill prevention and containment procedures are provided in the SPCC plan.

Northern's HDD Plan, provided in Resource Report 1, Appendix 1A, contains actions and mitigation measures that Northern will implement if an inadvertent release of drilling fluid occurs within or adjacent to a water supply well.

Northern will restore the ground surface to original contours as closely as practicable and will not appropriate any nonessential utilization of groundwater to dewater the pipeline trench for disconnect activities. While the two Projects will affect groundwater, vegetation, and wildlife within the cumulative impact areas, these effects—when considered alongside agricultural practices and other past, present, and reasonably foreseeable projects—are not expected to result in a significant cumulative impact (see Resource Report 1, Table 1.11-2).

Spills

The introduction of contaminants into groundwater due to the accidental release of project-related chemicals, fuels, or hydraulic fluid during construction could have an adverse effect on groundwater quality, most notably near shallow water wells. Spill-related impacts from disconnect and pipeline installation activities are primarily associated with fuel storage, equipment refueling, and equipment maintenance. To avoid spill-related impacts, Northern has developed a SPCC Plan (see Appendix 2A) that outlines measures that will be implemented to prevent accidental releases of fuels and other hazardous substances. The SPCC Plan describes response, containment, and cleanup procedures in the event that an inadvertent release of fuels and hazardous substances should occur.

In the unlikely event that contaminated soils or groundwater is encountered on either Project, containment measures will be implemented to isolate and contain the suspected soil or source of groundwater contamination. Northern will collect and test samples of the substrate or groundwater to identify the contaminants. Once the type, magnitude, and extent of the contamination are determined, the material will be disposed of at a licensed facility and/or backfilled in the trench, dependent on agency consultation. By implementing the protective measures set forth in the SPCC Plan, long-term contamination due to disconnect activities is not anticipated.

2.2 Surface Water Resources

Surface water resources within both Projects were identified through an examination of publicly available desktop data, previously collected data from 2023 (V2F Project only), and aquatic resource field surveys completed within the both Project ESBs in 2025. Any preliminary data collected or

reviewed was confirmed during the 2025 field surveys. This section describes the surface water resources that will be affected by the V2F and NL27 Projects, respectively, and mitigation measures that will be implemented to avoid or minimize impacts on each Project. Northern completed biological field surveys for 100% of the parcels within the V2F Project ESB. Northern completed biological field surveys for 98% of the parcels within the NL27 Project ESB. The remaining parcels to be surveyed within the NL27 Project in 2026 are provided in Table 2.2-1.

Table 2.2-1 NL27 Project Parcel Survey Status Summary

NL27 Project Facility	MP		Parcel ID	Survey Status
	To	From		
Lake Mills M500 E-line	All parcels within the Lake Mills M500-E-line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Albert Lea M500 E-line	All parcels within the Albert Lea M500 E-line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Willmar 3rd branch line upstream	3.40		SC-003	Relocated WIL-TAR-002 to be surveyed in 2026
Willmar 3rd branch line downstream	9.05	9.07	CA-028	To be surveyed in 2026
	9.07	9.37	CA-026	To be surveyed in 2026
Welcome 2nd line	All parcels within the Welcome 2nd line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Paynesville 2nd Branch Line	All parcels within the Paynesville 2nd branch line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Worthington 2nd Branch Line	All parcels within the Worthington 2nd branch line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Springfield 2nd branch line	15.40		WA-059	Relocated SPR-TAR-001 to be surveyed in 2026
Minnesota Interconnect 2nd branch line	All parcels within the Minnesota Interconnect 2nd branch line ESB were surveyed prior to filing; no additional surveys are required in the 2026 calendar year.			
Alexandria 2nd branch line	17.07		MO-014	Relocated ALX-TAR-002 to be surveyed in 2026
Hugo compressor station[1]	No surveys required.			

Note: Parcels remaining to be surveyed are shown on Figure 2-4 and the Alignment Sheets.
[1] Planned work at the Hugo compressor station is limited to uprate of an existing turbine and associated workspace is fully within the existing facility footprint.

2.2.1 Watersheds

In Minnesota, public waters are water basins and watercourses that meet the criteria set forth in Minnesota Statutes, Section 103G.005. In Iowa public waters are all waters (surface and groundwater) that are designated as public water supply systems and are under regulation of Iowa's Public Drinking Water Program that is administered by the IDNR under delegation of the authority from the EPA (IDNR 2025d). Tables 2.2-1 and 2.2-2 lists watersheds crossed by each Project, respectively (State of Iowa, 2021, USGS 2006; MDNR 2025c; MPCA 2025a).

V2F Project

Table 2.2-2 Watersheds Crossed by the V2F Project

V2F ProjectFacility	MP		Watershed (Hydrology Unit Code 12)	River Basin (Hydrology Unit Code 4)
	From	To		
Lake Mills M500 E-line	34.20	34.21	County Ditch No 55 (070802020106)	Cedar-Des Moines Rivers Basin
	34.20	36.01	Goose Creek (070802020106)	Cedar-Des Moines Rivers Basin
	36.01	39.61	Albert Lea Lake-Shell Rock River (070802020104)	Cedar-Des Moines Rivers Basin
	39.61	42.46	Halls Lake (070802020102)	Cedar-Des Moines Rivers Basin
Albert Lea M500 E-line	1.55	3.55	Headwaters Le Sueur River (070200110101)	Minnesota River
	3.57	3.68		
	3.55	3.57	Headwaters Le Sueur River (070200110101)	Minnesota River
Faribault M500 D-line	97.37	98.92	Chub Lake-Chub Creek (070400020402)	Lower Mississippi River Basin
	98.92	98.98	Dutch Creek (070400020401)	Lower Mississippi River Basin
	98.98	102.20	Chub Lake-Chub Creek (070400020402)	Lower Mississippi River Basin
	102.20	104.63	Headwaters Vermillion River (070400010201)	Lower Mississippi River Basin
	104.63	104.89	South Branch Vermillion River (070400010205)	Lower Mississippi River Basin
Disconnect Site- Ventura Compressor Station	NA	NA	Headwaters East Branch Iowa River (070802070203)	Cedar-Des Moines Rivers Basin
Disconnect Site – Farmington Compressor Station	NA	NA	Farquar Lake (070400010203)	Lower Mississippi River Basin
			City of Farmington-Vermillion River (070400010204)	Lower Mississippi River Basin
Temporary Compression Site- Lake Mills Compression Station	NA	NA	Elk Creek (070802020202)	Cedar-Des Moines Rivers Basin
Temporary Compression Site- Owatonna Compression Station	NA	NA	County Ditch Number Twenty seven-Le Sueur River (070200110103)	Minnesota River
Temporary Compression Site- Northfield #1	NA	NA	Heath Creek (70400020603)	Lower Mississippi River Basin
Temporary Compression Site for A-Line Abandonment - La Crosse BL MNB73201 launcher /ABA05	NA	NA	Headwaters Le Sueur River (070200110101)	Minnesota River

Source: State of Iowa 2021; USGS 2006; MDNR 2025c; MPCA 2025a

Based on a review of the MDNR and IDNR watershed inventory databases (MDNR 2025b, IDNR 2025), the Lake Mills M500 E-line, Faribault M500 D-line, temporary compression site at Northfield #1 and the disconnect site at the Farmington compressor station lie within Minnesota watershed districts or organizations. No Iowa V2F Project components are within local watershed regulatory districts. Lake Mills M500 E-line is fully within the Shell Rock Watershed District; however, the Lake Mills M500 E-line will not cross any known district projects occurring or planned to occur within the Shell Rock Watershed District.

The temporary compression site at Northfield #1 and a portion of the Faribault M500 D-line between the kickoff and MP 102.05 are within the North Cannon River Watershed Management Organization. However, no watershed projects occurring or planned to occur will be crossed by the Faribault M500 D-line or is within planned workspace to conduct temporary compression at Northfield #1.

The disconnect site at the Farmington compressor station and a portion of the Faribault M500 D-line between MP 102.05 and the terminus intersects the Vermillion River Watershed Joint Powers Organization; and a portion of a watershed program project is within FAR-ETWS-040 adjacent to MP 102.36. The watershed program project (named David Schonning Grassed Waterway) is a 1,750-foot grass swale erosion control/water quality project that was reconstructed in 2013 in response to the July 2021 flood event. Northern will avoid the grass swale to the extent possible and utilize construction matting to cross it where necessary. Any impact on the swale would be temporary and will be restored to pre-construction conditions to the extent possible, upon completion of construction activities. No watershed program projects occur within the Farmington compressor station and work planned within the facility is limited to disconnecting Northern's A-line and dewatering activities. Therefore, the V2F Project is not anticipated to impact any watershed projects. Northern will follow their standards and FERC Plan and its Procedures to minimize impacts to local watersheds and meet water quality standards. Northern will obtain all necessary local watershed permits prior to initiation of construction activities. Therefore, the V2F Project is not anticipated to have an impact on local watersheds.

NL27 Project

Table 2.2-3 Watersheds Crossed by the NL27 Project

Facility	MP		Watershed (HUC-12)	River Basin (HUC-4)
	From	To		
Lake Mills M500 E-line	42.49	43.63	Halls Lake (070802020102)	Cedar-Des Moines Rivers Basin
	43.63	44.18	Bancroft Creek-Shell Rock River (070802020101)	Cedar-Des Moines Rivers Basin
	44.18	44.54	Halls Lake (070802020102)	Cedar-Des Moines Rivers Basin
	44.54	44.81	Bancroft Creek-Shell Rock River (070802020101)	Cedar-Des Moines Rivers Basin
Albert Lea M500 E-line	3.64	6.75	Headwaters Le Sueur River (070200110101)	Minnesota River
	6.75	7.06	County Ditch Number 27-Le Sueur River (070200110103)	Minnesota River

Facility	MP		Watershed (HUC-12)	River Basin (HUC-4)
	From	To		
Willmar 3rd Branch Line Upstream	3.35	5.13	Credit River (070200121107)	Minnesota River
Willmar 3rd Branch Line Downstream	6.38	11.16	Upper Carver Creek (070200121001)	Minnesota River
Welcome 2nd Line	10.47	11.71	Fourmile Creek-East Fork Des Moines River (071000030102)	Cedar-Des Moines Rivers Basin
Paynesville 2nd Branch Line	0.00	2.45	Kolling Creek (070102020601)	Upper Mississippi River Basin
Worthington 2nd Branch Line	19.34	21.51	Pletz Marsh (102300030303)	Missouri River Basin
Springfield 2nd Branch Line	13.82	13.91	Lower South Fork Watonwan River (070200100406)	Minnesota River
	13.91	14.04	City of La Salle-Watonwan River (070200100602)	Minnesota River
	14.04	14.10	Lower South Fork Watonwan River (070200100406)	Minnesota River
	14.10	15.81	Lower Saint James Creek (070200100304)	Minnesota River
	15.81	16.83	Lower Butterfield Creek (070200100302)	Minnesota River
	16.83	19.55	City of La Salle-Watonwan River (070200100602)	Minnesota River
	19.55	21.17	Lake Hanska (070200100601)	Minnesota River
	21.17	21.22	City of La Salle-Watonwan River (070200100602)	Minnesota River
Minnesota Interconnect 2nd Branch Line	17.64	19.23	Elizabeth Lake-Rum River (070102070504)	Upper Mississippi River Basin
Alexandria 2nd Branch Line	16.80	18.08	Pike Creek (070101040905)	Upper Mississippi River Basin
Hugo Compressor Station Uprate	N/A		Hardwood Creek (070102060302)	Upper Mississippi River Basin
			Big Marine Lake (070300050906)	Upper Mississippi River Basin

Source: USGS 2006; MDNR 2025c; MPCA 2025a

Based on a review of the MDNR watershed inventory databases (MDNR 2025b), the Lake Mills M500 E-line, Willmar 3rd branch line upstream, Willmar 3rd branch line downstream, Paynesville 2nd branch line, and Hugo compressor station lie within the Shell Rock Watershed District, Scott Watershed Management Organization, Carver County Water Management Organization, and the Sauk Watershed District, respectively. However, these NL27 Project components will not cross any known district or organization projects occurring or planned to occur. Northern will follow their standards and FERC Plan and its Procedures to minimize impacts to local watersheds and meet water quality standards. Northern will obtain all necessary local watershed permits prior to initiation of construction activities. Therefore, the NL27 Project is not anticipated to have an impact on local watersheds.

2.2.2 Floodplains

FEMA Risk Maps have been prepared with respect to both Projects for Hancock and Worth counties, Iowa, and Freeborn, Steele, Dakota, Scott, Carver, Martin, Stearns, Jackson, Watonwan, Isanti, Morrison, and Washington counties, Minnesota. SFHA is defined as the area that will be inundated by the flood event having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood also is referred to as the base flood or 100-year flood (FEMA 2020).

V2F Project

A review of the FEMA Risk Maps indicates that the one disconnect site (Ventura compressor station) and three temporary compression sites (Lake Mills compressor station, La Crosse BL MNB73201 launcher/ABA 05, and Northfield #1) along with two pipeline extensions (Lake Mills M500 E-line, and Albert Lea M500 E-line) are located outside of any identified SFHAs (Figure 6-3).

On the Faribault M500 D-line, Northern identified locations where two SFHAs will be crossed by the pipeline extension.

- The SFHA between MP 98.66 and MP 98.68 will be crossed by open-cut methods; portions of FAR SA-002, FAR ETWS-011 and FAR ETWS-013 are located within the SFHA
- The SFHA between MP 98.99 to 99.16 will be crossed primarily via HDD; the HDD point on the south side of Chub Creek is located outside the SFHA. The HDD point and a portion of FAR ETWS-014 and FAR ETWS-015 are located within the SFHA on the north side of Chub Creek.

For mitigation within the SFHA, Northern will stake down any construction mats, anchor or move any loose equipment outside of the SFHA, and limit fuel storage and refueling operations inside the SFHAs.

Additionally, a portion of the temporary access road at the temporary compression site at the Owatonna compressor station is within the SFHA; however, the access road has been built up above floodplain elevations so no additional mitigation will be required. A portion of FCS ETWS-002 at the disconnect site inside the Farmington compressor station is located within a SFHA. The area within the SFHA will be used for construction dewatering discharge purposes only (Figure 6-3). As described in Resource Report 1, the dewatering location has been required by MDNR staff on other Northern projects completed at this location. Northern will utilize tie-downs on any dewatering equipment that will remain in the SFHA for an extended period of time. Floodplains crossed by the V2F Project are depicted on Figure 6-3 in Resource Report 6.

NL27 Project

A review of these FEMA Risk Maps indicates that the Lake Mills M500 E-line, the Albert Lea M500 E-line, the Willmar 3rd branch line downstream, the Welcome 2nd line, the Worthington 2nd branch line, the Alexandria 2nd branch line, and the Hugo compressor station are located outside of any identified SFHAs (Figure 6-4). The remaining components cross SFHAs as follows.

- Willmar 3rd branch line upstream between MP 4.42 and MP 4.43; floodway will be crossed via HDD, with both HDD points located outside the SFHA.

- Paynesville 2nd branch line between MP 0.56 and MP 0.62. The SFHA will be crossed by HDD, with both HDD points located outside the SFHA. Additionally, a small portion of PAY-ETWS-010 is located within an SFHA at MP 0.82. If the portion of PAY-ETWS-010 cannot be avoided by construction activities, then Northern will utilize construction matting, as needed, in areas of the floodplain. Mats will be anchored to the ground.
- Springfield 2nd branch line
    - between MP 15.20 and MP 15.25 will be crossed via HDD with both HDD points located outside the SFHA
    - between MP 16.11 and MP 16.27 will be crossed via HDD, with both HDD points on the edge of the SFHA. ETWS for the HDD extends into the SFHA
    - between MP 17.35 and MP 18.21 will be cross via HDD and open cut methods. Two HDDs, including the Watonwan River and 290th Street, will be completed while the remainder of the SFHA will be open cut. Several ETWS' including SPR-ETWS-023 to SPR-ETWS-032 will be located within the SFHA.
- Minnesota Interconnect 2nd branch line between MP 18.24 and MP 18.45. The SFHA will be crossed via HDD. The HDD point on the east side is located outside of the SFHA, while the HDD point on the west side is located at the edge of the SFHA. There also will be TWS and ETWS located on the west side of the HDD.

For mitigation within the SFHA, Northern will stake down any construction mats, anchor or move any loose equipment outside of the SFHA, and limit fuel storage and refueling operations inside the SFHAs. Floodplains crossed by the NL27 Project are depicted on Figure 6-4 in Resource Report 6.

2.2.3 Waterbodies Crossed

FERC defines a waterbody as "any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes." Minor waterbodies are those measuring less than or equal to ten feet wide at the water's edge; intermediate waterbodies are greater than ten feet wide but are less than or equal to 100 feet wide at the water's edge; and major waterbodies measure greater than 100 feet wide at the water's edge (FERC 2013b). A perennial stream has a well-defined channel containing water year-round during years with normal rainfall. Intermittent streams also have a -well-defined channel but only contain water seasonally or following rain events or snow melt. Ephemeral streams are features that carry only stormwater as a direct response to precipitation and are not considered federally jurisdictional as WOTUS. Additionally, ephemeral streams are not regulated by the state in Iowa, and in Minnesota ephemeral streams are only regulated by the state if they are designated as a Public Water. No ephemeral streams identified meet the definition of public water in Minnesota therefore, no ephemeral streams are displayed on the figures as delineated jurisdictional features.

<u>V2F Project</u>

As detailed in Northern's wetland and waterbody determination and delineation reports for the V2F Project (Appendix 2B), an assessment of waterbodies was completed for the V2F Project components using desktop review of USGS topographic maps (1:24,000 scale), NRCS soils, NHD, and NWI data. NHD waterbodies are depicted on Figure 2-1. Northern identified six perennial streams and 12 intermittent within the V2F Project ESB during the 2025 field surveys, however only eight waterbodies (four perennial streams and four intermittent streams) will be crossed by the V2F

Project. All eight waterbodies crossed by the V2F Project will be completed via HDD methods. Field-delineated waterbodies are depicted on Figure 2-3. Table 2.2-4 contains information about the mapped waterbodies that will be crossed during project construction, including approximate MP, feature ID and name, flow regime, crossing length, state water quality classification, fishery type, and proposed crossing method.

Table 2.2-4 Waterbodies Crossed by the V2F Project

MP	Waterbody	Waterbody Type	Crossing Width (feet)	Construction Impact Acreage	Operational Impact Acreage	State Water Quality Use Designations[1]	Fishery Type	Crossing Method (Contingency)	Section 303(d) Impaired Waters List
Lake Mills M500 E-line									
34.45	LMA-S01	Intermittent	30.2	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
37.87	LMA-S03	Perennial (County Ditch 68/Shoff Creek)[2]	15.5	<0.01[3]	0.00[4]	2Bg, 3C, 4A, 4B, 5, 6	Warmwater	HDD	None
37.91	LMA-S04	Intermittent	6.4	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
41.15	LMA-S07	Perennial (Wedges Creek; County Ditch #9)[2]	23.5	<0.01[3]	0.00[4]	2Bg, 3C, 4A, 4B, 5, 6	Warmwater	HDD	None
41.92	LMA-S08	Perennial (County Ditch 11)[2]	7.2	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**82.8**	**<0.01**	**0.00**				
Albert Lea M500 E-line									
2.28	ALO-S01	Intermittent	9.7	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**9.7**	**<0.01**	**0.00**				

Faribault M500 D-line									
99.02	FAR-S02	Perennial (Chub Creek)[2]	26.0	<0.01[3]	0.00[4]	2Bg, 3C, 4A, 4B, 5, 6	Warmwater	HDD	Aquatic Consumption, Aquatic Lif, Aquatic Recreation (fish and benthic macroinvertebrate bioassessments and fecal coliform)
103.09	FAR-S05	Intermittent	3.2	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**29.2**	**<0.01**	**0.00**				
Disconnect Site – Ventura compressor station									
No waterbodies are crossed by the Project component									
Disconnect Site – Farmington compressor station									
No waterbodies are crossed by the Project component									
Temporary Compression Site – A-Line Abandonment at La Crosse BL MNB73201 launcher/ABA 05									
No waterbodies are crossed by the Project component									
Temporary Compression Site – Lake Mills Compressor Station									
No waterbodies are crossed by the Project component									
Temporary Compression Site – Owatonna Compressor Station									
No waterbodies are crossed by the Project component									
Temporary Compression Site – Northfield #1									
No waterbodies are crossed by the Project component									
V2F Project Total			**121.7**	**<0.01**	**0.00**				

[1] State Water Classification: Class 1 = Domestic Consumption. Class 2 = Aquatic Life and Recreation; A = cold water, B = warm water, g= applies for general warm water streams. Class 3 = Industrial Consumption; A – D refers to chlorides standards. Class 4 = Agriculture and Wildlife; A = applies to irrigation purposes, B = applies to use by livestock and wildlife. Class 5 = Aesthetic Enjoyment and Navigation. Class 6 = Other Uses and Protection of Border Waters. See additional discussion in 2.2.5.
[2] Listed as a Minnesota Public Watercourse per the Minnesota Public Waters Index.
[3] Impacts will be limited to foot traffic within a six-foot-wide travel lane between the HDD entry and exit points.
[4] Waterbody crossed by the Project via HDD. Northern will not conduct routine maintenance between the entry and exit points in riparian areas; therefore, no impacts on the waterbody will occur during operation.

The V2F Project will cross eight waterbodies, none of which are over 100 feet in crossing width. All crossings will be conducted via HDD, which will minimize potential direct impacts on the extent practicable and eliminate the need for restoration. Restoration of the HDD entry and exit points is described in the V2F Project-specific SWPPPs, located in Resource Report 7, Appendix 7D.

NL27 Project

As detailed in Northern's wetland and waterbody determination and delineation reports for the NL27 Project (Appendix 2B), an assessment of waterbodies was completed for the NL27 Project components using desktop review of USGS topographic maps (1:24,000 scale), NRCS soils, NHD, and NWI data. NHD waterbodies are depicted on Figure 2-2. Northern identified a total of 31 waterbodies (16 perennial streams, 14 intermittent streams and one open water) within the NL27 Project ESB during the 2025 field surveys, however only 19 waterbodies (12 perennial streams, six intermittent streams and one open water) will be crossed by the NL27 Project. Northern will utilize a combination of HDD and open-cut construction methods to cross the 19 waterbodies. Field-delineated waterbodies are depicted on Figure 2-4. Table 2.2-5 contains information about the mapped waterbodies that will be crossed during project construction, including approximate MP, feature ID and name, flow regime, crossing length, state water quality classification, fishery type, and proposed crossing method.

Table 2.2-5 Waterbodies Crossed by the NL27 Project

MP	Waterbody	Waterbody Type	Crossing Width (feet)	Construction Impact Acreage	Operational Impact Acreage	State Water Quality Use Designations[1]	Fishery Type	Crossing Method (Contingency)	Section 303(d) Impaired Waters List
Lake Mills M500 E-line									
No waterbodies are crossed by the Project component									
Albert Lea M500 E-Line									
4.75	ALO-S03	Perennial	46.6	<0.01[3]	0.00[4]	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
5.35	ALO-S02	Perennial	50.4	<0.01[3]	0.00[4]	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**97.0**	**<0.01**	**0.00**				
Willmar 3rd Branch Line Upstream									
3.70	WIL-S01	Intermittent	N/A	<0.01	<0.01	Default (2Bg, 3, 4A, 4B, 5, 6)	Warmwater	TWS[7]	None
4.46	WIL-S08	Perennial (Credit River)[2]	29.0	<0.01[3]	0.00[4]	2Bg, 3, 4A, 4B, 5, 6	Warmwater	HDD	None[6]
4.92	WIL-OW02	Open water	148.9	0.02	0.00	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
4.97	WIL-S09	Perennial	18.3	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**218.4**	**0.02**	**0.00**				
Willmar 3rd Branch Line Downstream									
7.39	WDC-S02	Perennial	52.0	0.09	0.06	7, 3, 4A, 4B, 5, 6	N/A (Limited Resource Value)	TWS/Open cut[5]	None
8.99	WDC-S05	Intermittent (Unnamed Stream)[2]	5.0	<0.01	<0.01	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	TWS/Open cut[5]	None
Subtotal			**57.0**	**0.09**	**0.06**				

MP	Waterbody	Waterbody Type	Crossing Width (feet)	Construction Impact Acreage	Operational Impact Acreage	State Water Quality Use Designations[1]	Fishery Type	Crossing Method (Contingency)	Section 303(d) Impaired Waters List
Welcome 2nd Line									
No waterbodies are crossed by the Project component									
Paynesville 2nd Branch Line									
0.60	PAY-S03	Perennial (Kolling Creek)[2]	15.1	<0.01[3]	0.00[4]	2Bg, 3, 4A, 4B, 5, 6	Warmwater	HDD	Aquatic Life (dissolved oxygen)
2.03	PAY-S02	Perennial (Kolling Creek)[2]	35.1	<0.01[3]	0.00[4]	2Bg, 3, 4A, 4B, 5, 6	Warmwater	HDD	None
2.29	PAY-S01	Perennial	4.0	<0.01[3]	0.00[4]	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
Subtotal			**54.2**	**<0.01**	**0.00**				
Worthington 2nd Branch Line									
19.90	WOR-S01	Intermittent (Unnamed Stream)[2]	44.7	0.08	0.05	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	TWS/Open cut[5]	Aquatic Recreation (*E. coli*)
Subtotal			**44.7**	**0.08**	**0.05**				
Springfield 2nd Branch Line									
15.26	SPR-S04	Perennial (Saint James Creek)[2]	16.2	<0.01[3]	0.00[4]	7, 3C, 4A, 4B, 5, 6	N/A (Limited Resource Value)	HDD	Limited Resource Value (*E. coli*)
16.18	SPR-S03	Intermittent	26.6	<0.01[3]	0.00[4]	Default (2Bg, 3C, 4A, 4B, 5, 6)	Default (warmwater)	HDD	None
16.19	SPR-S02	Perennial (Butterfield Creek)[2]	35.1	<0.01[3]	0.00[4]	2Bg, 3C, 4A, 4B. 5, 6	Warmwater	HDD	Aquatic Life, Aquatic Recreation (benthic macroinvertebrates and fish bioassessments, *E. coli* and turbidity)

MP	Waterbody	Waterbody Type	Crossing Width (feet)	Construction Impact Acreage	Operational Impact Acreage	State Water Quality Use Designations[1]	Fishery Type	Crossing Method (Contingency)	Section 303(d) Impaired Waters List
17.51	SPR-S01	Perennial (Watonwan River)[2]	107.7	0.02	0.00[4]	2Bg, 3C, 4A, 4B, 5, 6	Warmwater	HDD	Aquatic Consumption, Aquatic Life, Aquatic Recreation (fecal coliform, fish bioassessment, mercury in fish tissue and turbidity)
Subtotal			**185.6**	**0.02**	**0.00**				
Minnesota Interconnect 2nd Branch Line									
18.31	MIC-S01	Perennial	61.5	<0.01[3]	0.00[4]	2BG, 3C, 4A, 4B, 5, 6	Warmwater	HDD	None
Subtotal			**61.5**	**<0.01**	**0.00**				
Alexandria 2nd Branch Line									
16.89	ALX-S01	Intermittent	13.0	0.02	0.02	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	TWS/Open cut[5]	None
17.31	ALX-S02	Intermittent	N/A	0.04	0.02	Default (2Bg, 3, 4A, 4B, 5, 6)	Default (warmwater)	TWS[7]	None
Subtotal			**13.0**	**0.06**	**0.04**				
Hugo Compressor Station Uprate									
No waterbodies are crossed by the Project component									
NL27 Project Total			**731.4**	**0.27**	**0.15**				

[1] State Water Classification: Class 1 = Domestic Consumption. Class 2 = Aquatic Life and Recreation; A = cold water, B = warm water, g= applies for general warm water streams. Class 3 = Industrial Consumption; A – D refers to chlorides standards. Class 4 = Agriculture and Wildlife; A = applies to irrigation purposes, B = applies to use by livestock and wildlife. Class 5 = Aesthetic Enjoyment and Navigation. Class 6 = Other Uses and Protection of Border Waters. See additional discussion in 2.2.5.
[2] Listed as a Minnesota Public Watercourse per the Minnesota Public Waters Index.
[3] Impacts will be limited to foot traffic within a six-foot-wide travel lane between the HDD entry and exit points.
[4] Waterbody crossed by the Project via HDD. Northern will not conduct routine maintenance in riparian areas between the entry and exit pits; therefore, no impacts on the waterbody will occur during operation.
[5] Waterbody crossed by the Project via open-cut will include the use of dam and flume and installation of a temporary clear span bridge (TCSB) to establish and maintain a dry working cell through the waterbody.
[6] Delisted from Section 303(d) Impaired Waters List in 2024 for turbidity.
[7] Waterbody is inside TWS; TCSB will be installed but no open-cutting will occur.

The NL27 Project will cross 19 waterbodies, two of which are over 100 feet in crossing width (WIL-OW02 - open water/pond and SPR-S01 - Watonwan River). Both WIL-OW02 and SPR-S01 will be crossed using HDD methods. Northern plans to utilize HDD on 13 of the 19 waterbody crossings to minimize direct impacts. Northern has prepared an HDD plan and profile and site-specific plan that will serve as the FERC site-specific crossing plan for each of the two major waterbody crossings. The required FERC site-specific crossing plans are provided in the HDD Plan in Resource Report 1, Appendix 1A.

Northern will mat across two waterbodies that are within TWS but are not crossed by the pipeline trench (see TCSB discussion below). Northern will complete open-cut, dry-ditch crossings of four of the waterbodies by implementing the construction techniques in Northern's Procedures in V.B.6. These will include but are not limited to:

- Installing erosion and sediment control devices along the stream banks prior to the start of disturbance
- Flagging waterbody buffers (e.g., ETWS setbacks, no refueling zones) with signs or highly visible flagging
- Completing the open-cut crossings of the waterbodies during no-to-low-flow conditions
- Placing spoil piles at least 15 feet from the water's edge or in the adjacent ETWS
- Installing a dam and flume. These devices will be monitored continuously while in place. Dams will be constructed with materials that prevent sediment or contamination from entering the waterbody and with materials that do not extend into banks (e.g., sandbags)
- Installing baffle devices to prevent streambed scour and the discharge points of the pump or flume
- Installing sediment barriers to prevent the downstream flow of spoil to sediment-laden water
- Replacing the waterbody subsoil then replace the stream bed spoil and restore it to preconstruction condition. Streambank will be restored to preconstruction condition and stabilized
- Carefully remove the in-stream devices (e.g., dam and pump or dam and flume) to slowly restore natural water flow and prevent scouring or sediment transport downstream

During trench dewatering, water will be pumped from the trench via a submersible pump equipped with a float and then discharged through a geotextile filter bag and/or straw bale dewatering structure to a well-vegetated upland area. Dewatering will be conducted to avoid the flow of silt-laden water directly into waterbodies.

A total of six TCSBs will be needed at the four open-cut waterbody crossings and two waterbody crossings that occur within Project TWS but are not intersected by the pipeline. The following stipulations will apply to these temporary bridges.

- A temporary bridge will be installed across the waterbody to allow for equipment access. The bridge will be constructed and maintained to allow for unrestricted flow of water and to prevent soil from entering the waterbody.
- The temporary bridge will span between the waterbody top of banks.

- The temporary bridge will be designed to withstand and pass the highest waterbody flow expected to occur while the bridge is in place.
- Use or modifications to TCSBs will be documented in the SWPPP, per MPCA requirements, as necessary.
- The temporary bridge will be removed as part of final cleanup and restoration.

Northern will restore waterbody beds and banks to pre-construction conditions once the crossing is completed, and no permanent fill will be placed within a waterbody crossed by the Project. HDD entry and exit points also will be restored as outlined in the NL27 Project-specific SWPPPs (Resource Report 7, Appendix 7D).

2.2.4 National Wild and Scenic Rivers System

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve rivers with outstanding natural, cultural and recreational values in a free-flowing condition. No waterbodies crossed by either of the Projects are included in the National Wild and Scenic Rivers System (National Wild and Scenic River System 2025). The Rum River is the only listed National Wild and Scenic Rivers System within 0.25 mile of either Project. The Rum River is located approximately 0.21 mile east of MP 17.64 of the Minnesota Interconnect 2nd branch line on the NL27 Project. Northern will follow FERC's Plan and its Procedures, BMPs detailed within the Project specific SWPPP, as well as Northern's HDD Plan to avoid impacts on National Wild and Scenic Rivers Systems.

2.2.5 Section 303 (d) List of Impaired Waters

Under Section 303(d) of the CWA, states are required to assess all waters of the state to determine if they meet water quality standards; list waters that do not meet standards and update the list biannually; and conduct total maximum daily load studies to set pollutant-reduction goals needed to restore waters to the extent that they meet water quality standards for designated uses.

<u>V2F Project</u>

One waterbody crossed by the V2F Project in Minnesota is designated as impaired (FAR-S02, Chub Creek) (MPCA 2024b and MPCA 2024d). Impairments listed for each waterbody crossed by the V2F Project are provided in Table 2.2-4. Chub Creek has a designation of 2Bg for listed impairments for aquatic life use, aquatic recreational for fish consumption with pollutant stressors pertaining to fish and invertebrate bio assessments, and fecal coliform. These impairments are considered to be construction related parameters and require the additional BMPs found in items 23.9 and 23.10 of the MPCA construction stormwater permit. Northern plans to cross Chub Creek via HDD and does not anticipate direct impacts on the waterbody. For the impaired water, the mitigation measures that will be used to protect it are described in detail within Project-specific SWPPPs, included in Resource Report 7, Appendix 7D.

No waterbodies will be crossed by V2F Project in Iowa. Therefore, based on review of Iowa's 303(d) List of Impaired Waterbodies, the V2F Project will not cross any impaired waterbodies in Iowa (IDNR 2025a).

NL27 Project

Five waterbodies crossed by the NL27 Project are designated as impaired (PAY-S03 - Kolling Creek, WOR-S01, SPR-S01 - Watonwan River, SPR-S02 - Butterfield Creek and SPR-S04 - Saint James Creek) (MPCA 2024b and MPCA 2024d). Impairments listed for each waterbody crossed by the NL27 Project are provided in Table 2.2-5. These impairments, with the exception to waterbodies listed for impairment of *E. coli* only (i.e.,WOR-S01 and SPR-S04) are construction-related parameters and require the additional BMPs found in items 23.9 and 23.10 of the MPCA construction stormwater permit. Northern plans to cross all listed impaired waterbodies via HDD, except for WOR-S01, which will be crossed using open-cut methods. Waterbody WOR-SO1 is only listed for impairments to aquatic recreation due to presence of *e. coli* which is not a construction related impairment. Therefore, Northern does not anticipate construction related impacts to affect impaired waterbodies crossed by the NL27 Project. For the impaired water, the mitigation measures that will be used to protect it are described in detail within Project-specific SWPPPs, included in Resource Report 7, Appendix 7D.

2.2.6 Outstanding Resource Value Waters

Minnesota designates certain surface waters as ORVWs because of their exceptional qualities. According to Minnesota Rule 7050.0180, ORVWs are defined as waters within the Boundary Waters Canoe Area Wilderness; Voyageur's National Park; MDNR-designated scientific and natural areas; wild, scenic and recreational river segments; Lake Superior; specific portions of the Mississippi River; and other waters of the state with high water quality, wilderness characteristics, unique scientific or ecological significance, exceptional recreational value or other special qualities that warrant stringent protection from pollution.

The Minnesota State Wild and Scenic Rivers Program was established in 1973 to protect rivers with outstanding natural, scenic, geographic, historic, cultural and recreational values. (MDNR 2020c).

Additionally, state-designated trout waters, Outstanding National Resource Waters, and Outstanding Iowa Waters are absent from the V2F and NL27 Projects areas (IDNR 2010).

No waterways crossed by either Project are designated ORVWs or Areas of Special Natural Resource Interest waterbodies (MPCA 2025a; MPCA 2025c; SWDV 2025; IDNR 2025b). The Rum River is designated by Minnesota as a Wild, Scenic and Recreational Water and is listed as a ORVW and ORNW in Minnesota. The Rum River is located approximately 0.21 mile east of MP 17.64 of the Minnesota Interconnect 2nd branch line. Northern will follow FERC's Plan and its Procedures, BMPs detailed within the Project specific SWPPP, as well as Northern's HDD Plan to avoid impacts on the Rum River.

In February 2026 responses from the Natural Heritage Review of each component, MDNR has indicated that two calcareous fens (Big Lake SW #24729 and Roscoe North #24694) are in proximity to the Paynesville 2nd branch line and one calcareous fen (Kelleher Park #41531) is in proximity to the Willmar 3rd branch line upstream. Northern will coordinate with the MDNR Calcareous Fen Program Coordinator to determine if its Project will impact the fens and associated groundwater hydrology. Northern will provide an update to FERC when the consultation is

complete. Additional information on these fens, including location information, is provided in Resource Report 3, Section 3.2.3.

2.2.7 Public Waters

Minnesota Statute Section 103G.005, Subdivision 15, defines public waters and public water wetlands using numerous criteria, including waters of the state which have been finally determined to be public waters or navigable waters by a court of competent jurisdiction, natural and altered watercourses with a total drainage area greater than two square miles in area or a wetland area greater than ten acres in size in unincorporated areas or greater than 2.5 acres in size in incorporated areas. Pipelines that cross a Minnesota Public Water require a MDNR Utility Crossing Permit; any work within a public water or public water wetland requires an in-water work permit from MDNR. In Iowa, public waters are all waters (surface and groundwater) that are designated as public water supply systems and are under regulation of Iowa's Public Drinking Water Program that is administered by the IDNR under delegation of the authority from the EPA (IDNR 2025d).

<u>V2F Project</u>

A total of four public waterbodies are crossed by the V2F Project.

- Faribault M500 D-line: Chub Creek (M-048-017)
- Lake Mills M500 E-line: County Ditch 11 (I-030-010-001), Wedges Creek/County Ditch #9 (I-030-010), and Shoff Creek/County Ditch #68 (I-030-009).

No public waters are crossed by the Albert Lea M500 E-line or the disconnect and temporary compression sites. No public water wetlands are crossed by the V2F Project; Northern has confirmed this assumption with local MDNR hydrology staff. The four public watercourses will be crossed via HDD methods. The V2F Project does not cross any public waters in Iowa.

Due to the use of HDD, Northern has reduced potential impacts on Minnesota Public Waters to be limited to foot traffic within one six-foot-wide travel lane or two three-foot-wide travel lanes between the HDD entry and exit points within the protected wetland. Travel lanes will only involve hand clearing/limbing of vegetation aboveground sufficient to allow pedestrian travel and installation of tracking wires. Vegetation will be allowed to regrow following completion of the HDD. No fill, excavation, mechanical clearing, or vegetative community conversion will occur between the HDD entry or exit points.

<u>NL27 Project</u>

A total of eight public waterbodies are crossed by the NL27 Project.

- Willmar 3rd branch line upstream: one public ditch/altered natural waterbody Credit River (M-048-017 [delineated as WIL-S08]) via HDD
- Willmar 3rd branch line downstream: one public natural watercourse/unnamed stream (M-055-022-003 [delineated as WDC-S05]) via open-cut
- Paynesville 2nd branch line: two public natural watercourses, Kolling Creek (M-074-010 [delineated as PAY-S01]) and an unnamed stream (M-074-010-003 [delineated as PAY-S02]) via HDD

- Worthington 2nd branch line: one public natural watercourse/unnamed stream (I-039-005-005 [delineated as WOR-S01]) via open-cut
- Springfield 2nd branch line: three public natural watercourses (M-055-076-003 [delineated as SPR-S01/St. James Creek], M-055-076-003-034-001 [delineated as SPR-S02/Butterfield Creek], and M-055-076-003 [delineated as SPR-S04/Watonwan River]) via HDD.

No public waters are crossed by the Albert Lea M500 E-line, Welcome 2nd line, Minnesota Interconnect 2nd branch line, Alexandria 2nd branch line or the Hugo compressor station uprate.

Furthermore, one unnamed public water basin/wetland (70001300 [delineated as WIL-W05]) will be crossed via open-cut on the Willmar 3rd branch line upstream. No other NL27 Project components will cross public water basins/wetlands.

Due to the use of HDD, Northern has reduced potential impacts on Minnesota Public Waters to be limited to foot traffic within one six-foot-wide travel lane or two three-foot-wide travel lanes between the HDD entry and exit points within the protected waters, except for WDC-S05 and WOR-S01, which will be crossed using open-cut methods. Travel lanes associated with HDD crossings will only involve hand clearing/limbing of vegetation aboveground, where needed to sufficiently allow pedestrian travel and installation of tracking wires. Vegetation will be allowed to regrow following completion of the HDD. No fill, excavation, mechanical clearing, or vegetative community conversion will occur between the HDD entry or exit points.

Public waterbodies and public water basins/wetlands that will be crossed using open-cut methods will be completed in a manner compliant with Northern's Procedures and MDNR regulatory requirements. Northern will install the pipelines a minimum of ten feet below the bed of the two public waters. Open-cut crossings will cause temporary disturbance to waterbodies and wetlands; areas of temporary disturbance will be returned to pre-construction conditions. Vegetated areas will be allowed to regrow naturally or seeded per MDNR permit conditions upon completion of construction activities.

2.2.8 U.S. Army Corps of Engineers Section 10 Waters

Navigable waters are defined by 33 CFR Part 329 as those waters that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Traditional navigable waters are designated by the USACE and regulated under Section 10 of the Rivers and Harbors Act of 1899.

None of the waters crossed by either Project are considered traditionally navigable by the USACE or are included within the USACE Section 10 Waters list (USACE 2025).

2.2.9 Other Special State and Local Waterbody Designations

Trout, and the cold water, gravel stream-bed habitats they require, are sensitive to environmental impacts such as sedimentation. Trout streams receive additional protection under rules administered by the MDNR and USACE. Based on a review of the MPCA construction stormwater special waters search, which provides a list of designated trout streams in Minnesota, no waterbodies crossed by either Project are designated as trout streams (MPCA 2024d).

There are no trout streams or other special waterbodies within one mile of either Project (MPCA 2024d, IDNR 2025c), with the exception of the Rum River which is designated as a special state waterbody. The Rum River is further discussed above in Section 2.2.4.

2.2.10 Potable Surface Water Supply

No waterways crossed by the V2F or NL27 Projects were designated by the State of Minnesota or the State of Iowa for domestic consumption, as discussed in Section 2.2.12.

Based on a review of the MDH Source Water Protection Web Viewer and the Iowa Geospatial Data Clearinghouse Water Use Surface Water Intakes data webviewer, there are no potable surface water supply intakes within three miles downstream of the V2F or NL27 Projects. There are no potable surface water intake sources located within three miles upstream or three miles downstream of any waterbody crossings within either Projects areas (MDH 2025; State of Iowa 2018).

A portion of the NL27 Project on the Willmar 3rd branch line downstream between MP 10.29 and the terminus and the Minnesota Interconnect 2nd branch line are located within the Minneapolis Priority B DWSMA for surface waters. Additionally, the Paynesville 2nd branch line and Alexandria 2nd branch line are within the St. Cloud Priority B DWSMA for surface waters. These two surface water DWSMAs are part of the Minneapolis, St. Paul, and St. Cloud Priority B DWSMA. Per the MDNR Source Water Protection website, the listed Priority B surface water DWSMA is an area where contaminants of concern can be found at treatable levels most of the time but occasionally are present at higher levels. To avoid impacts of source water protection areas, Northern will follow FERC Plan and its Procedures, as well as obtain necessary local land development and stormwater management permits prior to initiation of construction activities. Additionally, Northern will implement BMPs detailed within each Project-specific SWPPP; and each SWPPP will be developed to comply with state and local regulations and DWSMA specific source water protection plans.

2.2.11 Hydrostatic Test Water and Dust Suppression

Hydrostatic testing will be conducted in accordance with Department of Transportation regulations Title 49 CFR Part 192 to verify the integrity of the pipe and the piping components before being placed into service.

Hydrostatic test water will be obtained from off-site sources and brought to both Projects in compliance with state regulations and existing water rights. Resource Report 1, Table 1.5-1 lists potential hydrostatic water sources for testing the pipeline segments, the number of test sections and approximate volume of water to be used. No chemical additives will be mixed with the hydrostatic test water. In Minnesota, Northern plans to discharge hydrostatic test water utilized for both Projects onsite where feasible. Discharge of test water will be to an upland location onsite in accordance with the state discharge permits. The hydrostatic test water will be tested according to local disposal facility requirements or state permits. Should Northern decide not to discharge test water onsite, the test water will be hauled offsite and disposed of at an appropriate facility.

There will be approximately 265 gallons of hydrostatic test water discharged onto the ground in Iowa. There will be 15,838,567 gallons discharged for the V2F Project in Minnesota. There will be an additional 10,875,000 gallons of water discharged for the NL27 Project in Minnesota.

No significant water quality impacts are anticipated as a result of discharge from hydrostatic testing. The new pipeline facilities associated with both Projects will consist of new steel pipe that will be free of chemicals or lubricant, and no additives will be used.

As outlined in Resource Report 1, Section 1.5.6.1, water also may be utilized for the control and mitigation of fugitive dust in areas disturbed for construction, such as access roads. Typically, dust control is provided by contractors utilizing water tanker trucks, and water is obtained from a municipal source, as necessary. Actual amounts required will vary based on climatic conditions at the time of construction for each Project.

2.2.12 Sensitive Surface Waters/Waterbody Quality Classification

Sensitive waterbodies include those designated under Section 305(b) or Section 303(d) of the CWA; those for domestic use and those where fish or other listed species are present. Pursuant to Section 303(d) of the CWA, states, territories and authorized tribes are required to develop a list of waters that do not meet or are not expected to meet applicable water quality standards. The law requires that these jurisdictions establish priority rankings for waters on the list and develop action plans emphasizing a reduction of total maximum daily loads to improve water quality.

The MPCA is the agency charged with classifying waterbodies in Minnesota. Consistent with the requirements of the CWA, the MPCA has established water quality standards, including the identification of beneficial uses of the state's waters, numeric standards and narrative criteria and non-degradation protections for high-quality or unique waters. Minnesota groups the waters of the state into one or more of the following seven designated use classifications per Minnesota Rules 7050.0140. Note that waterbodies with defaulted beneficial use designations are typically smaller tributaries to larger streams and may not contain suitable fisheries habitat during all or a portion of the year due to seasonally inadequate water levels. Fisheries are further discussed in Resource Report 3 Section 3.1.

- Class 1: Domestic Consumption
  - Waters of the state that are or may be used as a source of supply for drinking, culinary or food processing use, or other domestic purposes
- Class 2: Aquatic Life and Recreation
  - Water of the state that support or may support fish, other aquatic life, bathing, boating, or other recreational purposes; Class 2 waters are sub-classified:
    - Class 2A – Denoting a Cold Water designation
    - Class 2B – Denoting a Warm Water designation
- Class 3: Industrial Consumption
  - Waters of the state that are or may be used as a source of supply for industrial process or cooling water or any other industrial or commercial purposes. Class 3 waters are sub-classified as 3A, 3B, 3C, or 3D, with A-C indicating an increasingly relaxed standard for acceptable chloride values, hardness values, and pH range; Sub-class 3D applies to wetlands, where the standard is to maintain natural background.
- Class 4: Agricultural and Wildlife

    - Waters of the state that are or may be used for any agricultural purposes, including stock watering and irrigation, or used by waterfowl or other wildlife; Class 4 waters are sub-classified:
        - Class 4A: Applies for irrigation purposes
        - Class 4B: Applies for waters used by livestock and wildlife without inhibition or injury effects
- Class 5: Aesthetic Enjoyment and Navigation
    - Aesthetic enjoyment and navigation include all waters of the state that are or may be used for any form of water transportation or navigation or fire prevention.
- Class 6: Other uses and Protection of Border Waters
    - Any other beneficial uses, including any such uses in Minnesota or any other state, province, or nation of any waters flowing through or originating in Minnesota
- Class 7: Limited Resource Value Waters
    - Waters of the state that have been found to have limited value as a water resource as determined by an attainability analysis

V2F Project

Pursuant to Minnesota Rule 7050.0430, five waterbodies crossed by the V2F Project (LMA-S01, LMA-S04, LMA-S08, ALO-S01, and FAR-S05) default to Class 2B (aquatic warm water community), Class 3C (industrial consumption), Class 4A (irrigation), Class 4B (livestock and wildlife), Class 5 (aesthetic enjoyment and navigation), and Class 6 (other uses). Pursuant to Minnesota Rule 7050.0470, three other waterbodies crossed by the V2F Project (LMA-S03, LMA-S07, and FAR-S02) have a beneficial water use designation of 2Bg, 3C, 4A, 4B, 5, and 6. Beneficial water use designations for the V2F Project are provided in Table 2.2-4.

The eight waterbody crossings associated with the V2F Project will be crossed via HDD; therefore, the V2F Project will have minimal impacts on the waterbodies. Specific waterbody crossing construction methods and mitigation procedures for the V2F Project are further described in Section 2.2.13.

There are no waterbody crossings in Iowa on the V2F Project.

NL27 Project

Pursuant to Minnesota Rule 7050.0430, 11 waterbodies crossed by the NL27 Project (ALO-S02, ALO-S03, WIL-OW02, WIL-S09, WDC-S05, PAY-S01, PAY-S02, WOR-S01, SPR-S03, ALX-S01 and ALX-S02) default to Class 2B (aquatic warm water community), Class 3C (industrial consumption), Class 4A (irrigation), Class 4B (livestock and wildlife), Class 5 (aesthetic enjoyment and navigation), and Class 6 (other uses). Pursuant to Minnesota Rule 7050.0470, five waterbodies crossed by the NL27 Project (WIL-S08, PAY-S03, SPR-S01, SPR-S02 and MIC-S01) have a beneficial water use designation of 2Bg, 3C, 4A, 4B, 5, and 6 aquatic warm water community. Two waterbodies crossed by the NL27 Project (WDC-S02 and SPR-S04) have a beneficial water use designation of 7 (Limited Resource Value), 3C, 4A, 4B, 5, 6. Beneficial water use designations for the NL27 Project are provided in Table 2.2-5.

Of the 19 waterbodies being crossed by the NL27 Project, 13 will be crossed via HDD. The other six waterbodies will be crossed by open-cut methods or will be impacted by TWS. Northern will use

dry-channel construction in accordance with its Procedures for waterbody crossings where open-cut methods will occur. At these locations, Northern will maintain downstream flow using a dam and flume construction techniques or utilize matting to avoid impacts to the waterbody's bed and bank. Northern will restore waterbody beds and banks to pre-construction conditions once the crossing is completed, and no permanent fill will be placed within a waterbody crossed by the Project. HDD entry and exit points also will be restored as outlined in the NL27 Project-specific SWPPPs. Therefore, the NL27 Project will have minimal impacts on the waterbodies crossed by the Project. Specific waterbody crossing construction methods and mitigation procedures for the NL27 Project are further described in Section 2.2.13.

2.2.13 Waterbody Impacts and Mitigation Measures

Northern will complete work near waterways in accordance with the FERC Plan and its Procedures and in compliance with the CWA Section 401 water quality certification conditions applicable to the USACE Regional General Permit. The eight waterbodies on the V2F Project will be crossed via HDD. The 19 waterbodies on the NL27 Project will be crossed via a combination of HDD and open-cut methods. Staging areas adjacent to waterbodies are in compliance with Northern's Procedures and are required for equipment set-up and operation associated with project construction activities. Northern will implement the project-specific SWPPPs, which contain BMPs intended to reduce ground disturbance, minimize erosion and sediment run off and promote revegetation within the construction area.

As proposed, neither Project will cause permanent impacts on surface waterbodies. Construction practices will follow FERC Plan and Northern's Procedures and Northern's standards, which contain BMPs intended to reduce ground disturbance, minimize erosion and sediment run off and promote revegetation within the construction area. Northern's EIs will document that all construction workspace along with the waterbody boundaries are staked by a civil survey firm prior to the start of construction. The refueling setback at each waterbody also will be demarcated with signage placed by Northern's EIs. Crossing construction methods are discussed in detail in Resource Report 1, Section 1.5.6.3.

All HDD waterbody crossings will have a depth of at least 21 feet below the waterbody's bed for the V2F Project and a depth of at least 14 feet below the waterbody's bed for the NL27 Project. On the NL27 Project all open-cut waterbody crossings will have a depth of cover of at least 4.5 feet below the waterbody's bed, with the exception of waterbodies WDC-S05 and WOR-S01. These two waterbodies will require a minimum depth of cover of ten feet since they are state-designated public watercourses. All waterbody crossings utilizing open-cut methods also will utilize dry ditch construction methods to install the pipeline through the waterbody. Northern will use dam and flume to maintain downstream flow and create a dry workspace for the pipe installation. Upon completion of the waterbody crossing, the waterbody will be returned to pre-construction conditions to the extent practicable. Additional information regarding the safety factors for the HDDs is provided in Resource Report 6, Section 6.6. Additional information on the depths of the HDDs is provided in Resource Report 6, Table 6.7-1. No waterbodies crossed on the V2F Project will be crossed using open-cut methods.

There are two major waterbodies (over 100 feet in width) are crossed by the NL27 Project:

- Willmar 3rd branch line upstream (WIL-OW02)
- Springfield 2nd branch line (SPR-S01-Watonwan River).

Both major waterbodies will be crossed by HDD. Northern has prepared an individual HDD plan and profile and site-specific plan that will serve as the FERC site-specific crossing plan for each of the major waterbody crossings; and are provided in the HDD Plan in Resource Report 1, Appendix 1A-2.

For all waterbody crossings, fuels, lubricants or other potentially hazardous materials used during routine construction can temporarily impact aquatic habitats and resources if released into the environment. The SPCC plan and Northern's Procedures for both Projects provide restrictions and mitigation measures to minimize potential impacts associated with the release of fuels, lubricants or other potentially toxic materials used during routine construction. To minimize potential impacts, Northern will restrict the storage, location and use of hazardous materials. Refueling and storing of hazardous materials will be prohibited within 100 feet of a waterbody during construction. In addition to measures that minimize and avoid spill related impacts, the SPCC plan contains measures to mitigate releases should releases occur. If trench dewatering is necessary, water will be pumped from the trench via a submersible pump equipped with a float and then discharged through a geotextile filter bag and/or straw bale dewatering structure to a well-vegetated upland area. Dewatering will be conducted, as necessary, to aid in pipe installation and avoid the flow of silt-laden water directly into waterbodies.

Soil disturbances in waterbodies and construction activity within both Projects work areas adjacent to waterbodies could result in potential erosion and sedimentation into the waterbodies. As part of Northern's temporary erosion and sediment control measures for each Project, Northern will construct or install sediment barriers, stormwater diversions, mulch, and seed to establish ground cover as necessary to protect the potentially affected waterbodies. Northern will restore slopes and contours to preconstruction conditions and will restore vegetation using approved seed mixes. The temporary and permanent erosion and sediment control measures will be installed as specified in the FERC's Plan and its Procedures, the project-specific SWPPPs, and applicable stormwater permits and water quality conditions. Construction work areas will be allowed to return to preconstruction vegetation and land use(s) and will be permanently maintained pursuant to the Plan and Northern's Procedures. With implementation of these measures, the potential for erosion and sedimentation to adversely affect waterbodies will be minimized to the maximum extent practicable.

In the event of an inadvertent release of drilling mud during HDD activities, Northern will implement measures as outlined in its HDD Monitoring, Inadvertent Return Response, and Contingency Plan located in Resource Report 1, Appendix 1A.

Precipitation and/or the seepage of groundwater can necessitate the dewatering of trenches in order for construction to proceed. During trench dewatering, water will be pumped from the trench, discharged into a well vegetated upland area and/or filtered through a geotextile sediment filter bag or sediment barrier. Dewatering will be conducted in a manner designed to prevent the flow of silt-laden water directly into adjacent waterbodies and in accordance with state permitting requirements.

V2F Project

The V2F Project in Minnesota meets non-notifying conditions under the St. Paul District RGP for Utilities for activities in Minnesota regulated by the USACE St. Paul District. However, Northern still submitted V2F Project notification letters/joint applications to the USACE-St. Paul District February 16, 2026, and included Project maps and a copy of the wetland and waterbody delineation reports for each respective V2F Project component in Minnesota. The V2F Project, as designed, meets non-notifying conditions under Nationwide Permit 12 (Oil or Natural Gas Pipeline Activities) for activities in Iowa; as such, no notifications were required to the USACE Rock Island District. Northern copied the Local Government Units responsible for administering WCA in the February 16, 2026 emails. Copies of agency correspondence are provided in Appendix 2D. Northern will submit any correspondence received from the USACE St. Paul District office in a supplemental filing.

NL27 Project

Northern submitted preliminary NL27 Project notification letters/joint applications to the USACE-St. Paul District February 19, 2026, and included Project maps and a copy of the wetland and waterbody delineation reports for all NL27 Project components except for the Willmar 3rd branch line upstream and Alexandria 2nd branch line. Northern stated that the NL27 Project generally meets non-notifying conditions under the St. Paul District RGP for Utilities for activities in Minnesota regulated by the USACE St. Paul District, except for the Willmar 3rd branch line upstream and Alexandria 2nd branch line components. These two components will require a Pre-Construction Notification application to the USACE St. Paul District for activities impacting WOTUS. On February 12, 2026, Northern requested pre-application meetings with the USACE to discuss the PCN applications for the Willmar 3rd branch line upstream and Alexandra 2nd branch line. Northern copied the Local Government Units responsible for administering WCA in the February 19, 2026 emails. Copies of agency correspondence are provided in Appendix 2D. Northern will provide any related correspondence and authorization letters from the USACE St. Paul District for these components in a supplemental filing.

2.2.14 Water Use

As required by 49 CFR Part 192, Northern will conduct pressure testing via hydrostatic pressure testing of the pipelines being installed and placed into service for the V2F and NL27 Projects. Hydrostatic test water will be obtained from off-site sources and brought to both Projects in compliance with state regulations and existing water rights. No chemical additives will be mixed with the hydrostatic test water. In Minnesota, Northern will either transport hydrostatic test water offsite to a local disposal facility or discharge of the water in an upland location onsite in accordance with the state discharge permits. The hydrostatic test water will be tested according to local disposal facility requirements or state permits.

V2F Project

There will be approximately 256 gallons of water needed in Iowa and will be discharged to the ground surface inside the Ventura compressor station. Northern estimates that approximately 4,470,767 gallons of water will be required to complete hydrostatic pressure testing for the V2F Project.

An additional 948,100 gallons of water will be required to pre-test the HDD pipe before the HDDs are completed. Approximately 3,579,700 gallons of water will be required to create the drilling mud for the HDD activities. Hydrostatic test water volumes per V2F Project component are provided in Table 1.5-1 within Resource Report 1. An additional 6,840,000 gallons of water is estimated to be used for control and the mitigation of fugitive dust in areas disturbed during construction activities as needed for the V2F Project. Typically, dust control is provided via contractors utilizing trucks that hold approximately 3,000 gallons of water per load. Water for HDD activities and dust control will be obtained from the same municipal water source used for hydrostatic pressure testing. The actual required amounts of water required throughout the duration of construction activities will vary based on weather conditions at the time of construction. Total water volume required for the V2F Project is estimated at 15,838,567 gallons.

NL27 Project

Northern estimates that approximately 2,780,000 gallons of water will be required to complete hydrostatic pressure testing for the NL27 Project.

An additional 373,400 gallons of water will be required to pre-test the HDD pipe before the HDDs are completed. Approximately 1,881,600 gallons of water will be required to create the drilling mud for the HDD activities. Hydrostatic test water volumes per NL27 Project component are provided in Table 1.5-2 within Resource Report 1. An additional 5,840,000 gallons of water is estimated to be used for control and the mitigation of fugitive dust in areas disturbed during construction activities as needed for the NL27 Project. Typically, dust control is provided via contractors utilizing trucks that hold approximately 3,000 gallons of water per load. Water for HDD activities and dust control will be obtained from the same municipal water source used for hydrostatic pressure testing. The actual required amounts of water required throughout the duration of construction activities will vary based on weather conditions at the time of construction. Total water volume required for the NL27 Project is estimated at 10,875,000 gallons.

2.3 Wetlands

Wetlands that meet the WOTUS definition are subject to regulation by the USACE under the CWA, and the jurisdictional regulatory authority lies with the USACE. The MDNR has regulatory authority over certain wetlands, navigable waters and adjacent lands under Minnesota Statute 103G and Rule 6115.0250. In Minnesota Most wetlands are protected under the WCA Rules Chapter 8420 and administered by an LGU. LGUs can be a city, county, watershed district or soil and water conservation district depending on Project location. In Iowa the IDNR has regulatory authority over wetlands, navigable waters and adjacent lands under Iowa Chapter 456B Special Provisions – Natural Resources Department.

Northern performed a desktop review of both Projects using NWI data, USGS data, NHD data, NRCS soils information, preliminary data previously collected, and aerial orthophotography to identify potential wetlands or wet signatures. Additionally, Northern completed a review of historical aerial imagery for agricultural areas as wetlands are often problematic to locate in farmed areas. The review consisted of multiple years of aerial imagery in areas with mapped poorly drained or somewhat poorly drained soils. The aerial imagery was reviewed for the appearance of wet signatures. A wet signature is field evidence, recorded by a photograph, of ponding, flooding or

impacts of saturation for sufficient duration, which meets wetland hydrology and possibly wetland vegetation criteria. Areas with wet signatures were investigated in the field and wetland boundaries were verified. The NWI data are shown on Figures 2-1 and 2-2, respectively for the two Projects.

Field surveys were completed in 2025 to locate and verify the presence of wetlands within both Projects ESBs. Any preliminary data collected prior to 2025 was verified by Northern during the 2025 field surveys using the Routine On-Site Determination Method defined in the USACE Wetland Delineation Manual (USACE 1987), subsequent guidance documents (USACE 1991 and 1992), the Northcentral Northeast Regional Supplement (USACE 2012) and the Midwest Regional Supplement (USACE 2010). Copies of the wetland delineation reports are included in Appendix 2B. Table 2.2-1 lists the NL27 Project parcels that were not surveyed in 2025 and are scheduled for survey in 2026.

2.3.1 Existing Resources

V2F Project

One hundred fifty-eight wetlands were identified within the ESB surveyed for the V2F Project; however, only 39 wetlands will be crossed by the V2F Project. Field-delineated wetland boundaries are shown in Figure 2-3. The wetland communities that will be crossed by the V2F Project are classified as seasonally flooded basin/farmed wetland, wet meadow/disturbed wet meadow, shallow marsh, shrub-carr, wet to wet-mesic prairie, hardwood swamp, floodplain forest, degraded sedge meadow, and shallow open water. Wetland classifications are discussed in greater detail below. Northern's Wetland and Waterbody Delineation Report in Appendix 2B provides a detailed review of the wetland delineation survey, including vegetation community profiles and qualitative assessments. Table 2.3-1 lists the identified wetlands crossed by the V2F Project and provides a summary of the wetland characteristics, including the sampling point number, USFWS Cowardin classification, field determined classification, crossing methodology, and acreage of the wetland delineated within the V2F Project by component.

Table 2.3-1 Wetlands Crossed by the V2F Project

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Lake Mills M500 E-line												
LMA-W12	35.54	35.56	Seasonally flooded basin/farmed wetland / PEM1Af	118	TWS/Open-Cut	0.18	0.00	0.13[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W13	36.41	36.49	Seasonally flooded basin/farmed wetland / PEM1Af	425	TWS/Open-Cut	0.49	0.00	0.39[5]	Depressional	Wildlife Habitat	Precipitation	Potentially
LMA-W14	36.67	36.69	Seasonally flooded basin/farmed wetland / PEM1Af	133	TWS/Open-Cut	0.17	0.00	0.14[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W20	37.84	37.84	Seasonally flooded basin/farmed wetland / PEM1Af	10	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W21	37.90	37.90	Degraded wet meadow / PEM1B	22	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Not Likely
LMA-W26	38.82	38.82	Seasonally flooded basin/farmed wetland / PEM1Af	30	TWS/Open-Cut	0.05	0.00	0.04[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W27	38.86		Degraded wet meadow / PEM1B	N/A	TWS	0.01	0.00	<0.00[5,8]	Depressional / Fringe	Groundwater Recharge	Groundwater / LMA-OW01	Not Likely
LMA-W31	39.12	39.13	Seasonally flooded basin/farmed wetland / PEM1Af	37	TWS/Open-Cut	0.13	0.00	0.04[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W34	39.75	39.76	Seasonally flooded basin/farmed wetland / PEM1Af	77	TWS/Open-Cut	0.15	0.00	0.09[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
LMA-W37	40.19		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	Staging area	0.03[6]	0.00	0.00[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W40	40.31	40.33	Degraded wet meadow / PEM1B	114	TWS/Open-Cut	0.16	0.00	0.11[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely
LMA-W41	40.66	40.66	Degraded wet meadow / PEM1B	26	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Not Likely
LMA-W42	40.73	40.73	Degraded wet meadow / PEM1B	18	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater / LMA-S06	Not Likely
LMA-W44	42.11	42.11	Degraded wet meadow / PEM1B	28	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Not Likely
Subtotal				**1,038**		**1.37**	**0.00**	**0.94**				
Albert Lea M500 E-line												
ALO-W03	2.04		Seasonally flooded basin/farmed wetland / PEM1Af \	N/A	TAR	0.04[6]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
ALO-W04	2.14	2.39	Seasonally flooded basin/farmed wetland / PEM1Af	1,238	HDD	0.17[9]	0.00	0.00[4]	Depressional / Floodplain	Wildlife Habitat	Precipitation / ALO-S01	Not Likely
ALO-W13	3.45	3.45	Seasonally flooded basin/farmed wetland / PEM1Af	11	TWS/Open-Cut	0.02	0.00	0.01[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
ALO-W16	3.60	3.61	Degraded wet meadow / PEM1B, Shrub-carr / PSS1B	53	HDD	0.01[8,9]	0.00	0.00[4]	Depressional / Floodplain	Groundwater Recharge	Groundwater / ALO-S02	Potentially
Subtotal				**1,302**		**0.24**	**0.00**	**0.01**				

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Faribault M500 D-line												
FAR-W02	97.35		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	ETWS	0.39[6]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
	97.37	97.38	Seasonally flooded basin/farmed wetland / PEM1Af	55	TWS/Open-Cut	0.08	0.00	0.06[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W03	97.39	97.39	Degraded wet meadow / PEM1B	12	TWS/Open-Cut	0.04	0.00	0.01[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely
FAR-W10	97.69		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	0.04	0.00	0.02[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W12	97.74	97.76	Seasonally flooded basin/farmed wetland / PEM1Af	130	TWS/Open-Cut	0.21	0.00	0.15[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W23	97.95	97.98	Degraded Wet Meadow / PEM1Bf	205	TWS/Open-Cut	0.39	0.00	0.22[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely
FAR-W31	98.03		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	<0.00[8]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W33	98.13		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	<0.00[8]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W39	98.31	98.31	Degraded wet meadow / PEM1B	20	TWS/Open-Cut	0.04	0.00	0.02[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
FAR-W40	98.42		Degraded wet meadow / PEM1B, Shallow marsh / PEM1C, Shallow open water / PUBH	26	TWS/Open-Cut	0.04	0.00	0.03[5]	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater	Not Likely
FAR-W63	99.01	99.10	Floodplain forest / PFO1A, Degraded wet meadow / PEM1B, Wet to wet-mesic prairie / PEM1B, Shrub-carr / PSS1C	387	HDD	0.05[9]	0.00	0.00[4]	Depressional / Floodplain	Wildlife Habitat / Groundwater Recharge	Groundwater / FAR-S02 / FAR-S03	Potentially
FAR-W67	99.96	100.07	Hardwood swamp / PFO1A, Seasonally flooded basin/farmed wetland / PEM1B, Shallow marsh / PEM1C, Shrub-carr / PSS1C	518	HDD	0.07[9]	0.00	0.00[4]	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater	Not Likely
FAR-W69	100.53	100.60	Degraded wet meadow / PEM1B	317	HDD	0.04[9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Potentially
FAR-W70	100.62	100.62	Shallow Marsh / PEM1Cf	19	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Not Likely
FAR-W71	101.39	101.43	Seasonally flooded basin/farmed wetland / PEM1Af	293	TWS/Open-Cut	0.47	0.00	0.34[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
FAR-W78	103.08	103.12	Degraded wet meadow / PEM1B	200	HDD	0.03[9]	0.00	0.00[4]	Depressional / Floodplain	Groundwater Recharge	Groundwater / FAR-S05	Potentially

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
FAR-W80	103.63	103.99	Hardwood swamp / PFO1A, Seasonally flooded basin/farmed wetland / PEM1B, Degraded wet meadow / PEM1B, Shrub-carr / PSS1C	1,480	HDD	0.20[9]	0.00	0.00[4]	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater / FAR-S06 / FAR-S07 / FAR-S08	Potentially
FAR-W83	104.84	104.87	Seasonally flooded basin/farmed wetland / PEM1Af	152	TWS/Open-Cut	0.19	0.00	0.13[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
	104.87		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	ETWS	0.04[6]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
Subtotal				**3,814**		**2.32**	**0.00**	**0.98**				
Disconnect Site- Ventura Compressor Station												
VCS-W02	N/A		Degraded wet meadow / PEM1B	N/A	TAR/ETWS	0.01[6]	0.00	0.00	Depressional	Groundwater Recharge	Groundwater	Not Likely
Disconnect Site – Farmington Compressor Station												
FCS-W01	N/A		Wet meadow / PEM1B	N/A	ETWS	0.19[6]	0.00	0.00	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater / FCS-S01	Potentially
Subtotal for the Disconnect Sites				**N/A**		**0.20**	**0.00**	**0.00**				
Temporary Compression Site – La Crosse BL MNB73201 Launcher/ABA 05												
LBL-W01	NA		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	ETWS	0.07[6]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
Temporary Compression Site – Lake Mills Compressor Station												
No wetland crossings were identified within Project component ESB												
Temporary Compression Site –Owatonna Compressor Station												
No wetland crossings were identified within Project component ESB												

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Temporary Compression Site – Northfield #1												
NOR-W01	N/A		Degraded wet meadow / PEM1Bf	N/A	ETWS	0.14[6]	0.00	0.00	Depressional	Groundwater Recharge	Groundwater	Not Likely
Subtotal for the Temporary Compression Sites				**N/A**		**0.21**	**0.00**	**0.00**				
Temporary Compression Sites – Lake Mills Compressor Station and Owatonna Compressor Station												
No wetland crossings were identified within Project component ESB												
V2F Project Total				**5,884**		**4.34**	**0.00**	**1.93**				

[1] Wetland Classification based on Cowardin, Classification of Wetlands and Deepwater Habitats: PFO1A – Palustrine Forested – broad leaved deciduous – temporarily flooded (Hardwood Forest, Floodplain Forest), PSS1C – Palustrine Scrub-Shrub - broad-leaved deciduous - seasonally flooded (Shrub-Carr), PSS1B – Palustrine Scrub-Shrub - broad-leaved deciduous - saturated (Shrub-Carr), PEM1Af - Palustrine Emergent – temporarily flooded - farmed (Seasonally Flooded/Farmed), PEM1B - Palustrine Emergent – seasonally saturated (Wet Meadow / Disturbed wet meadow), PEM1Bf - Palustrine Emergent – seasonally saturated - farmed (Wet Meadow / Disturbed wet meadow / Farmed), PEM1C - Palustrine Emergent – persistent - seasonally flooded (Shallow Marsh), PEM1Cf - Palustrine Emergent – persistent - seasonally flooded - farmed (Shallow Marsh / Farmed), PUBH – Palustrine Unconsolidated Bottom –permanently flooded (Shallow Open Water) – The listed classification represents the wetland community at the crossing locations.
[2] Wetland crossing lengths of pipeline.
[3] Area required to be cleared at a frequency necessary to maintain the ROW in an herbaceous state.
[4] Wetlands crossed by the Project via HDD. Northern will not conduct maintenance between the entry and exit pits; therefore, no impacts on the wetland will occur during operation.
[5] Wetland impacts will occur from routine mowing operations; however, the wetland currently consist of a PEM community, therefore no community type conversion will occur.
[6] Construction related wetland impacts will not include below-ground impacts
[7] Jurisdiction determination per USACE determination 33 CFR Part 328 on November 13, 1987.
[8] Impacts are less than 0.01 acre in size
[9] Impacts will be limited to foot traffic within a six-foot-wide travel lane between the HDD entry and exit points.

The V2F Project will cross 39 wetlands; and result in a total of 4.34 acres of temporary impact and 1.93 acres of operational impact on wetlands. The V2F Project will result in no permanent fill or conversion of any wetlands. Northern will cross 13 of the 39 wetlands identified via HDD. Twenty-six of the 39 identified wetlands will be crossed via open-cut or will be temporarily impacted by ETWS, TAR or a staging area associated with the installation of the three pipeline extensions. An additional four wetlands are within the ETWS are needed for the disconnect sites or temporary compression sites. ETWS needed within the Farmington compressor station that will temporarily impact delineated wetland FCS-W01 is for construction dewatering purposes only. The dewatering location at the Farmington compressor station site was directed by the MDNR**.** Modifications to the FERC Procedures to utilize a 100-foot-wide TWS and have ETWS and staging areas in wetlands are discussed in Table 1.5-5, Resource Report 1. Wetland impacts are geographically isolated; no individual wetland crossings will be over 0.5 acre of impact.

Wetland impacts will be limited to foot traffic within 6-foot-wide or two 3-foot-wide travel lanes for the 13 wetlands that will be crossed via HDD on the V2F Project. No filling, grading or excavation, mechanical clearing, or vegetative community conversation will occur between the HDD entry or exit points.

During operation of the V2F Project, a ten-foot-wide corridor centered above the proposed pipelines through wetlands will need to be maintained in a state of emergent vegetation for safety purposes. Furthermore, trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating will be selectively cut and removed. No other wetlands on the V2F Project will be impacted by operations. Per its Procedures, Northern will not conduct any routing vegetation mowing or clearing in wetlands that are between HDD entry and exit points. Areas between HDD entry and exit points will not require operational maintenance. Refer to Table 2.3-1 for details on operational impacts.

Per the Minnesota WCA Chapter 8420.0420, Subpart 6, Utilities, a replacement plan will not be required for the installation of pipelines on the V2F Project. Additionally, per Subpart 9 De Minimis, a replacement plan will not be required for the V2F Project as permanent wetland impacts at each location do not exceed 10,000 square feet. Wetland mitigation credits are not required under the Minnesota WCA for temporary wetland impacts. Therefore, wetland mitigation credits will not be purchased for temporary or permanent wetland impacts as a result of V2F Project construction.

NL27 Project

One hundred fifty-one wetlands were identified within the ESB surveyed for the NL27 Project; however, only 39 wetlands will be crossed by the NL27 Project. Field-delineated wetland boundaries are shown in Figure 2-4. The wetland communities that will be crossed by the NL27 Project are classified as seasonally flooded basin/farmed wetland, wet meadow/disturbed wet meadow, shallow marsh, deep marsh, shrub-carr, hardwood swamp, and floodplain forest. Wetland classifications are discussed in greater detail below. Northern's Wetland and Waterbody Delineation Report in Appendix 2B provides a detailed review of the wetland delineation survey, including vegetation community profiles and qualitative assessments. Table 2.3-2 lists the identified wetlands crossed by the NL27 Project and provides a summary of the wetland characteristics, including the sampling point number, USFWS Cowardin classification, field determined classification, crossing methodology, and acreage of the wetland delineated within the NL27 Project by Project component

Table 2.3-2 Wetlands Crossed by the NL27 Project

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Lake Mills M500 E-line												
LMA-W37	42.56		Shallow marsh / PEM1Cf	N/A	TWS	<0.00[8]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
LMA-W42	42.56		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	<0.00[8]	0.00	<0.00[5,8]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater	Not Likely
Subtotal				**N/A**		**<0.00**	**0.00**	**<0.00**				
Albert Lea M500 E-line												
ALO-W09	7.07	7.07	Degraded wet meadow / PEM1B, shallow marsh / PEM1C	11	TWS/Open-Cut	0.02	0.00	<0.00[5,8]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater	Not Likely
	7.07		Shrub-carr / PSS1C[10]	N/A	N/A	0.00	0.00	0.00				
ALO-W14	4.14	4.18	Seasonally flooded basin/farmed wetland / PEM1Af	86	TWS/Open-Cut	0.13	0.00	0.09[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
ALO-W26	5.23	5.35	Degraded wet meadow / PEM1B, shrub-carr / PSS1C	549	HDD	0.08[9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ ALO-S02	Potentially
ALO-W34	3.78	3.78	Degraded wet meadow / PEM1B	12	TWS/Open-Cut	0.04	0.00	0.02[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely
Subtotal				**658**		**0.27**	**0.00**	**0.11**				
Willmar 3rd Branch Line Upstream												
WIL-W01	3.67	3.68	Seasonally flooded basin/farmed wetland / PEM1Af, degraded wet meadow / PEM1B	61	TWS/Open-Cut	0.10	0.00	0.07[5]	Depressional	Wildlife Habitat/ Groundwater Recharge	Precipitation/ Groundwater/ WIL-S01	Not Likely

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
WIL-W02	3.70	3.73	Hardwood swamp / PFO1A	50	TWS/Open-Cut	0.07	0.00	0.04[5]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ WIL-S01/ WIL-S03	Not Likely
			Degraded wet meadow / PEM1B	72	TWS/Open-Cut	0.16	0.00	0.10[5]				
WIL-W05[11]	4.03	4.11	Hardwood swamp / PFO1A	193	TWS/Open-Cut	0.18	0.00	0.16[5]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater	Potentially
			Degraded wet meadow / PEM1B	151	TWS/Open-Cut	0.41	0.00	0.22[5]				
WIL-W06	4.19		Hardwood swamp / PFO1A	N/A	TWS	0.01	0.00	<0.00[5,8]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ WIL-S05	Not Likely
			Degraded wet meadow / PEM1B	N/A	TWS	0.01	0.00	0.01[5]				
	4.26		Seasonally flooded basin/farmed wetland / PEM1Af, degraded wet meadow / PEM1B	N/A	ETWS	0.03	0.00	<0.00[5,8]				
WIL-W09	4.89	4.97	Shallow marsh / PEM1C	222	HDD	0.03[9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater / WIL-S09/ WIL-OW01/ WIL-OW02	Potentially
	5.08	5.10	Shrub-carr / PSS1C	97	TWS/Open-Cut	0.19	0.00	0.12[5]				
Subtotal				**846**		**1.19**	**0.00**	**0.72**				
Willmar 3rd Branch Line Downstream												
WDC-W07	6.91	6.97	Degraded wet meadow / PEM1B	307	TWS/Open-Cut	0.45	0.00	0.32[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely
WDC-W09	7.60	7.61	Degraded wet meadow / PEM1B	N/A	TAR	0.06[6]	0.00	0.00	Depressional	Groundwater Recharge	Groundwater	Not Likely
WDC-W12	7.62	7.63	Degraded wet meadow / PEM1Bd	18	TWS/Open-Cut	0.04	0.00	0.02[5]	Depressional	Groundwater Recharge	Groundwater	Not Likely

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
WDC-W13	7.76	7.78	Seasonally flooded basin/farmed wetland / PEM1Af	134	TWS/Open-Cut	0.18	0.00	0.14[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
WDC-W16	8.58	8.61	Seasonally flooded basin/farmed wetland / PEM1Af	142	TWS/Open-Cut	0.23	0.00	0.16[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
WDC-W23	8.98	9.02	Degraded wet meadow / PEM1B	222	TWS/Open-Cut	0.38	0.00	0.26[5]	Depressional	Groundwater Recharge	Groundwater / WDC-S05	Potentially
WDC-W24	9.85	9.85	Degraded wet meadow / PEM1Bd, shallow marsh / PEM1Cd	7	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ WDC-S06	Potentially
WDC-W34	N/A		Degraded wet meadow / PEM1Bdf	N/A	TAR	0.02[6]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
	9.86	9.86		11	HDD	<0.00[8,9]	0.00	0.00[4]				
	9.88	9.88		23	HDD	<0.00[8,9]	0.00	0.00[4]				
WDC-W31	10.28	10.28	Degraded wet meadow / PEM1Bdf	22	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater	Not Likely
WDC-W32	10.30	10.30	Shallow marsh / PEM1Cd	22	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater	Not Likely
	10.31			N/A	ETWS	0.05	0.00	0.00				
WDC-W33	10.59		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	0.01	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
WDC-W44	11.08		Seasonally flooded basin/farmed wetland / PEM1Af	N/A	TWS	<0.00[8,]	0.00	0.00	Depressional	Wildlife Habitat	Precipitation	Not Likely
WDC-W45	11.14		Degraded wet meadow / PEM1Bd	N/A	TWS	0.02	<0.00[12]	0.00[5]	Depressional	Groundwater Recharge	Groundwater/ WDC-S10	Potentially
Subtotal				**908**		**1.44**	**<0.00**	**0.90**				
Welcome 2nd Line												

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
No wetland crossings were identified within Project component ESB												
Paynesville 2nd Branch Line												
PAY-W08	0.56	0.61	Shallow marsh / PEM1C	223	HDD	0.03[9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ PAY-S03	Potentially
PAY-W03	1.56	1.62	Seasonally flooded basin/farmed wetland / PEM1Af	378	TWS/Open-Cut	0.48	0.00	0.39[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
PAY-W01	1.97	2.36	Shallow marsh / PEM1C, Shrub-carr / PSS1C	1,992	HDD	0.27[9]	0.00	0.00[4]	Depressional	Wildlife Habitat/ Groundwater Recharge	Groundwater/ PAY-S01/ PAY-S02	Potentially
Subtotal				**2,597**		**0.78**	**0.00**	**0.39**				
Worthington 2nd Branch Line												
No wetland crossings were identified within Project component ESB												
Springfield 2nd Branch Line												
SPR-W11	15.04	15.05	Seasonally flooded basin/farmed wetland / PEM1Af	39	TWS/Open-Cut	0.11	0.00	0.05[5]	Depressional	Wildlife Habitat	Precipitation	Not Likely
SPR-W12	15.20	15.26	Floodplain forest / PFO1A, degraded wet meadow / PEM1B	277	HDD	0.04[9]	0.00	0.00[4]	Depressional / Floodplain	Wildlife Habitat/ Groundwater Recharge	Groundwater/ SPR-S04	Potentially
SPR-W14	16.17	16.17	Seasonally flooded basin/farmed wetland / PEM1Af	29	HDD	<0.00[8,9]	0.00	0.00[4]	Depressional	Wildlife Habitat	Precipitation/ SPR-S03	Potentially
SPR-W13	16.19	16.25	Degraded wet meadow / PEM1B	255	HDD	0.04[9]	0.00	0.00[4]	Depressional	Groundwater Recharge	Groundwater/ SPR-S02	Potentially
SPR-W05	17.39	17.51	Floodplain forest / PFO1A, degraded wet meadow / PEM1B	626	HDD	0.09[9]	0.00	0.00[4]	Depressional / Floodplain	Wildlife Habitat/ Groundwater Recharge	Groundwater/ SPR-S01	Potentially
Subtotal				**1,226**		**0.28**	**0.00**	**0.05**				

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Minnesota Interconnect 2nd Branch Line												
MIC-W04	17.82	17.83	Shallow marsh / PEM1C	98	HDD	0.01[9]	0.00	0.00[4]	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater	Not Likely
MIC-W07	17.94		Wet meadow / PEM1B	N/A	TAR	0.02[6]	0.00	0.00	Depressional	Wildlife Habitat / Groundwater Recharge	Groundwater	Potentially
MIC-W01	18.25	18.27	Floodplain forest / PFO1A, Wet meadow / PEM1B	139	HDD	0.02[9]	0.00	0.00[4]	Depressional / Floodplain	Wildlife Habitat / Groundwater Recharge	Groundwater/ MIC-S01	Potentially
	18.38	18.41		159	HDD	0.02[9]	0.00	0.00[4]				
Subtotal				**396**		**0.07**	**0.00**	**0.00**				
Alexandria 2nd Branch Line												
ALX-W04	16.71		Degraded wet meadow / PEM1B	N/A	ETWS	0.01[6]	0.00	0.00	Depressional	Groundwater Recharge	Groundwater/ ALX-S01	Potentially
ALX-W03	16.87	16.90	Degraded wet meadow / PEM1B	116	TWS/Open-Cut	0.21	0.00	0.15[5]	Depressional	Groundwater Recharge	Groundwater/ ALX-S01	Potentially
ALX-W02	17.29	17.40	Seasonally flooded basin/farmed wetland / PEM1Af, degraded wet meadow / PEM1B	561	TWS/Open-Cut	0.97	0.00	0.63[5]	Depressional	Wildlife Habitat / Groundwater Recharge	Precipitation/ Groundwater/ ALX-S02	Potentially
ALX-W01	17.48	17.55	Hardwood swamp / PFO1A, seasonally flooded basin/farmed wetland / PEM1Af, degraded wet meadow / PEM1B, shrub-carr / PSS1C	379	HDD	0.05[9]	0.00	0.00[4]	Depressional	Wildlife Habitat / Groundwater Recharge	Precipitation/ Groundwater/ ALX-S03	Potentially
	18.03	18.03	Degraded wet meadow / PEM1B	23	TWS/Open-Cut	0.04	0.00	0.00				
	18.04			N/A	TWS	<0.00[8]	0.00	0.00				
Subtotal				**1,079**		**1.28**	**0.00**	**0.78**				

Unique Wetland Identifier	MP		Field Determined Wetland Classification[1]	Length of Crossing (feet)[2]	Primary Wetland Crossing Method	Area Affected by Construction (acres)	Area Affected by Operation (acres)		Wetland Setting	Wetland Function	Aquatic Resource	USACE Regulated (Y/N)[7]
	From	To					Operational Fill	Operational Maintenance[3,5]				
Hugo Compressor Station Uprate												
No wetland crossings were identified within Project component ESB												
NL27 Project Total				**7,710**		**5.31**	**<0.00**	**2.95**				

[1] Wetland Classification based on Cowardin, Classification of Wetlands and Deepwater Habitats: PFO1A – Palustrine Forested – broad leaved deciduous – temporarily flooded (Hardwood Swamp, Floodplain Forest), PSS1C – Palustrine Scrub-Shrub - broad-leaved deciduous - seasonally flooded (Shrub-Carr), PEM1Af - Palustrine Emergent – temporarily flooded - farmed (Seasonally Flooded Basin/Farmed Wetland), PEM1B - Palustrine Emergent – seasonally saturated (Wet Meadow / Disturbed wet meadow), PEM1Bd - Palustrine Emergent – seasonally saturated - ditched (Wet Meadow / Disturbed wet meadow / Ditched), PEM1Bdf - Palustrine Emergent – seasonally saturated – ditched- farmed (Wet Meadow / Disturbed wet meadow / Ditched / Farmed), PEM1C - Palustrine Emergent – persistent - seasonally flooded (Shallow Marsh), PEM1Cf - Palustrine Emergent – persistent - seasonally flooded - farmed (Shallow Marsh / Farmed), PEM1Cd - Palustrine Emergent – persistent - seasonally flooded - ditched (Shallow Marsh / ditched), PEM1F- Palustrine Emergent – semi permanently flooded (Deep Marsh) – The listed classification represents the wetland community at the crossing locations.
[2] Wetland crossing lengths of pipeline.
[3] Area required to be cleared at a frequency necessary to maintain the ROW in an herbaceous state.
[4] Wetlands crossed by the Project via HDD. Northern will not conduct maintenance between the entry and exit pits; therefore, no impacts on the wetland will occur during operation.
[5] Wetland impacts will occur from routine mowing operations; and will be limited to a ten-foot-wide corridor centered above the proposed pipeline in order to maintain a state of emergent vegetation for safety purposes. Trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating will be selectively cut and removed.
[6] Construction related wetland impacts will not include below-ground impacts
[7] Jurisdiction determination per USACE determination 33 CFR Part 328 on November 13, 1987.
[8] Impacts are less than 0.01 acre in size
[9] Impacts will be limited to foot traffic within a six-foot-wide travel lane between the HDD entry and exit points
[10] Portion of wetland complex not crossed by Project centerline or workspace
[11] Listed as Minnesota Public Water Basin/Wetland per the Minnesota Public Waters Index.
[12] Permanent fill placement totaling 0.003 (145 square feet) will be required within wetland.

The NL27 Project will cross 39 wetlands; and result in a total of 5.31 acres of temporary impact and 2.95 acres of operational impact on wetlands. The NL27 Project will require permanent fill placement totaling 0.003 acre (145 square feet) within wetland WDC-W45 associated with the construction of the new tie-in valve setting at MP 11.15 on the Willmar 3rd branch line downstream. As part of the construction and operation impacts, the Willmar 3rd branch line upstream will require conversion of forested and scrub-shrub wetland types totaling 0.45 acre to install the pipeline via open-cut methods through wetlands WIL-W02, WIL-W05 and a portion of WIL-W09 and use TWS within a portion of WIL-W06. Of the total 0.45 acre of forested and scrub-shrub wetland conversion, a total of 0.17 acre of forested wetland and 0.02 acre of scrub-shrub wetland will be permanently maintained as emergent vegetation within the pipeline easement. Refer to Table 2.3-2 for details.

Northern will cross 11 of the 39 identified wetlands via HDD. Additionally, wetland types within a portion of four other identified wetlands (WIL-W09 [shallow marsh/PEMC], WDC-W34 [degraded wet meadow/PEM1Bdf], WDC-W32 [shallow marsh / PEM1Cd], and ALX-W01 [hardwood swamp/PFO1A, Seasonally flooded basin/farmed wetland/PEM1Af, Degraded wet meadow/PEM1B, Shrub-carr/PSS1C]) also will be crossed by HDD to minimize impacts to wetland communities. Twenty-four of the 39 wetlands will be crossed using open-cut or will be temporarily impacted by TWS, ETWS or TAR associated with the installation of the ten pipeline extensions.

Modifications to the FERC Procedures to utilize a 100-foot-wide TWS and have ETWS and staging areas in or within 50-feet of wetlands are discussed in Table 1.5-6, Resource Report 1. Wetland impacts are generally geographically isolated; no individual wetland crossings will be over 0.5 acre of impact, except for wetlands WIL-W05 and ALX-W02 which will require temporary impacts over 0.5 acre for an individual crossing.

For the 11 wetlands that will be crossed using HDD and four additional wetland portions that will be crossed by HDD, wetland impacts will be limited to foot traffic within 6-foot-wide or two 3-foot-wide travel lanes. No filling, grading or excavation, mechanical clearing, or vegetative community conversation will occur between the HDD entry or exit points.

During operation, a ten-foot-wide corridor centered above the proposed pipelines through wetlands will need to be maintained in a state of emergent vegetation for safety purposes. Furthermore, trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating will be selectively cut and removed. A total of 17 wetlands will be impacted by operation of the Project. Refer to Table 2.3-2 for operational impact details.

Per the Minnesota WCA Chapter 8420.0420, Subpart 6, Utilities, a replacement plan will not be required for the installation of pipelines. Additionally, per Subpart 9 De Minimis, a replacement plan will not be required for the Project as permanent wetland impacts at each location do not exceed 10,000 square feet; and WCA does not regulate vegetation removal or wetland type conversion. Therefore, wetland mitigation credits are not required under the Minnesota WCA for wetland impacts resulting from the Project.

Temporary and permanent impacts to federally regulated wetlands (aka WOTUS) associated with vegetation removal and wetland type conversion may require mitigation Under the CWA Section 404 Utility RGP regulated by the USACE St. Paul District. Northern will submit PCNs for NL27 Project components (Willmar 3rd branch line upstream and Alexandria 2nd branch line) that meet

conditions requiring notification to the USACE under the Utility RGP and comply with compensatory mitigation requirements for impacts related to wetlands proposed for the above-mentioned Project components. Northern will submit any correspondence received from the USACE St. Paul District offices in a supplemental filing. Copies of agency correspondence are provided in Appendix 2D.

2.3.2 Construction and Operation Impacts

V2F Project

Northern will avoid and minimize wetland impacts on the maximum extent practicable. One hundred fifty-eight wetlands were identified within the V2F Project ESB; Northern designed the V2F Project to avoid 119 wetlands. Additionally, Northern will minimize impacts on 13 wetlands crossed by the V2F Project by using HDD. Twenty-six emergent wetlands will be impacted either by open cut and/or by a TWS, ETWS, TAR or staging area during pipeline construction. Northern will implement the Project SWPPPs to reduce ground disturbance, minimize erosion and sediment run off and promote revegetation within the construction areas. No forested or scrub-shrub wetlands will be crossed by the V2F Project via open cut and/or by a TWS, ETWS, TAR or staging area. All forested/scrub-shrub wetlands or wetland components containing forested and/or scrub-shrub areas crossed by the V2F Project will be done so via HDD.

Northern will complete work near wetlands in accordance with the Plan and its Procedures, with the exception of those areas listed in Resource 1, Table 1.5-5. Northern is requesting a modification to FERC Procedures for temporary workspace over 75 feet in width in 13 wetlands and ETWS and TARs within 50 feet of five wetlands. Wetlands crossed by the V2F Project, where the construction corridor cannot be reduced to 75 feet, qualify for the crossing exception outlined in the Procedures. These wetlands either border disturbed or cultivated uplands, or reducing the corridor width would not lessen impacts because the disturbance occurs on the non-working side. The ETWS and access roads located within 50 feet of wetlands are necessary to complete open-cuts of gravel road crossings, pipeline tie-ins, point of inflection, HDD pull-back workspace, and to daylight existing pipelines or other utilities which will be crossed via HDD. Following construction, wetlands that were located in ETWS, TWS, were open cut, or were crossed by a TAR will be allowed to return to their pre-construction state. Staging areas adjacent to wetlands are in compliance with Northern's Procedures and are required for equipment set-up and operation associated with an HDD.

Temporary impacts on wetlands within the construction workspace may include the removal of vegetation and disturbance of soils. Construction activities in nearby uplands also may disturb the surface soils and cause subsequent sedimentation from disturbed areas into wetlands. To minimize the potential for sedimentation of wetlands from construction activities, erosion and sediment control measures will be installed prior to or immediately following initial ground disturbance. The erosion control devices will be installed adjacent to wetland boundaries, maintained in working condition throughout construction, and will remain in place until the adjacent upland areas are successfully revegetated as specified in Northern's Procedures.

In wetlands, a ten-foot-wide corridor centered on the pipeline will be cleared at a frequency necessary to maintain an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that will compromise the integrity of the pipeline coating will be selectively removed from the ROW. Northern will not conduct any routine vegetation mowing or clearing in wetlands or riparian environments that are between HDD entry and exit points. The post-construction

maintenance procedure will follow those described in section VI.D.1 of Northern's Procedures. Northern will maintain a 25-foot buffer between any clearing activities and the edge of the waterbody banks. No permanent conversion of wetland communities nor any permanent wetland fill will occur as a part of the V2F Project.

NL27 Project

Northern will avoid and minimize wetland impacts on the maximum extent practicable. One hundred fifty-one wetlands were identified within the ESB; Northern designed the NL27 Project to avoid 112 of the 151 wetlands identified within the ESB. Additionally, Northern will minimize impacts on 11 wetlands by crossing via HDD and a portion of four other wetlands will be partially crossed using HDD. Twenty emergent wetlands, three emergent/forested wetland complexes and one emergent/scrub-shrub wetland complex will be impacted either by open cut and/or by a TWS, ETWS, or TAR during pipeline construction. Four wetlands (WIL-W02, WIL-W05, WIL-W06 and WIL-W09) containing forested or scrub-shrub wetland type components will be crossed by the NL27 Project resulting in temporary and permanent type conversion; and one emergent wetland (WDC-W45) will require the placement of permanent fill associated with the construction of the Willmar 3rd branch line downstream tie-in valve setting.

Northern will complete work near wetlands in accordance with the Plan and its Procedures, with the exception of those areas listed in Resource 1, Table 1.5-6. Northern is requesting a modification to FERC Procedures for temporary workspace over 75 feet in width in two wetlands and ETWS, a staging area, or TARs within 50 feet of 18 wetlands. Wetlands crossed by the NL27 Project, where the construction corridor cannot be reduced to 75 feet, qualify for the crossing exception outlined in the Procedures. These wetlands either border disturbed or cultivated uplands, or reducing the corridor width would not lessen impacts because the disturbance occurs on the non-working side. The ETWS, and access roads located within 50 feet of wetlands are necessary to complete open-cuts of gravel road crossings, pipeline tie-ins, point of inflection, HDD pull-back workspace, and to daylight existing pipelines or other utilities which will be crossed via HDD. Following construction, wetlands that were located in ETWS, TWS, were open-cut, or were crossed by a TAR will be allowed to return to their pre-construction state except for wetlands WIL-W02, WIL-W05 and WIL-W09 which will require ten-feet on each side of the pipeline crossing to be maintained. Staging areas adjacent to wetlands are in compliance with Northern's Procedures and are required for equipment set-up and operation associated with an HDD.

Temporary impacts on wetlands within the construction workspace may include the removal of vegetation and disturbance of soils. Construction activities in nearby uplands also may disturb the surface soils and cause subsequent sedimentation from disturbed areas into wetlands. To minimize the potential for sedimentation of wetlands from construction activities, erosion and sediment control measures will be installed prior to or immediately following initial ground disturbance. The erosion control devices will be installed adjacent to wetland boundaries, maintained in working condition throughout construction, and will remain in place until the adjacent upland areas are successfully revegetated as specified in Northern's Procedures. Northern will implement the BMPs in the Project SWPPPs to reduce ground disturbance, minimize erosion and sediment run off and promote revegetation within the construction areas.

In wetlands, a ten-foot-wide corridor centered on the pipeline will be cleared at a frequency necessary to maintain an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that will compromise the integrity of the pipeline coating will be selectively removed from

the ROW. Northern will not conduct any routine vegetation mowing or clearing in wetlands or riparian environments that are between HDD entry and exit points. The post-construction maintenance procedure will follow those described in section VI.D.1 of Northern's Procedures. Northern will maintain a 25-foot buffer between any clearing activities and the edge of the waterbody banks. Permanent conversion of 0.19 acre of wetland communities and permanent fill totaling 0.003 acre will occur as part of the NL27 Project.

2.4 Wetland Restoration Plan

Northern will follow the combined V2F and NL27 Projects Wetland Restoration Plan (Appendix 2C) for most components, except for activities specified in the PCN applications for the NL27 Willmar 3rd branch line and Alexandria 2nd branch line. Project-specific wetland restoration plans for those components will be included in the PCN applications and will govern the restoration of those two components. Northern also will implement measures from its Procedures to avoid or minimize wetland impacts, summarized below and detailed in Appendix 2C.

Soil compaction will be minimized by limiting equipment operation in wetlands and installing temporary equipment mats, as necessary. To prevent soil mixing in unsaturated wetlands, up to 12 inches of topsoil will be removed from directly over the trench and stockpiled for restoration as close as feasible to its original horizon. Northern also will attempt to segregate wetland topsoil or vegetative mass in mucky or inundated wetlands to replenish the native seed bank during restoration. For wetlands crossed via the push-pull method, Northern will install the pipeline a minimum of four feet below the benthic soil surface.

Northern will install trench plugs at the entrance and exit of the pipeline trench through the wetland. Any confining layers that are breached during construction will be restored during backfilling. Northern will restore contours to pre-construction levels and remove temporary erosion control measures.

Wetland crossings completed via HDD will minimize the potential for wetland impacts resulting from erosion, sedimentation and/or excess turbidity by avoiding surface disturbance in and immediately adjacent to the wetlands. In the event of an inadvertent release, Northern will implement the HDD Plan, which includes procedures for monitoring, detection, isolating, stopping, and clean-up of inadvertent releases, as well as making necessary agency notifications.

Permanent erosion control devices will be installed during restoration and may include slope breakers, interceptor diversion devices, and/or vegetation cover in adjacent upland areas to minimize long-term sedimentation into the wetlands. Energy dissipation devices may be installed at the down-slope end of surface water diversion devices to prevent erosion off the ROW into wetlands.

The SPCC plan provides restrictions and mitigation measures to limit potential impacts associated with the release of fuels, lubricants or other potentially toxic materials used during routine construction. Refueling and storage of hazardous materials will be prohibited within 100 feet of wetlands during construction, unless otherwise approved by FERC.

After the completion of construction activities on each of the two Projects respective components, wetland areas will generally be allowed to revegetate naturally, unless otherwise noted within project-specific SWPPPs or agency authorization letters. Emergent wetlands, dominated primarily by low-growing sedges, rushes and other herbaceous vegetation, will revert to pre-existing conditions within one to two growing seasons following construction activities, resulting in no

permanent impacts on emergent wetland types where temporary ground disturbance will occur. Areas where permanent conversion of wetland type will occur, will be maintained in an emergent state. Northern will comply with applicable federal, state and local agencies to replace permanent impacts to wetlands through in-kind compensatory mitigation, as required by applicable permits.

Northern will complete work near wetlands in accordance with the Plan and its Procedures, with the exception of those areas listed in Resource 1, Table 1.5-5 and 1.5-6. Northern is requesting a modification to FERC Procedures to allow temporary workspace over 75 feet in width in 13 wetlands; and to allow ETWS and TARs within 50 feet of five wetlands crossed by the V2F Project. For the NL27 Project, Northern is requesting a modification to FERC Procedures to allow temporary workspace over 75 feet in width in two wetlands and to allow ETWS, a staging area, or TARs within 50 feet of 18 wetlands. Wetlands crossed by the NL27 Project, where the construction corridor cannot be reduced to 75 feet, qualify for the crossing exception outlined in the Procedures. These wetlands either border disturbed or cultivated uplands, or reducing the corridor width would not lessen impacts because the disturbance occurs on the non-working side. The ETWS, and access roads located within 50 feet of wetlands are necessary to complete open-cuts of gravel road crossings, pipeline tie-ins, point of inflection, HDD pull-back workspace, and to daylight existing pipelines or other utilities which will be crossed via HDD. Following construction, wetlands that were located in ETWS, TWS, were open-cut, or were crossed by a TAR will be allowed to return to their pre-construction state except for wetlands WIL-W02, WIL-W05 and WIL-W09 which will require ten-feet on each side of the pipeline crossing to be maintained. Staging areas adjacent to wetlands are in compliance with Northern's Procedures and are required for equipment set-up and operation associated with an HDD.

In accordance with its Procedures, Northern will monitor vegetation within wetlands annually for three years or until vegetation has been considered successful. Northern will restore wetlands to their pre-existing condition, to the extent practicable, thereby restoring the wetland function.

2.5 Agency Consultation

For wetland seed mixes, Northern will utilize Minnesota Board of Water and Soil Resources-recommended wetland seed mixes. Northern has successfully utilized similar seed mixes on past Projects in the same geographic footprint. Consultation for seed mixes is not planned. The agency consultations described below are included in Appendix 2D.

V2F Project

On February 16, 2026, Northern submitted Project information and proposed wetland impacts on the USACE – St Paul District, BWSR, and applicable LGUs, stating the V2F Project qualifies for coverage under the Utility RGP without the need for Preconstruction Notification. Subsequently, Northern requested a No-Loss Notice of Decision of state wetland permitting from the LGU pursuant to WCA Chapter 8420.0415.

NL27 Project

On February 19, 2026, Northern submitted Project information and proposed wetland impacts on the USACE – St Paul District, BWSR, and applicable LGUs, stating the NL27 Project meets non-notifying conditions under the St. Paul District RGP for Utilities for activities in Minnesota regulated by the USACE St. Paul District, except for the Willmar 3rd branch line upstream and Alexandria 2nd branch line components. Subsequently, Northern requested a No-Loss Notice of Decision of state wetland permitting from the eight LGUs pursuant to WCA Chapter 8420.0415. for the Willmar

3rd branch line upstream and Alexandria 2nd branch line components, Northern submitted a request to USACE February 12, 2026, requesting a pre-application meeting. After the meeting, Northern will submit PCNs for the two components to the USACE St. Paul District for activities impacting WOTUS. In February 2026, Northern received responses from USACE acknowledging receipt of most of its wetland notification submittals. USACE stated that the proposed work appears to be authorized by a general permit that does not require pre-construction notification to the USACE. Northern can proceed without additional approvals from USACE. These components are: Lake Mills M500 E-line, Albert Lea M500 E-line, Paynesville 2nd branch line, Willmar 3rd branch line downstream, Springfield 2nd branch line, Welcome 2nd line, and Minnesota Interconnect 2nd branch line.

The LGU's for the Welcome 2nd line and the Worthington 2nd branch line also acknowledged receipt of the wetland notifications and indicated they would begin their reviews. All agency correspondence is included in Appendix 2D.

2.6 Requested Modifications to FERC Procedures

Northern has adopted the 2013 issuance of FERC's Plan and Procedures as its own for the construction and operation of the V2F and NL27 Projects (FERC 2013a; 2013b). Northern has identified several modifications for wetlands which are further discussion in Table 1.5-5 and Table 1.5-6, respectively in Resource Report 1. Project-specific plans will be developed and incorporated as necessary into construction contract documents.

2.7 References

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Resource Report 2
Figures

Figure 2-1
V2F Project NWI Wetlands

Figure No.

2-1

Title

National Wetlands Inventory Map
V2F - Disconnect Site Ventura Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Hancock County, Iowa

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

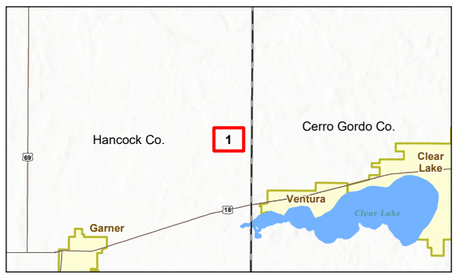
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory Map
V2F - Temporary Compression Site Lake Mills Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Worth County, Iowa

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

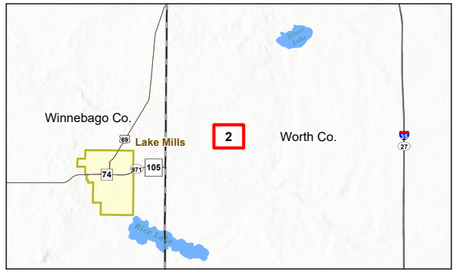
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Existing Pipeline
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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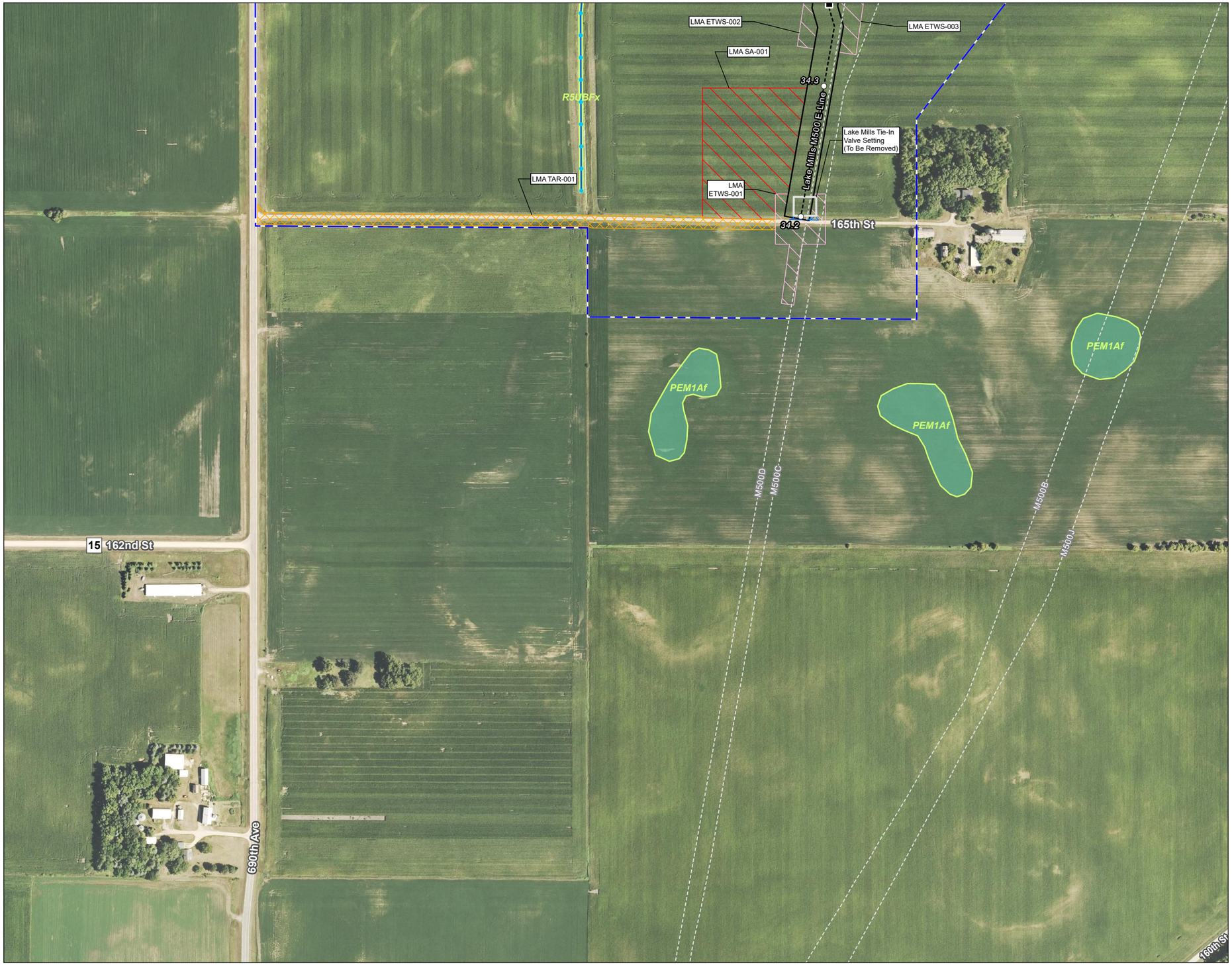


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

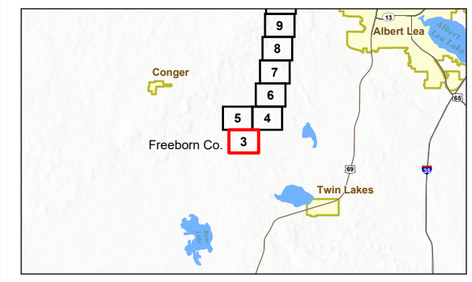
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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3. Background: 2023 NAIP

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Northern Natural Gas

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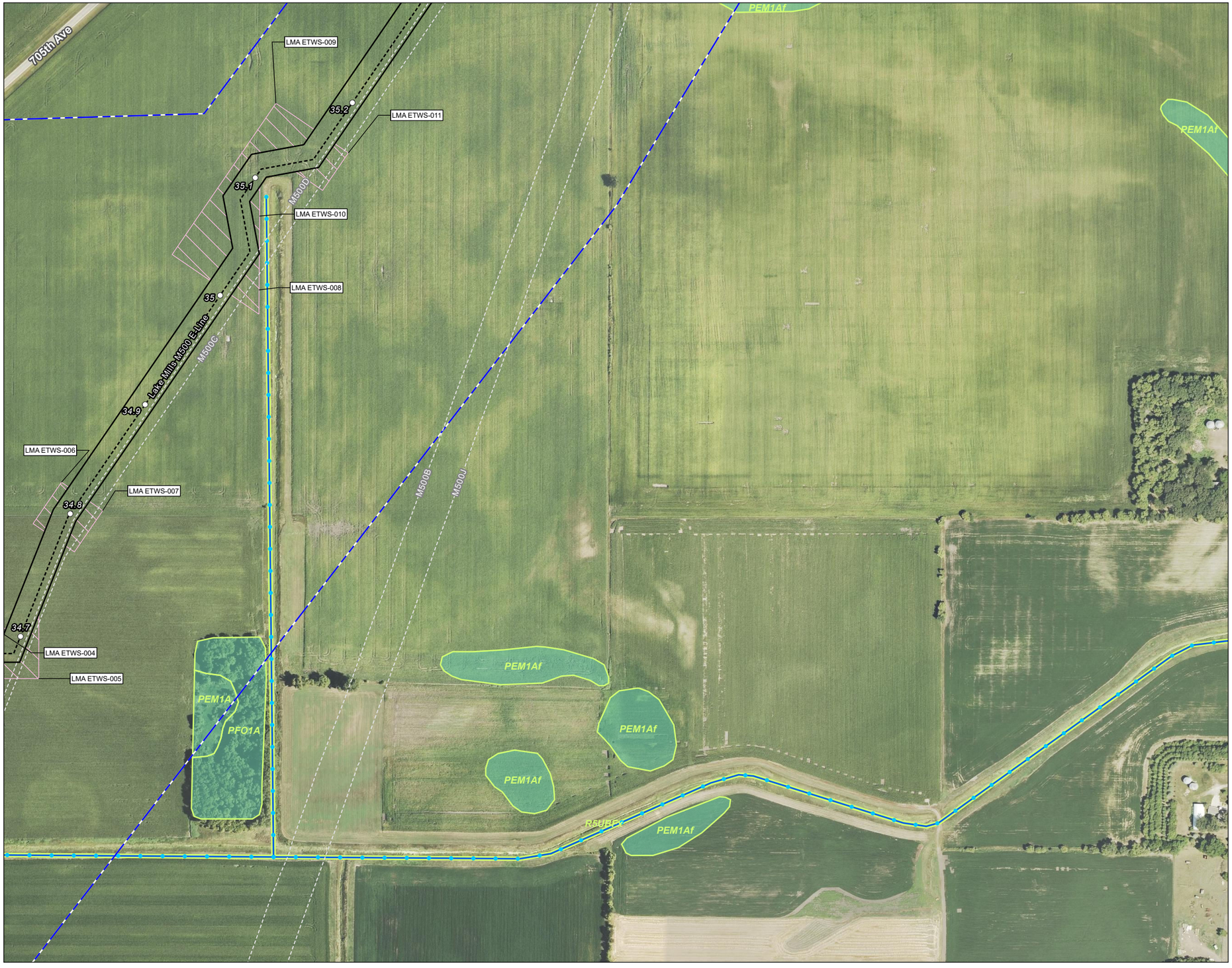

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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(At original document size of 11x17)
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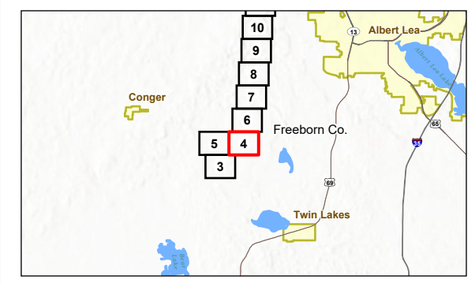
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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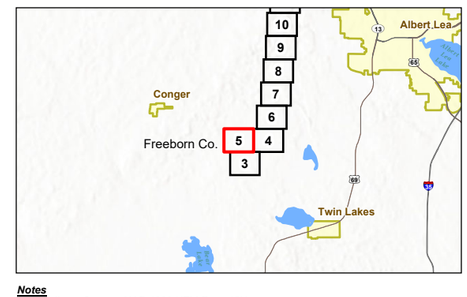
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

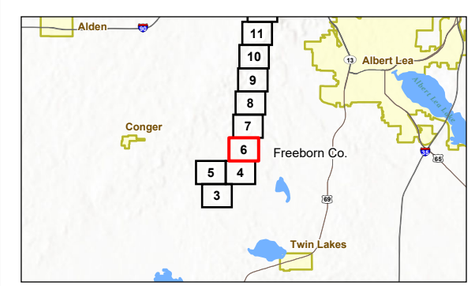
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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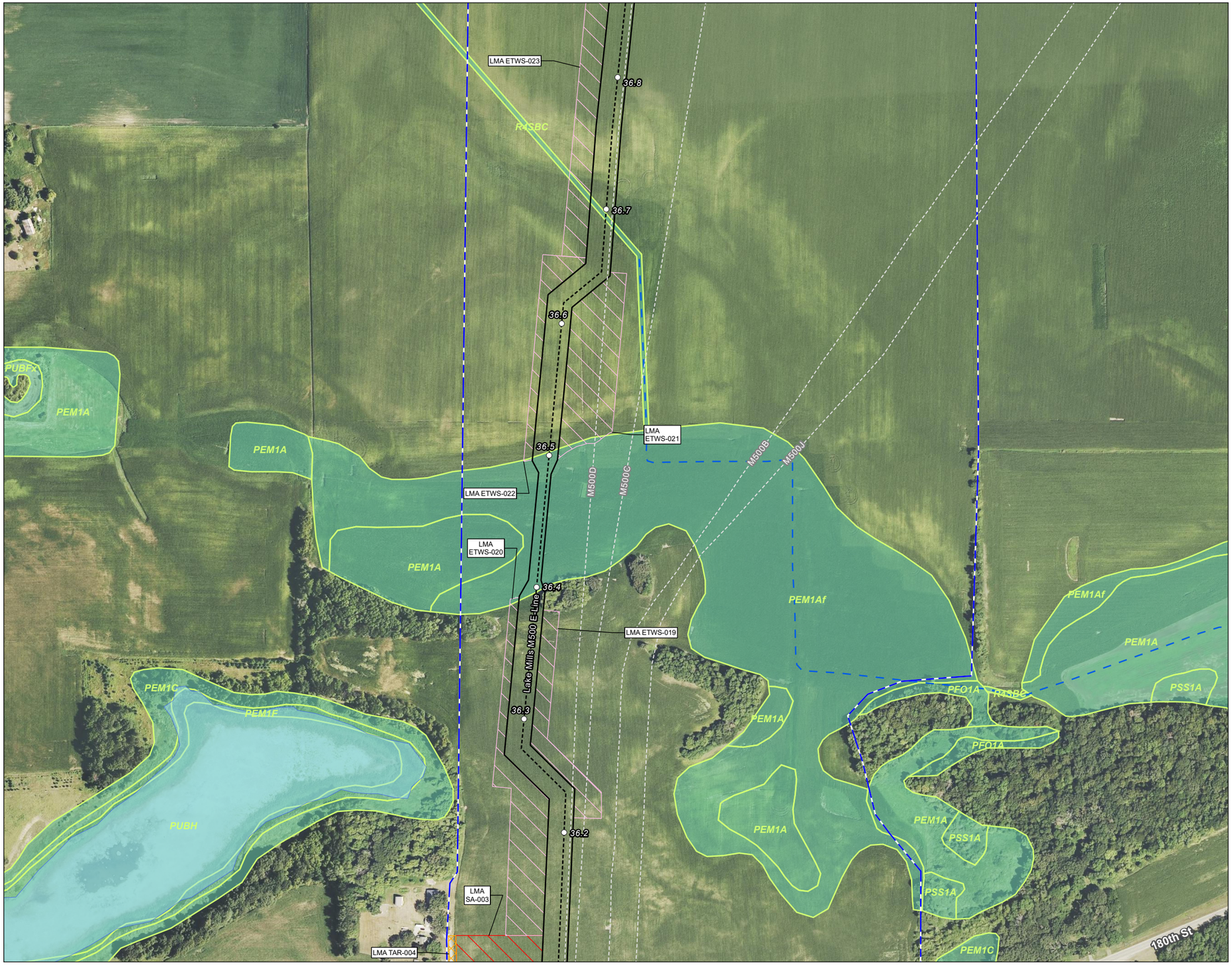

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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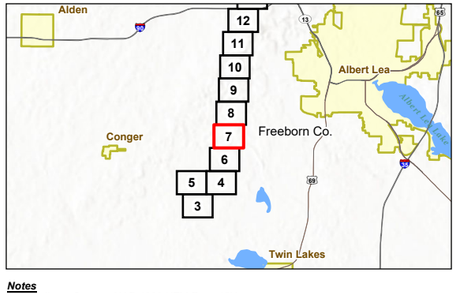
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

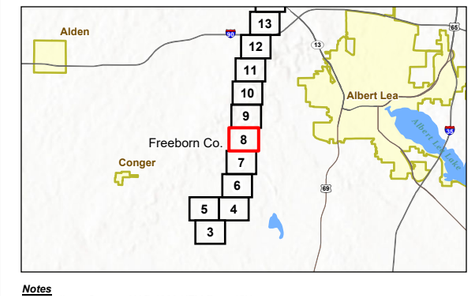
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- MDNR Protected Watercourse
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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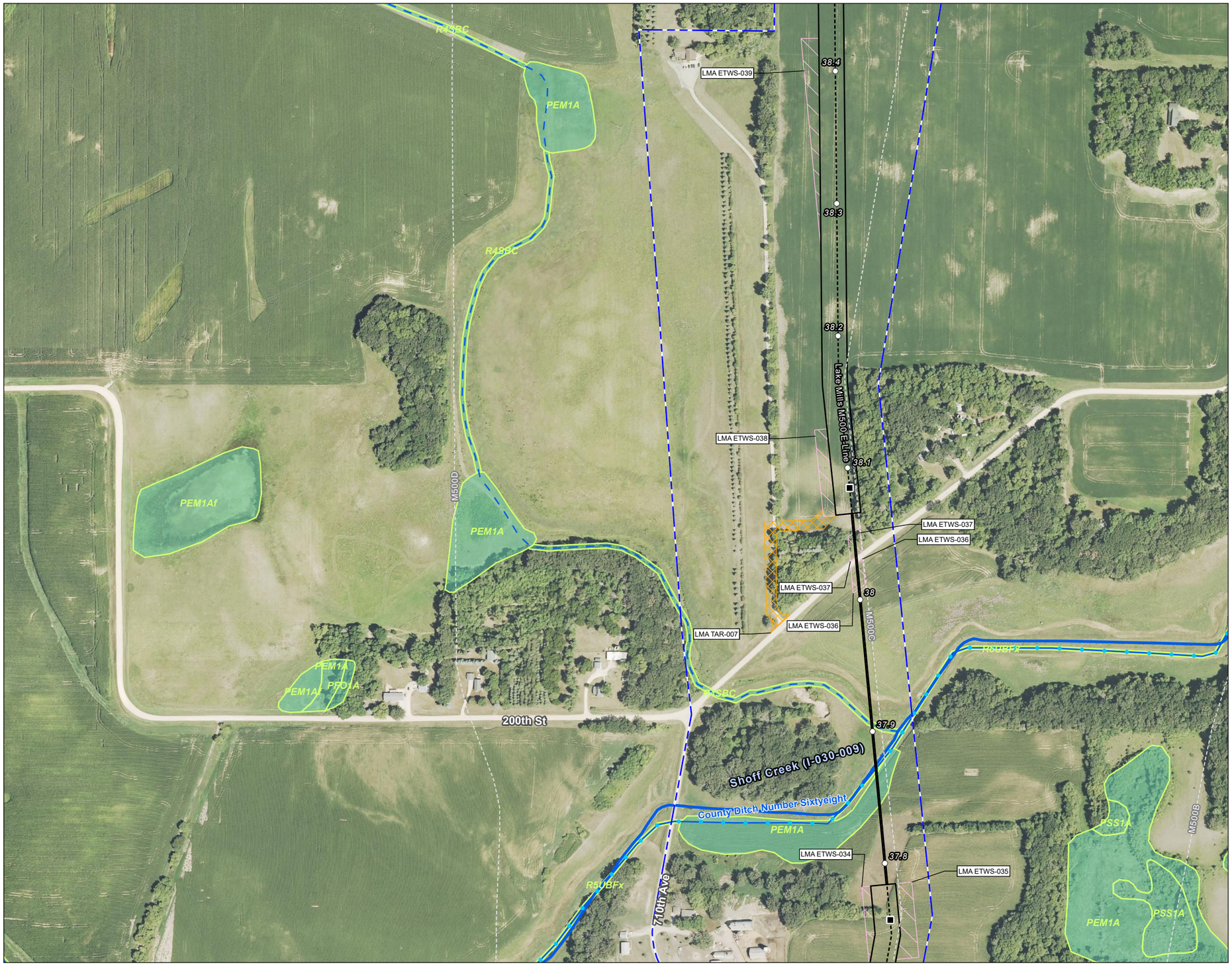


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

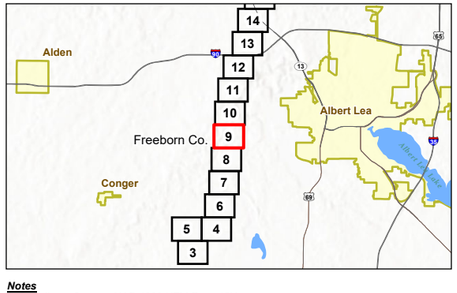
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MDNR Protected Watercourse
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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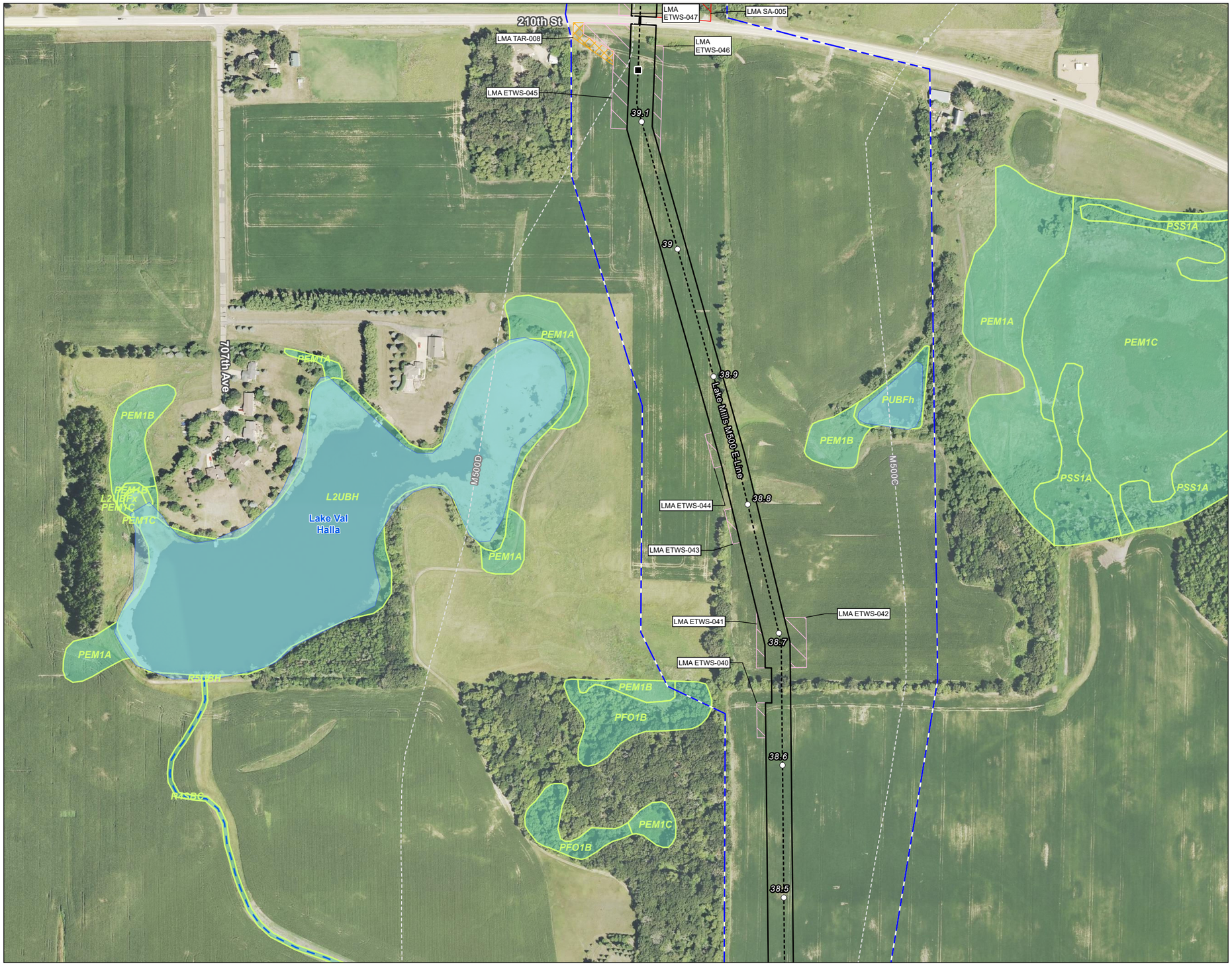

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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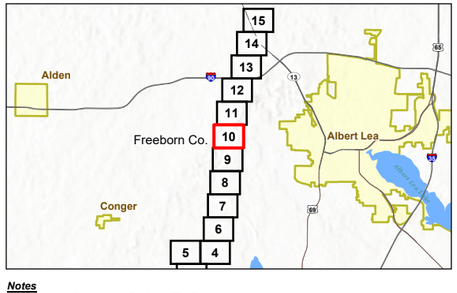
- Canal/Ditch
- Waterbody



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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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- Waterbody

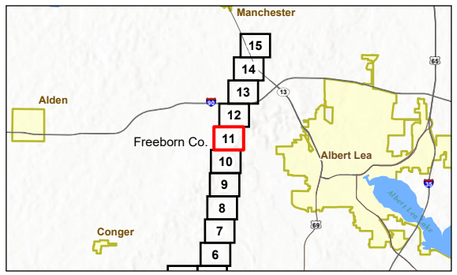

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
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Legend

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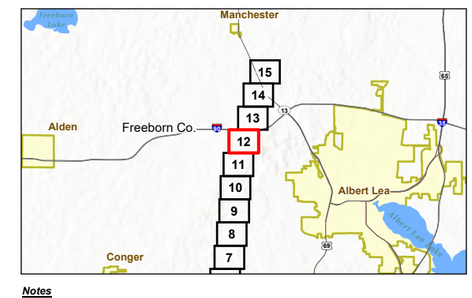
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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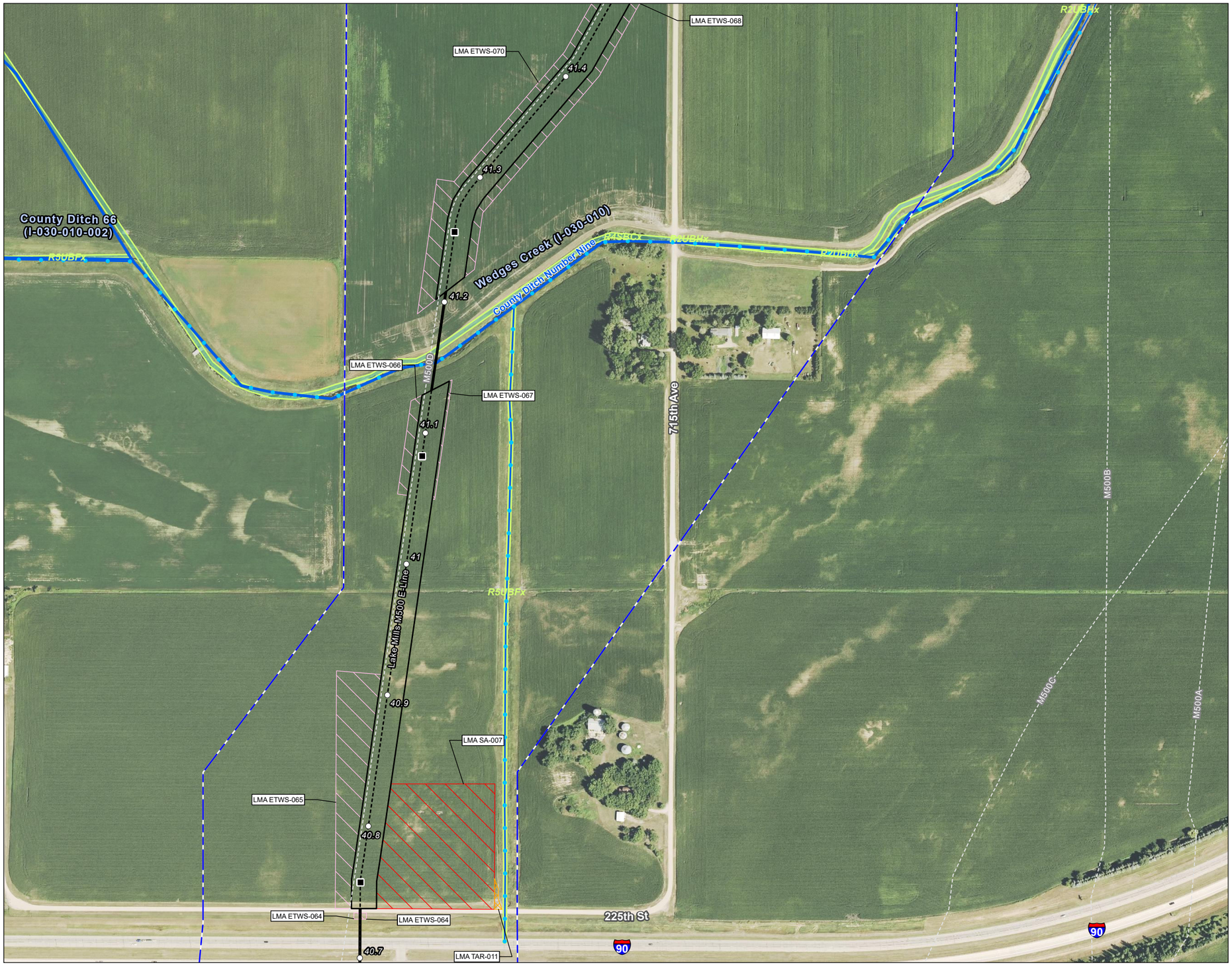


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

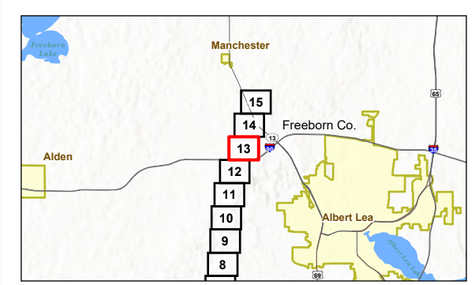
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MDNR Protected Watercourse
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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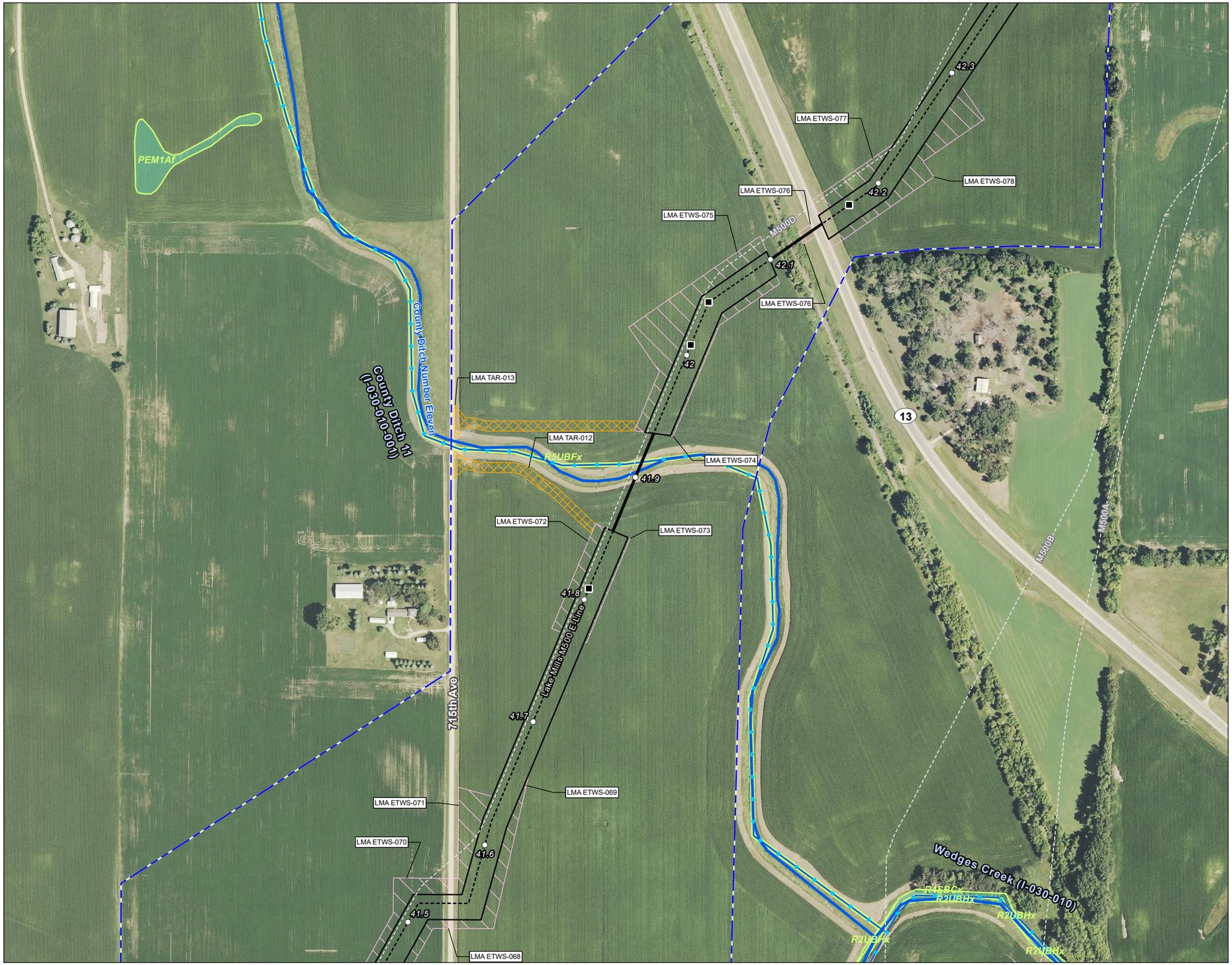

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

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Legend

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National Hydrography Dataset

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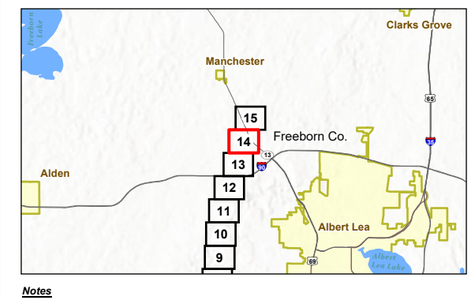
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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(At original document size of 11x17)
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Legend

- Environmental Survey Boundary
- Existing Lot
- Temporary Workspace
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- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
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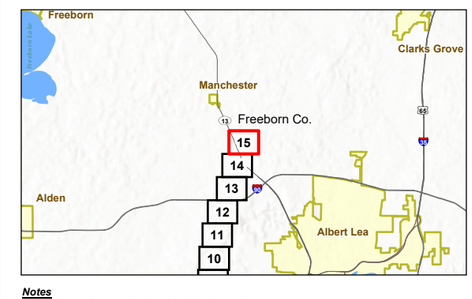
- MDNR Protected Watercourse
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
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- Existing Pipeline
- Mile Post
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National Hydrography Dataset

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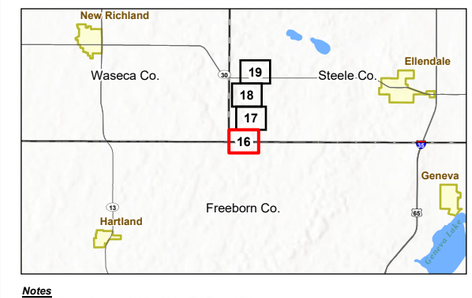
- Waterbody



Notes

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2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

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Legend

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National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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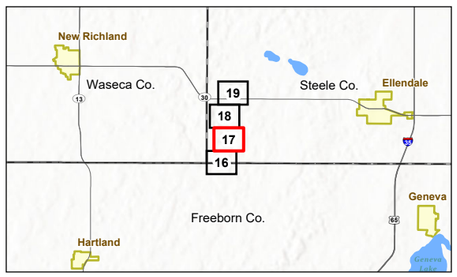
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

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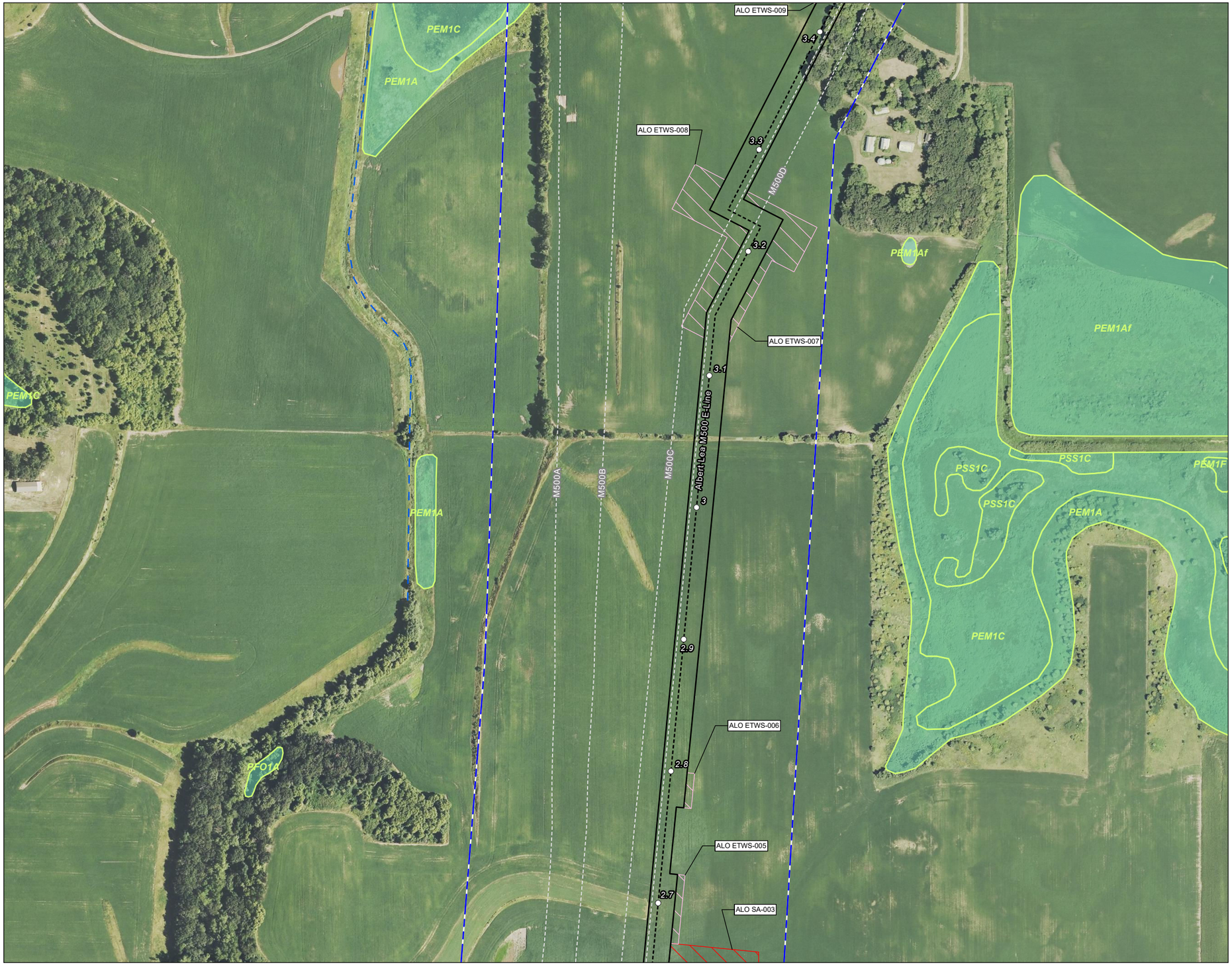

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
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Legend

- Environmental Survey Boundary
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- Extra Temporary Workspace
- Staging Area
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- Existing Pipeline
- Mile Post
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National Hydrography Dataset

- Perennial Stream
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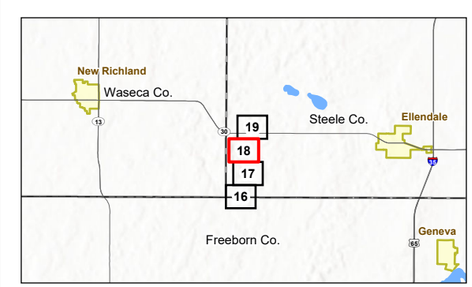

Notes
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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

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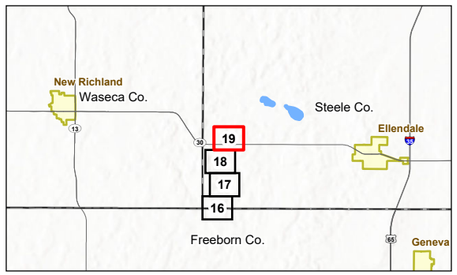
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Northern Natural Gas

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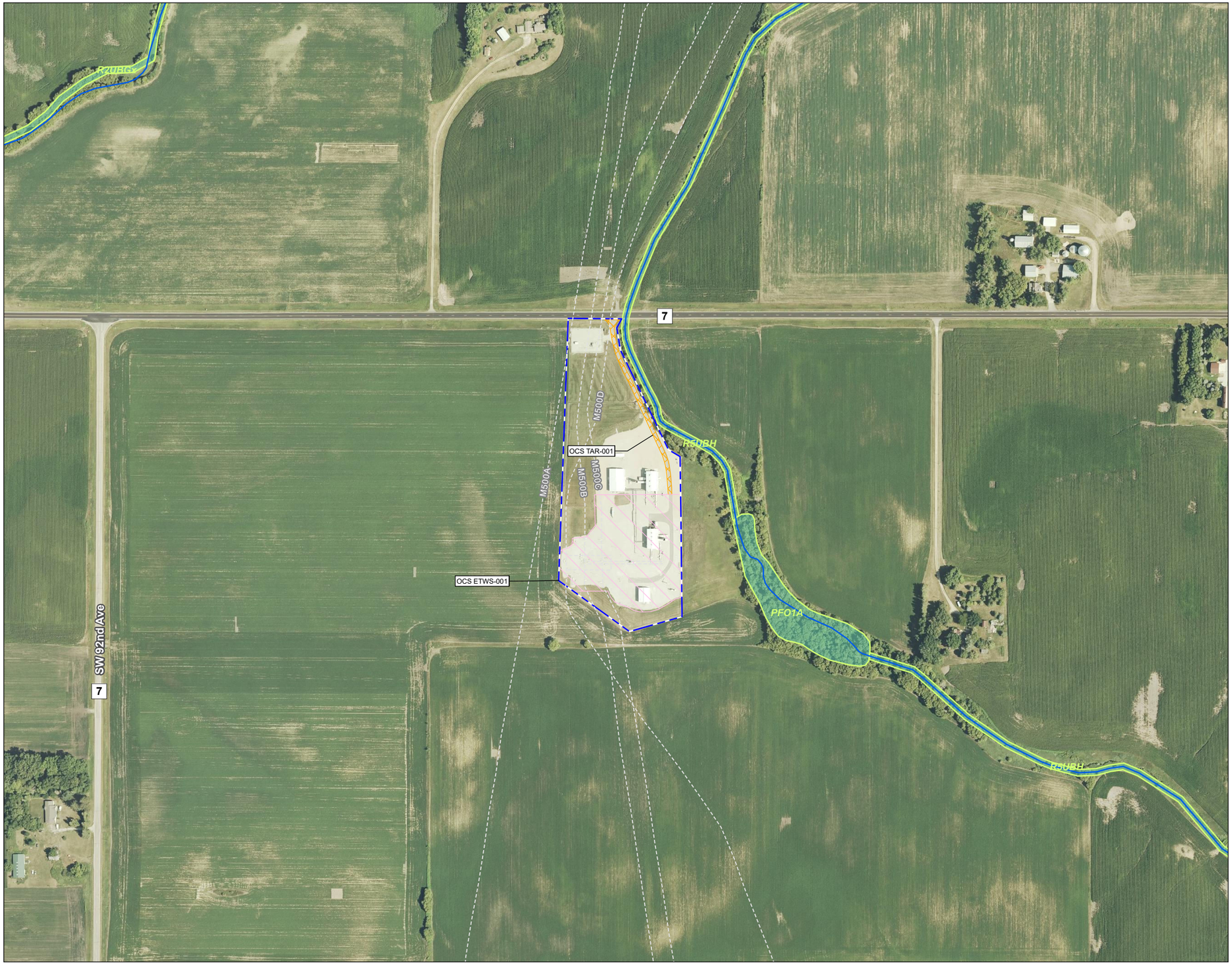


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Temporary Compression Site Owatonna Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

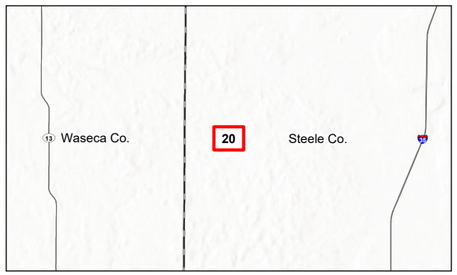
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Temporary Compression Site Northfield #1

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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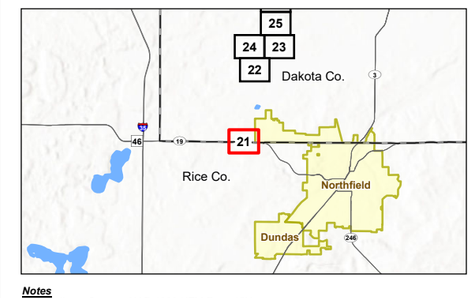
- Waterbody



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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
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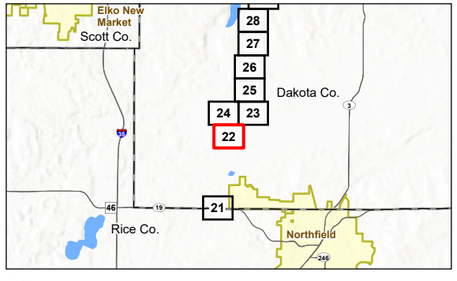
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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Northern Natural Gas

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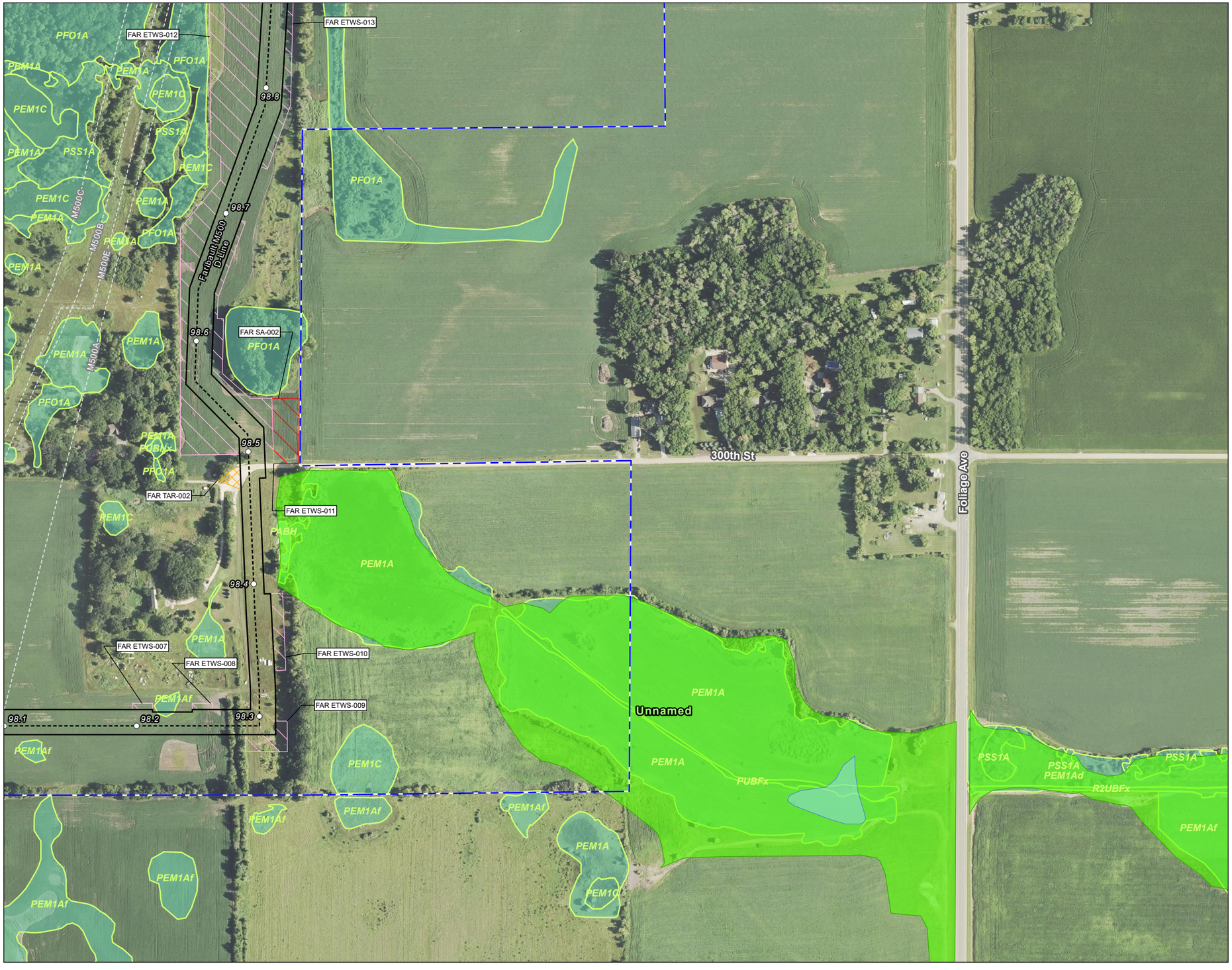

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

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Legend

- Environmental Survey Boundary
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- Extra Temporary Workspace
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- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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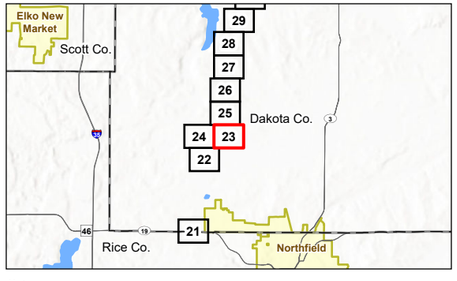
- Waterbody



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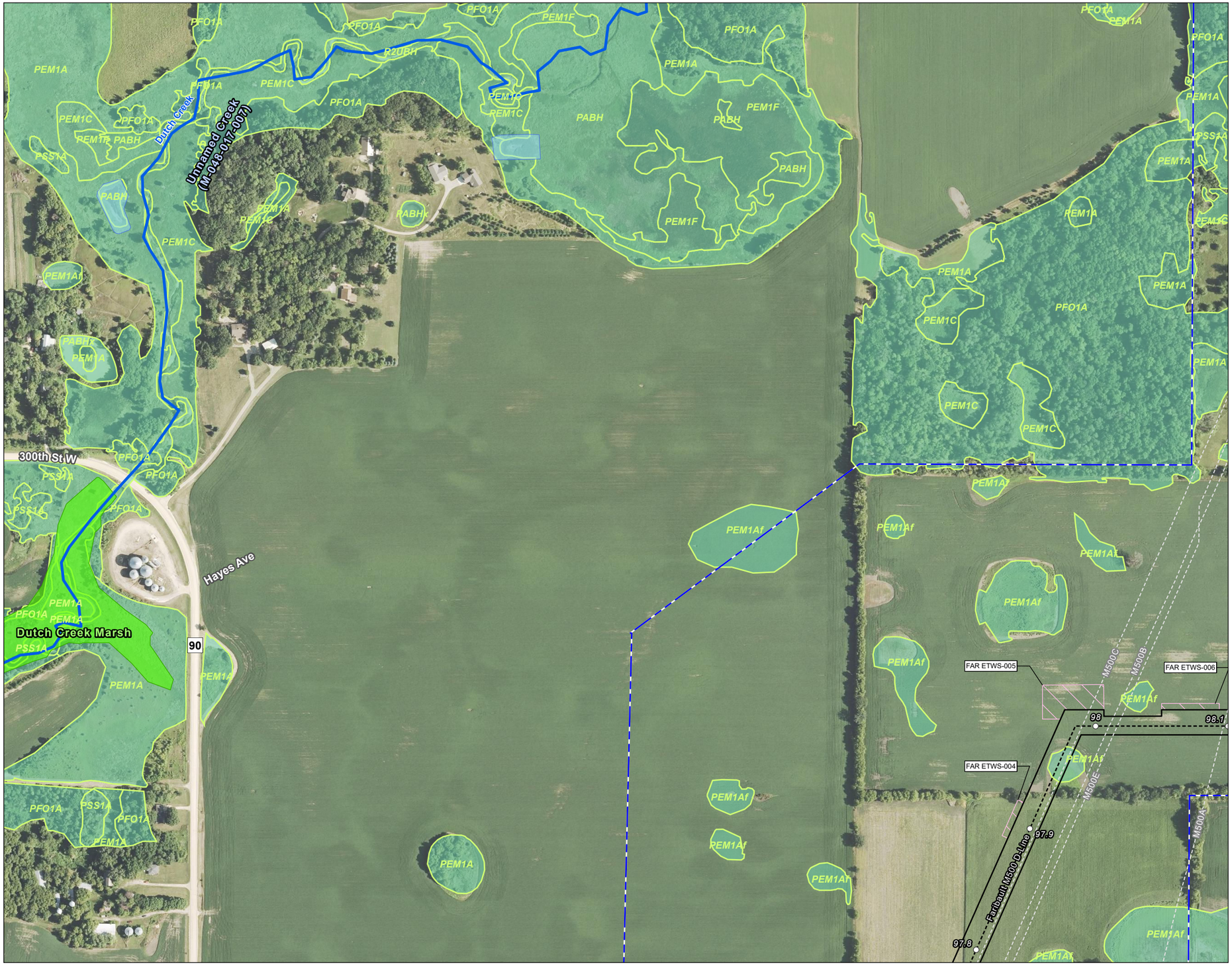

Figure No.
2-1

Title
National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project
172608813
Northern Natural Gas
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Project Location
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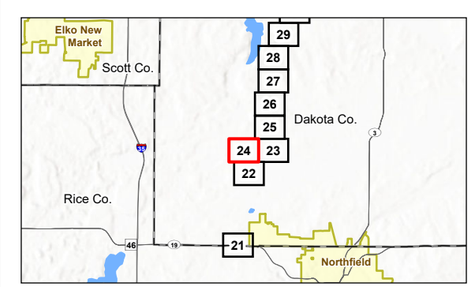
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- MDNR Protected Watercourse
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
3. Background: 2023 NAIP

Stantec
Northern Natural Gas

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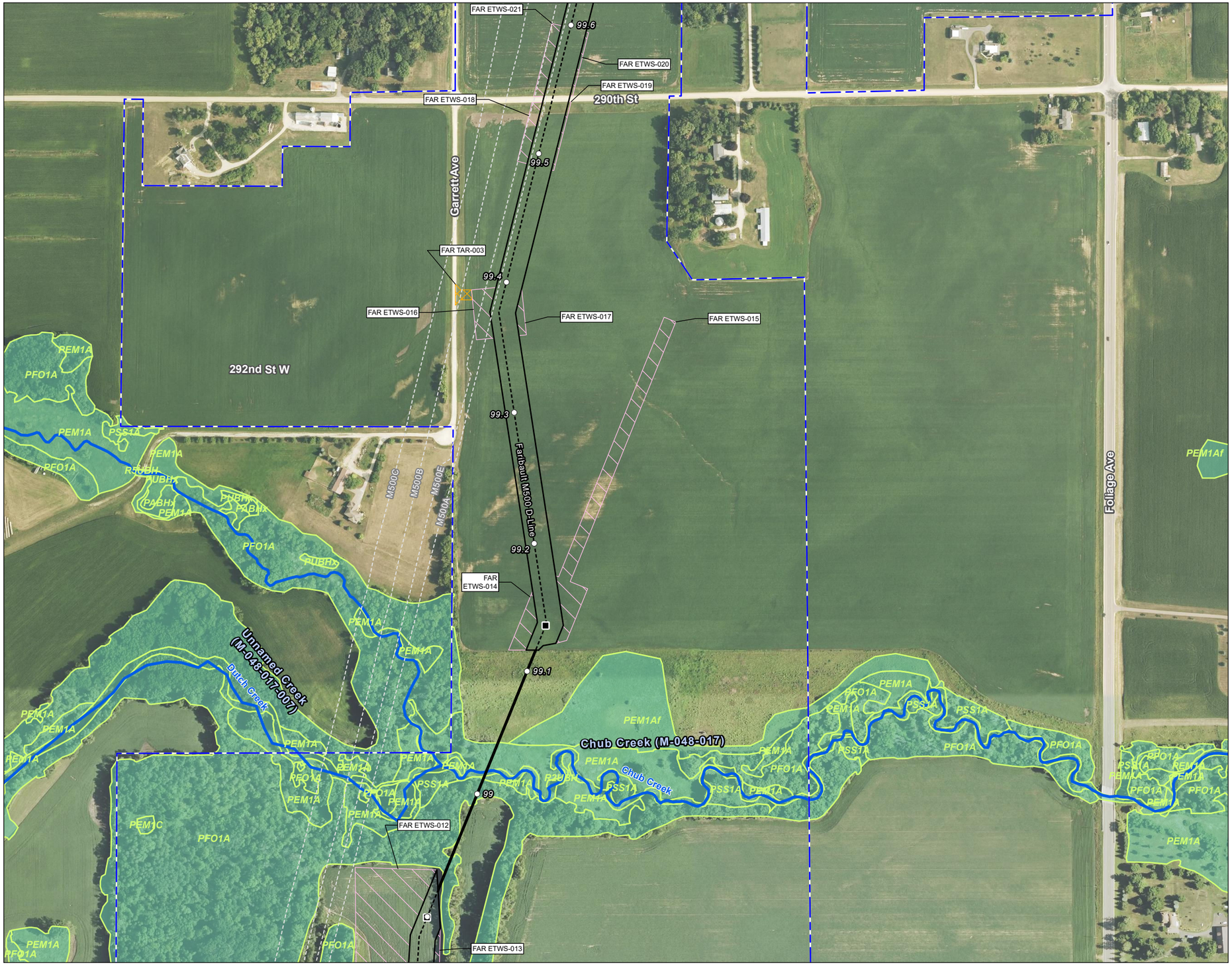


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

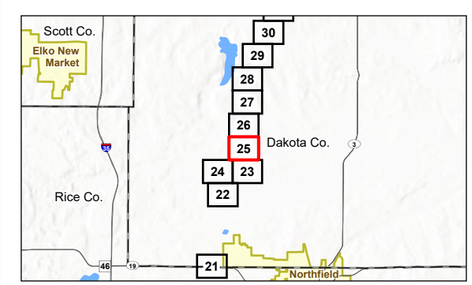
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MDNR Protected Watercourse
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

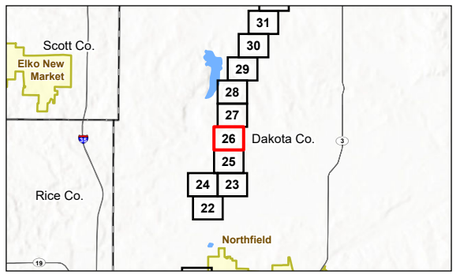
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

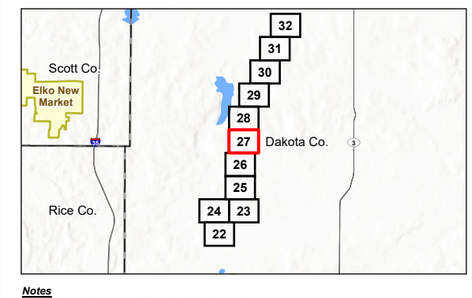
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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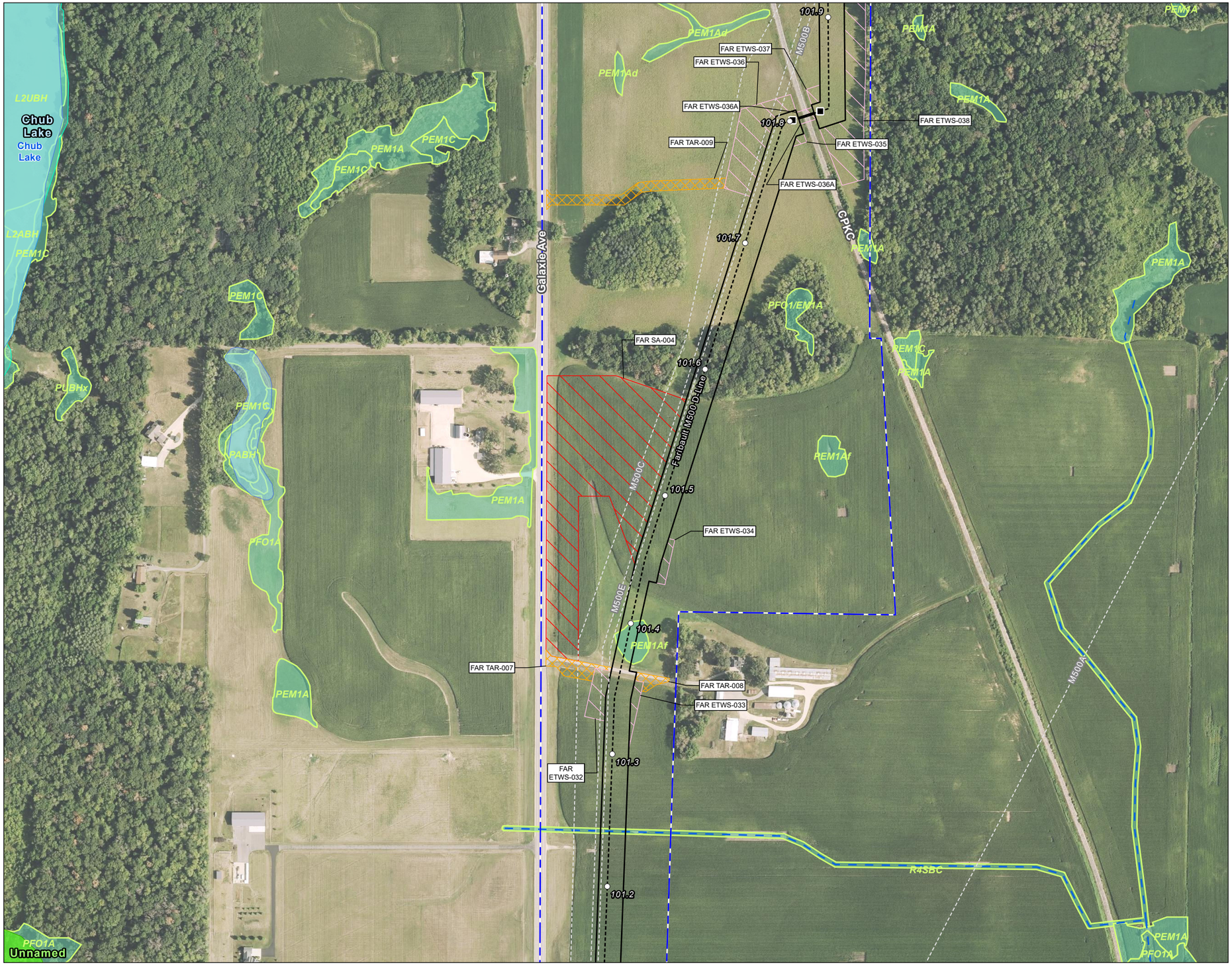

Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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(At original document size of 11x17)
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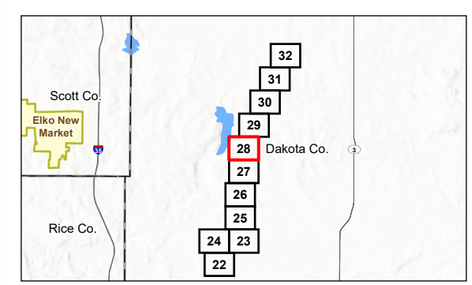
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MDNR Protected Water
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

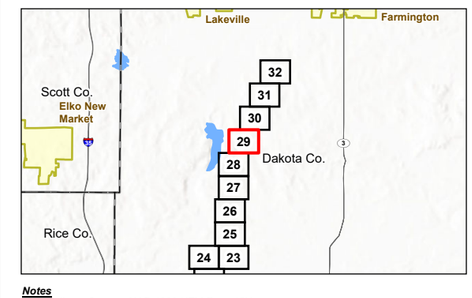
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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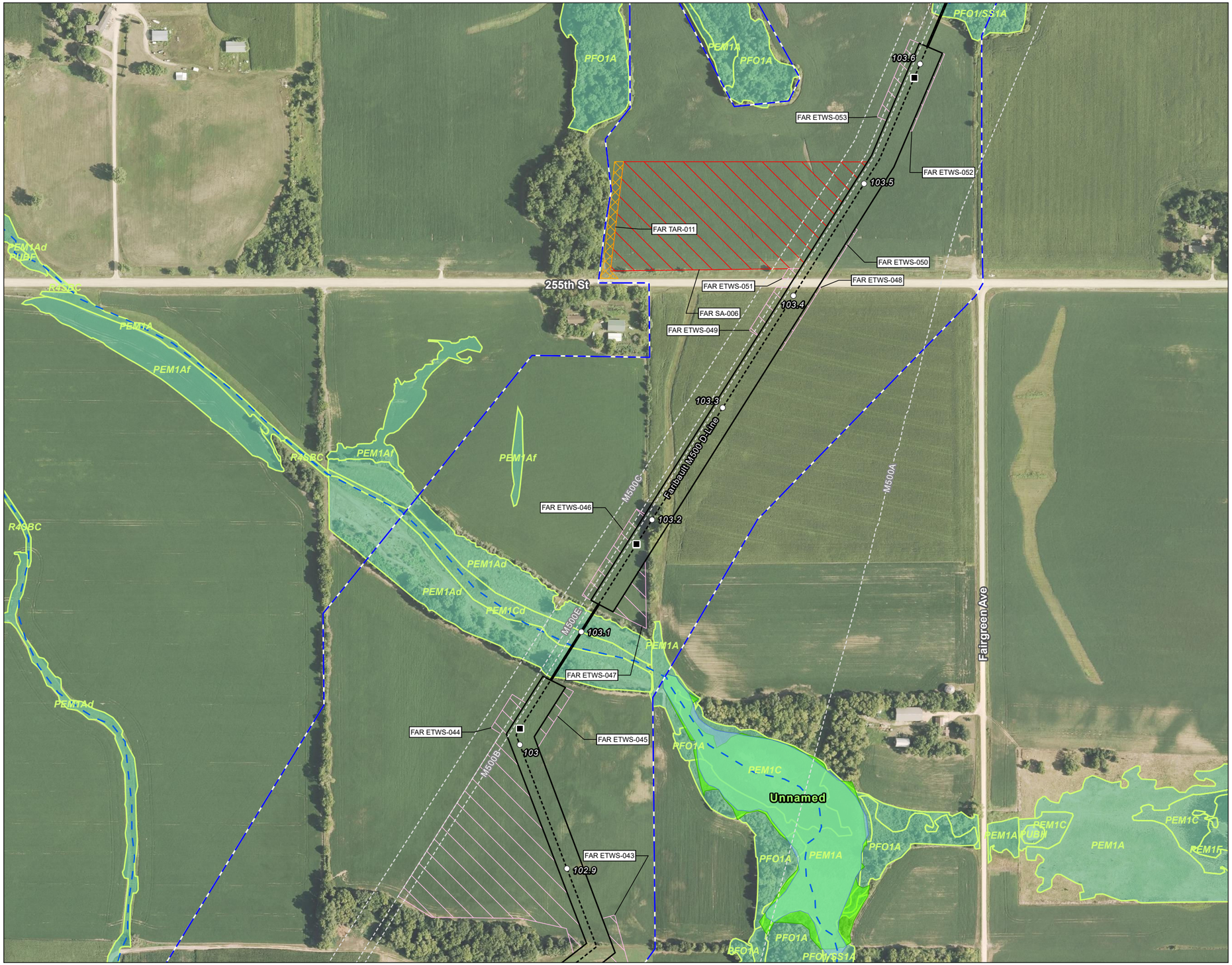


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

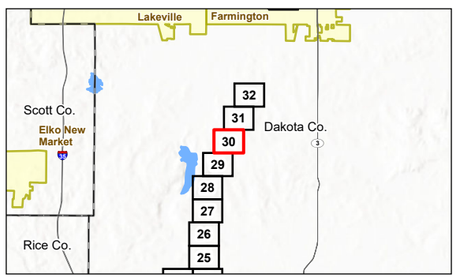
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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2. Data Sources: Stantec, NNG, Esri, USCB, USGS, MNDNR, USFWS
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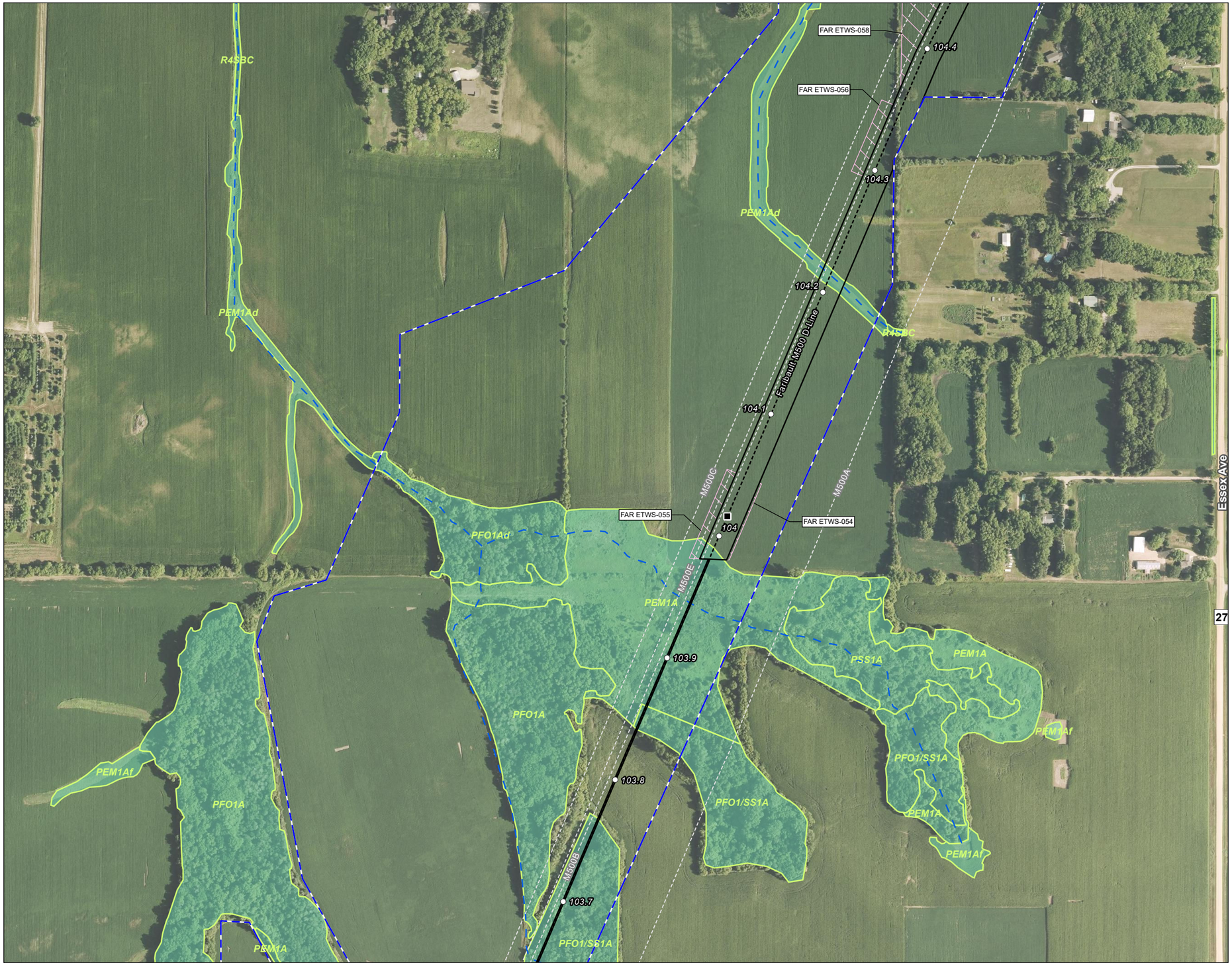


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

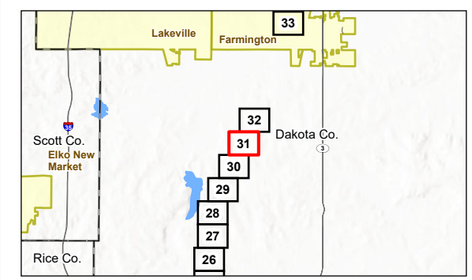
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

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Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

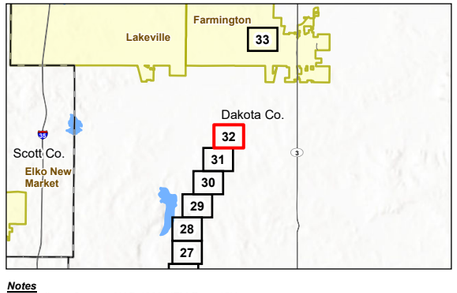
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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Stantec

Northern Natural Gas

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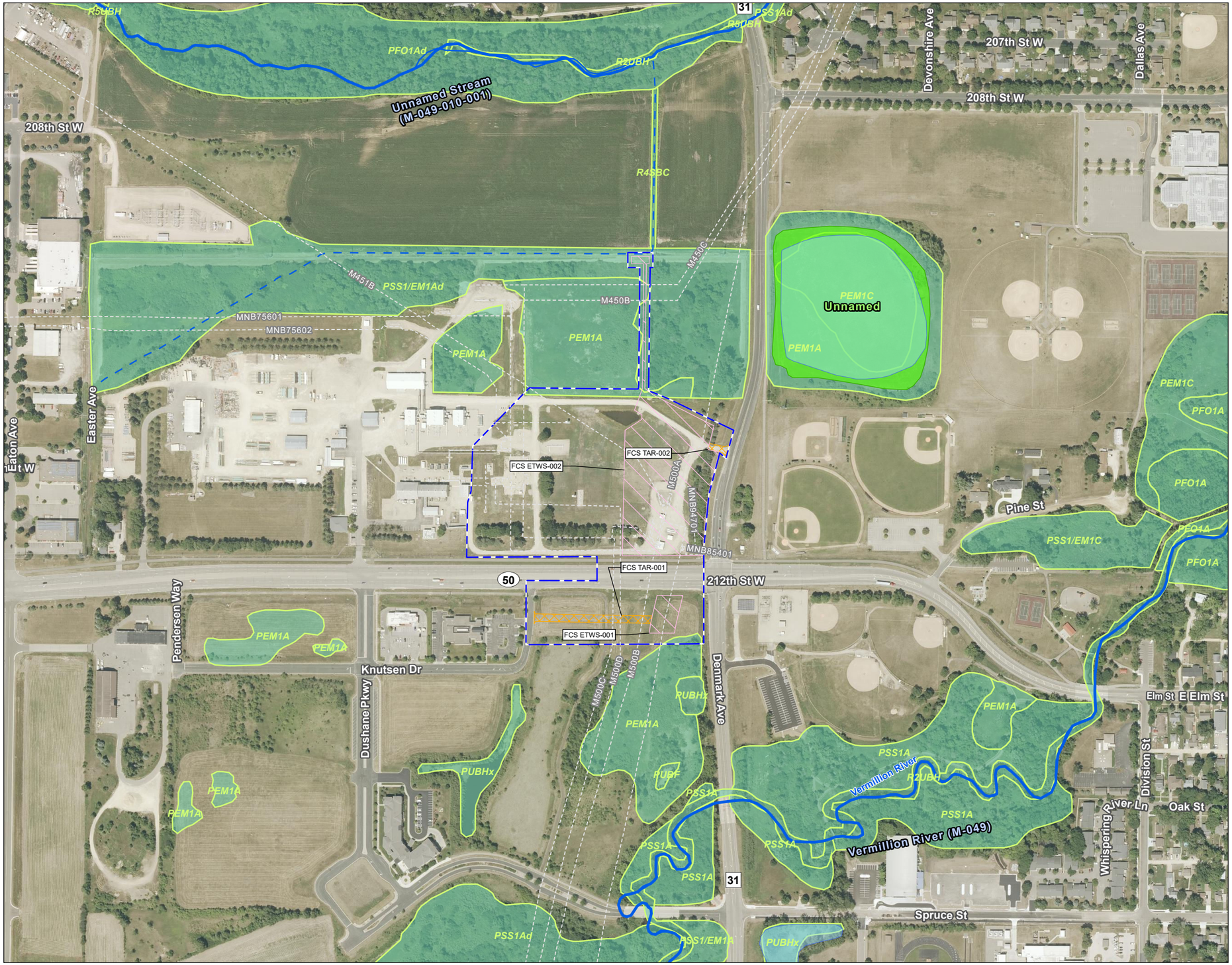


Figure No.

2-1

Title

National Wetlands Inventory & Public Waters Map
V2F - Disconnect Site for A-Line Abandonment
Farmington Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

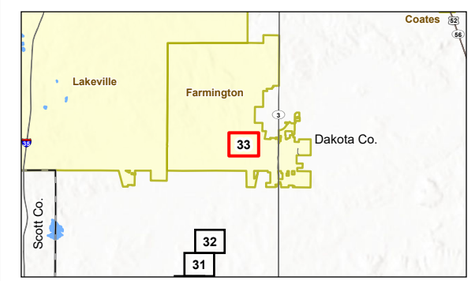
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- MDNR Protected Watercourse
- MnDNR Protected Wetland
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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Figure 2-2
NL27 Project NWI Wetlands

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

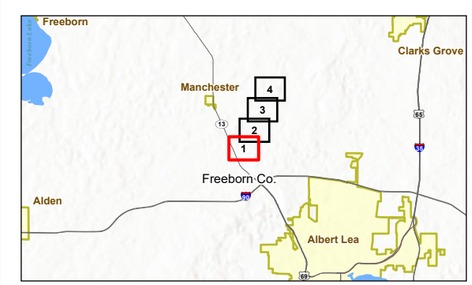
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

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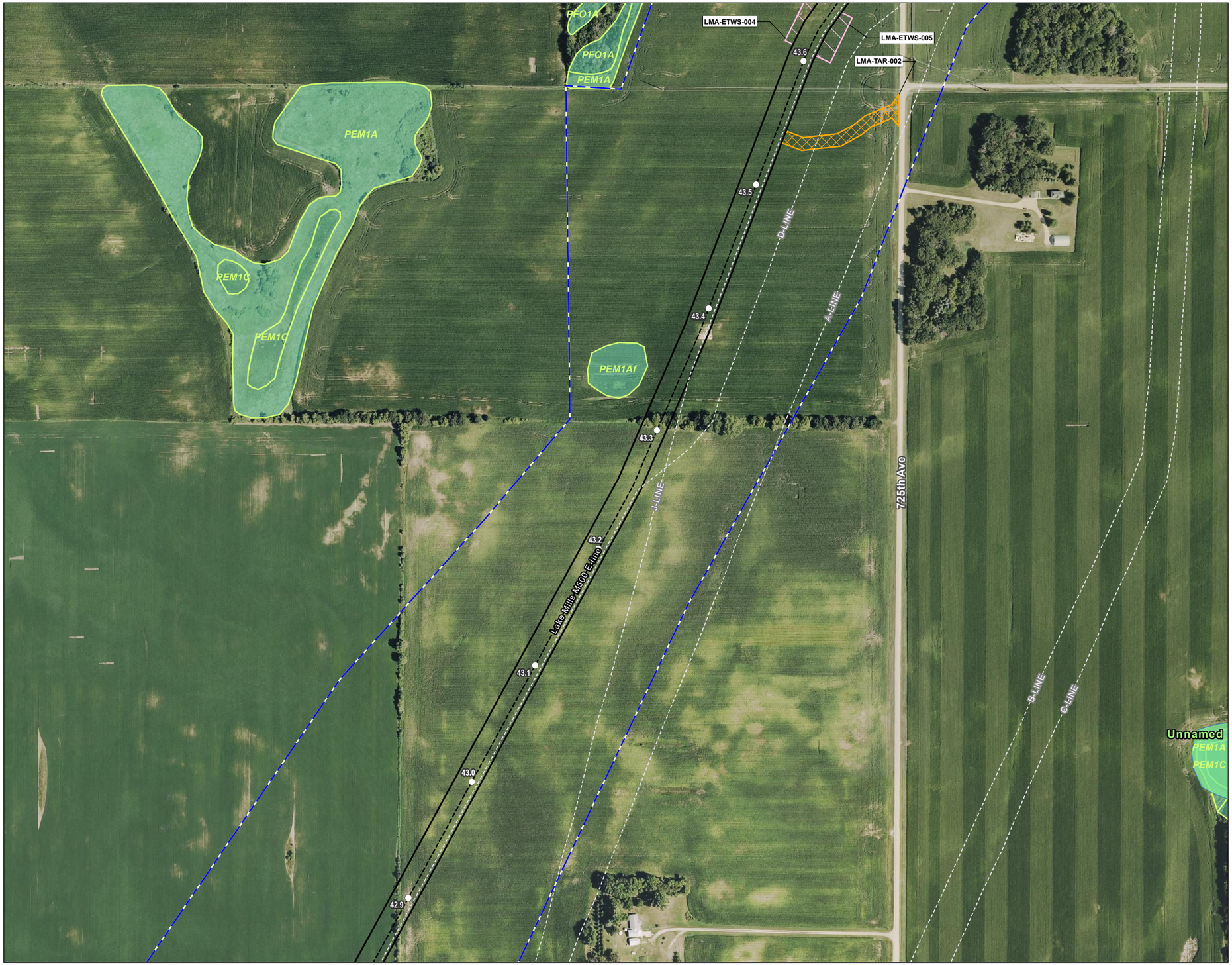


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

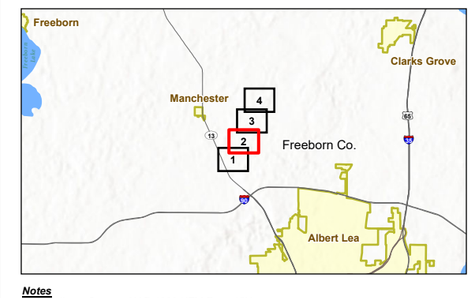
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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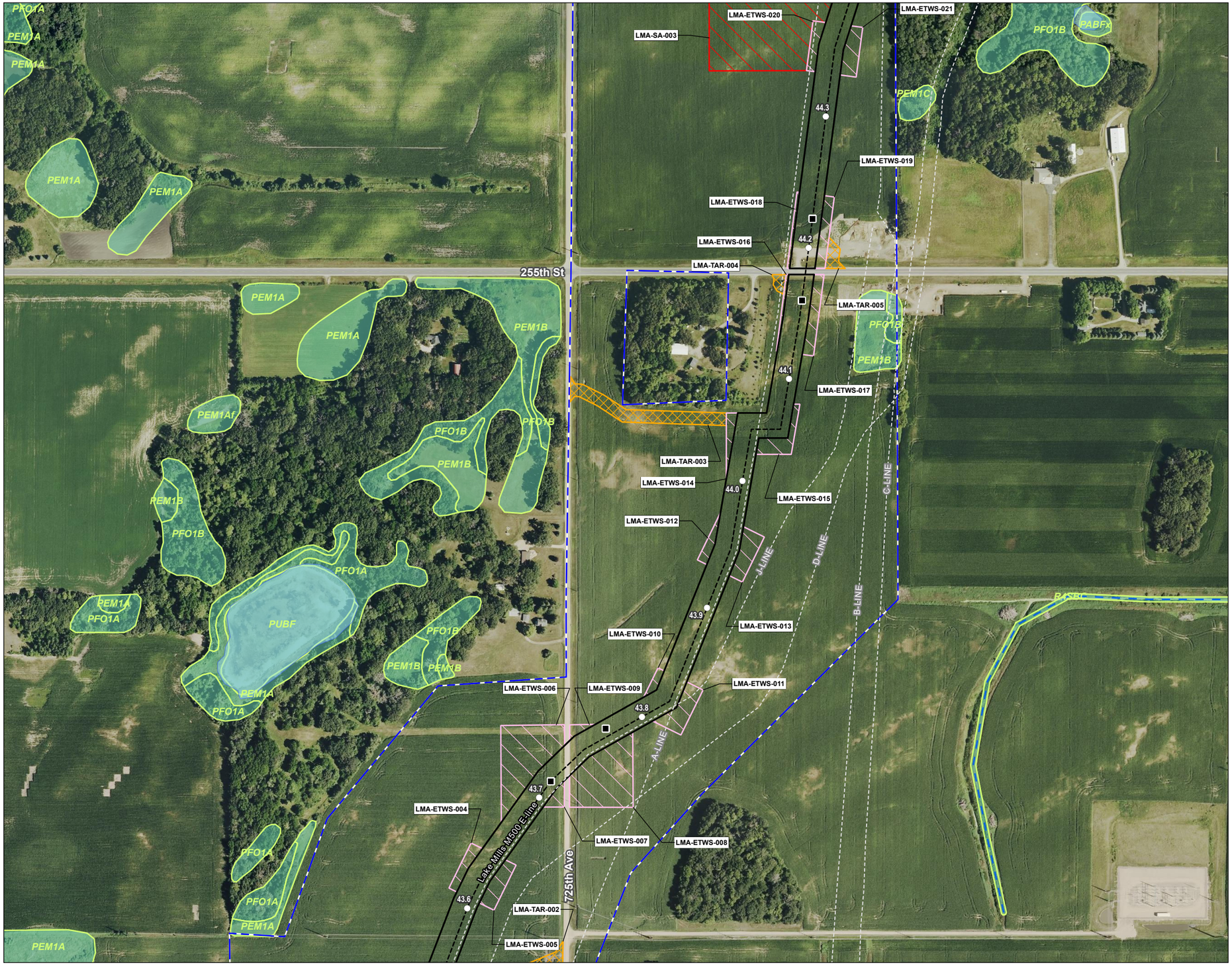


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

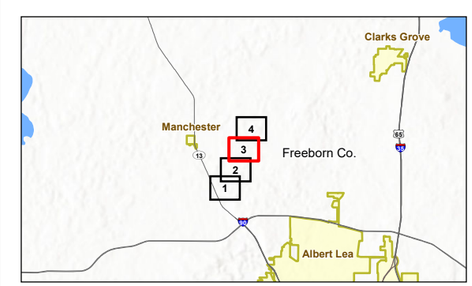
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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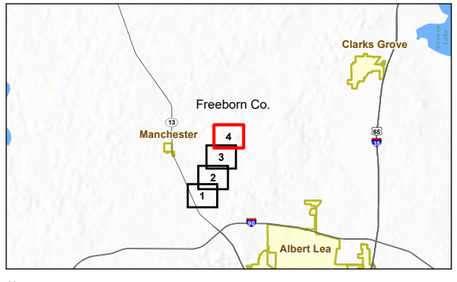
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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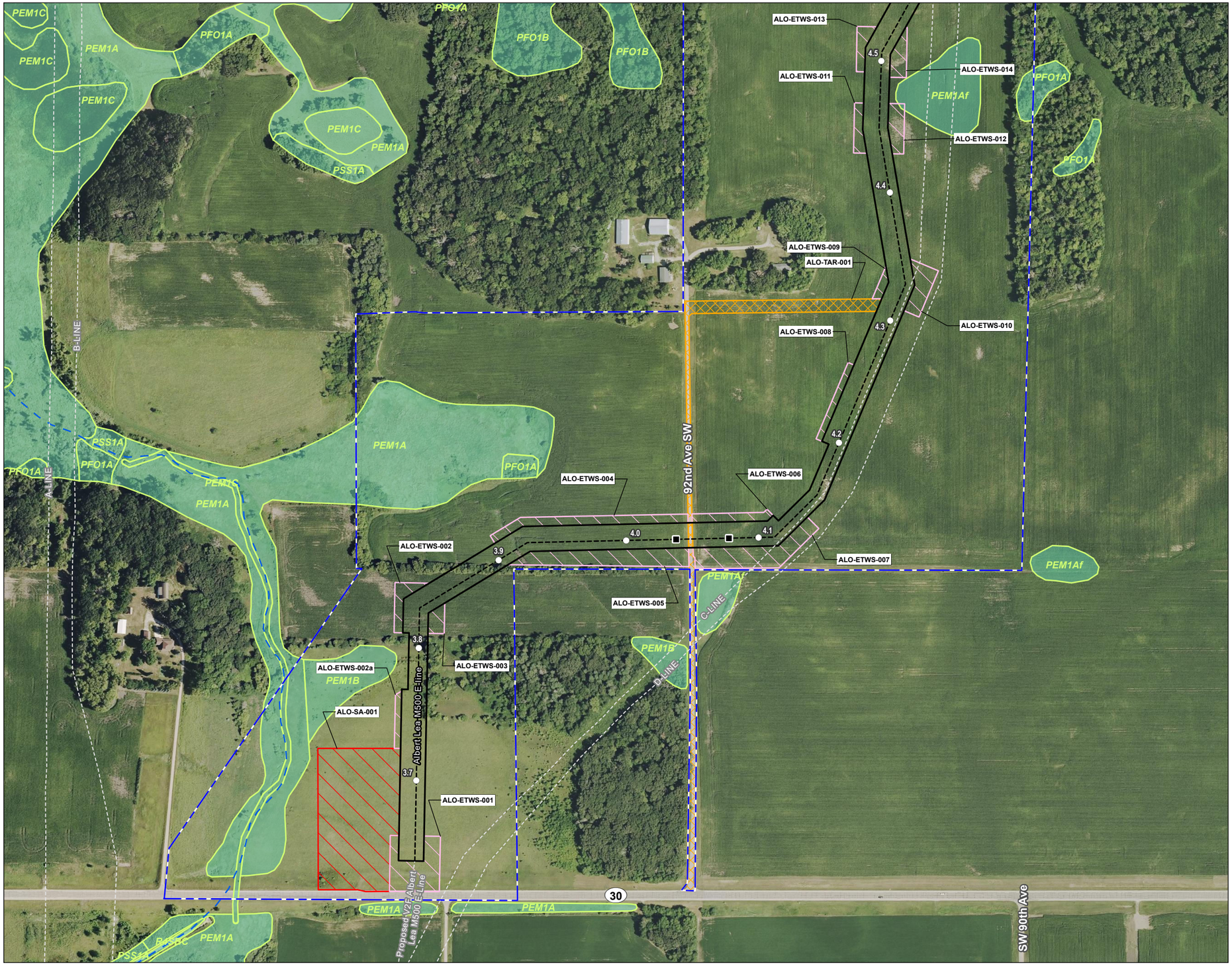


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

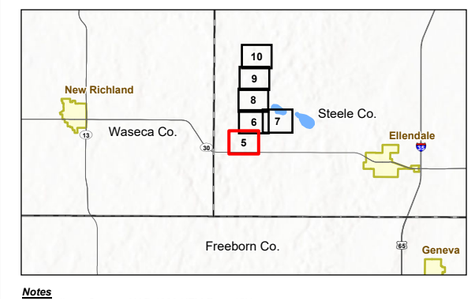
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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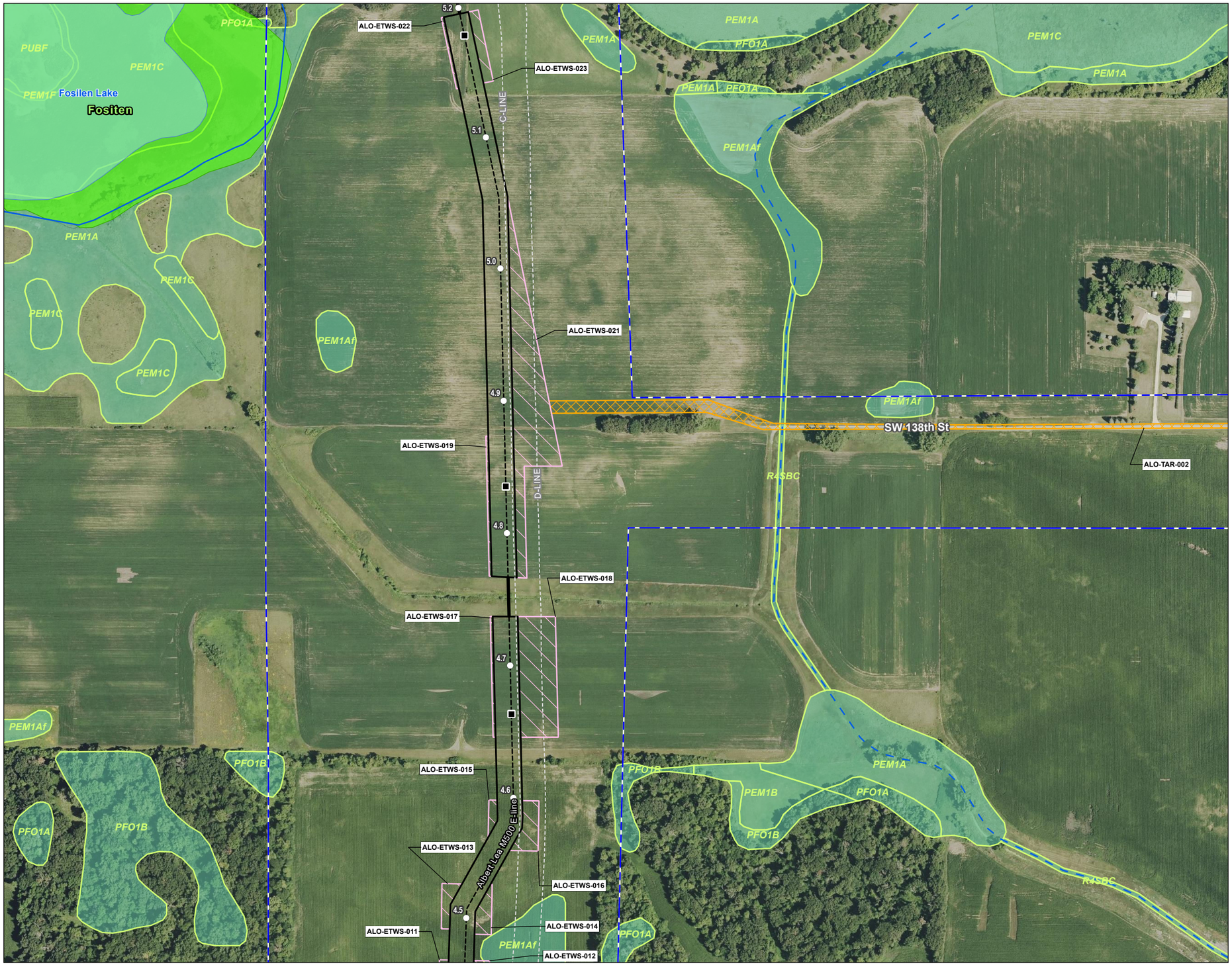


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

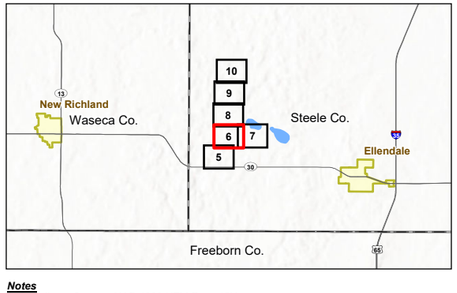
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.
2-2

Title
National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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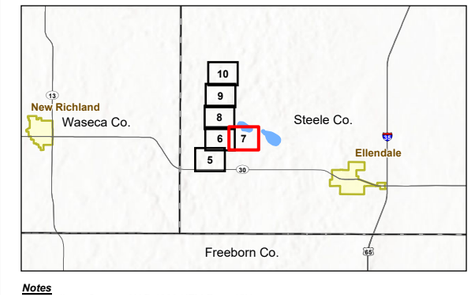
Legend
- Environmental Survey Boundary
- Temporary Access Road
- National Wetlands Inventory Feature
- MDNR Protected Water

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec
Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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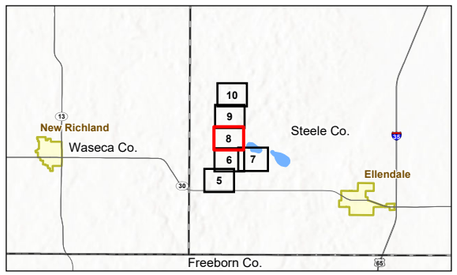
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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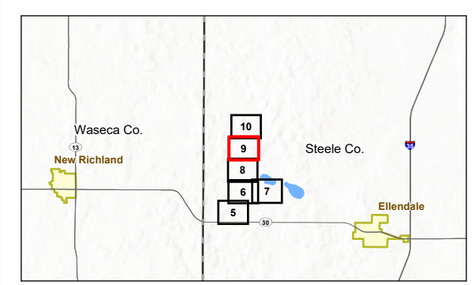
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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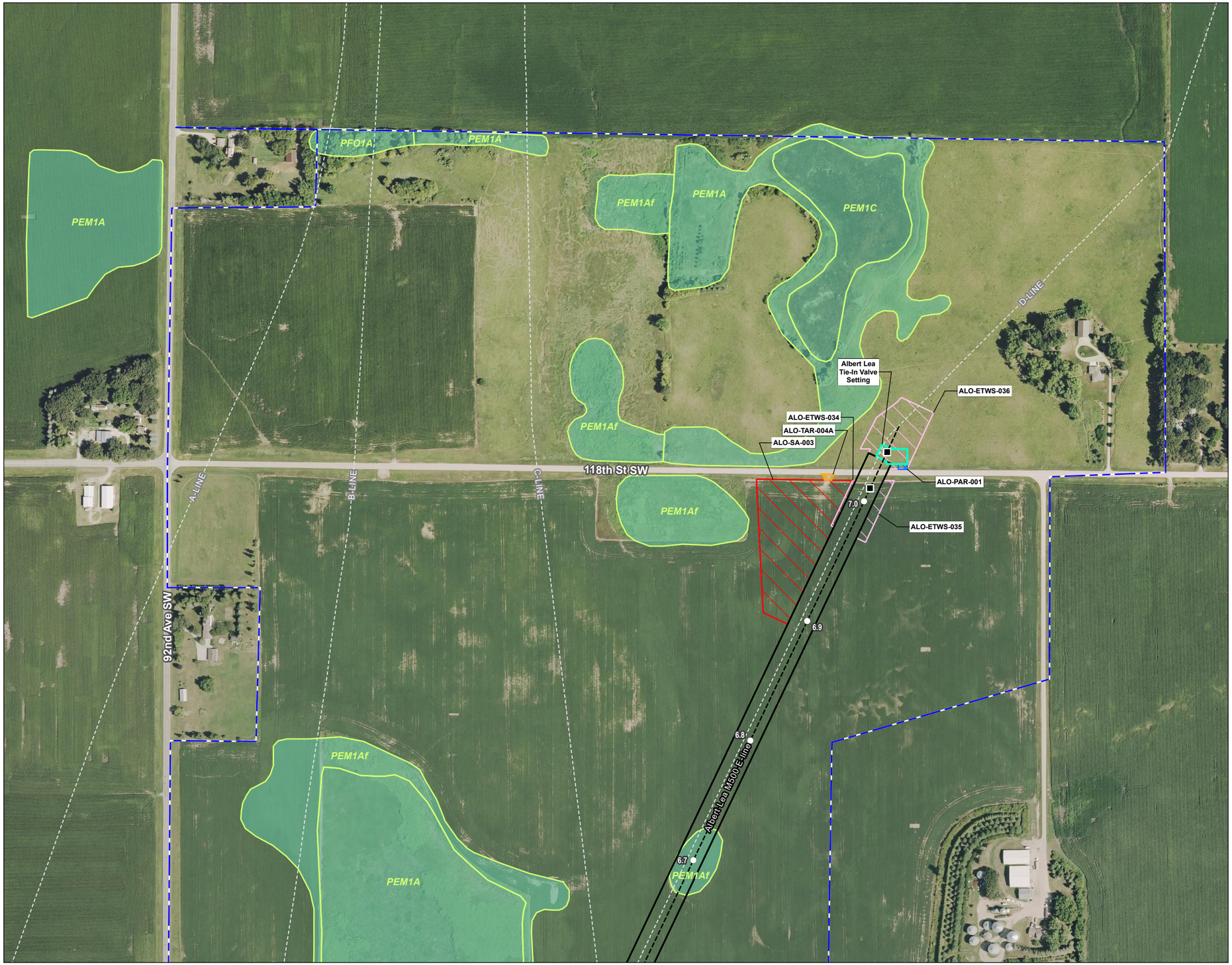

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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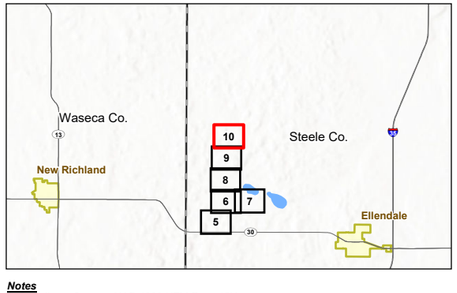
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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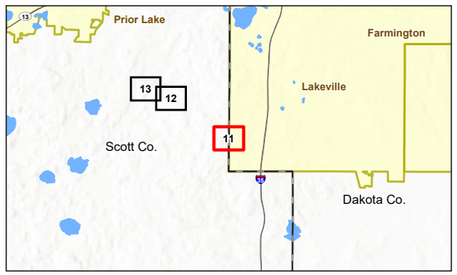
Legend

- Environmental Survey Boundary
- Existing Facility
- Extra Temporary Workspace
- Existing Pipeline
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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Northern Natural Gas

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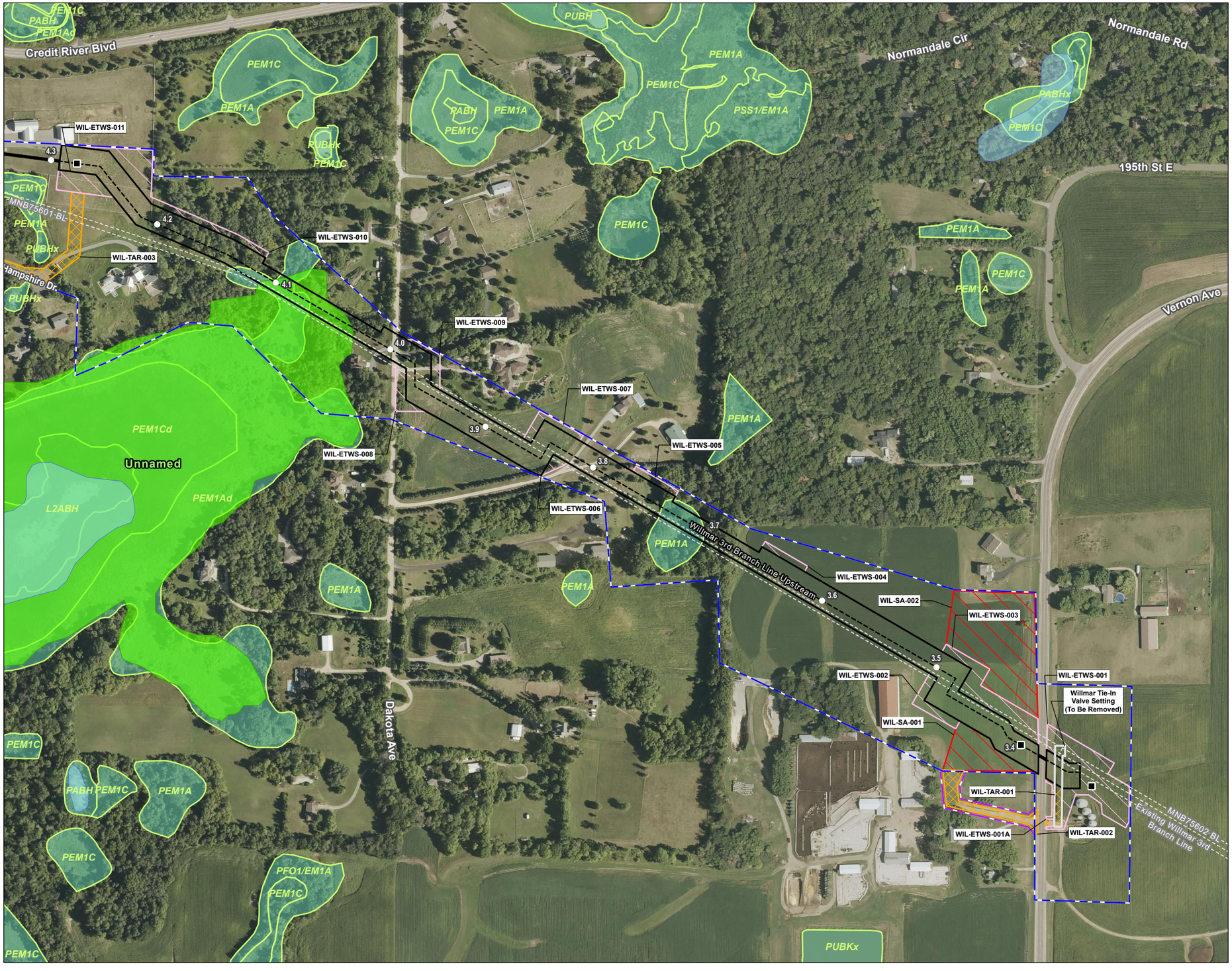

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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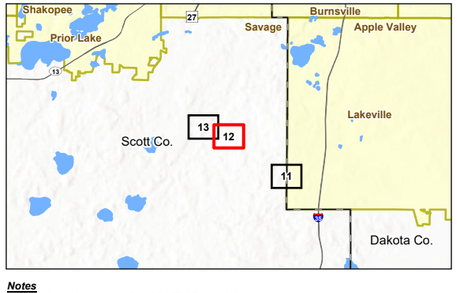
Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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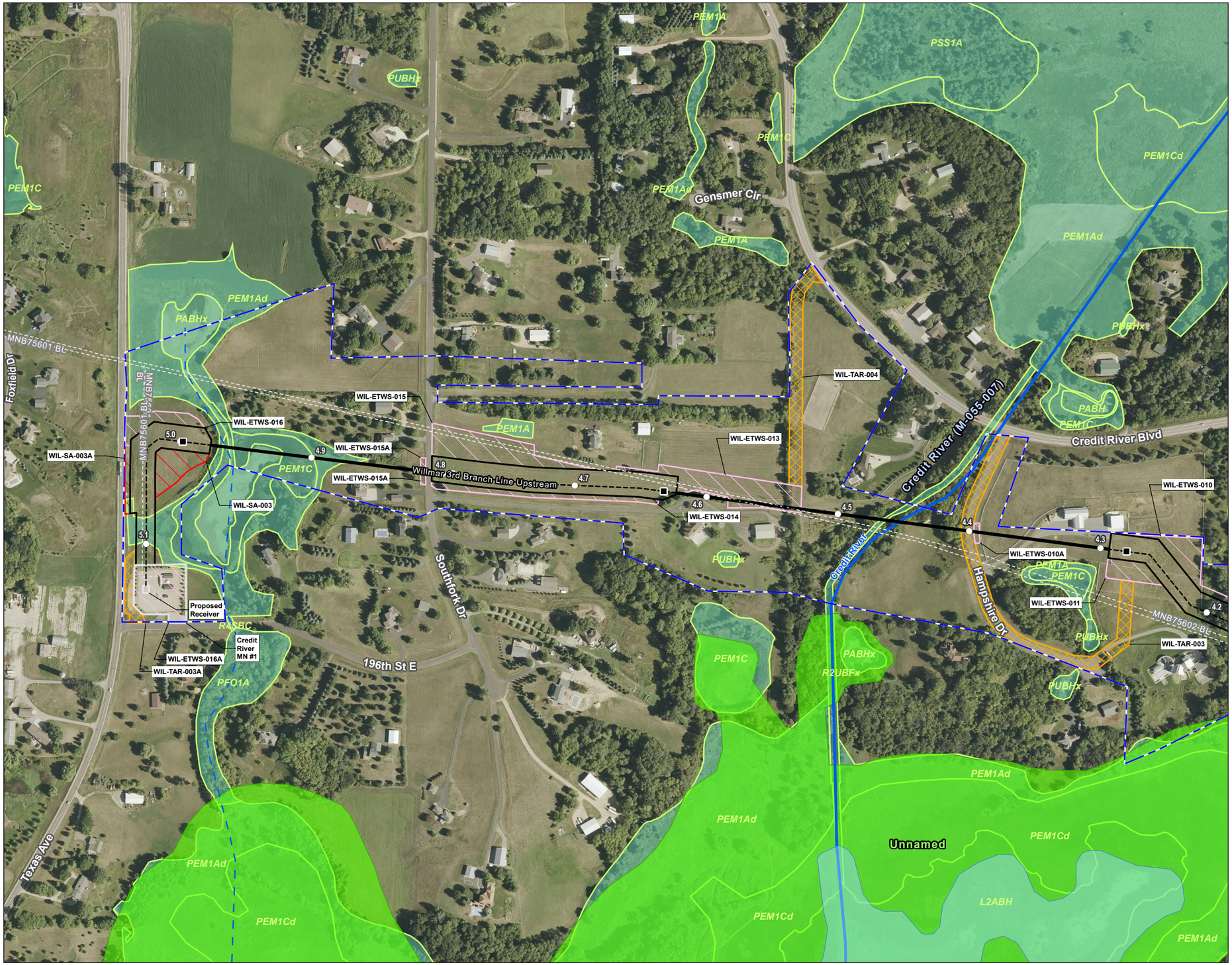


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

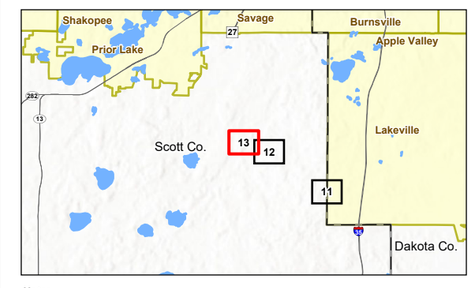
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Northern Natural Gas

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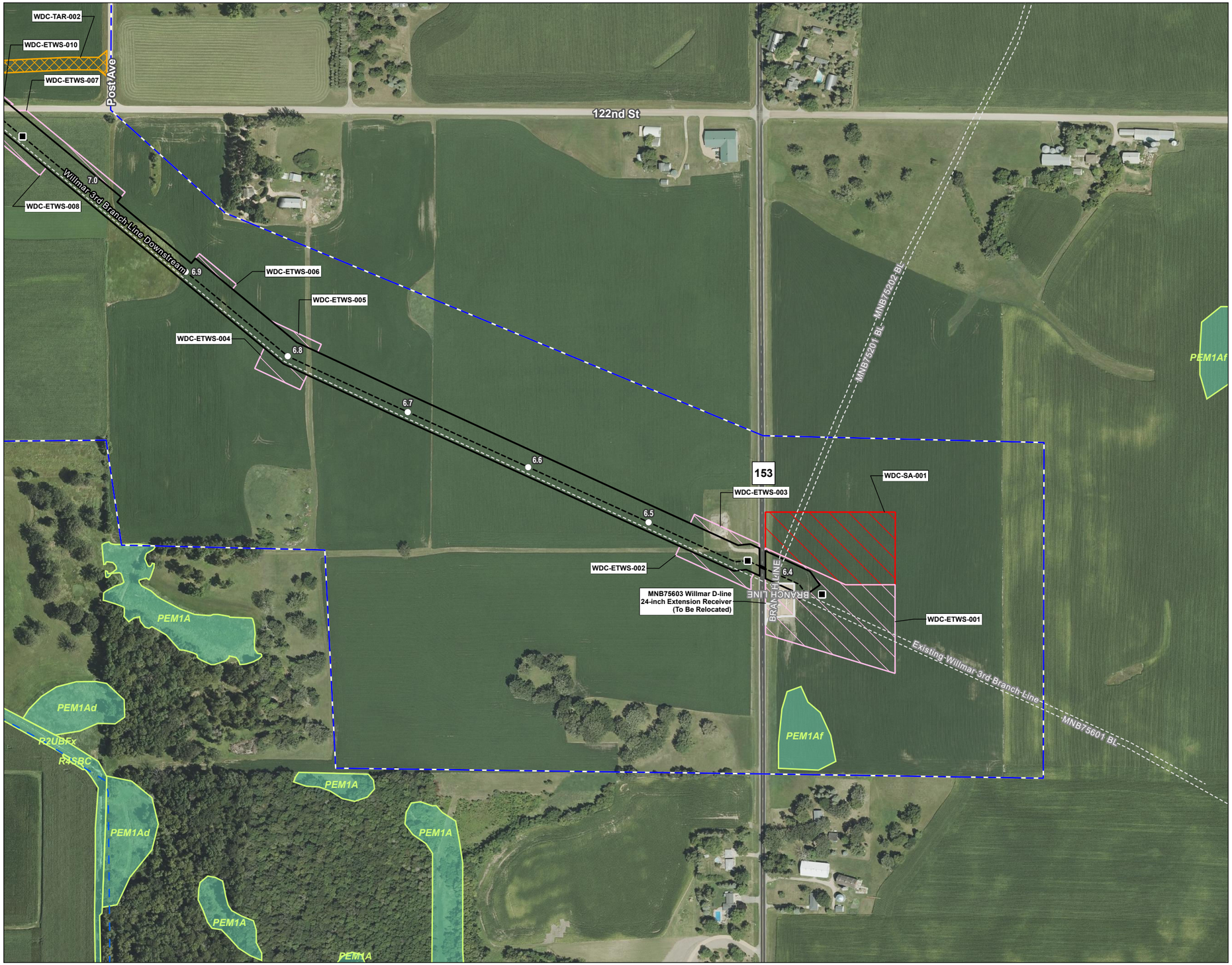


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

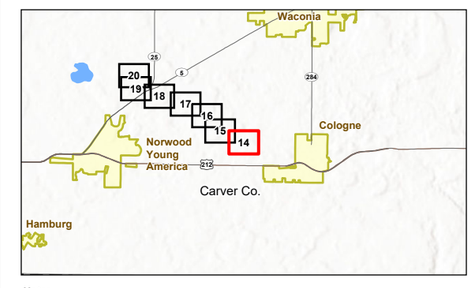
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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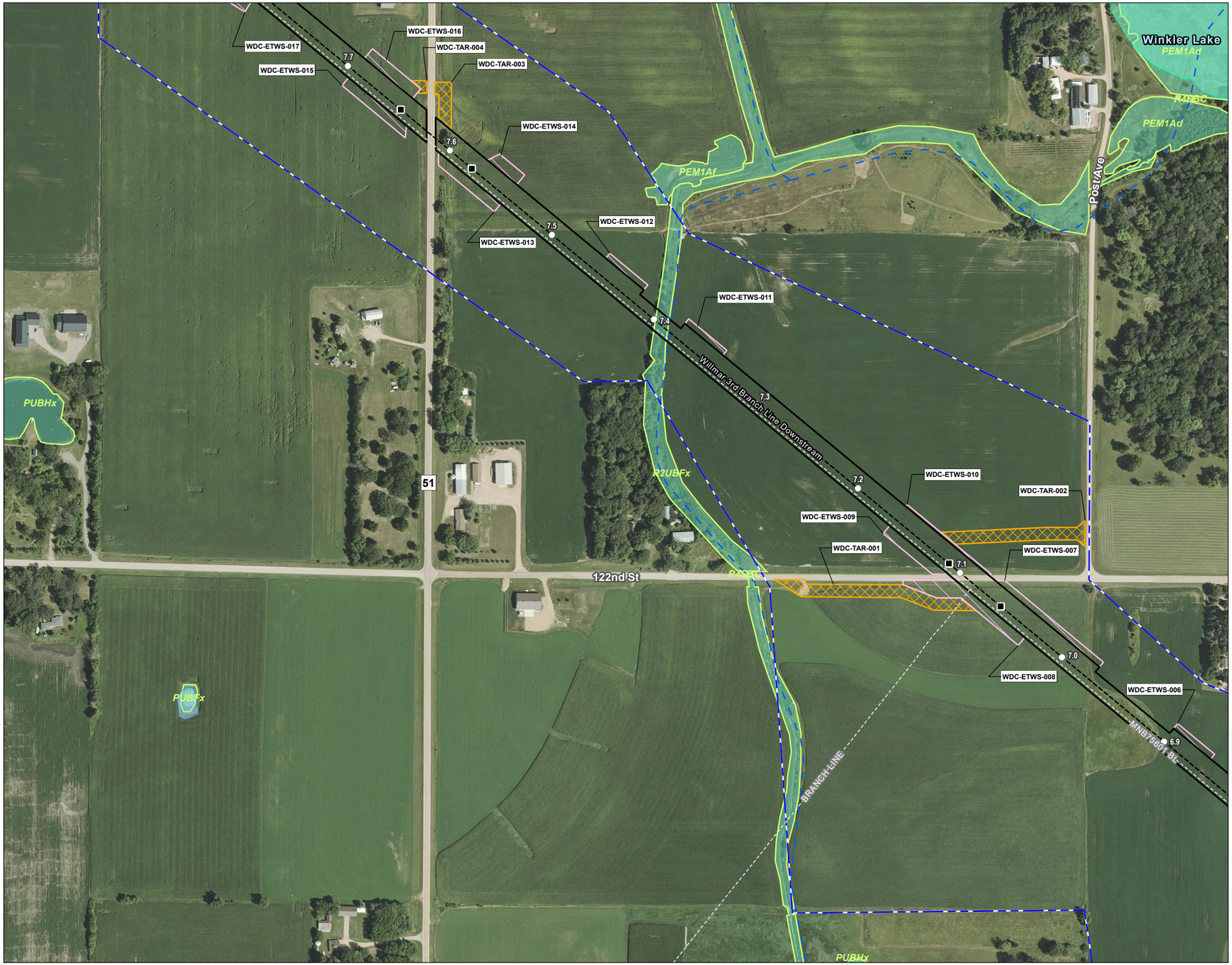


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

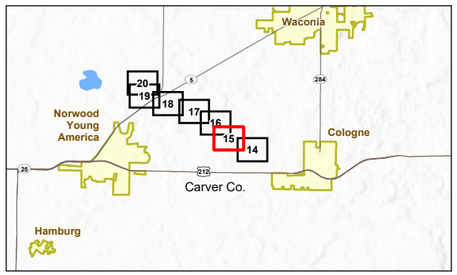
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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Legend

- Environmental Survey Boundary
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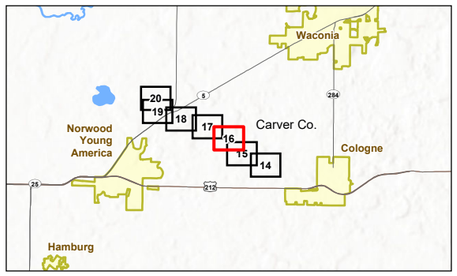
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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Northern Natural Gas

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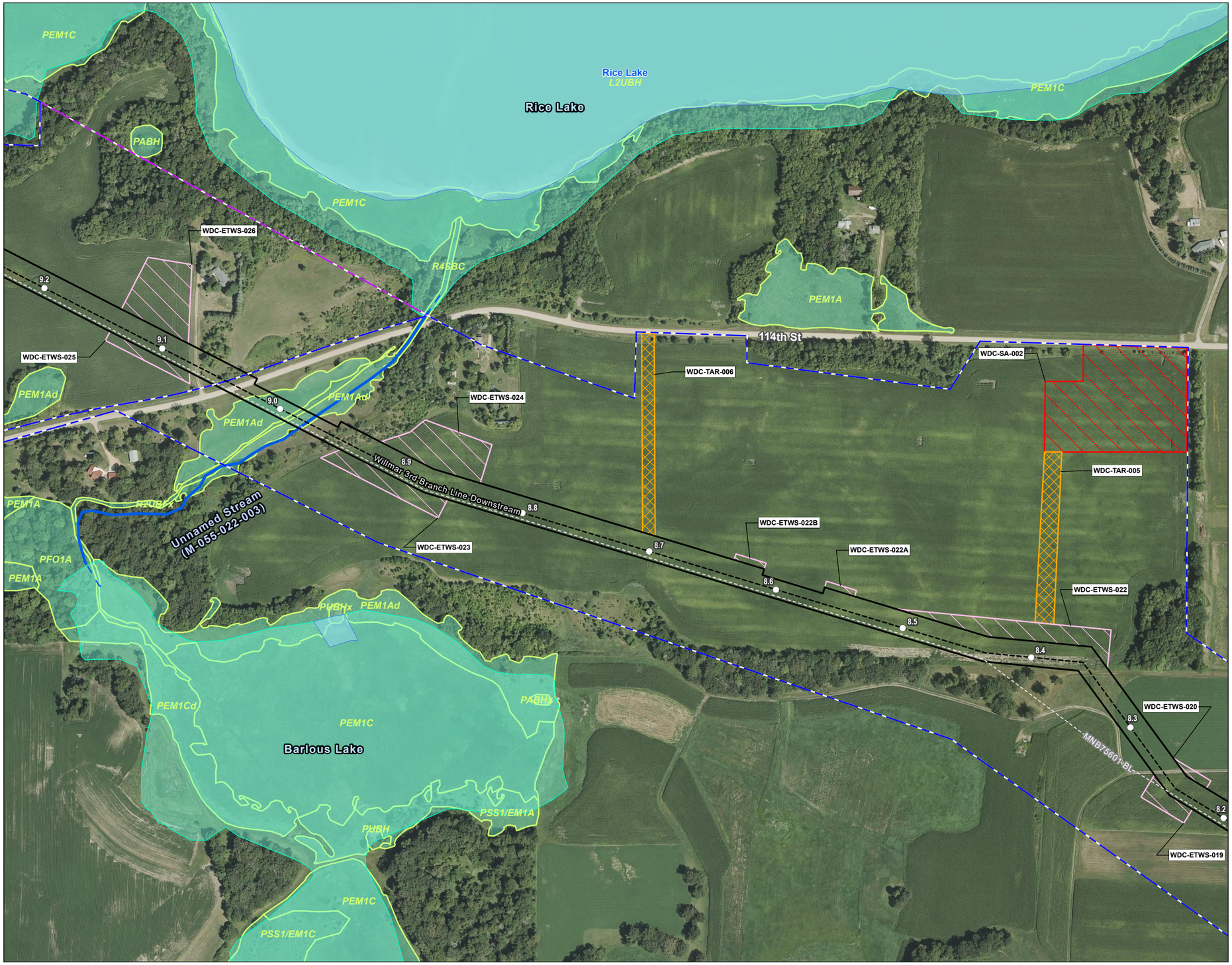


Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

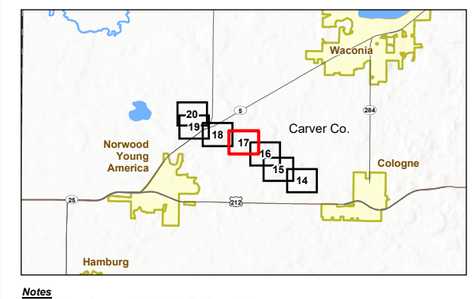
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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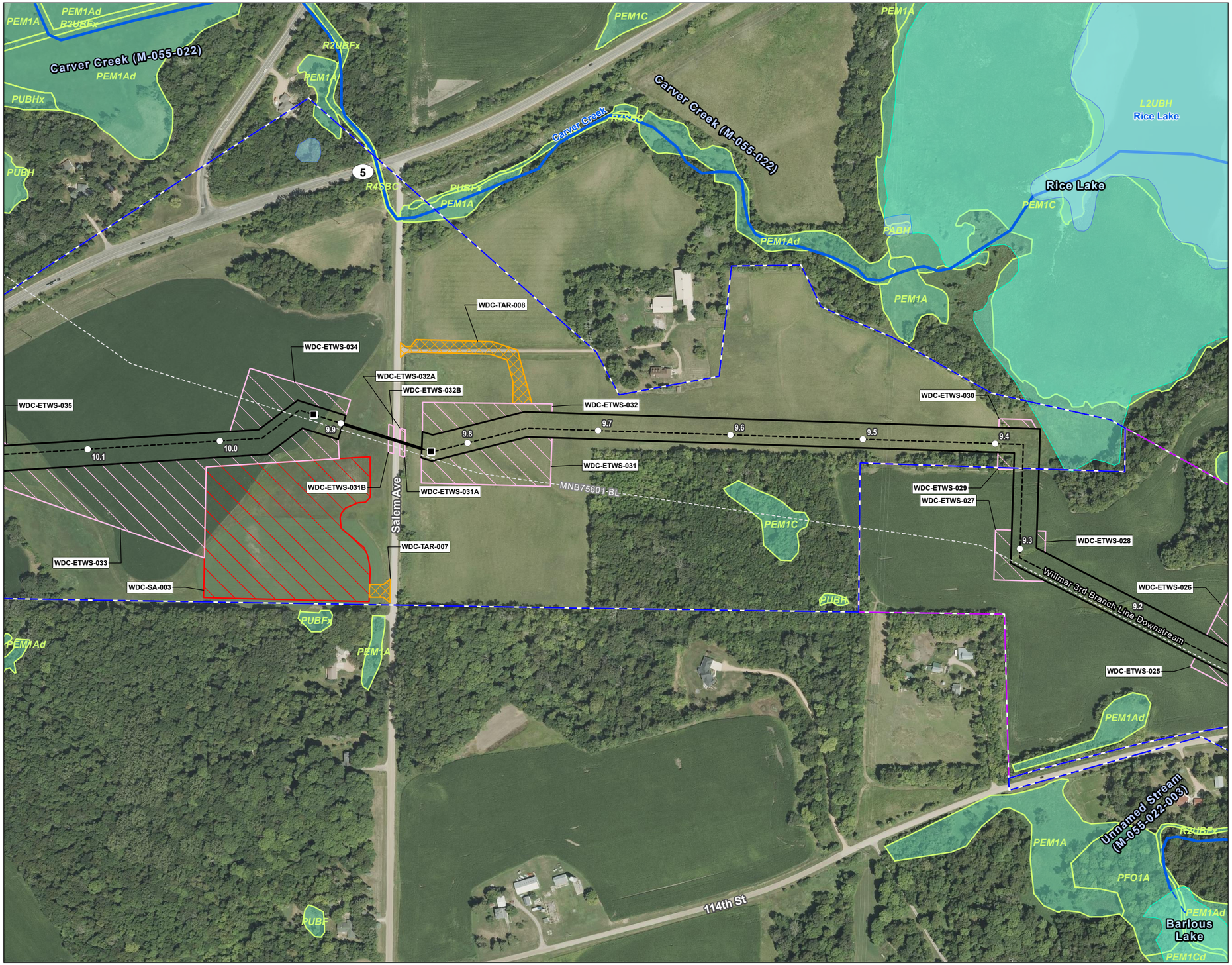

Figure No.

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Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

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Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
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- Extra Temporary Workspace
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- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

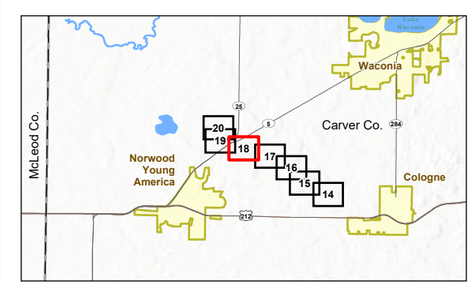

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

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Legend

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- Proposed Facility
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- Extra Temporary Workspace
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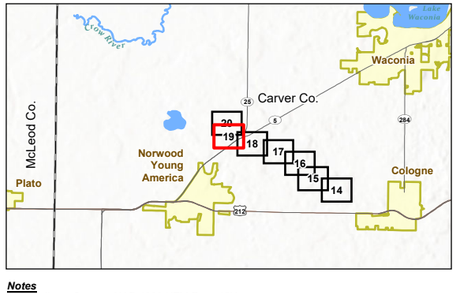
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

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Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
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- Extra Temporary Workspace
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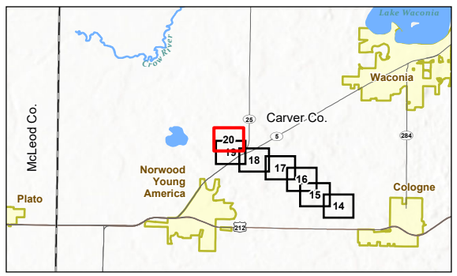
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Welcome 2nd Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Martin County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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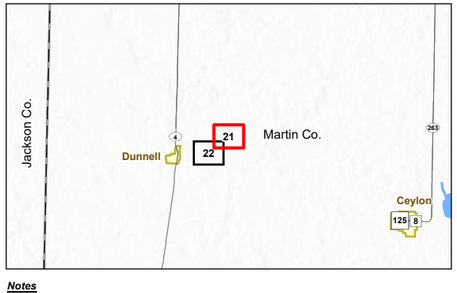
Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

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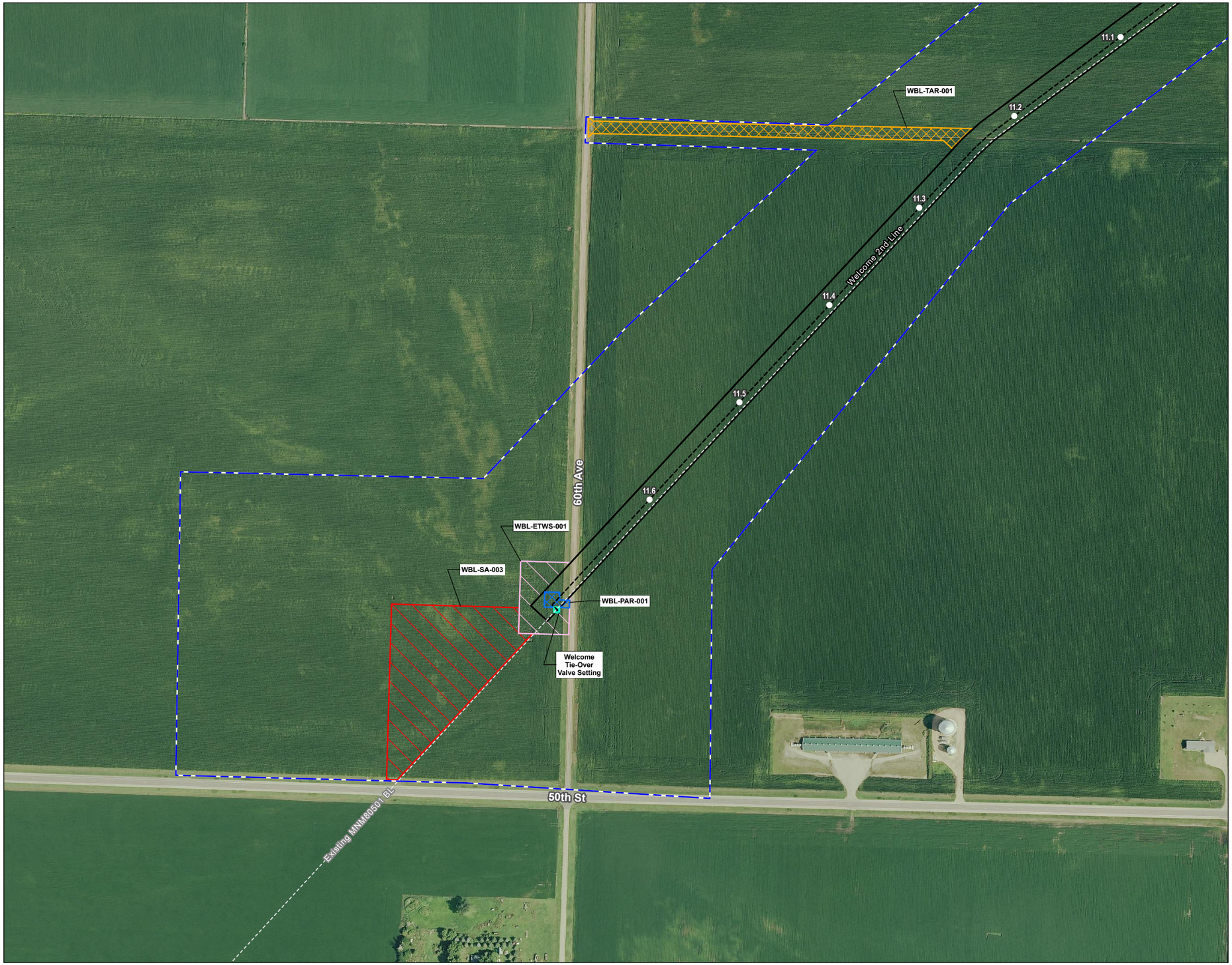

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Welcome 2nd Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Martin County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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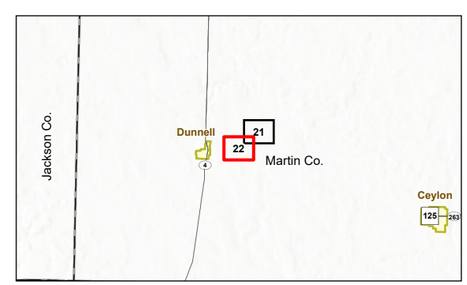
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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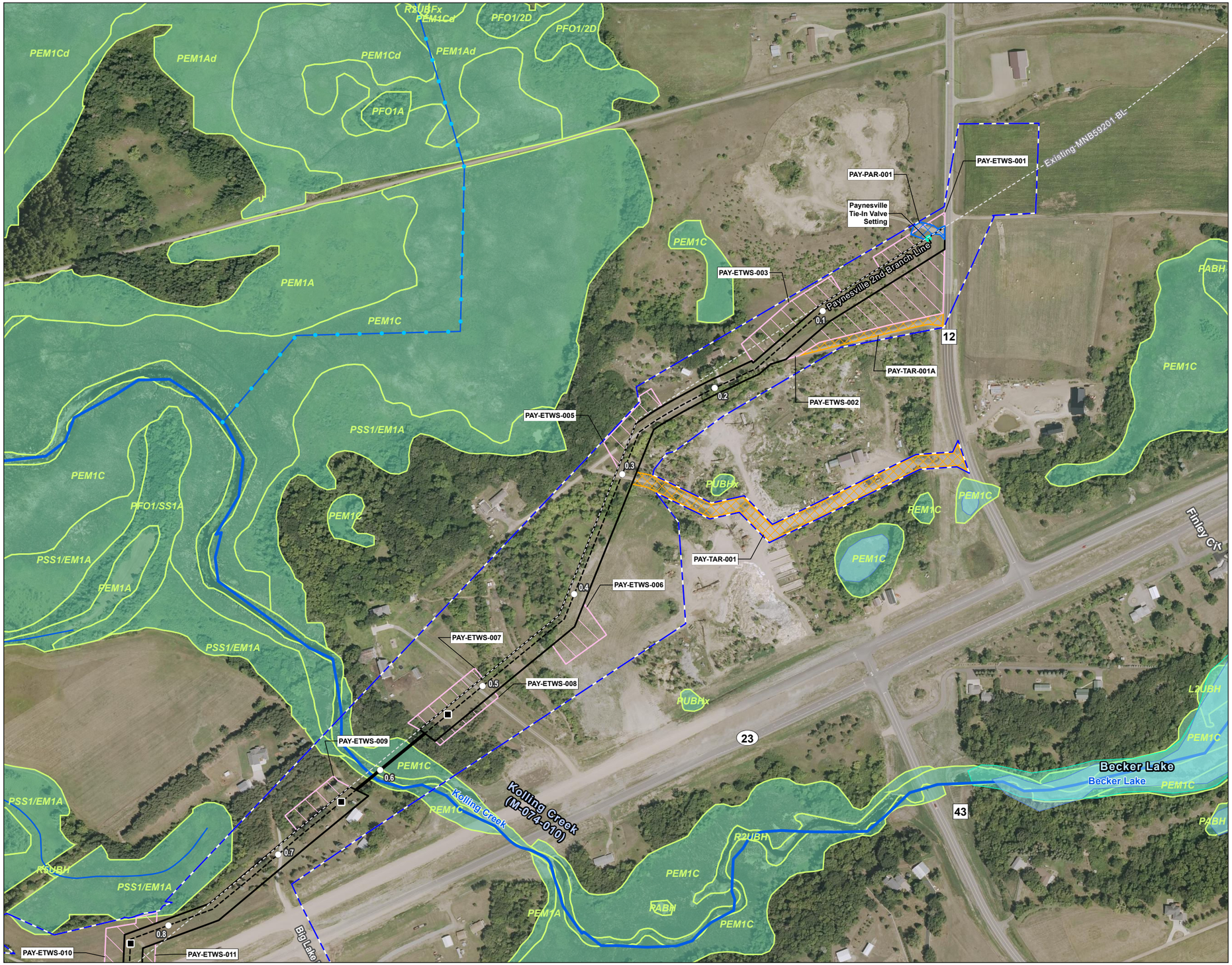

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

0 200 400 Feet
(At original document size of 11x17)
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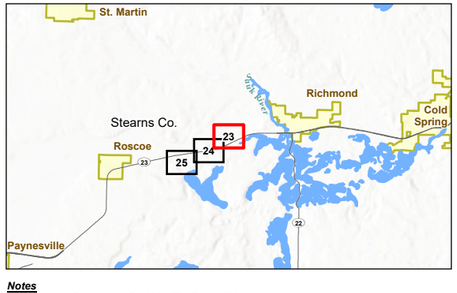
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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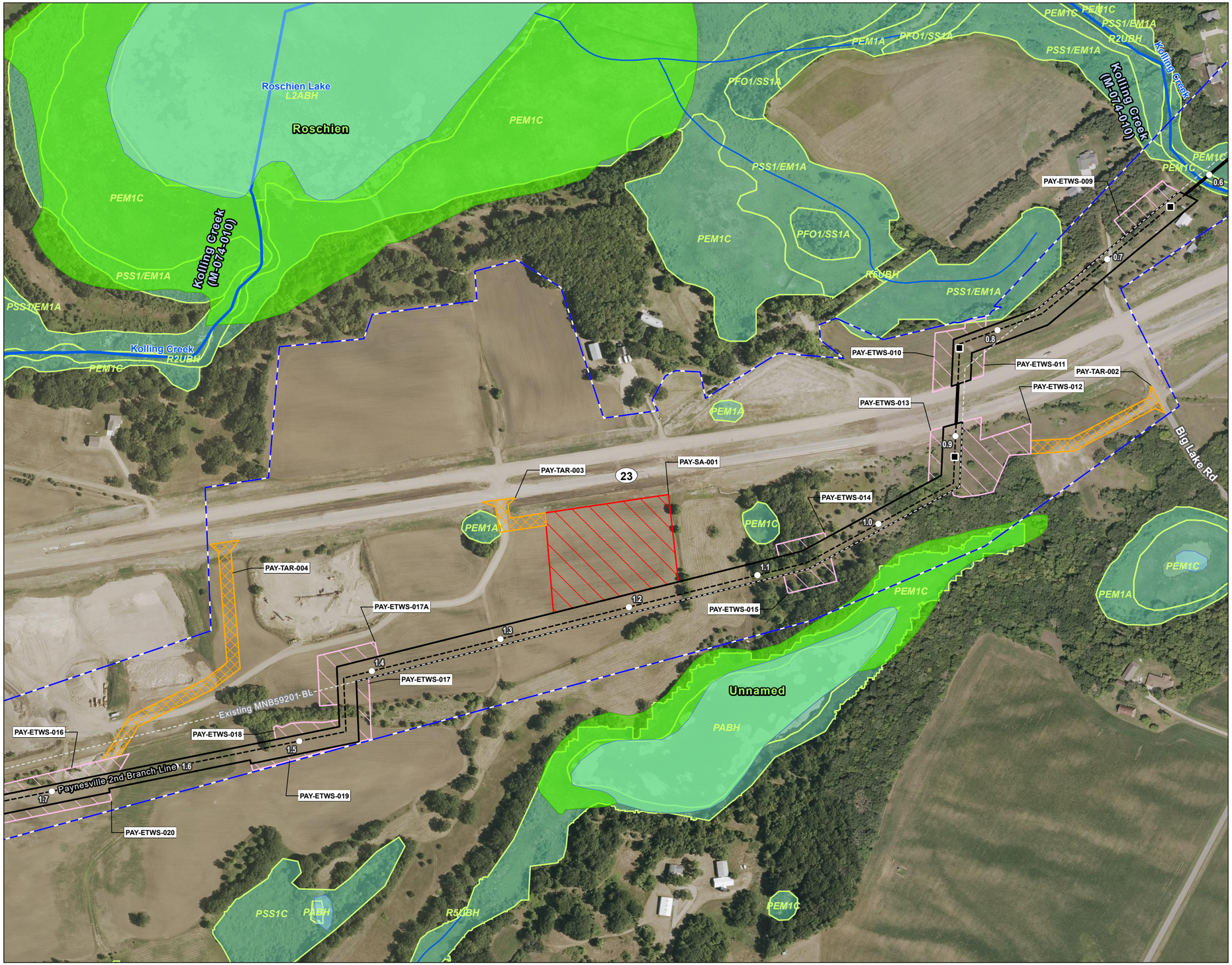

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

Prepared by JM on 2025-12-15
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Legend

- Environmental Survey Boundary
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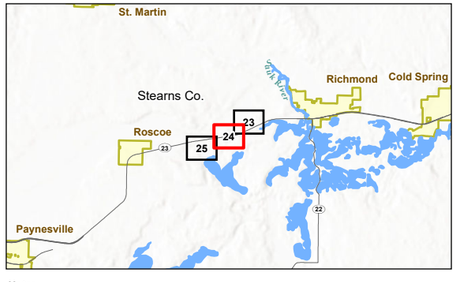
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MnDNR Protected Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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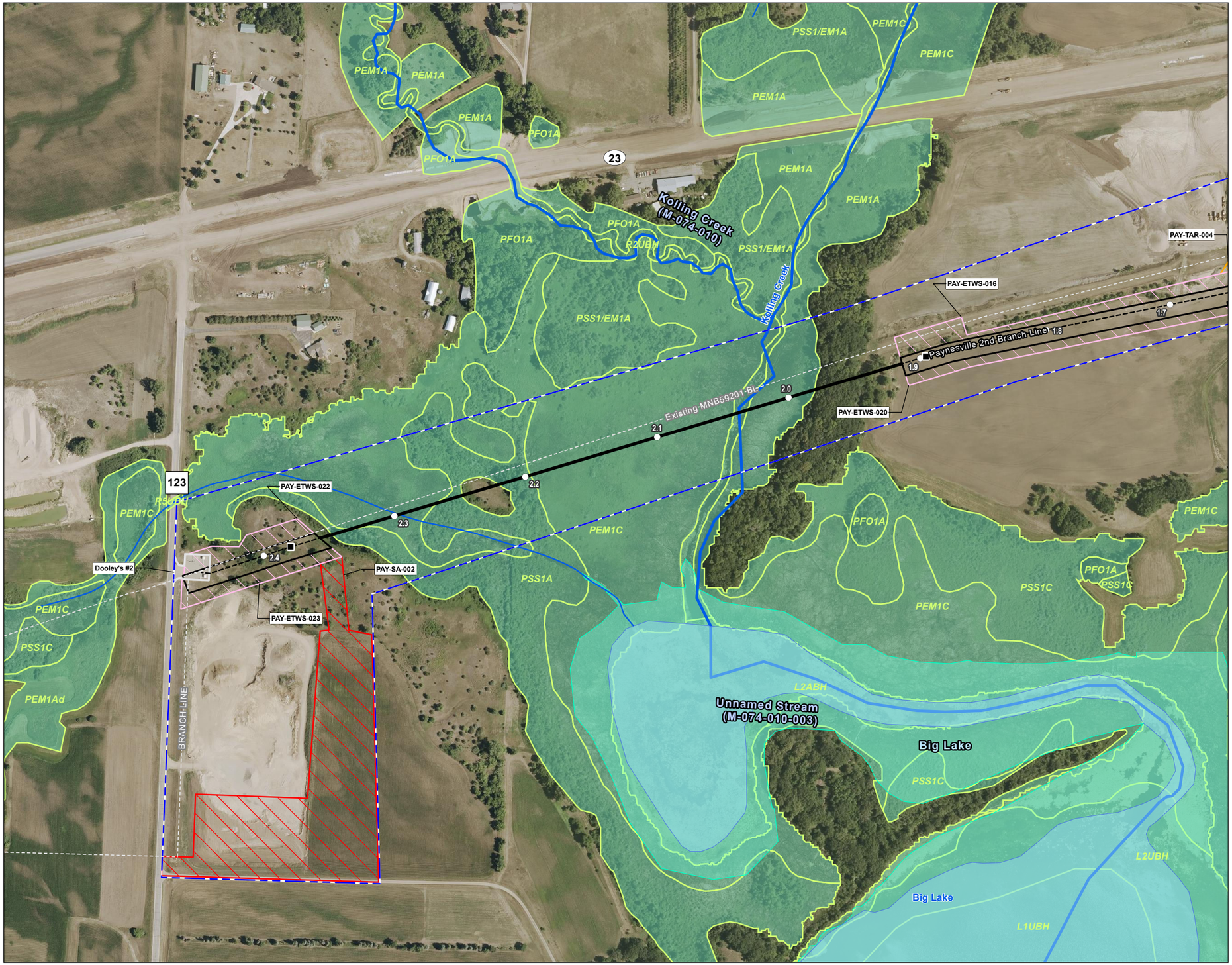

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

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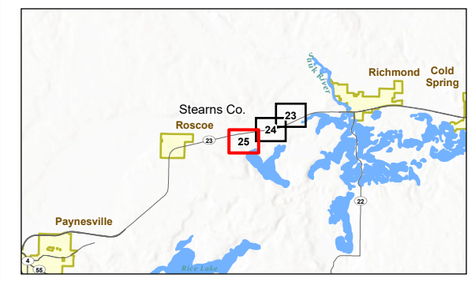

Notes
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Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

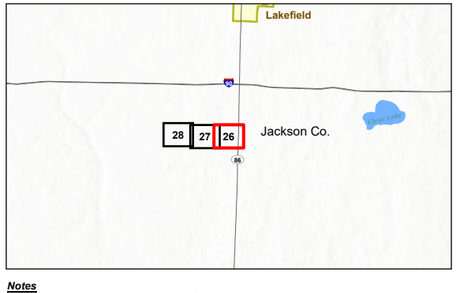
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

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Title

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NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

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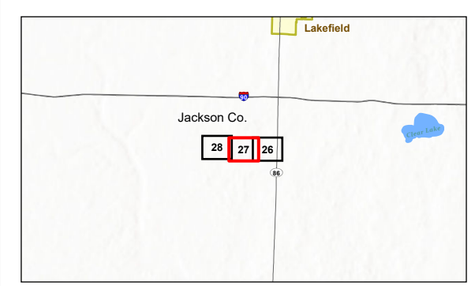
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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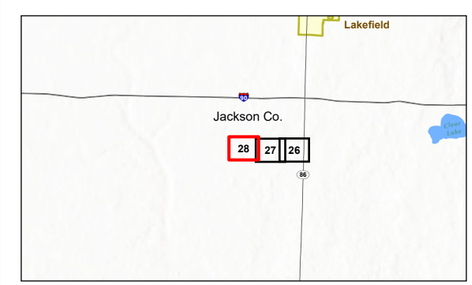
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

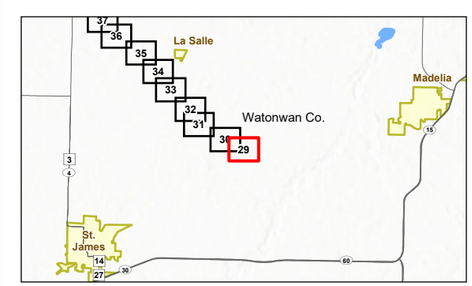

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Figure No.

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Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
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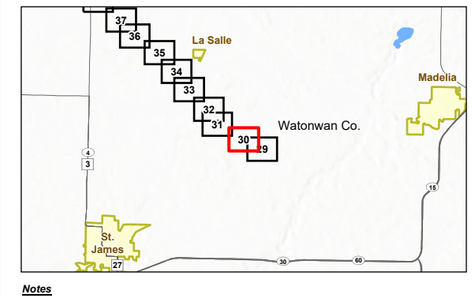
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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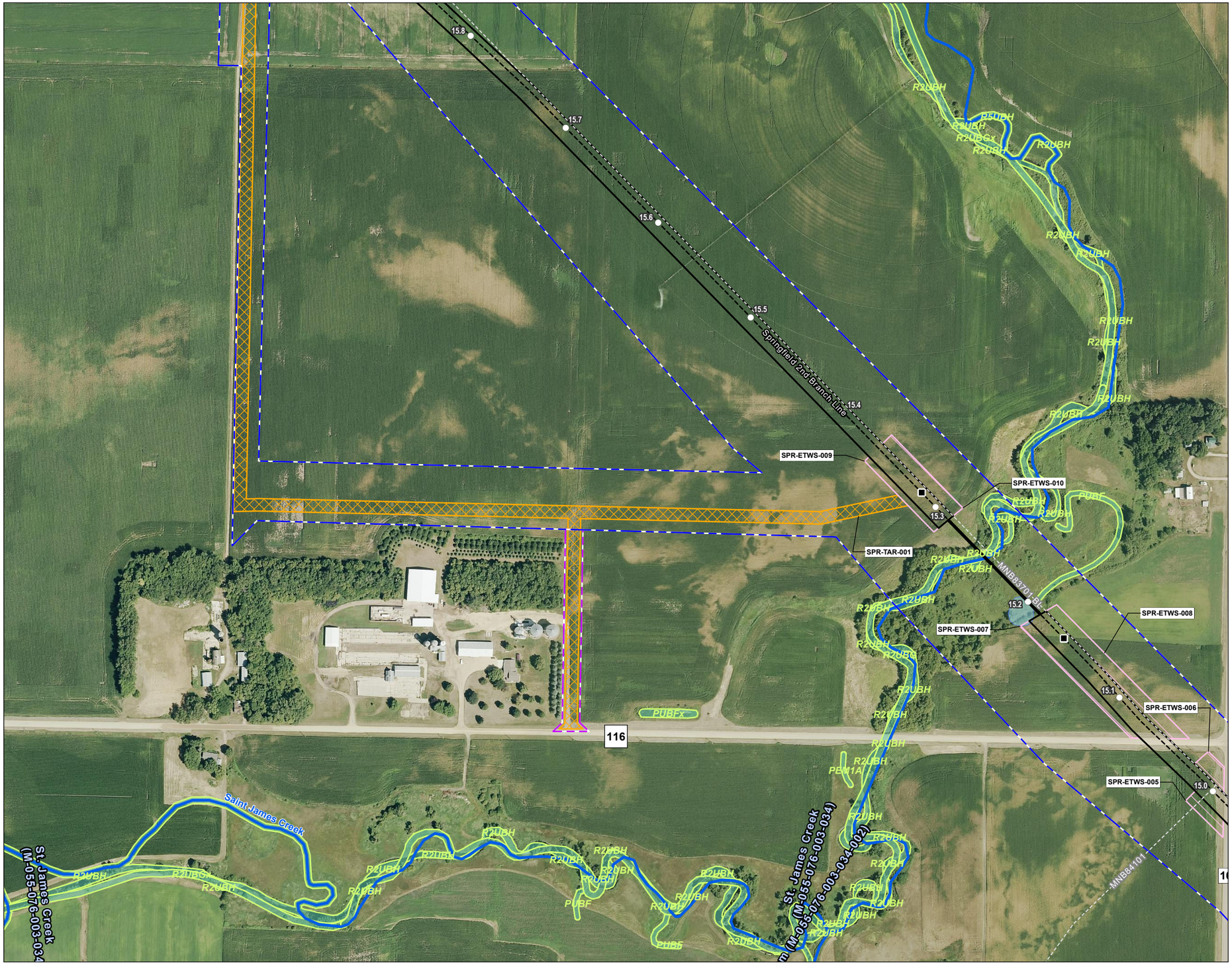

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

0 200 400 Feet
(At original document size of 11x17)
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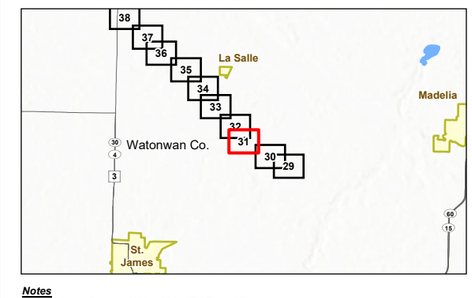
Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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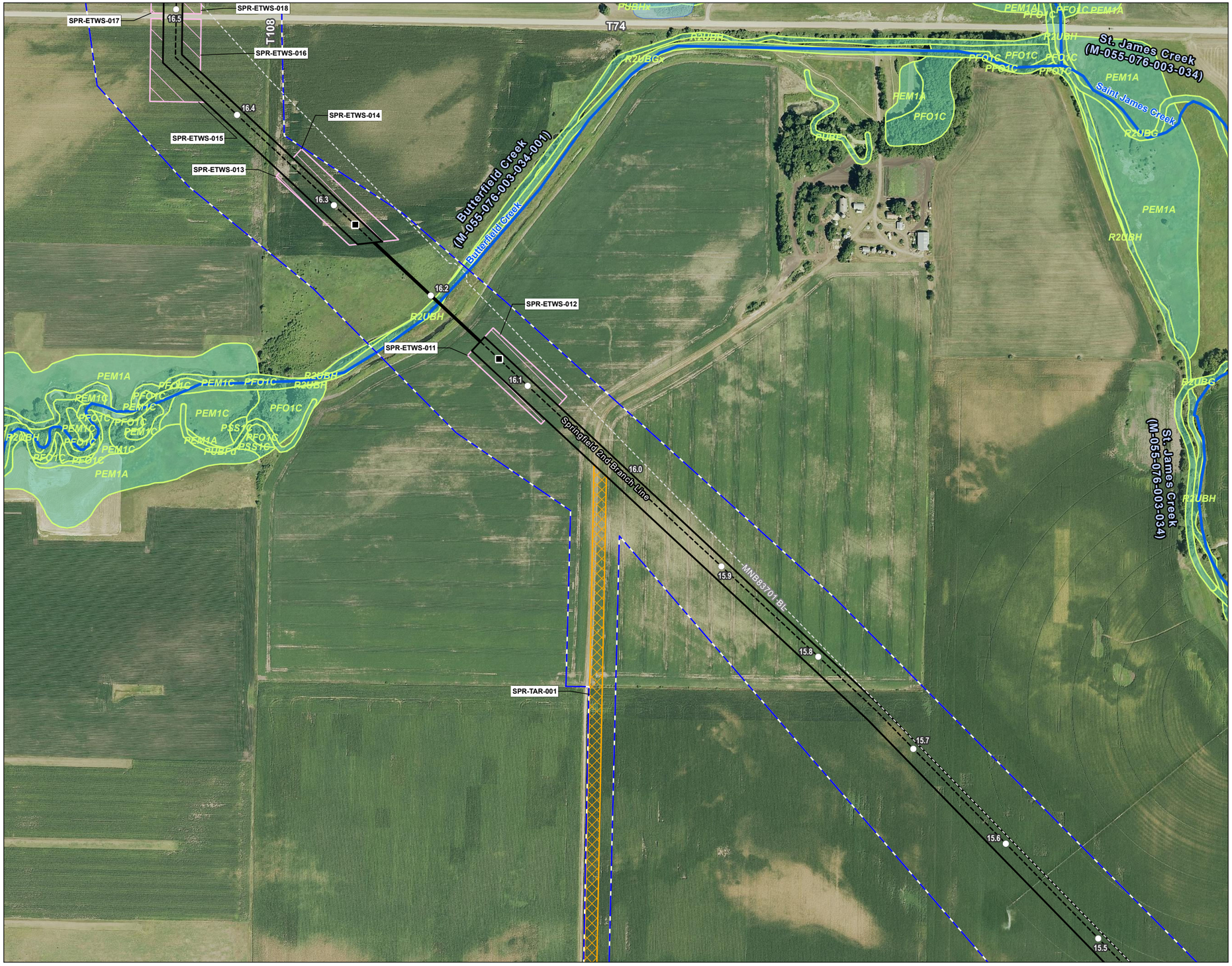

Figure No.
2-2

Title
National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
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IR by SK on 2026-01-15

N

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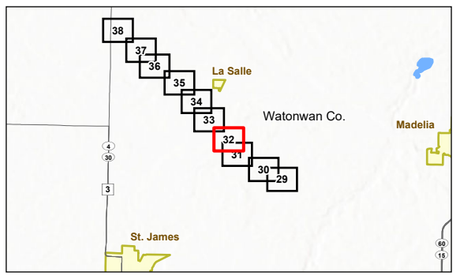
Legend
- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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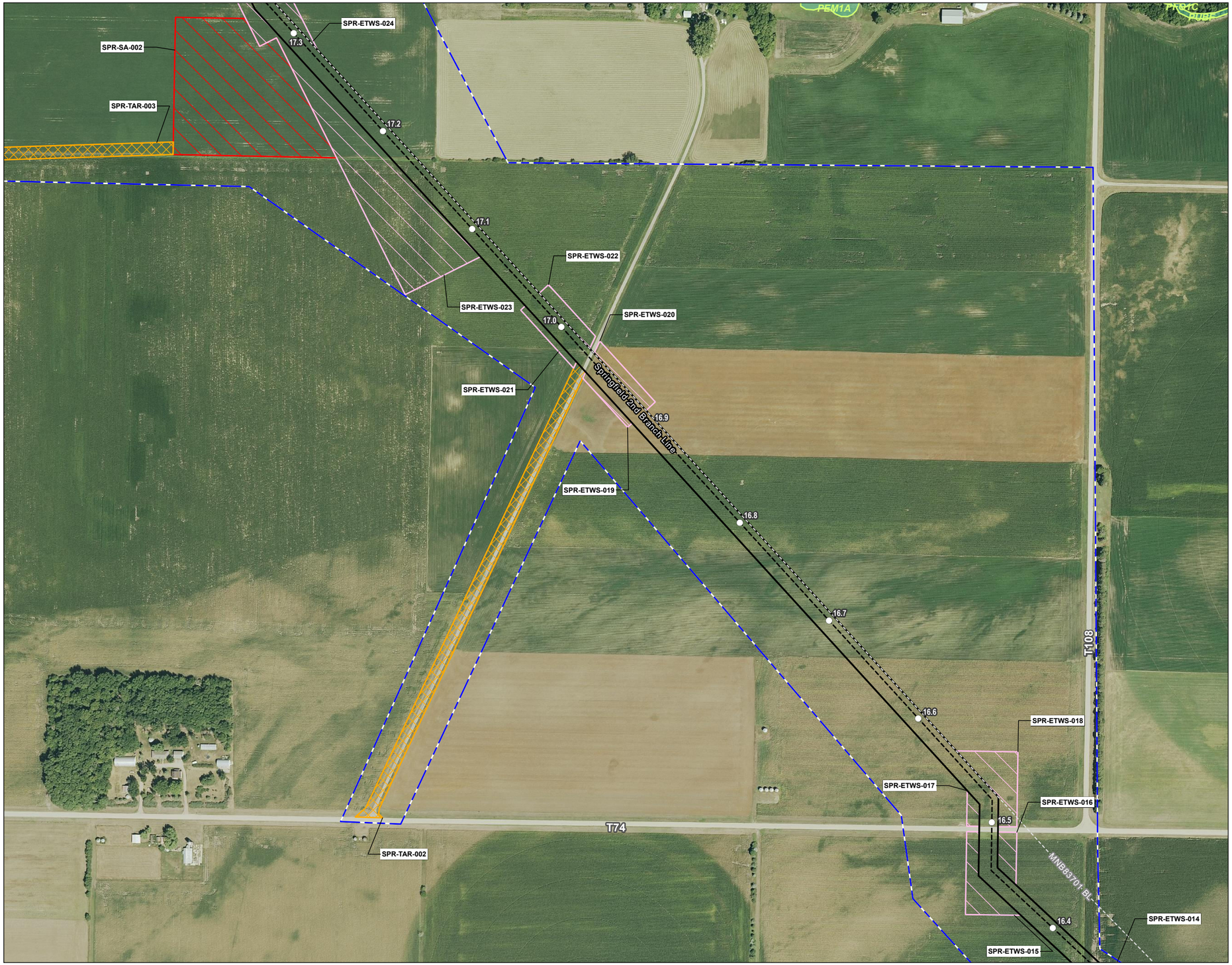

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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(At original document size of 11x17)
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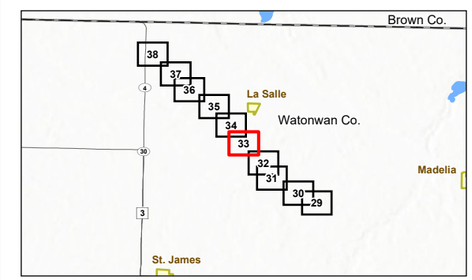
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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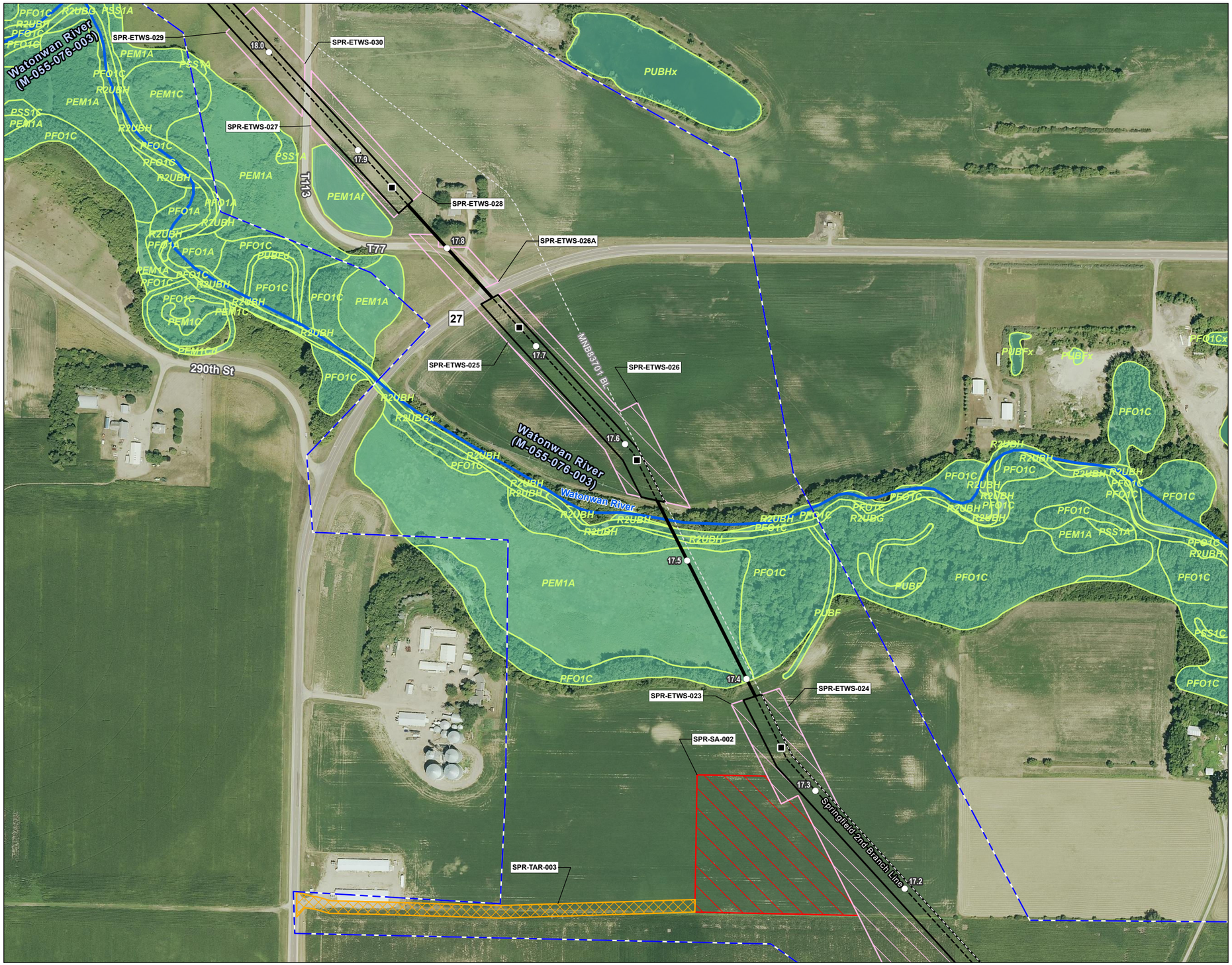

Figure No.
2-2

Title
National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project
172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
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Legend
- Environmental Survey Boundary
- Temporary Workspace
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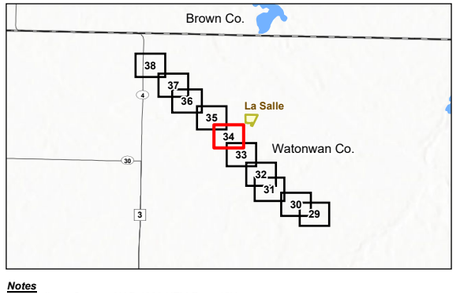
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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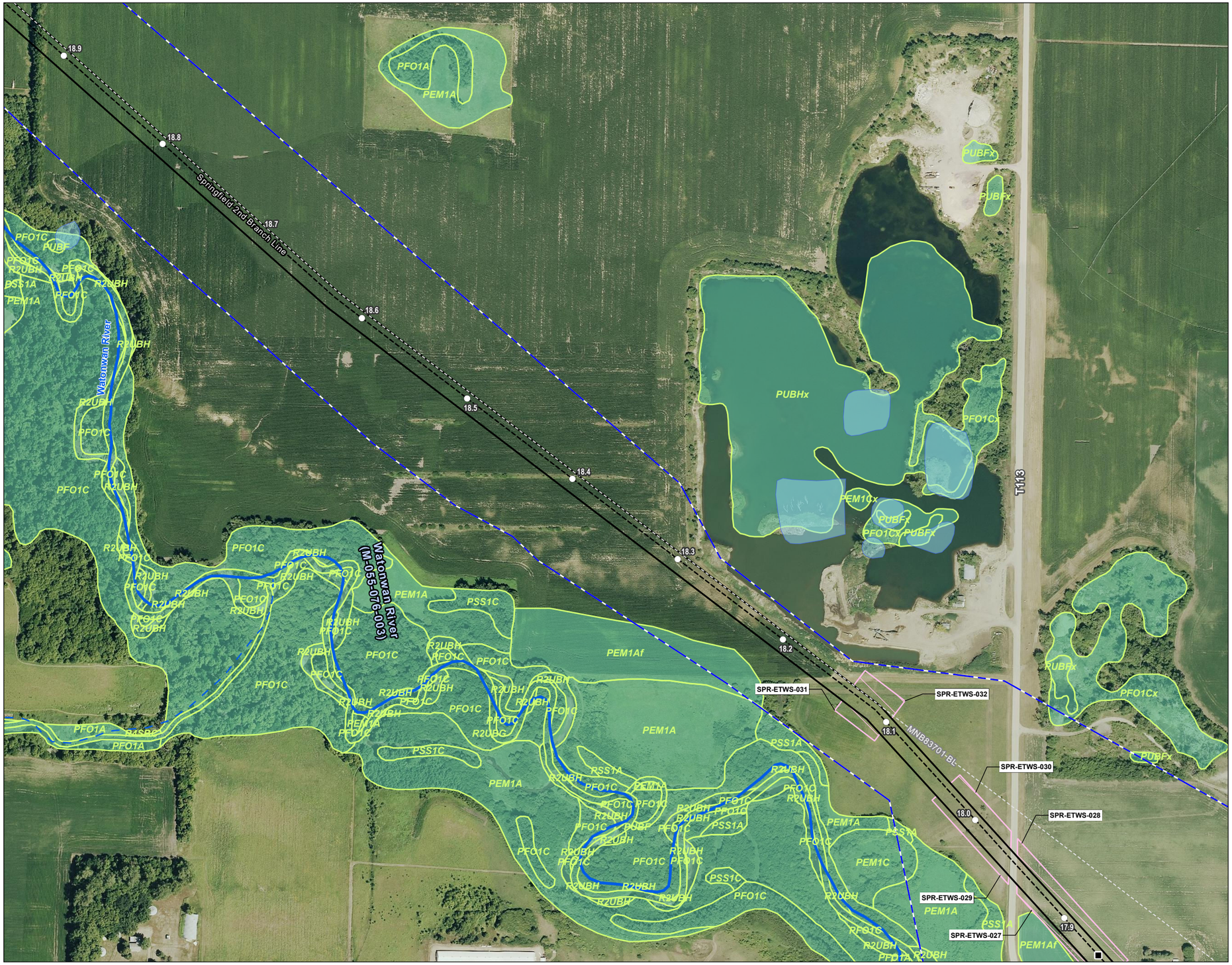

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
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(At original document size of 11x17)
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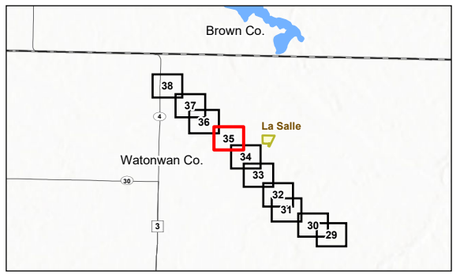
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

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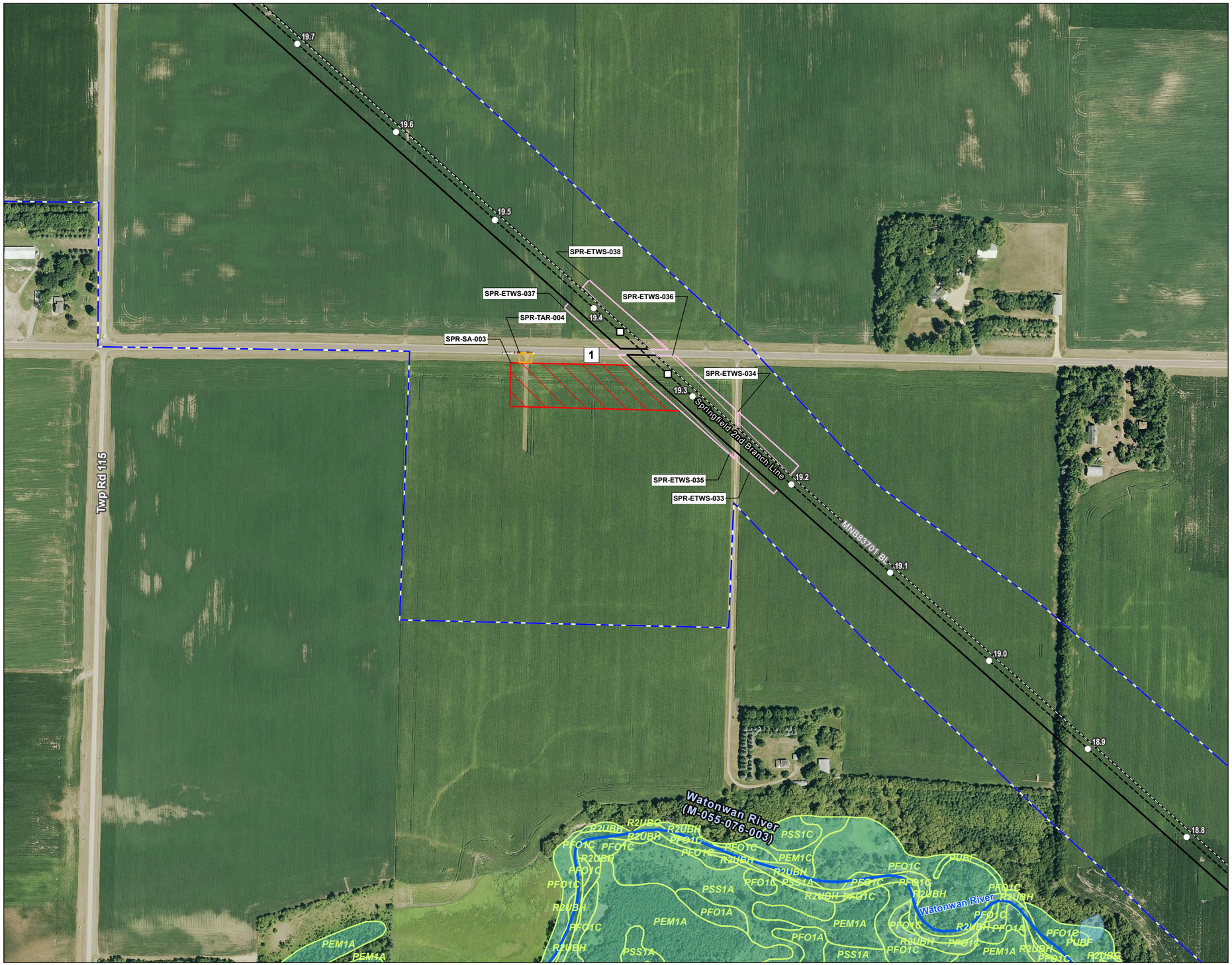

Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

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TR by SF on 2026-01-15
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Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- Auger Bore
- National Wetlands Inventory Feature
- MDNR Protected Watercourse

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

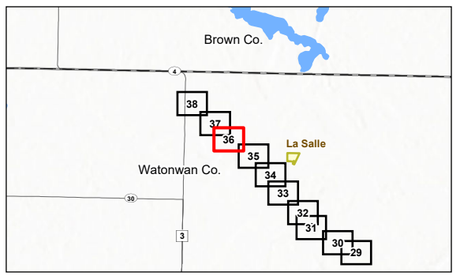

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

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Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Proposed Pipeline
- Existing Pipeline
- Mile Post

National Hydrography Dataset

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- Intermittent Stream
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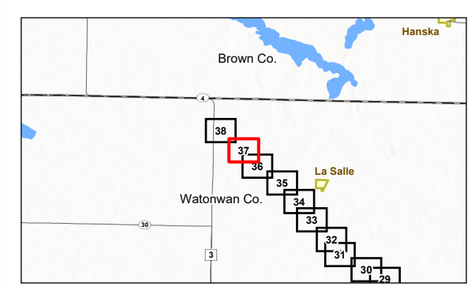

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Stantec

Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

0 200 400 Feet
(At original document size of 11x17)
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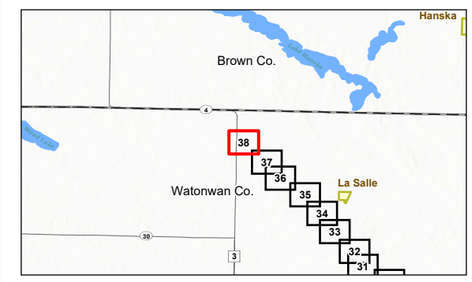
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

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Northern Natural Gas

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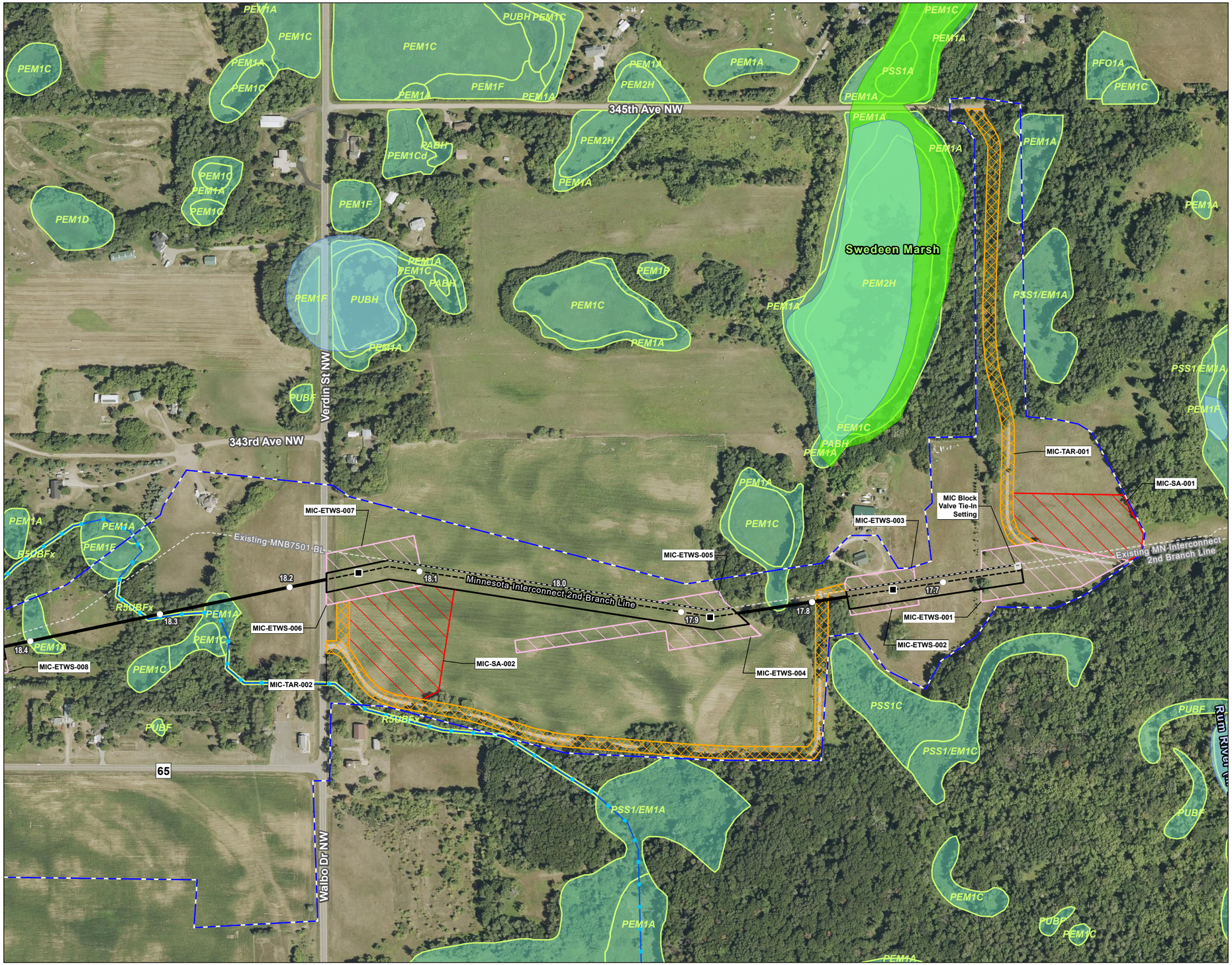

Figure No.
2-2

Title
National Wetlands Inventory & Public Waters Map
NL27 - Minnesota Interconnect 2nd Branch Line

Client/Project 172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Isanti County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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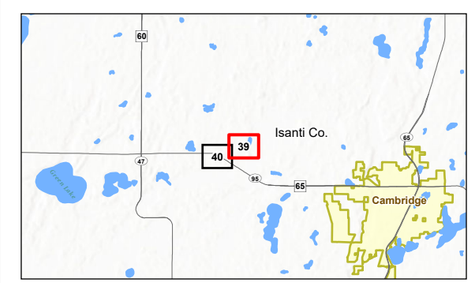
(At original document size of 11x17)
1:4,800

Legend
- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Watercourse
- MnDNR Protected Wetland

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec
Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Minnesota Interconnect 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Isanti County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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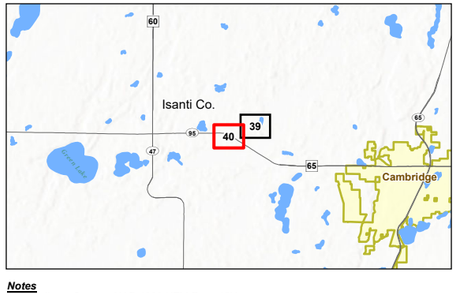
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature
- MDNR Protected Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Alexandria 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Morrison County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

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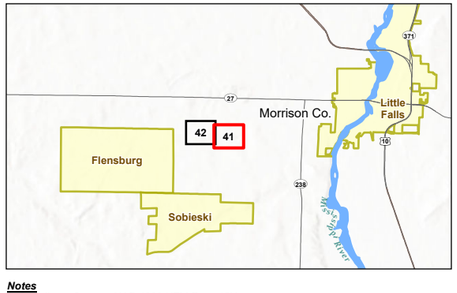
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-2

Title

National Wetlands Inventory & Public Waters Map
NL27 - Alexandria 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Morrison County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

0 200 400 Feet
(At original document size of 11x17)
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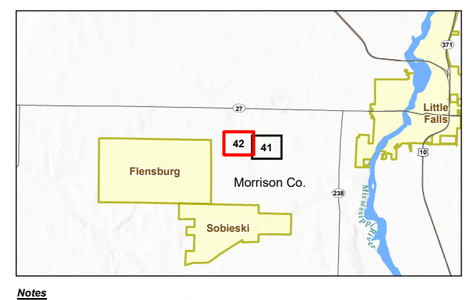
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Proposed Pipeline
- Existing Pipeline
- Mile Post
- HDD
- National Wetlands Inventory Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.
2-2

Title
National Wetlands Inventory & Public Waters Map
NL27 - Hugo Compressor Station

Client/Project 172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Washington County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-01-15

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend
- Environmental Survey Boundary
- Existing Facility
- Existing Pipeline
- National Wetlands Inventory Feature
- MnDNR Protected Wetland

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS, USFWS, MN DNR
3. Background: 2023 NAIP

Stantec
Northern Natural Gas

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Figure 2-3
V2F Project Field Delineated Wetland and Waterbodies

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Disconnect Site Ventura Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Hancock County, Iowa

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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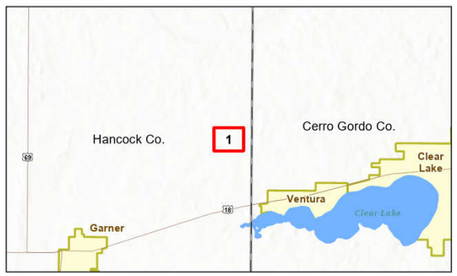
Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- Well
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Temporary Compression Site Lake Mills Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Worth County, Iowa

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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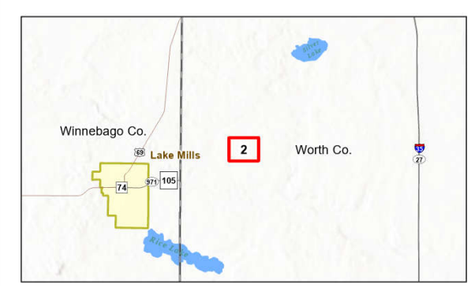
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Existing Pipeline
- Well
- Culvert
- Mapped Waterway Observation Point
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

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(At original document size of 11x17)
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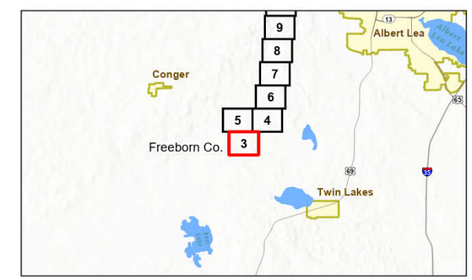
Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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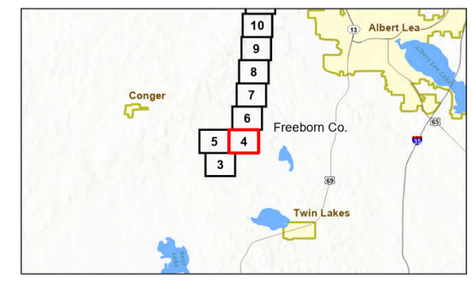
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Mapped Waterway Observation Point
- Sample Point
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

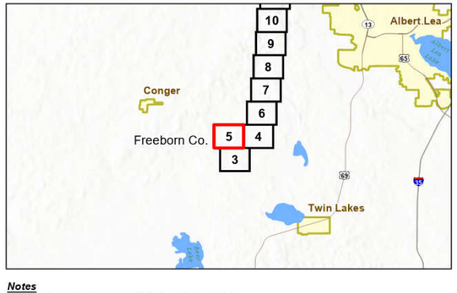
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

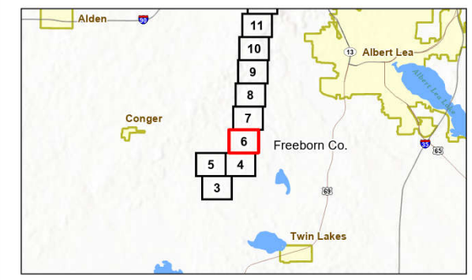
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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Northern Natural Gas

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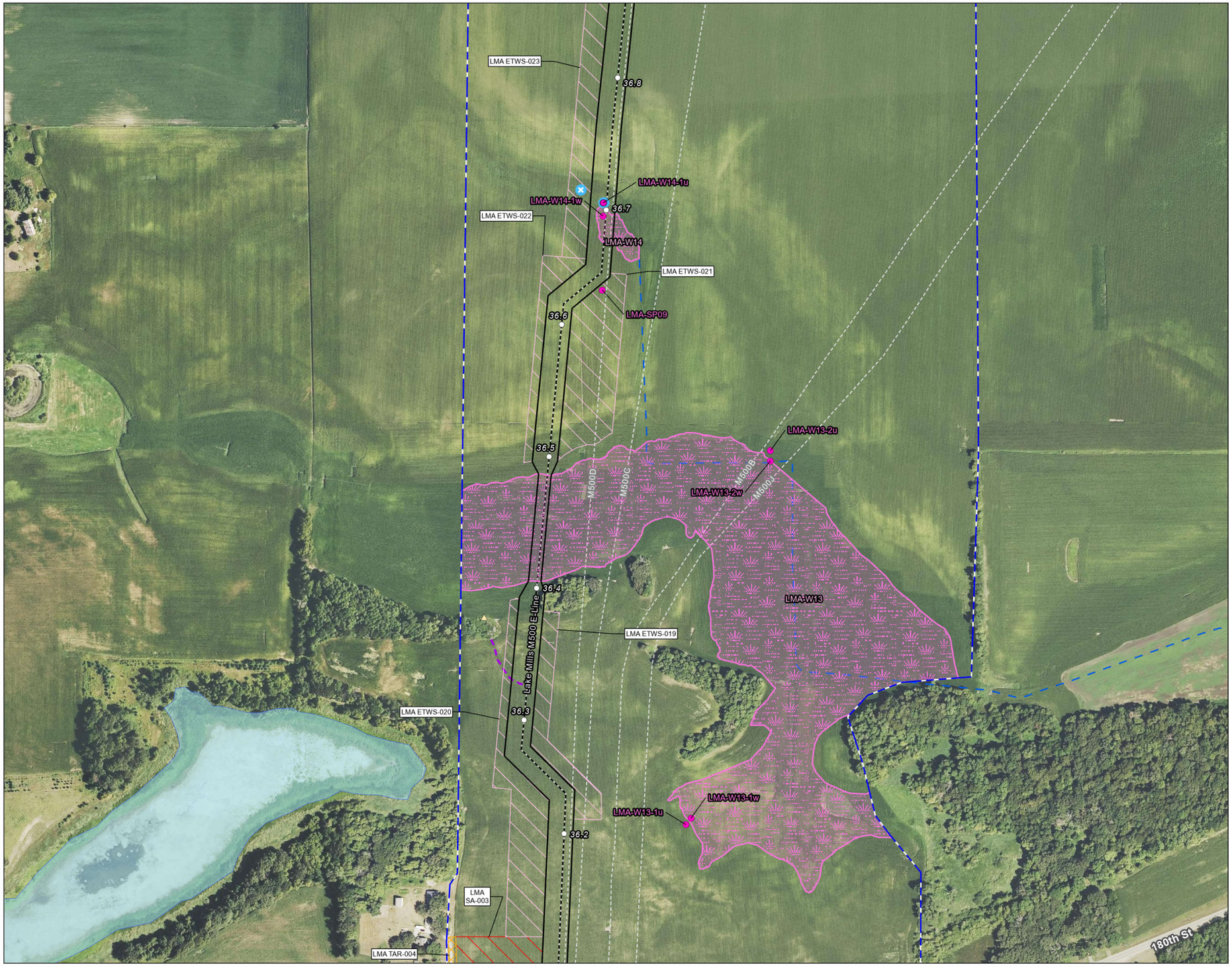


Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

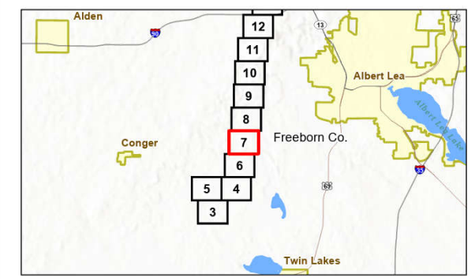
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Mapped Waterway Observation Point
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
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2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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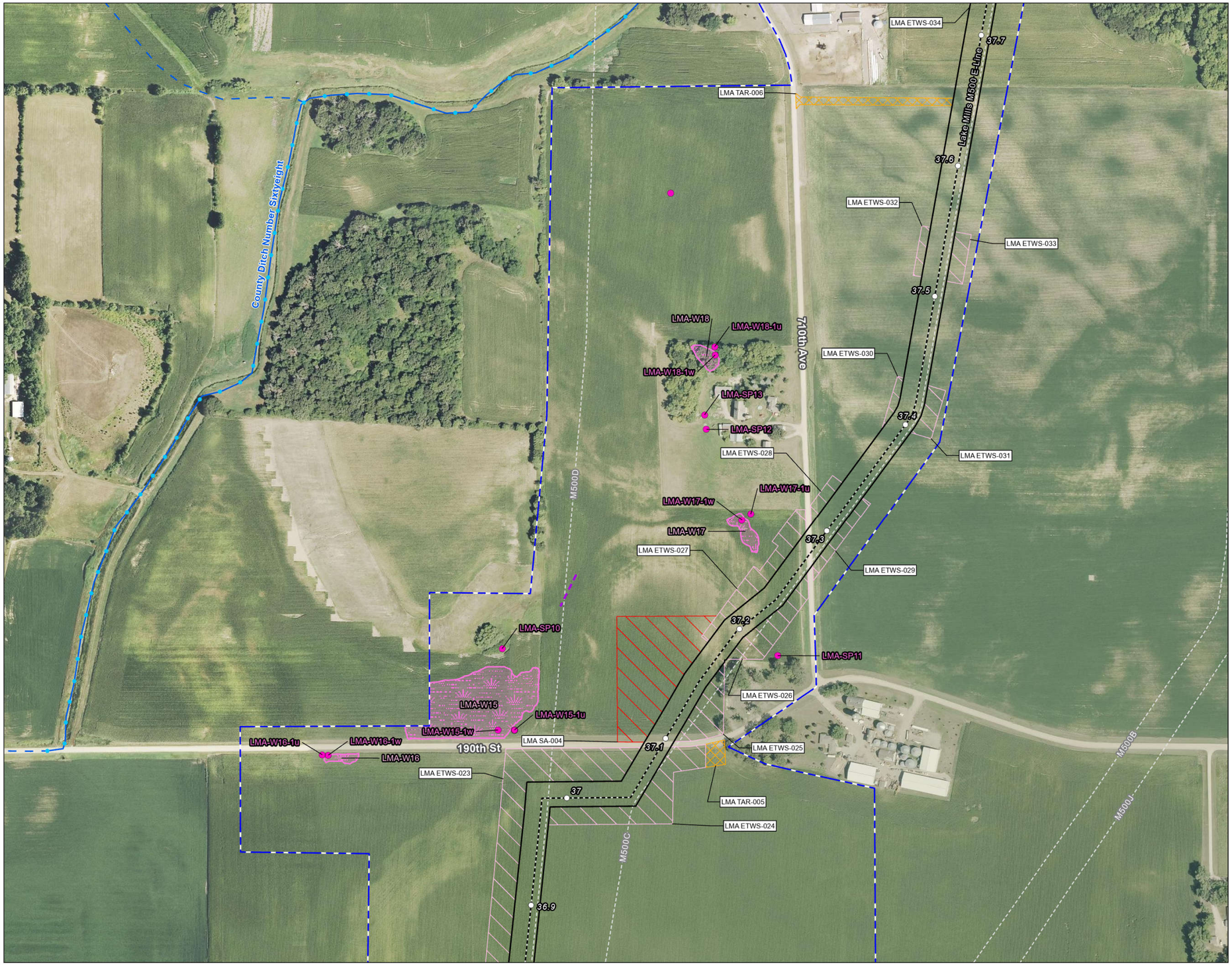


Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

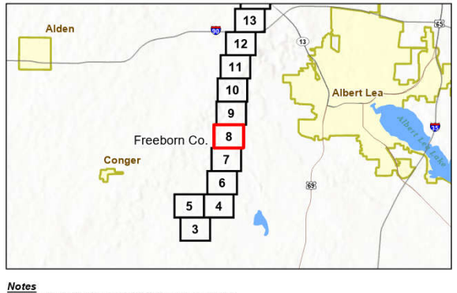
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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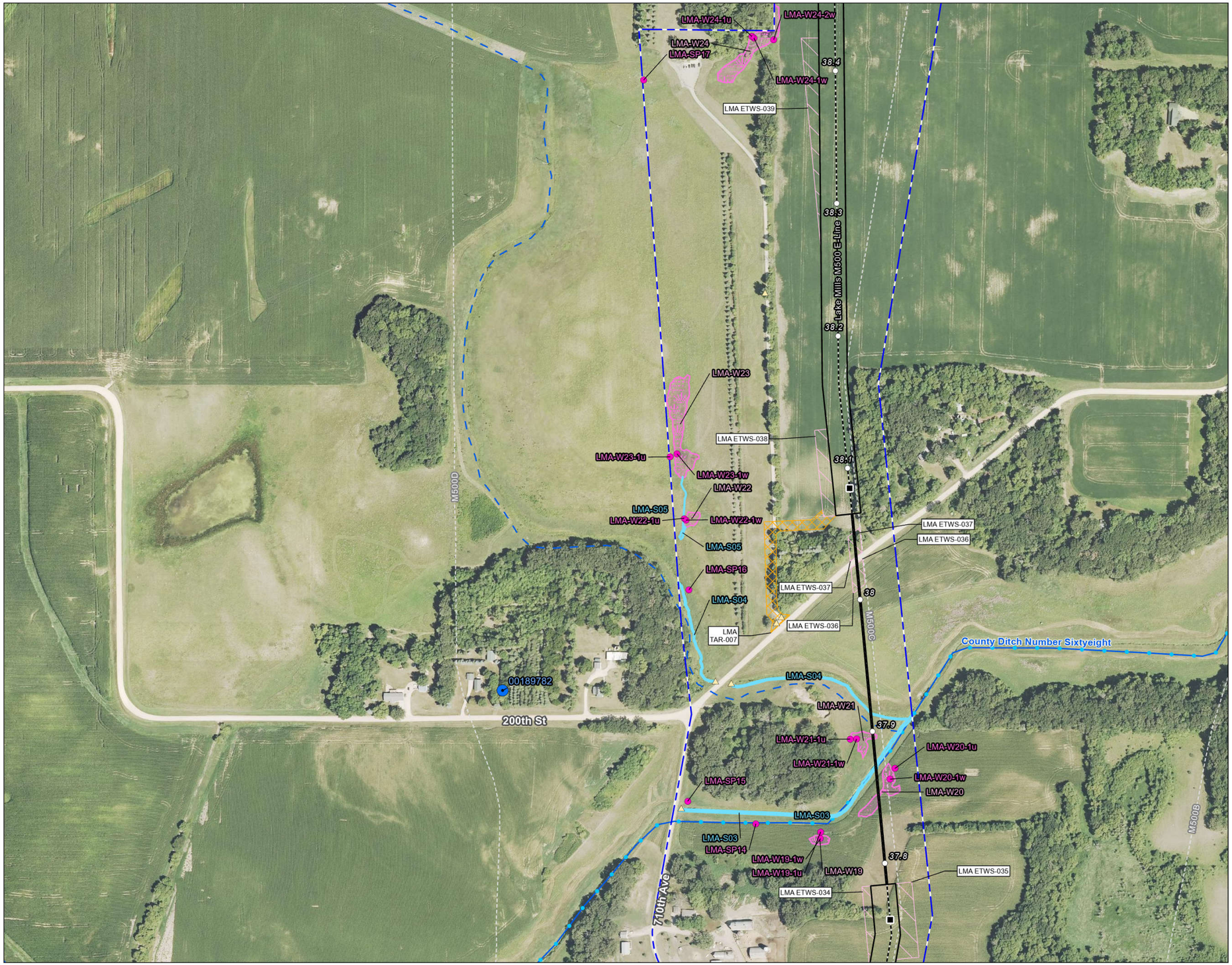

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- Field Delineated Waterway
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National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
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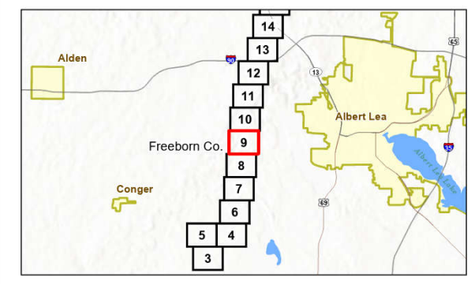

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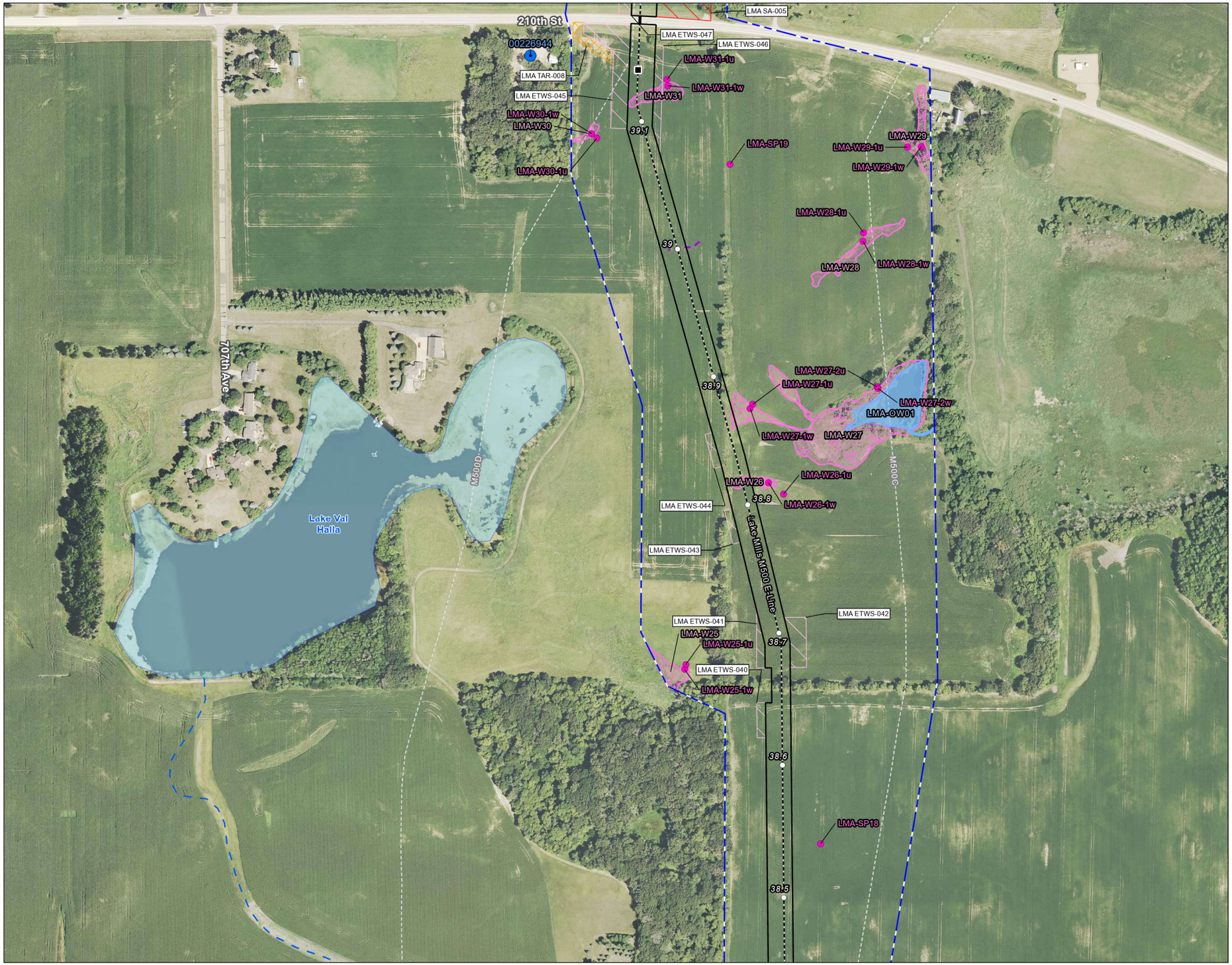

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- Field Delineated Wetland

National Hydrography Dataset

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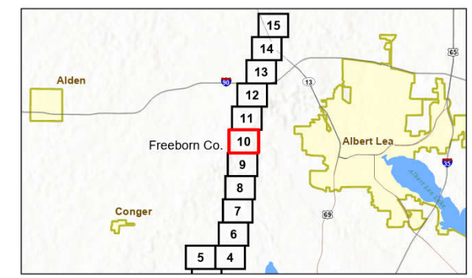

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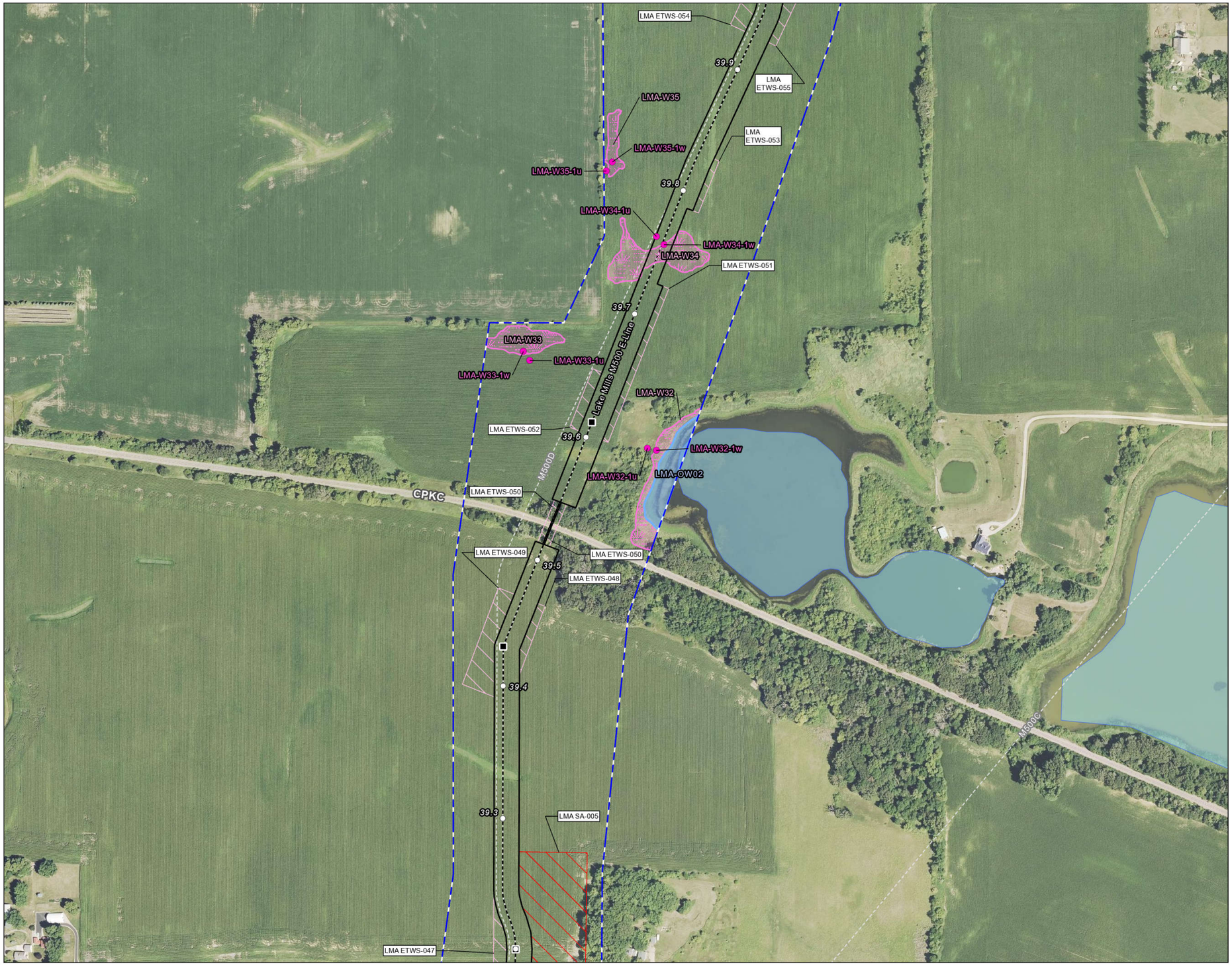

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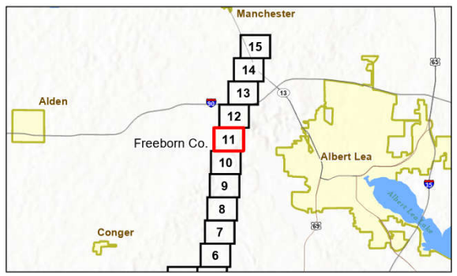

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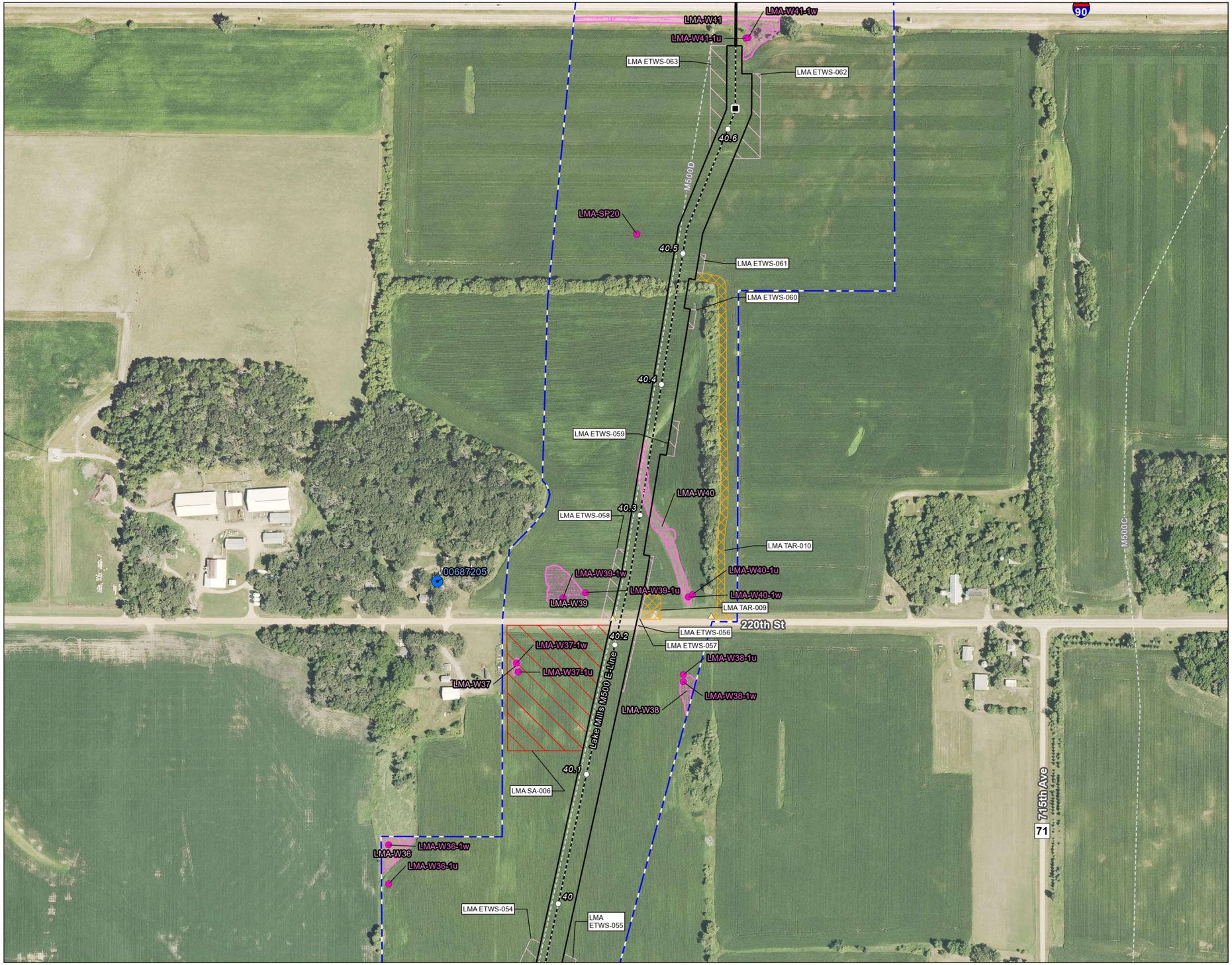

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Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
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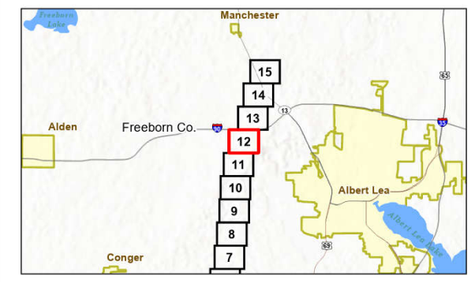

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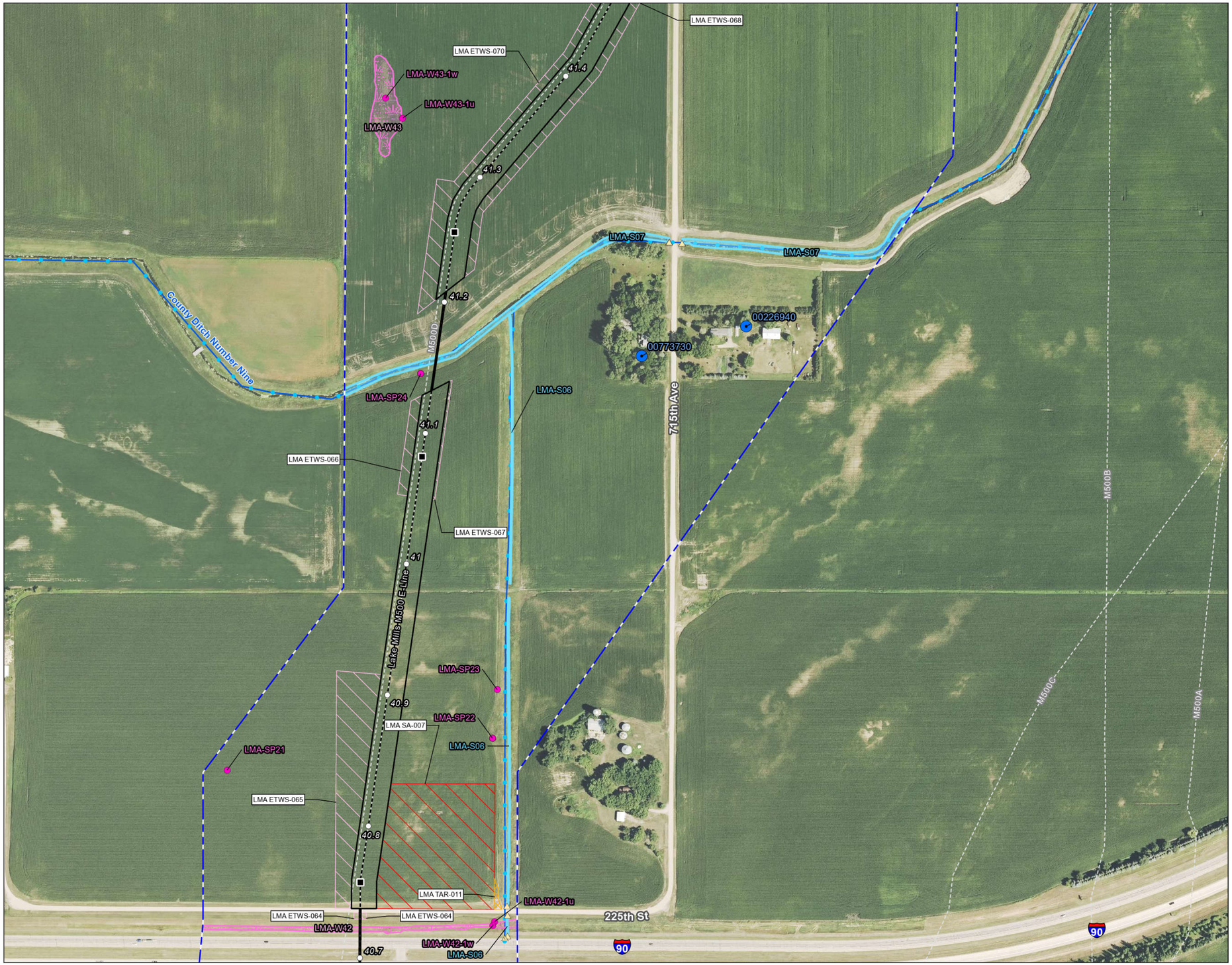

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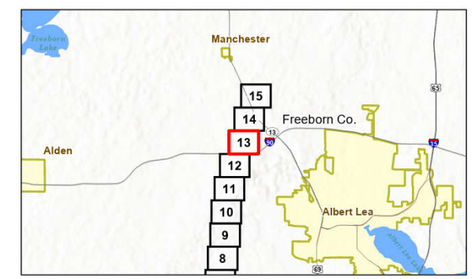

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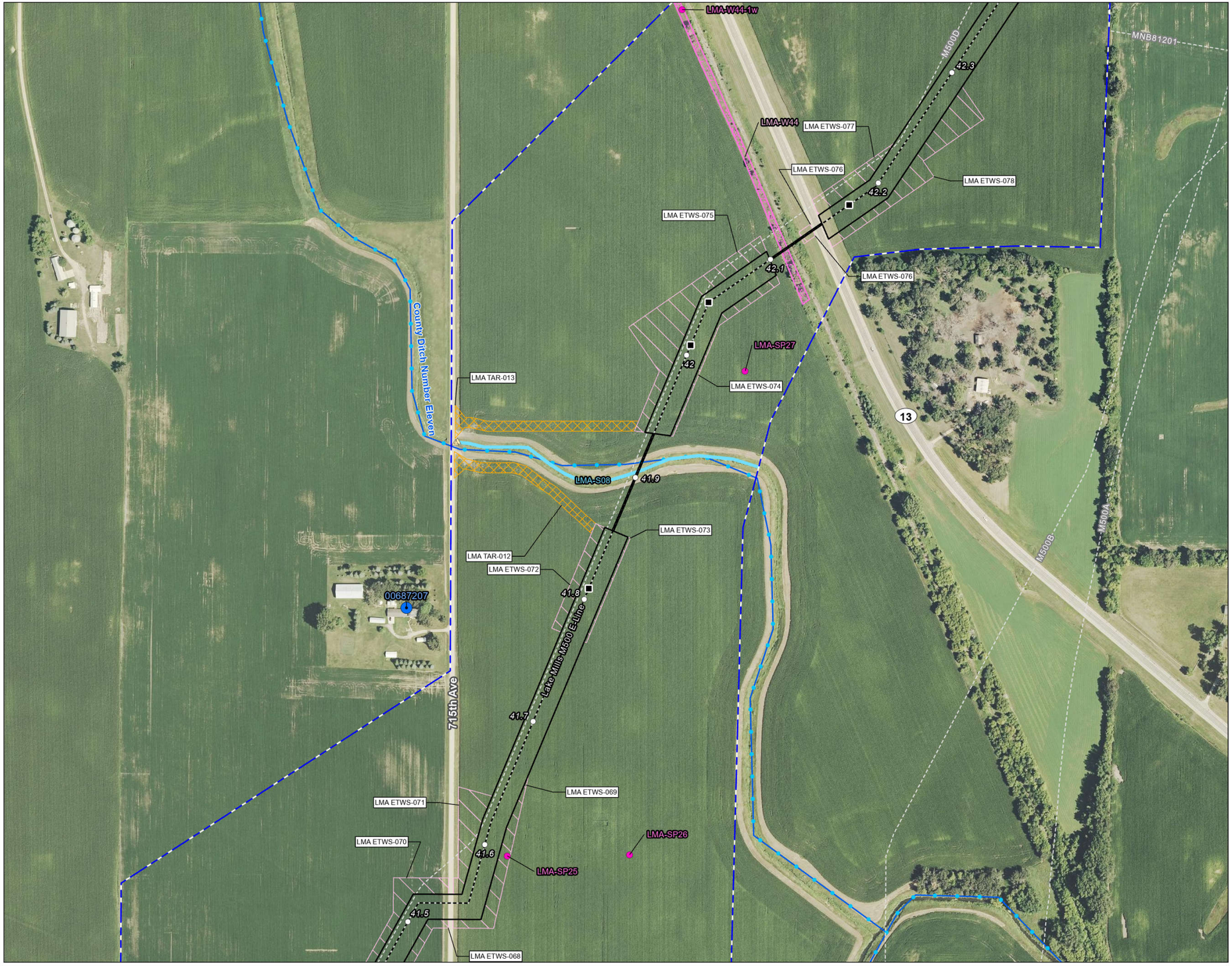

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Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
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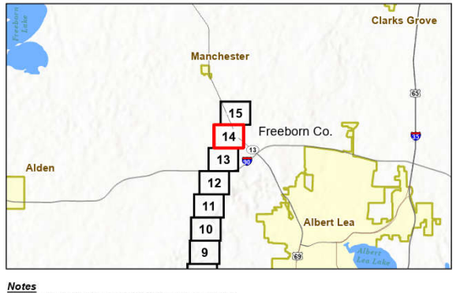

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Field Delineated Wetlands & Waterbodies
V2F - Lake Mills M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
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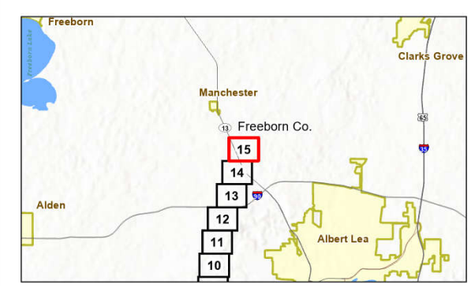

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
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Legend

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National Hydrography Dataset

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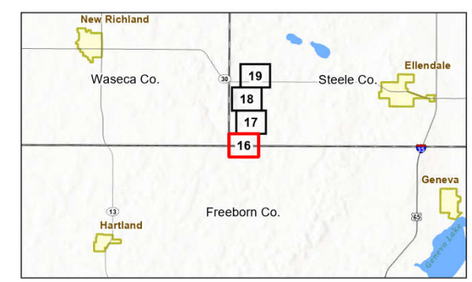

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
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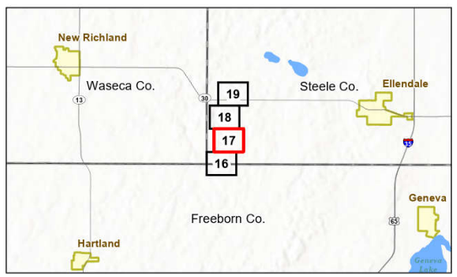

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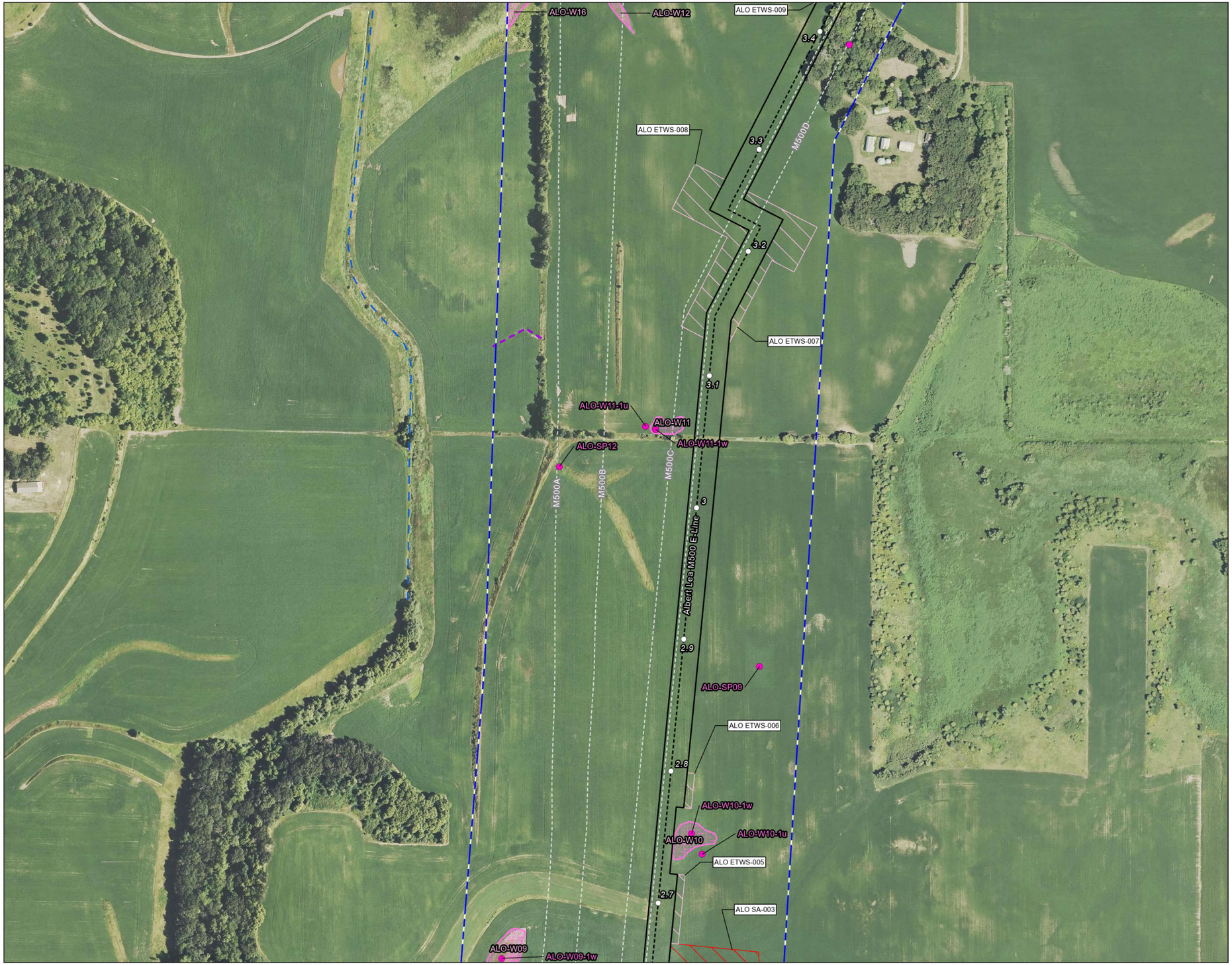

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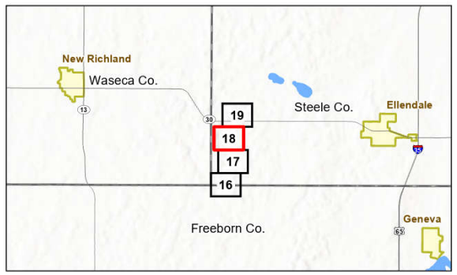
- Extra Temporary Workspace
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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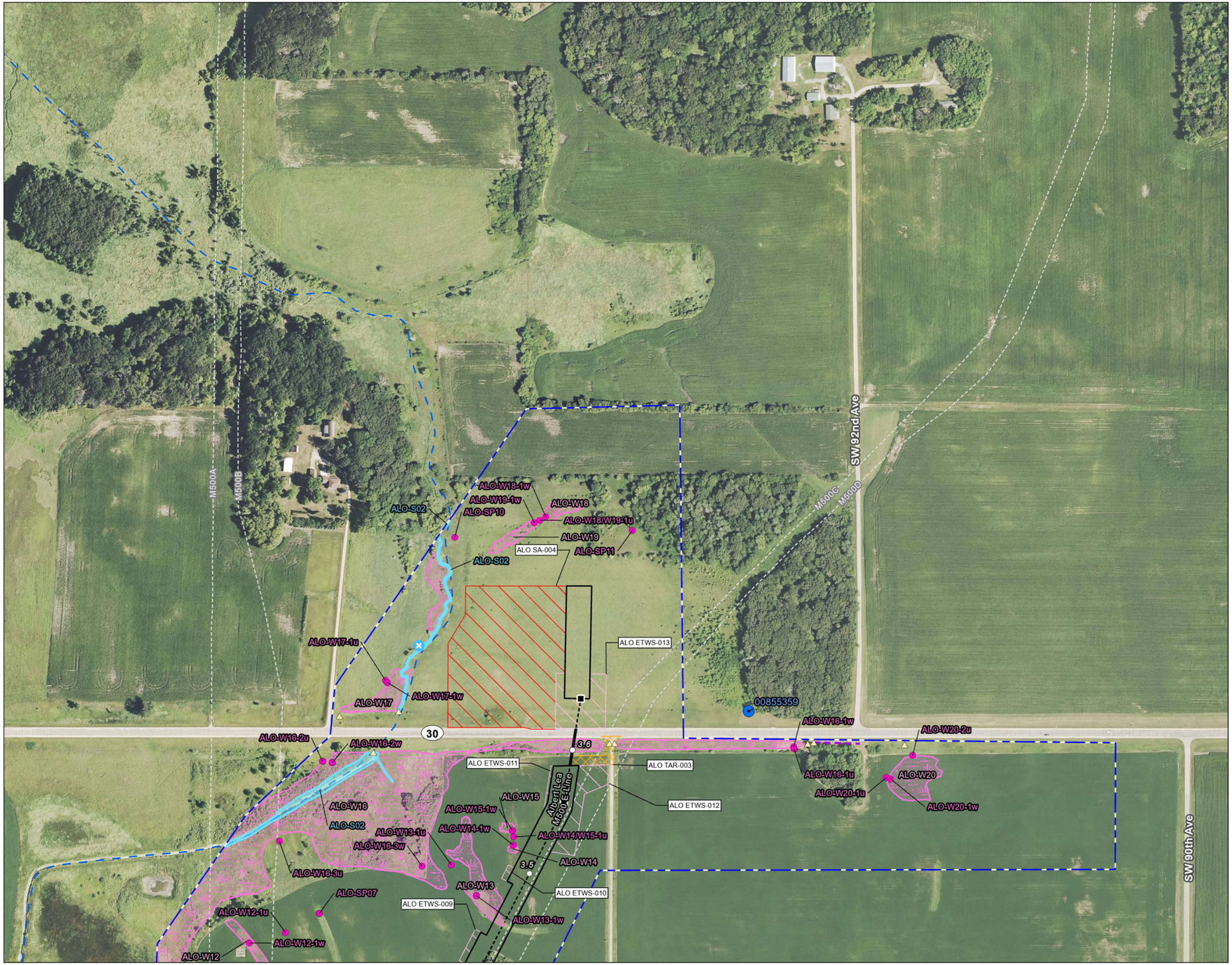


Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Albert Lea M500 E-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

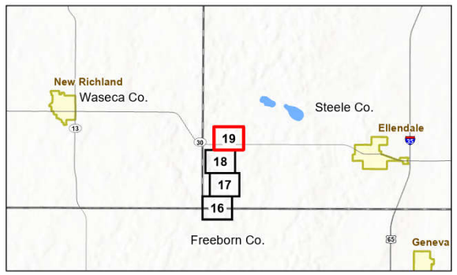
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Mapped Waterway Observation Point
- Sample Point
- Upland Drainage Feature
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Temporary Compression Site Owatonna Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage Feature

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

Notes
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2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Temporary Compression Site Northfield #1

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

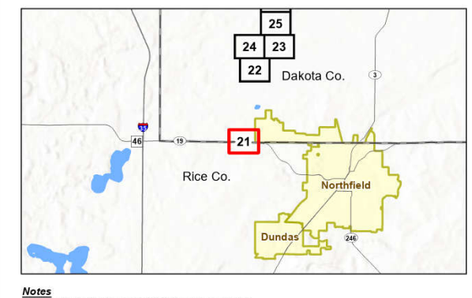

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

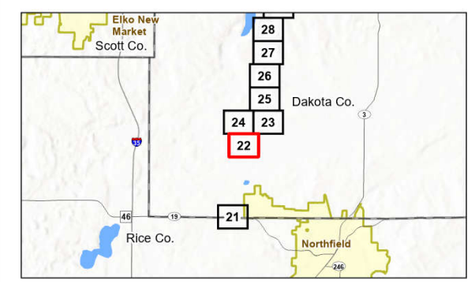
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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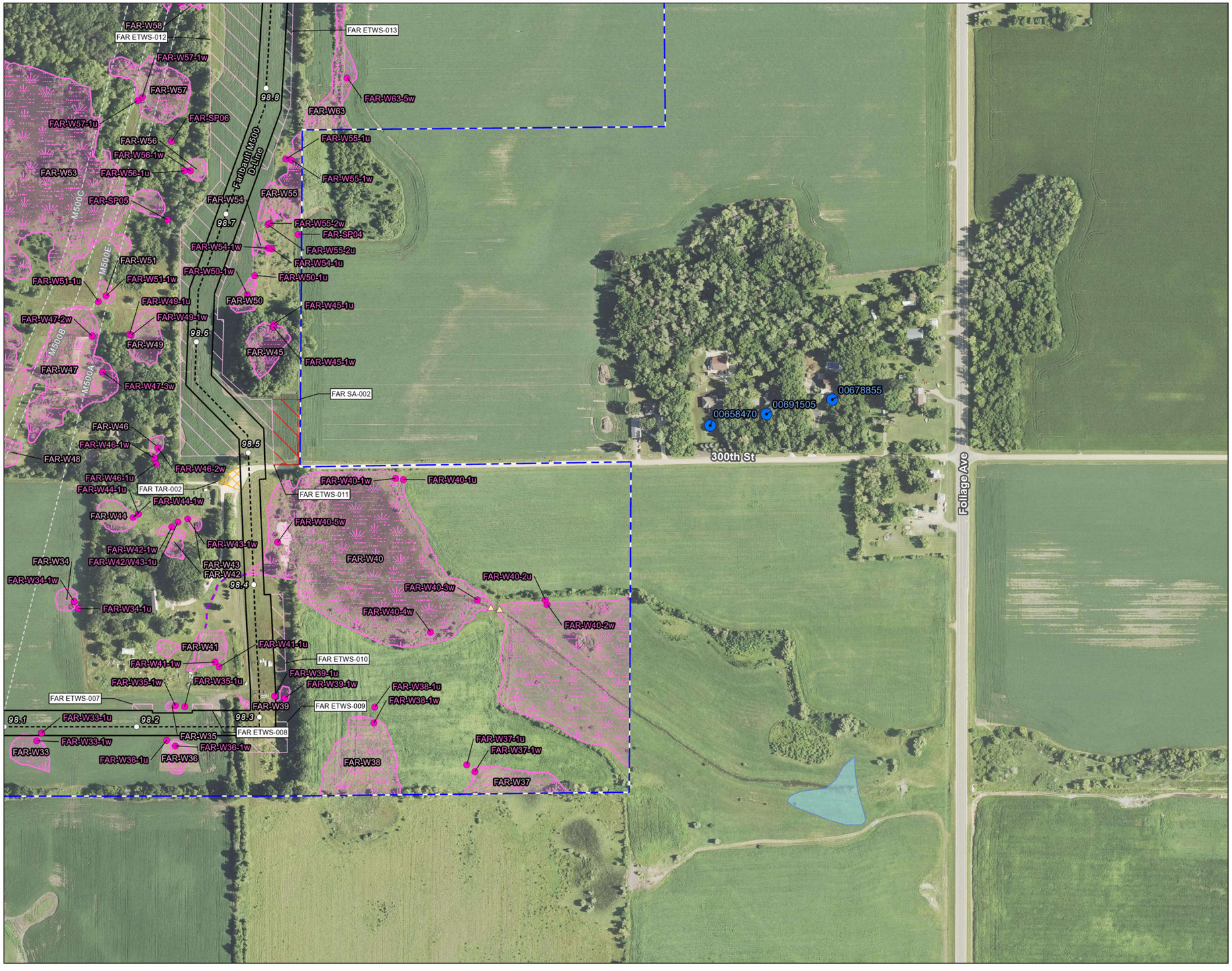

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
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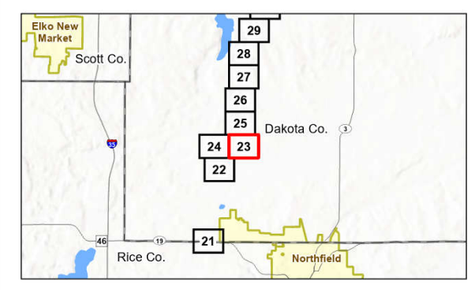
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage Feature
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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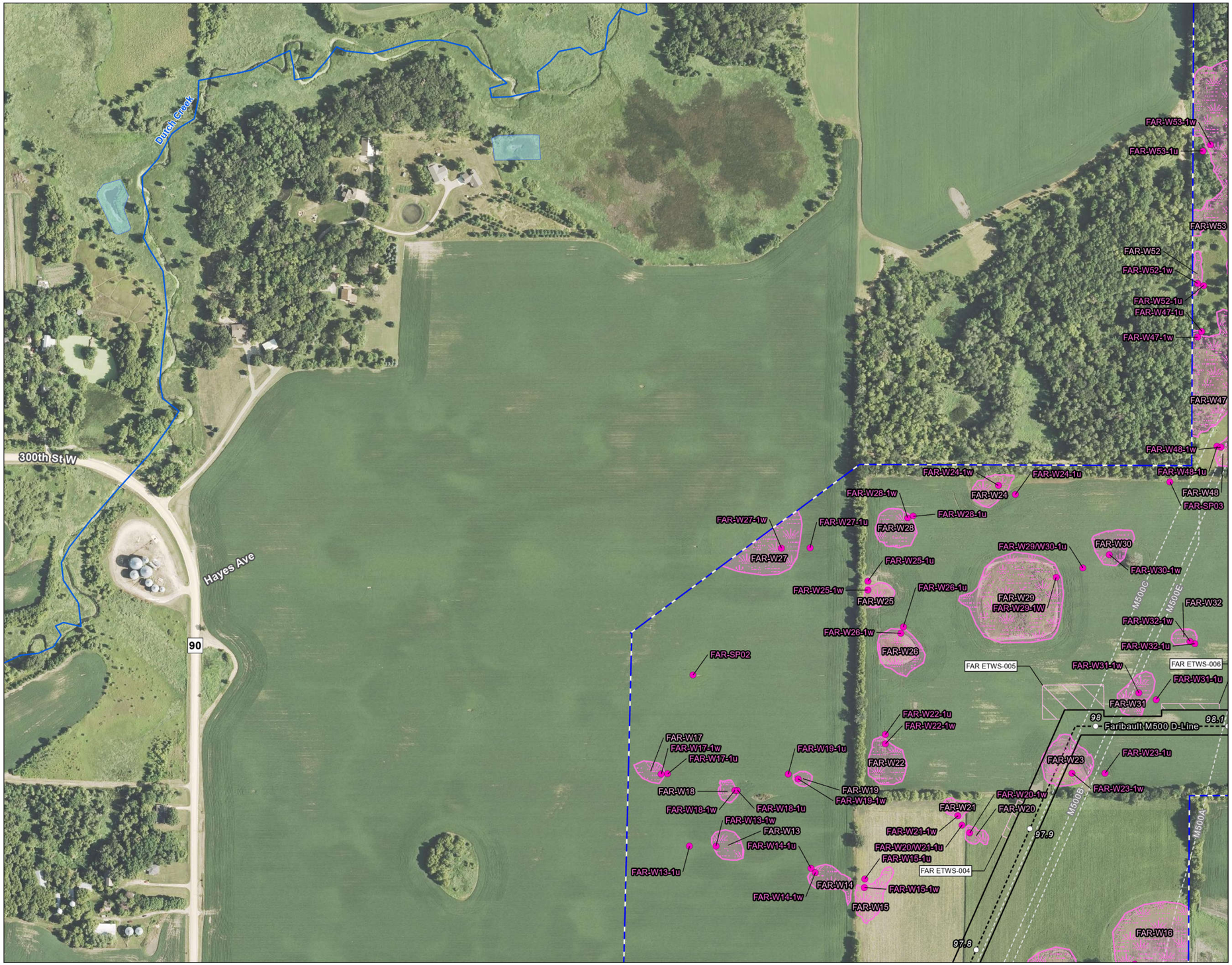

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
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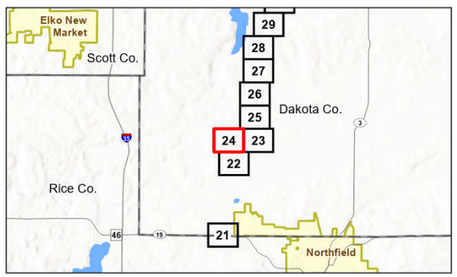
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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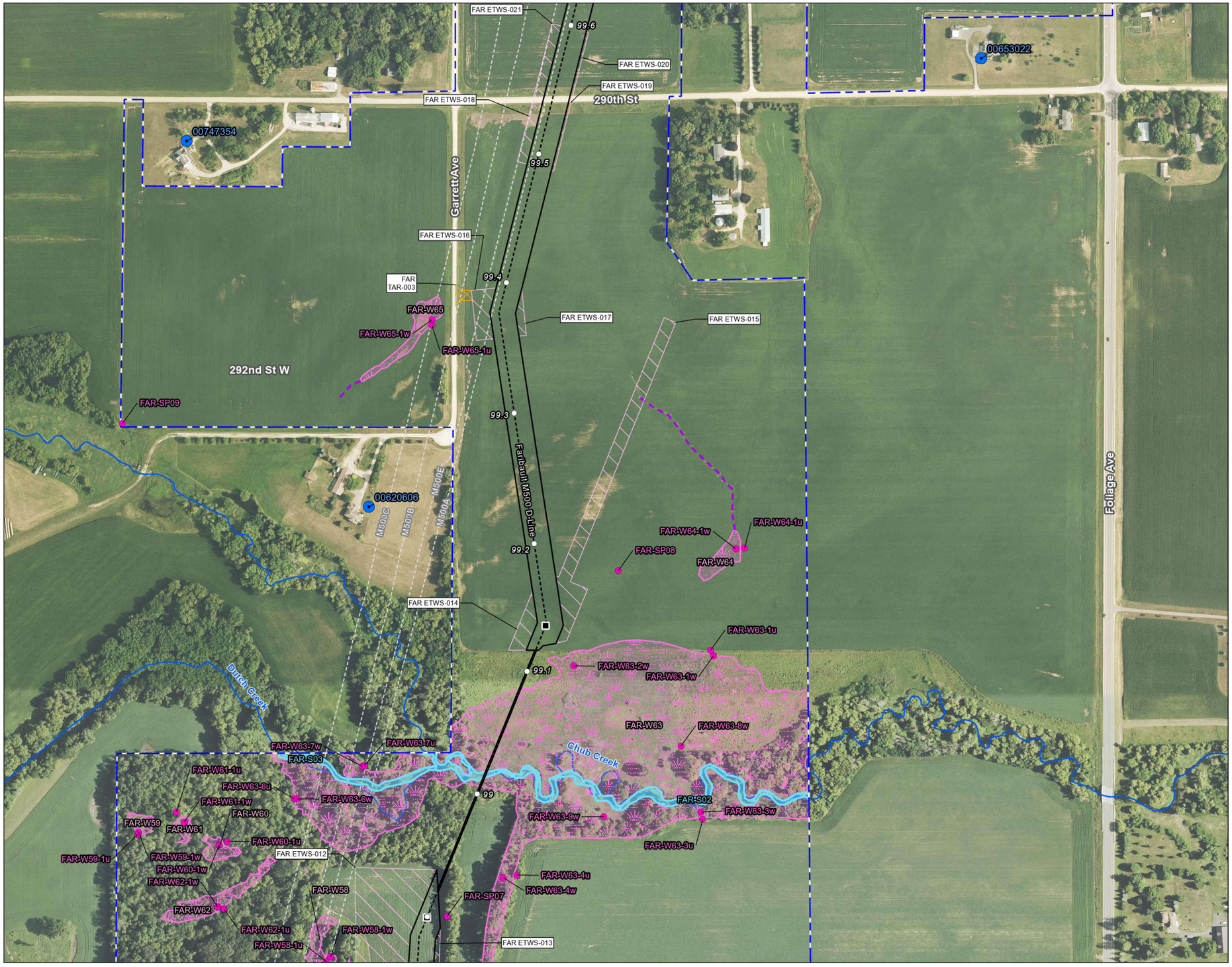

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage Feature
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

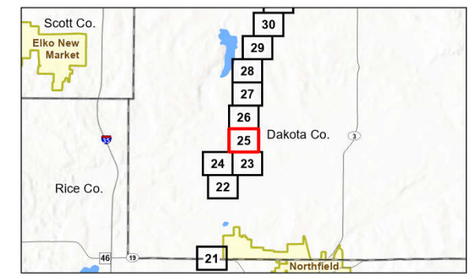

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
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N

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Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

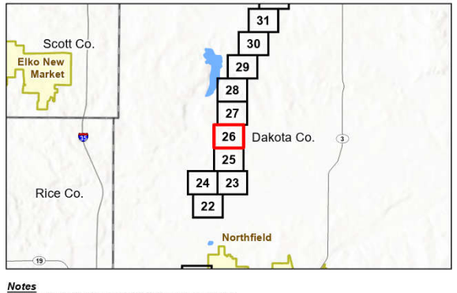

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

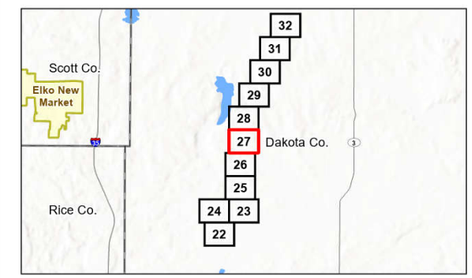
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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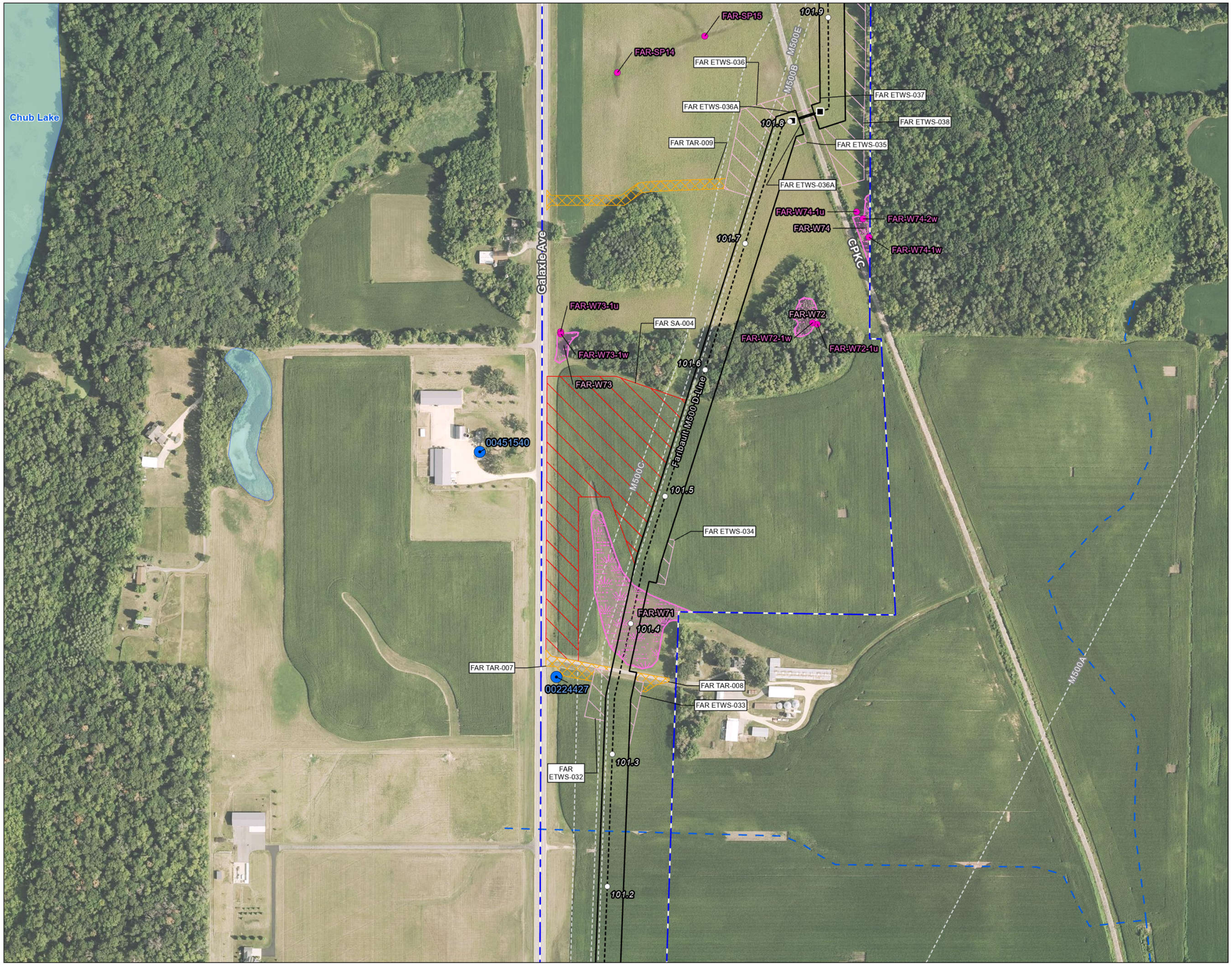

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
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N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

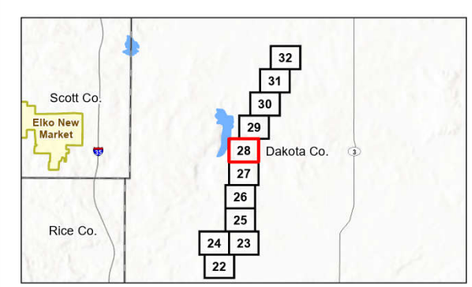

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
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(At original document size of 11x17)
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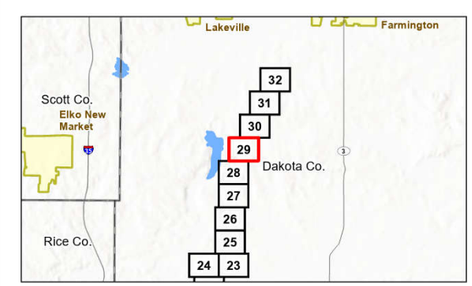
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage Feature
- Field Delineated Waterway
- Field Delineated Open Water
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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Northern Natural Gas

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Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

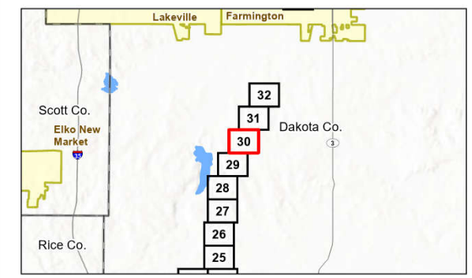
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage Feature
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, NNG, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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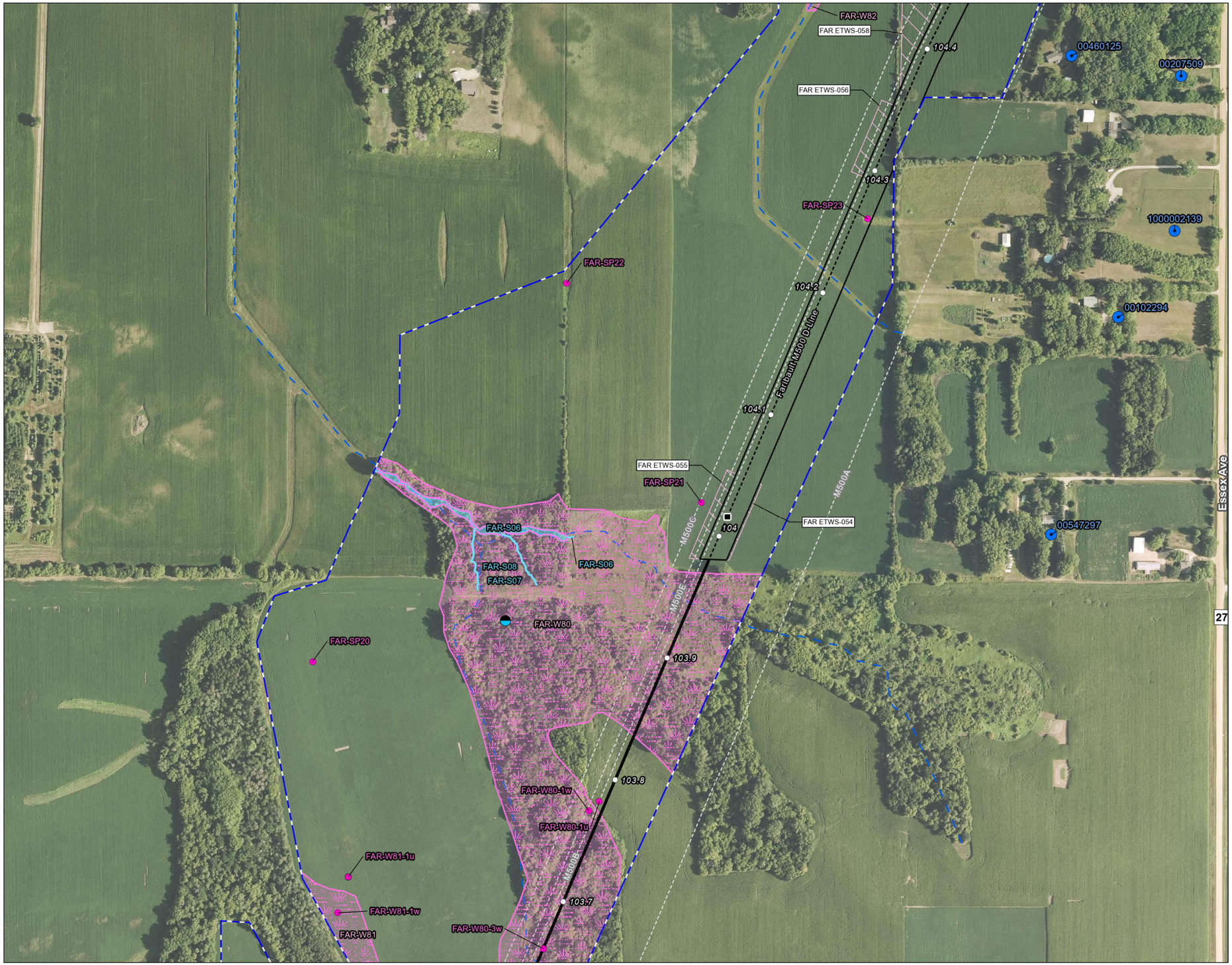


Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

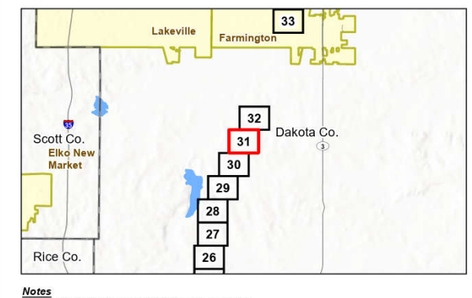
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Spring
- Well
- Sample Point
- Field Delineated Waterway
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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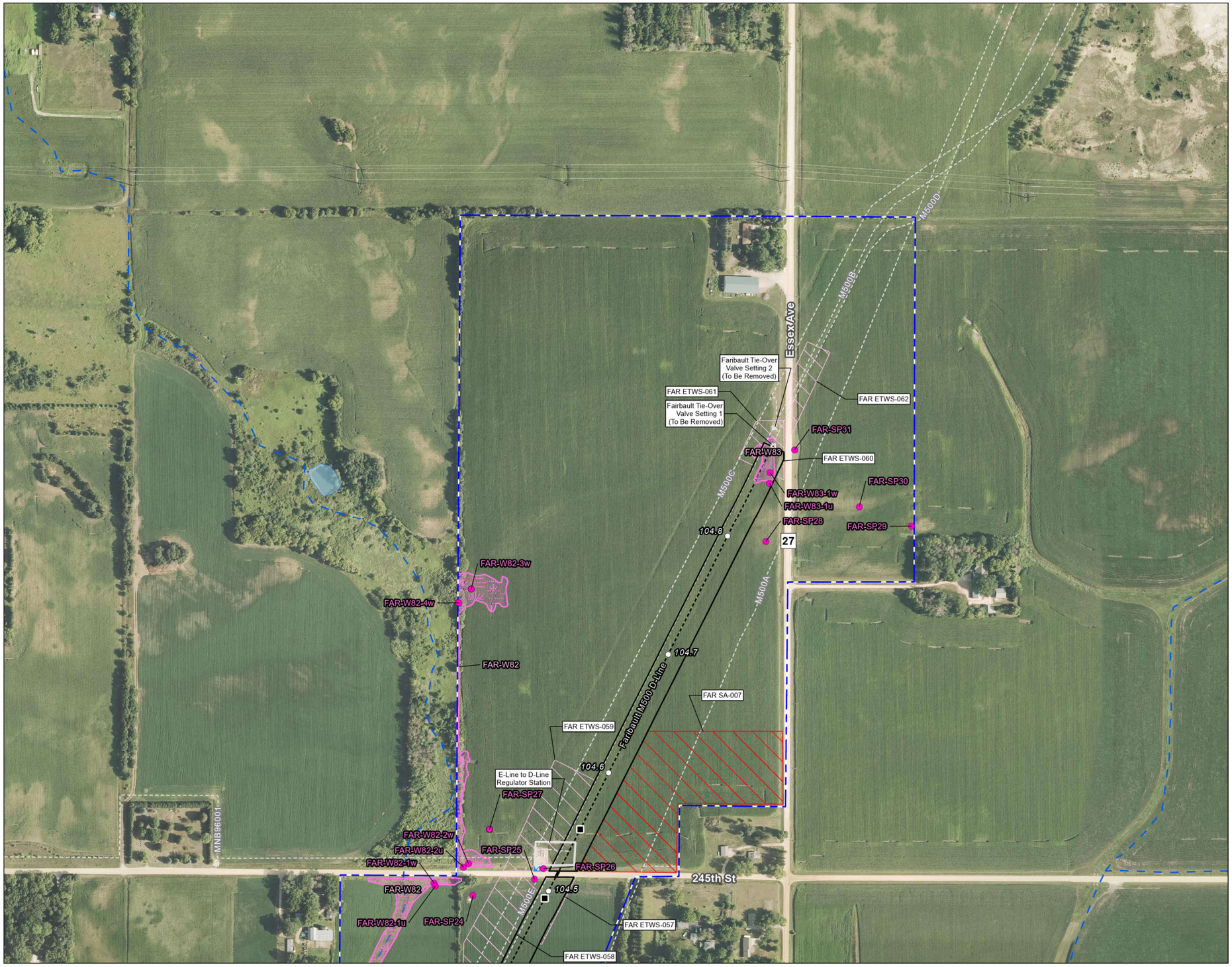


Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Faribault M500 D-Line

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

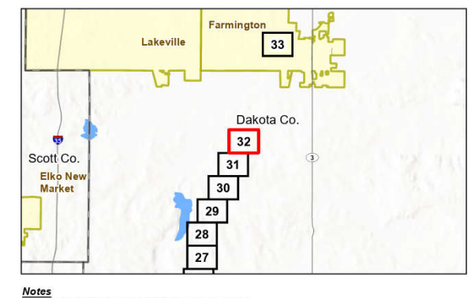
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Lot
- Existing Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody



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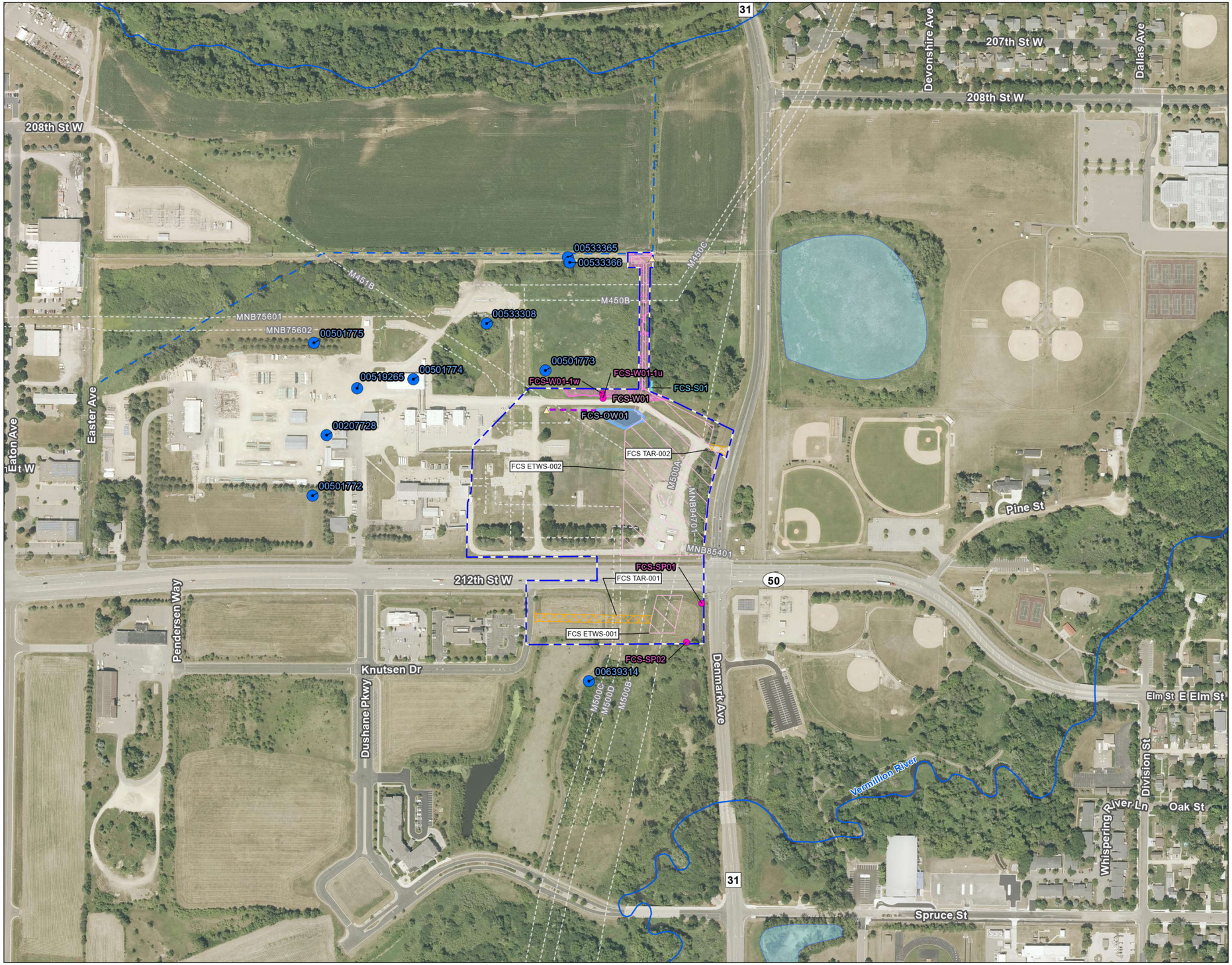

Figure No.

2-3

Title

Field Delineated Wetlands & Waterbodies
V2F - Disconnect Site for A-Line Abandonment
Farmington Compressor Station

Client/Project 172608813

Northern Natural Gas
Ventura to Farmington A-Line Abandonment & Capacity Replacement Project

Project Location
Dakota County, Minnesota

Prepared by JM on 2025-10-24
TR by JL on 2025-10-27
IR by SK on 2026-01-28

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Extra Temporary Workspace
- Temporary Access Road
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage Feature
- Field Delineated Waterway
- Field Delineated Open Water
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Canal/Ditch
- Waterbody

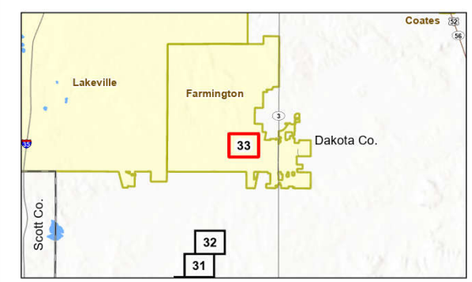

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Figure 2-4
NL27 Project Field Delineated Wetland and Waterbodies

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

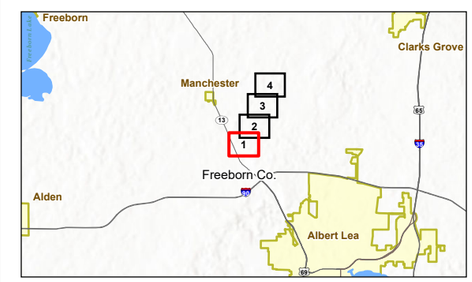
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Open Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

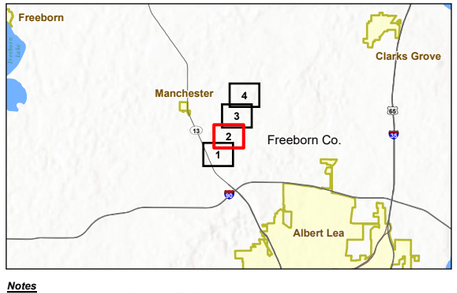
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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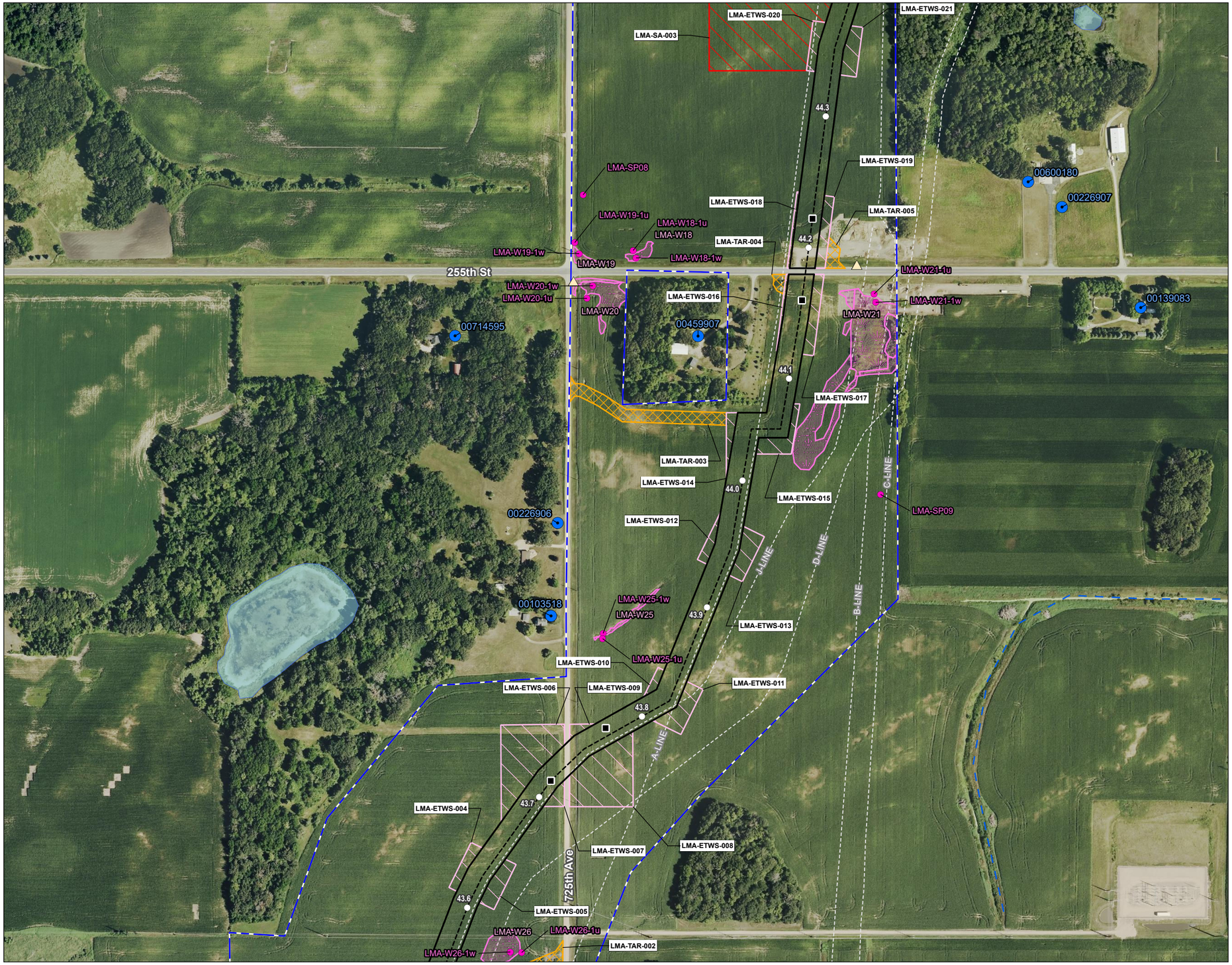

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
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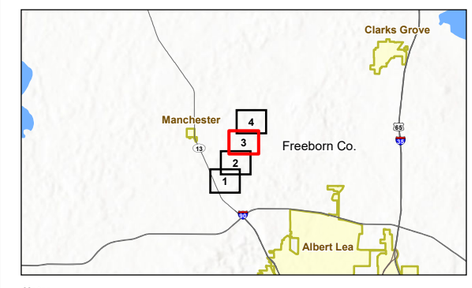
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Lake Mills M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Freeborn County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
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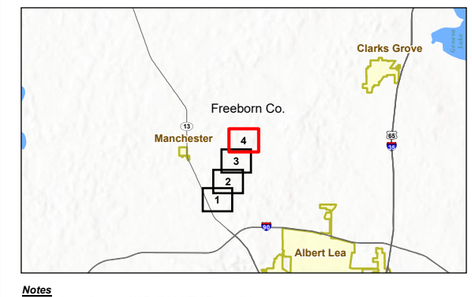
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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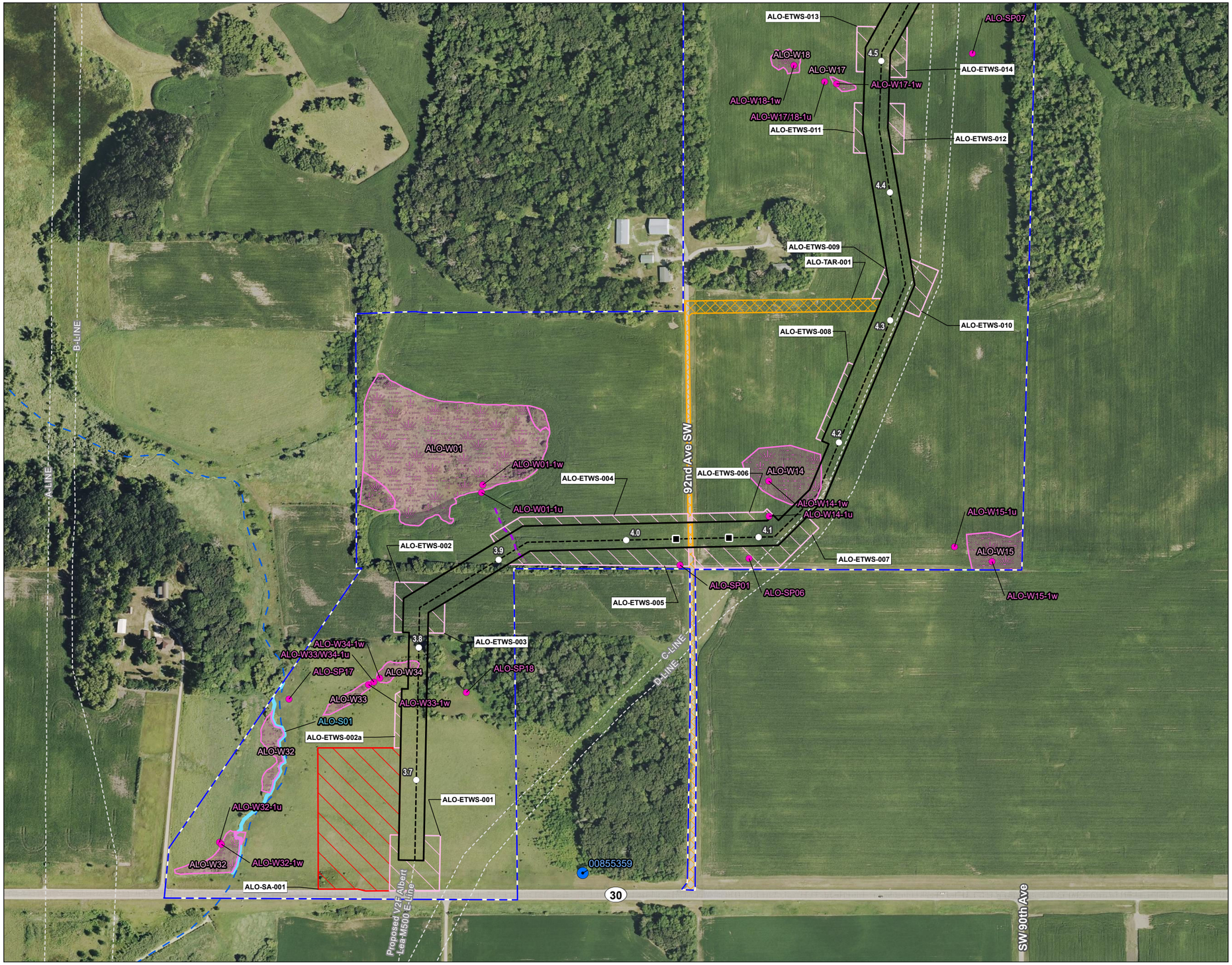

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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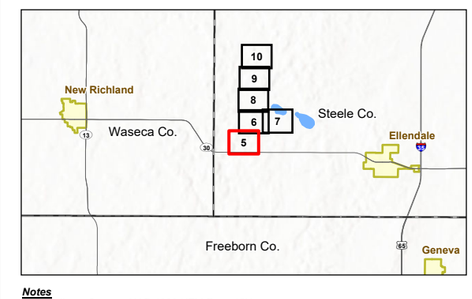
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



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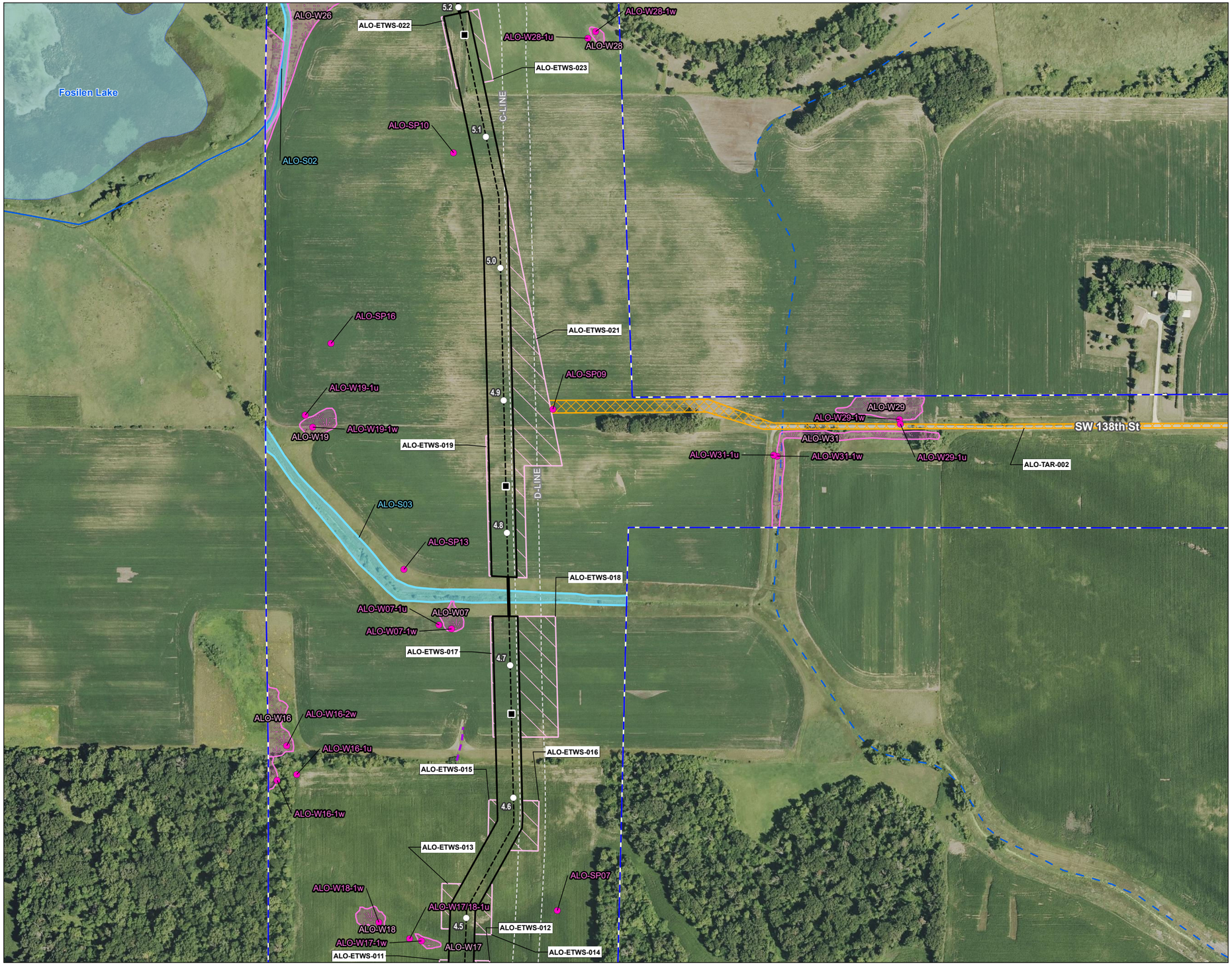

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Sample Point
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

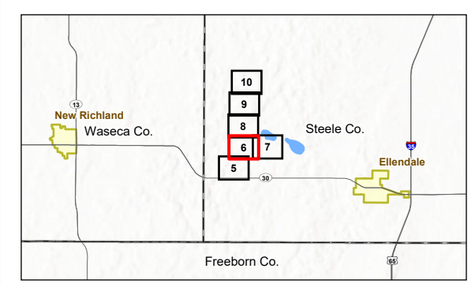

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
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Legend

- Environmental Survey Boundary
- Temporary Access Road
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

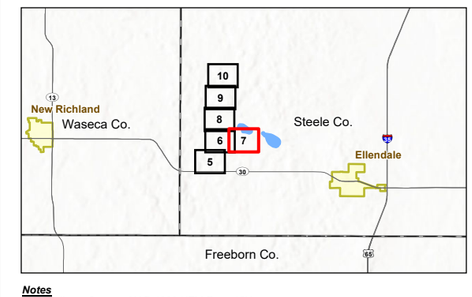

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

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Legend

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- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
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- Culvert
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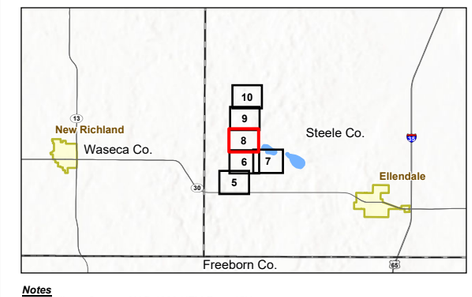
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

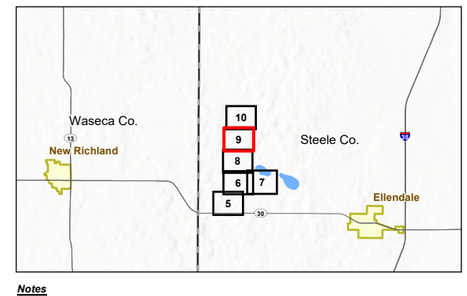
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland To Small to Delineate
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Open Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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Northern Natural Gas

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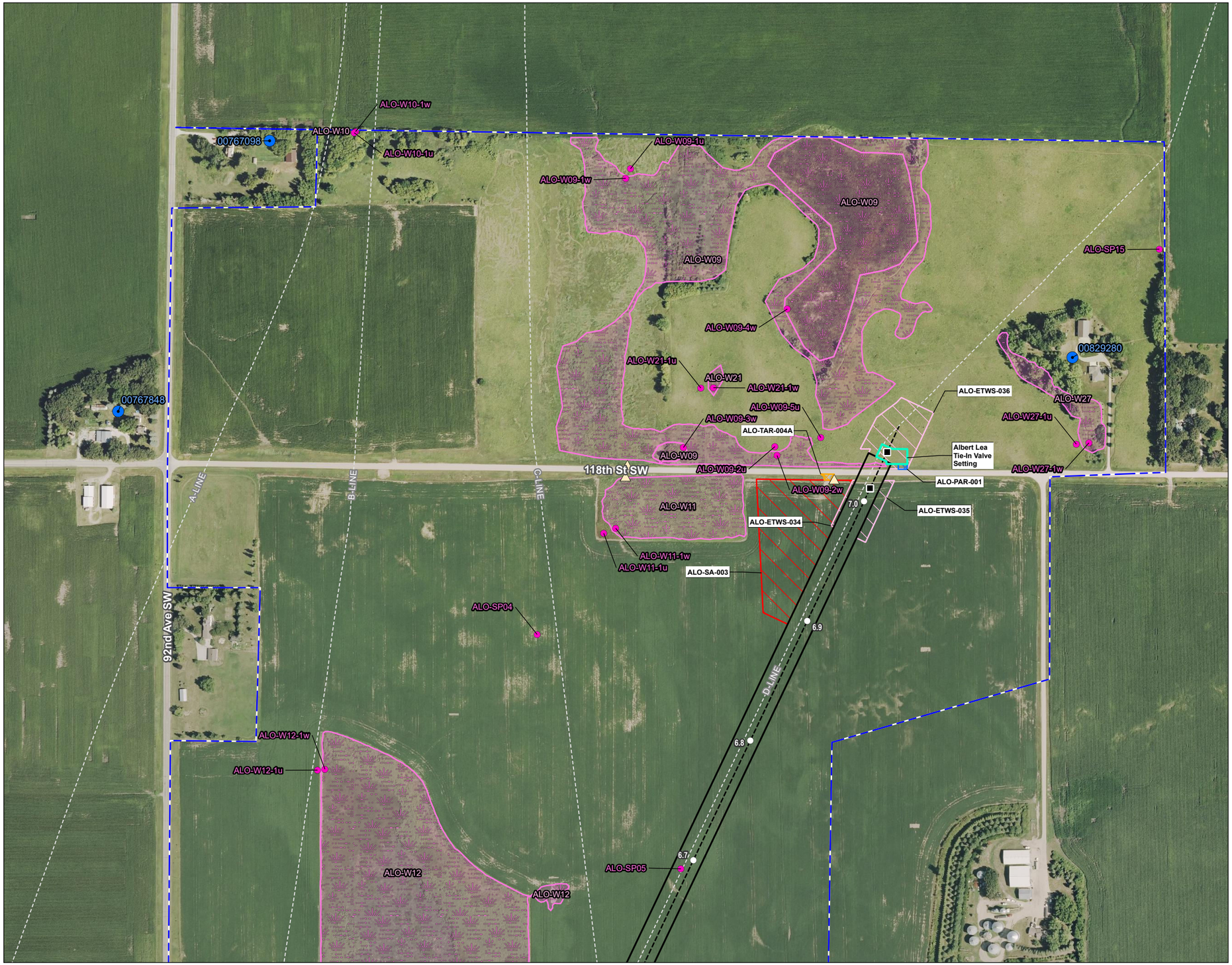

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Albert Lea M500 E-line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Steele County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
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- HDD
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- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch

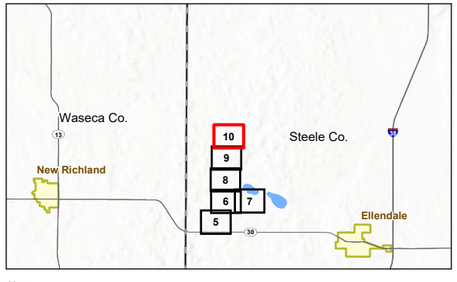

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
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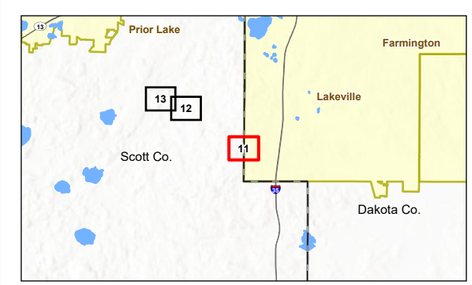
Legend

- Environmental Survey Boundary
- Existing Facility
- Extra Temporary Workspace
- Existing Pipeline
- Well

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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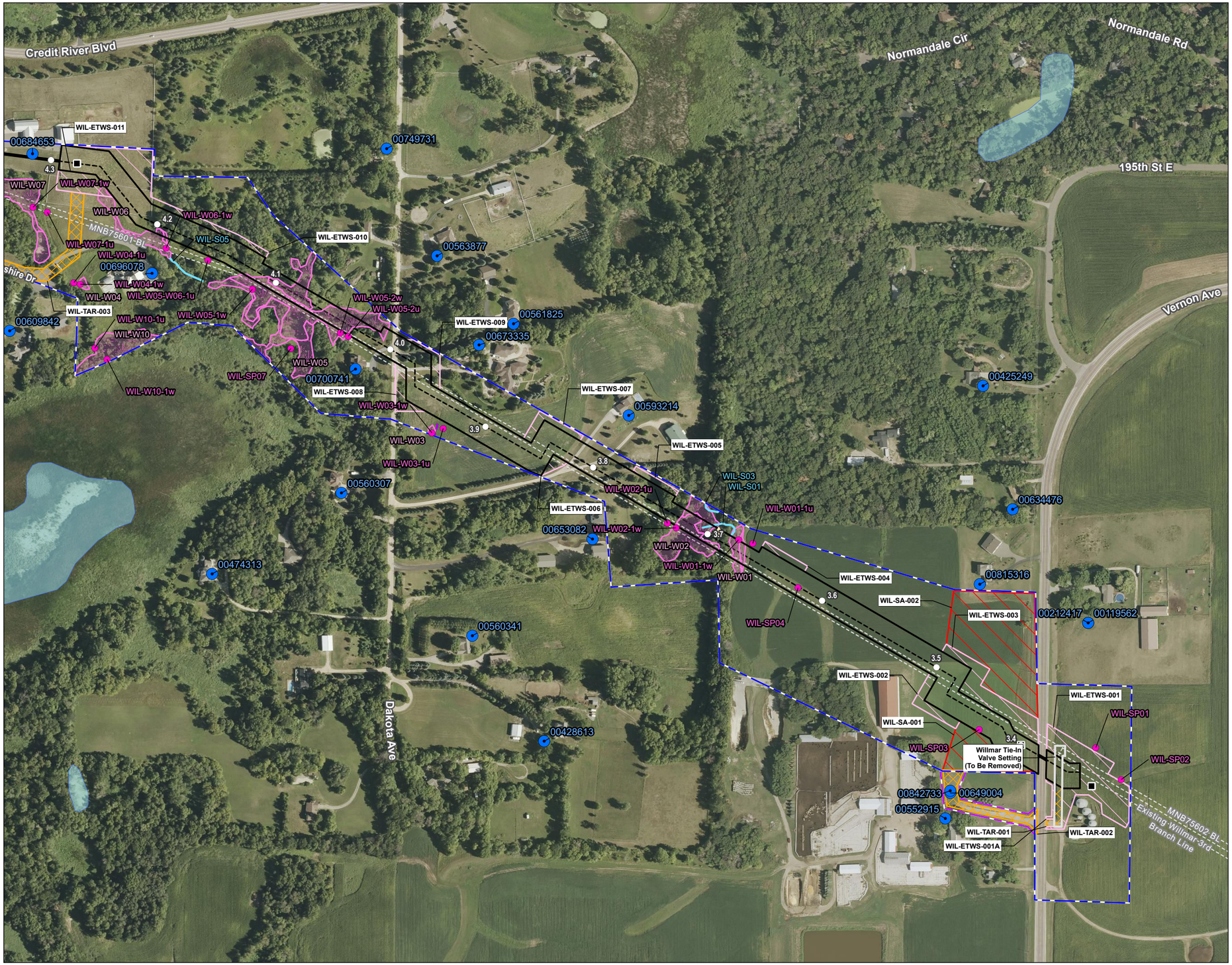

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

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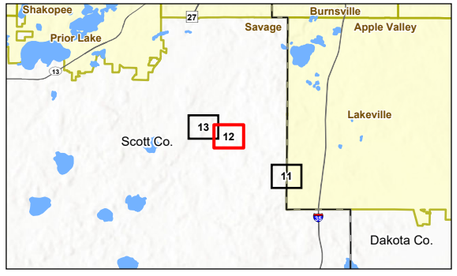
Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Waterway
- Upland Drainage
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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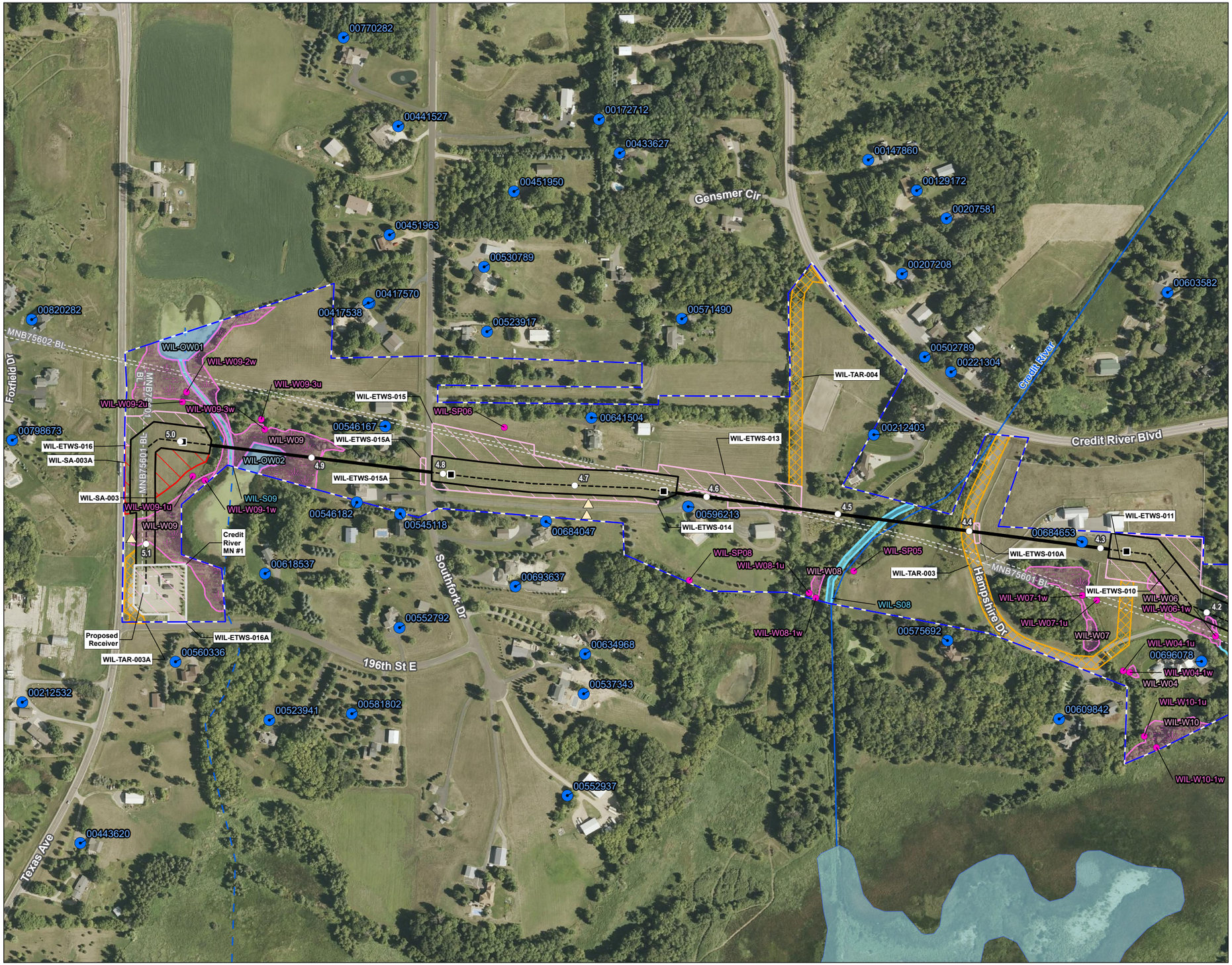

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Upstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Scott County, Minnesota

Prepared by JM on 2025-12-15
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Legend

- Environmental Survey Boundary
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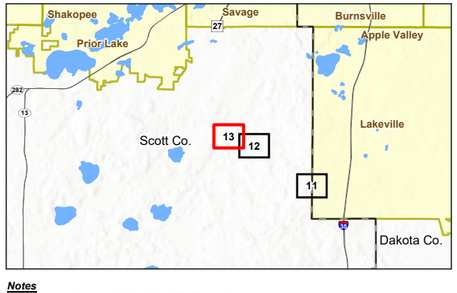
- Field Delineated Waterway
- Field Delineated Open Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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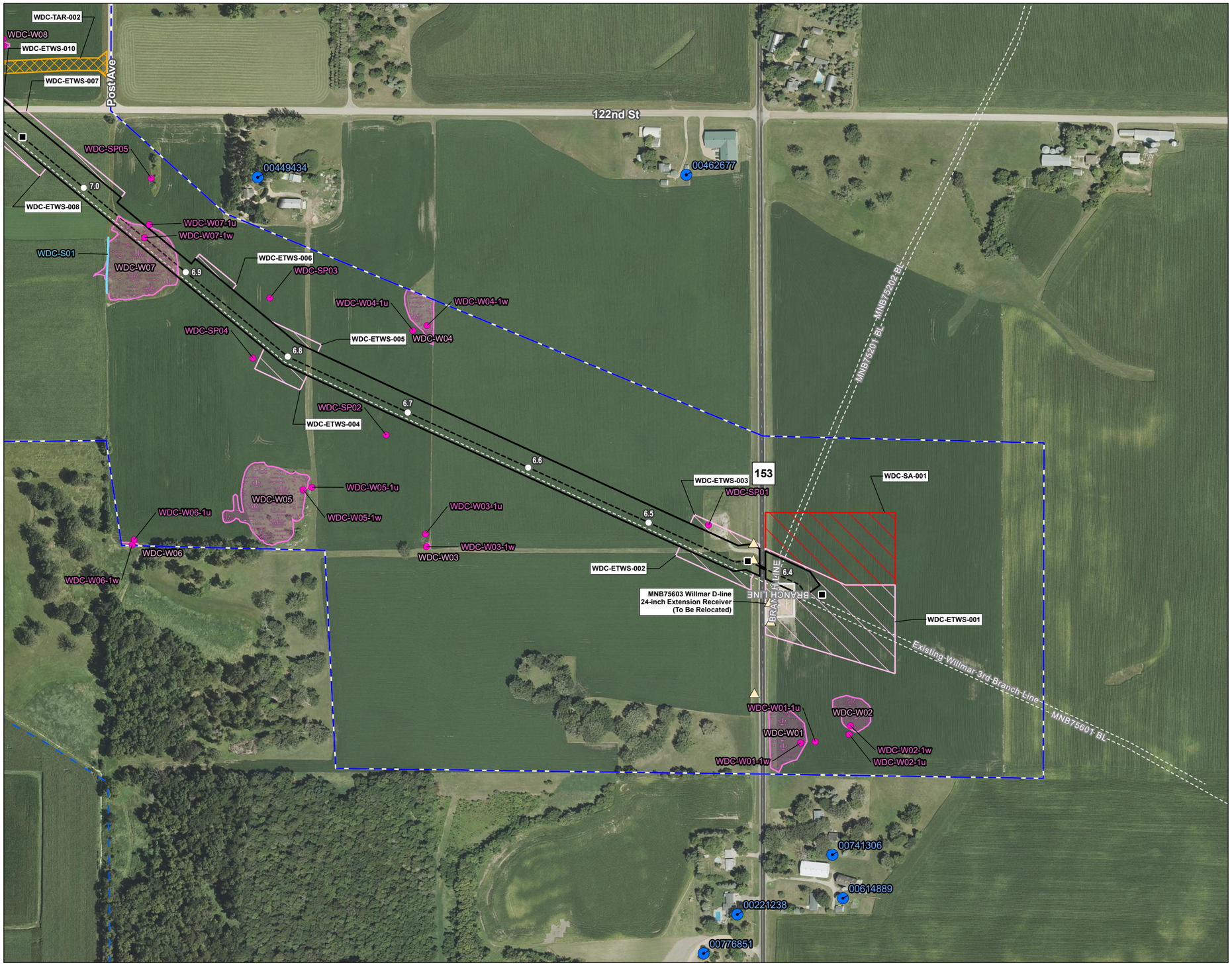

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
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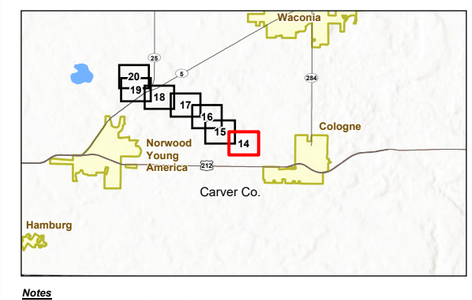
- Well
- Culvert
- Sample Point
- Field Delineated Waterway
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



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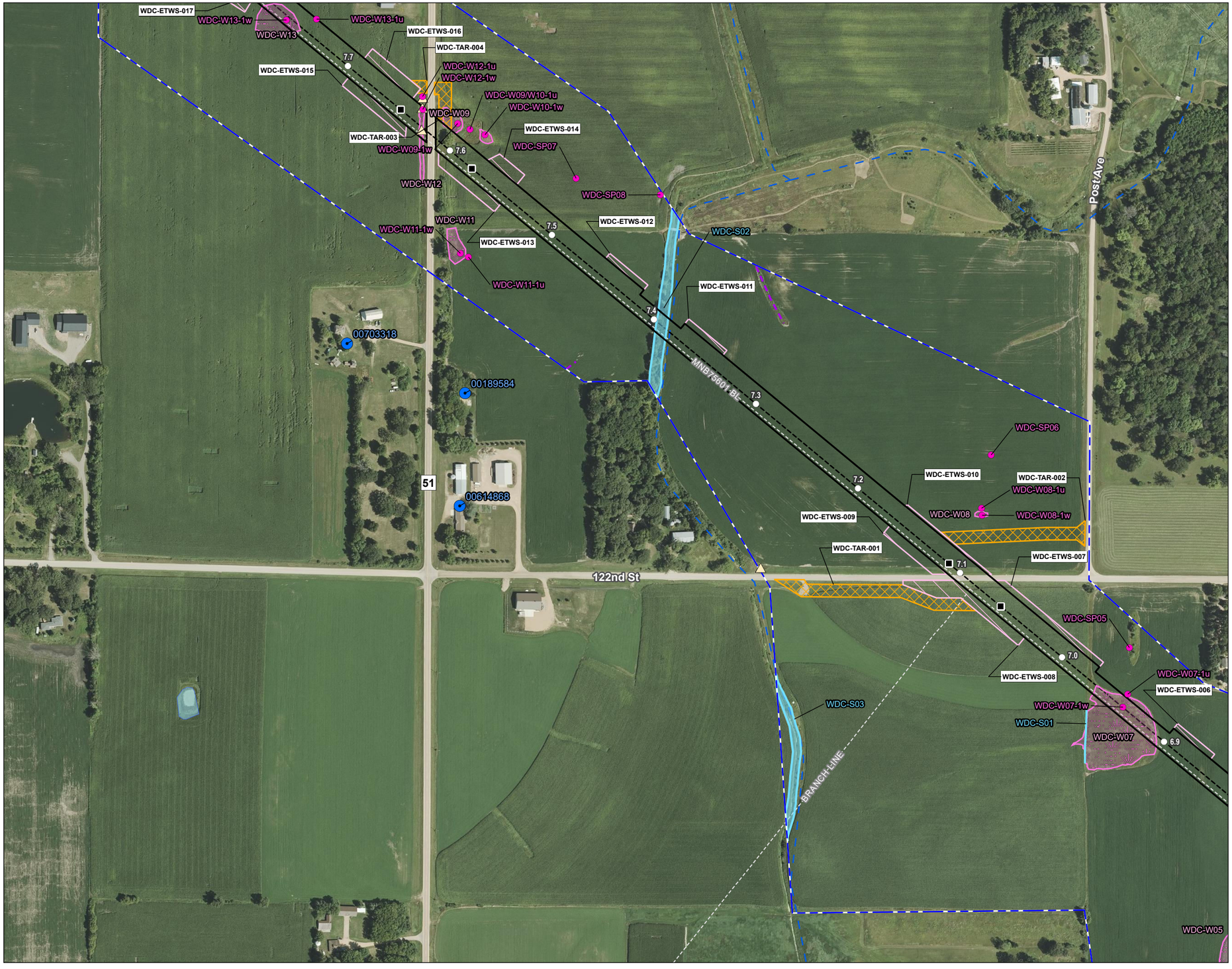

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
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Legend

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- HDD
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- Culvert
- Sample Point
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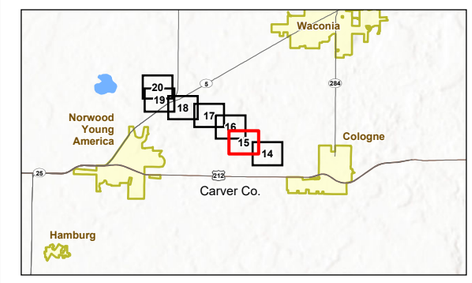
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



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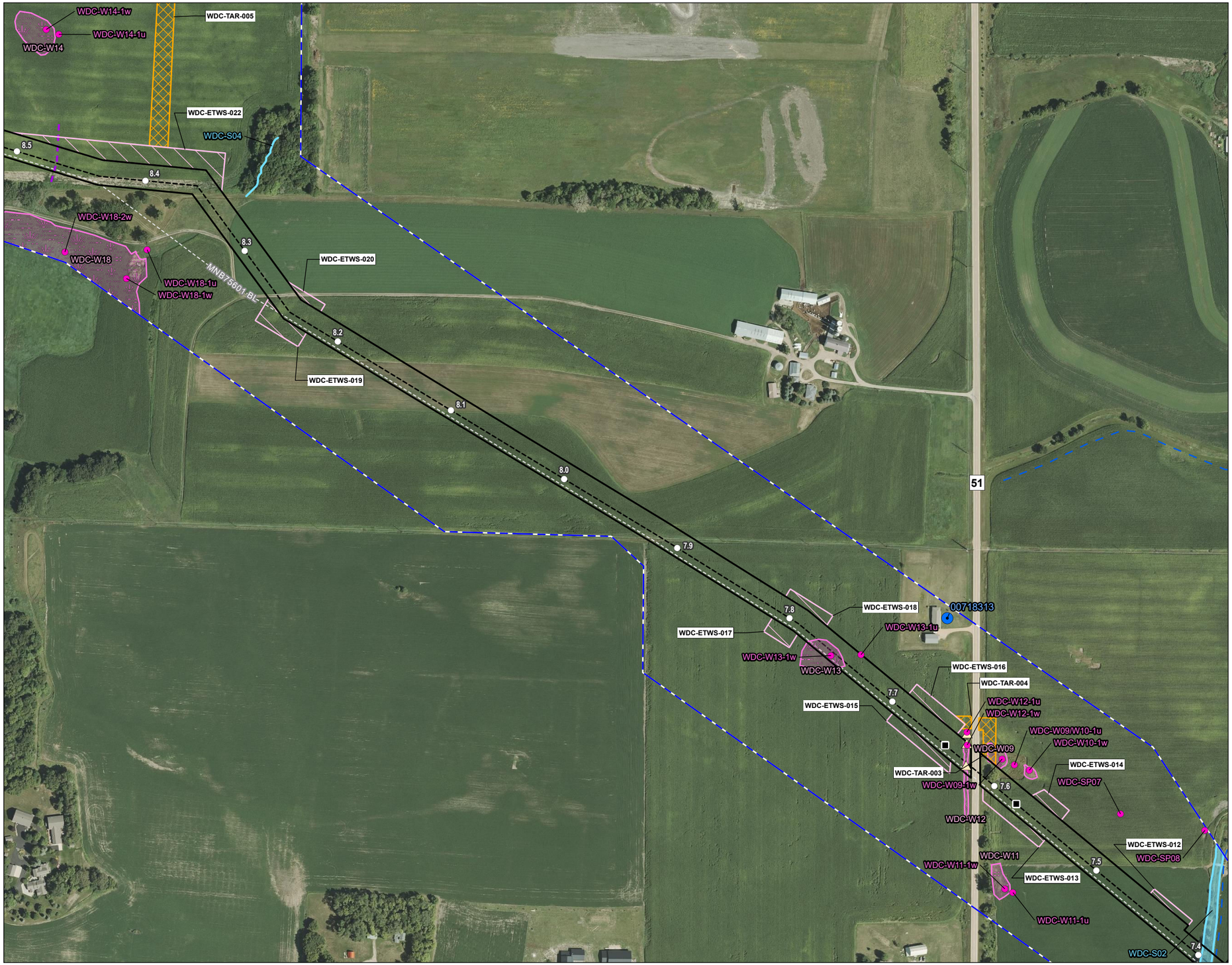

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
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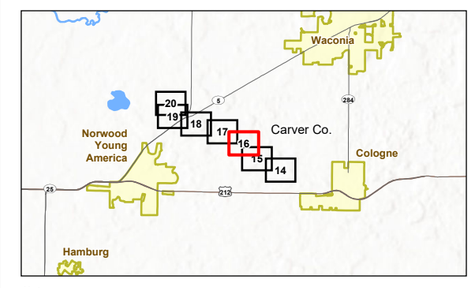

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Northern Natural Gas

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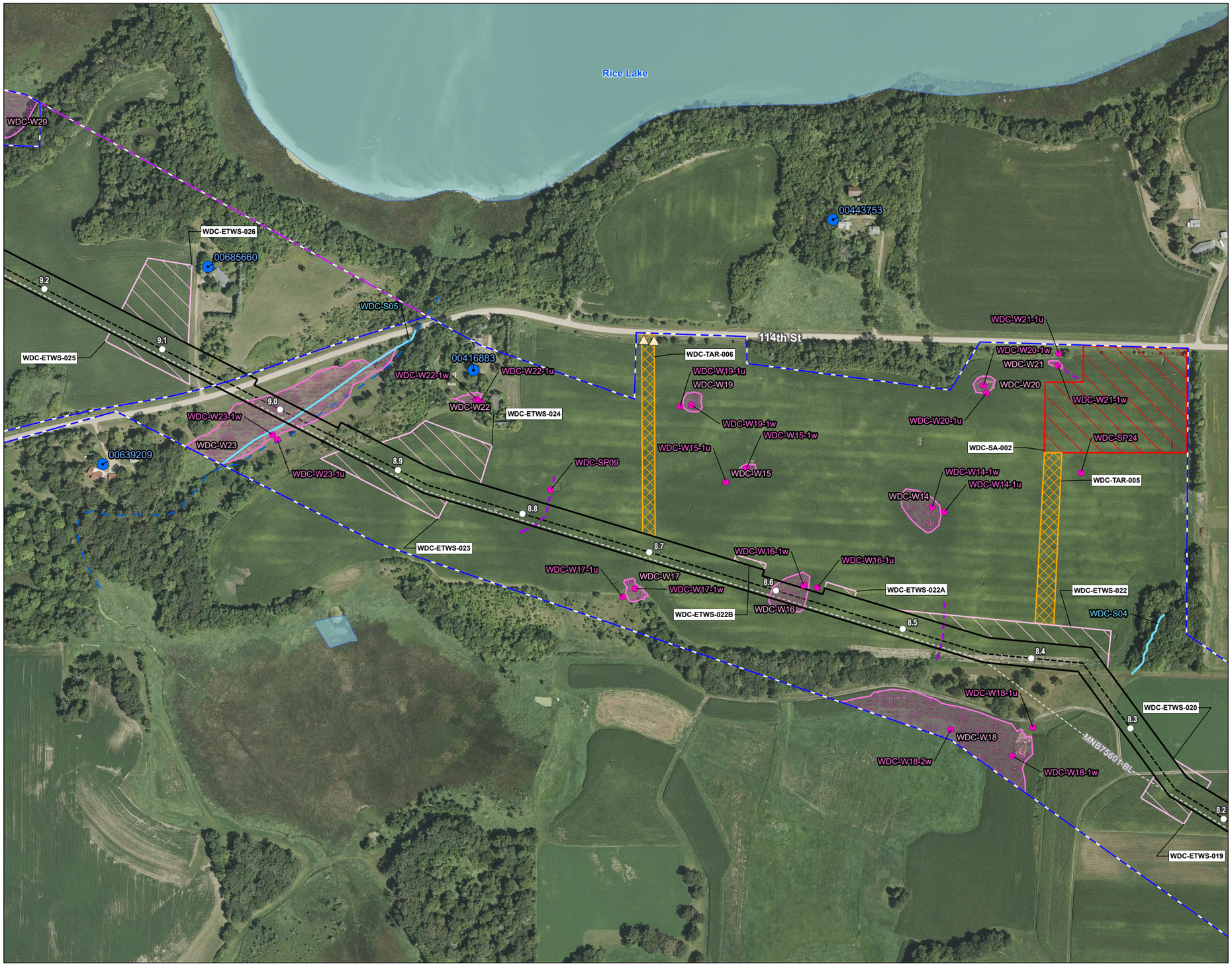

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
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Legend

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National Hydrography Dataset

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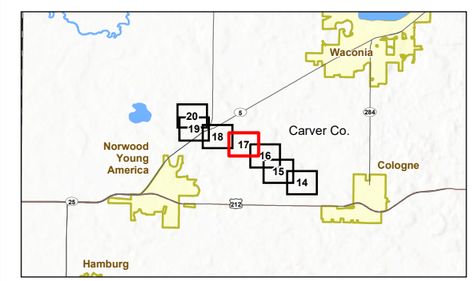

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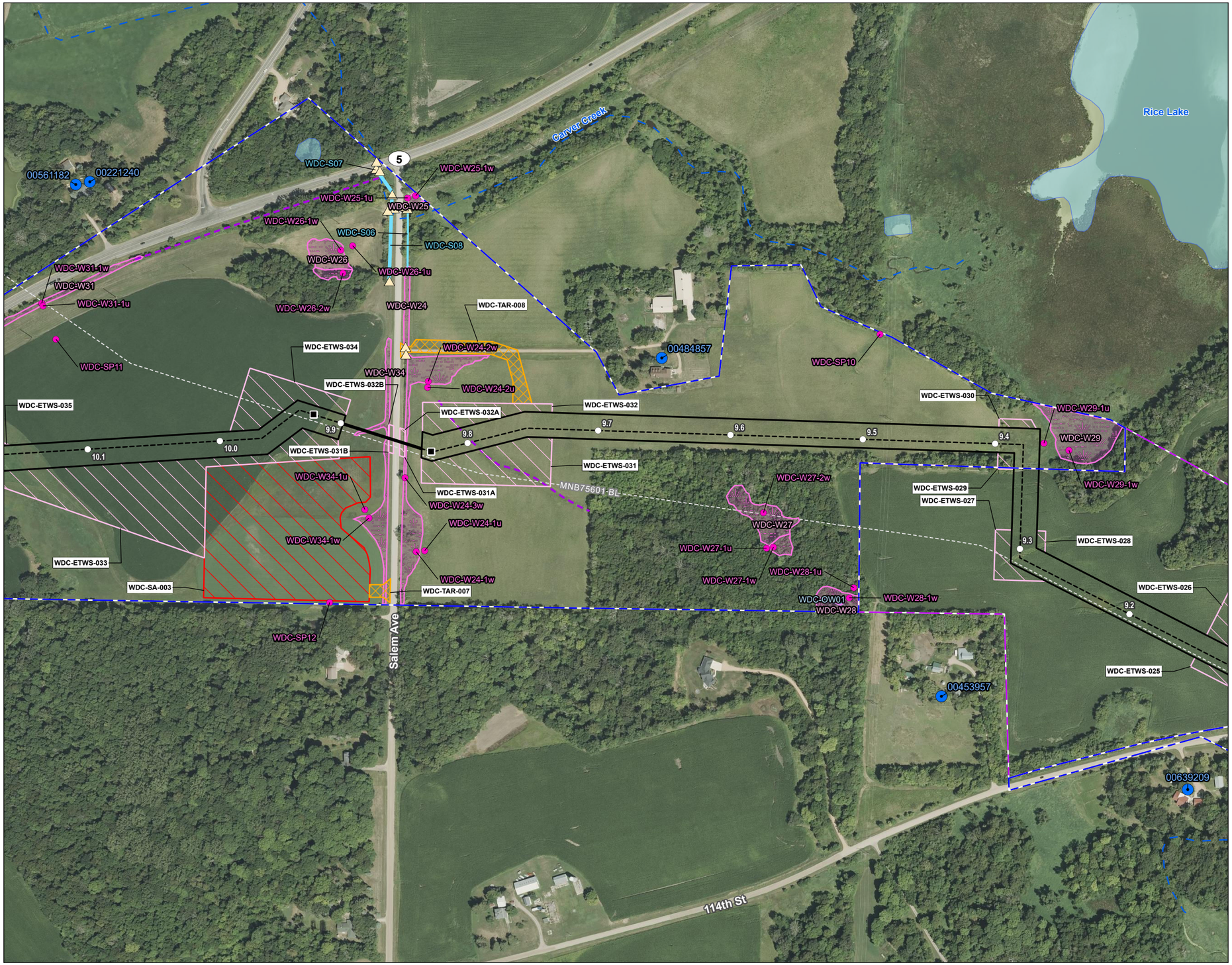

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

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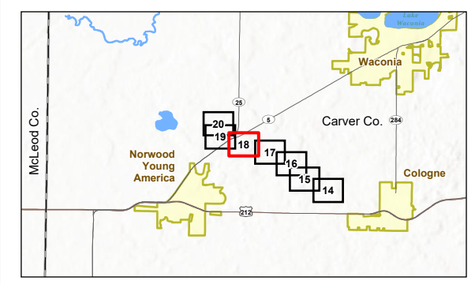

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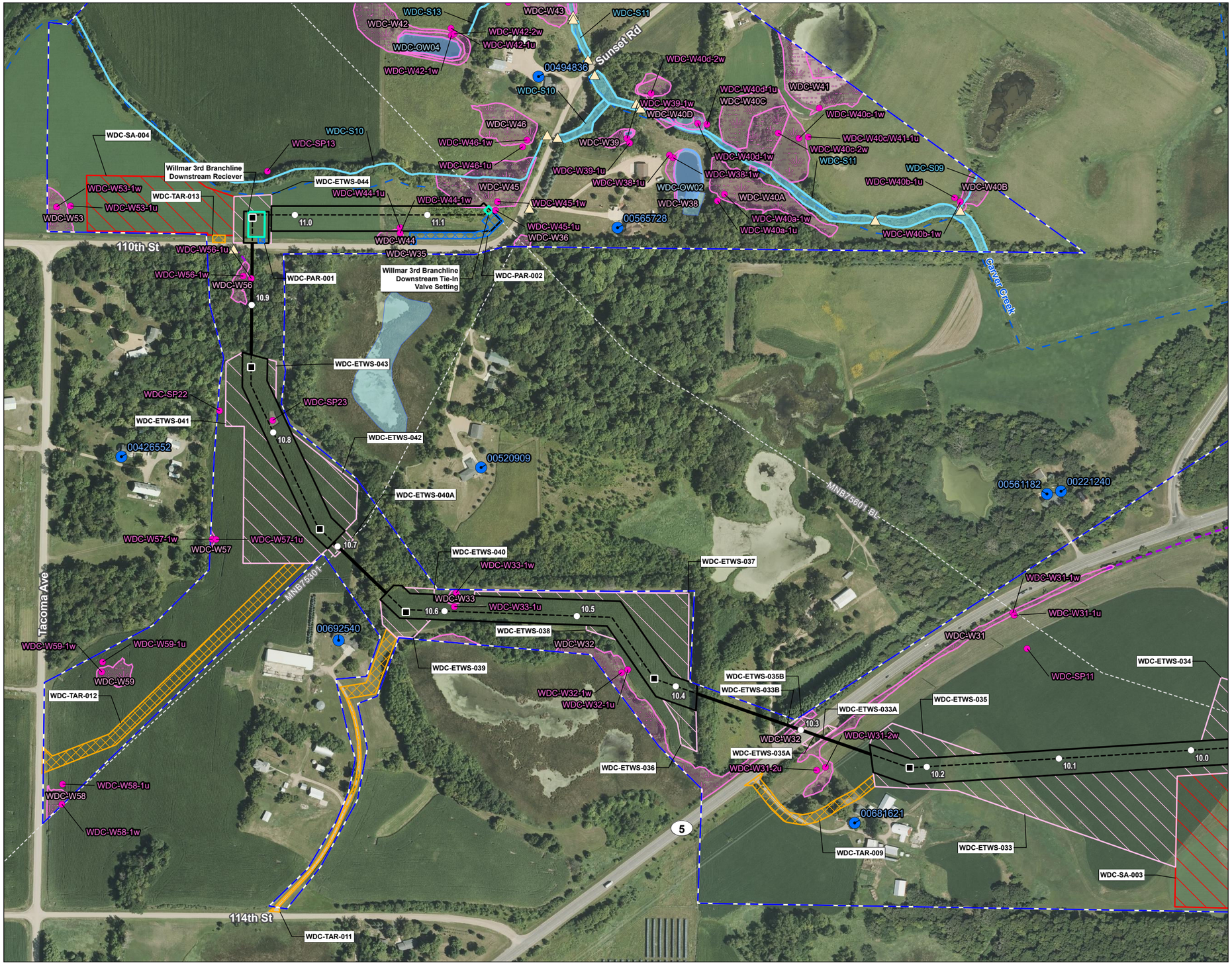

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
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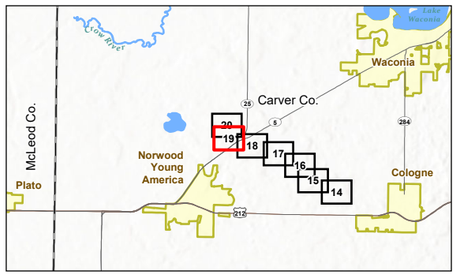
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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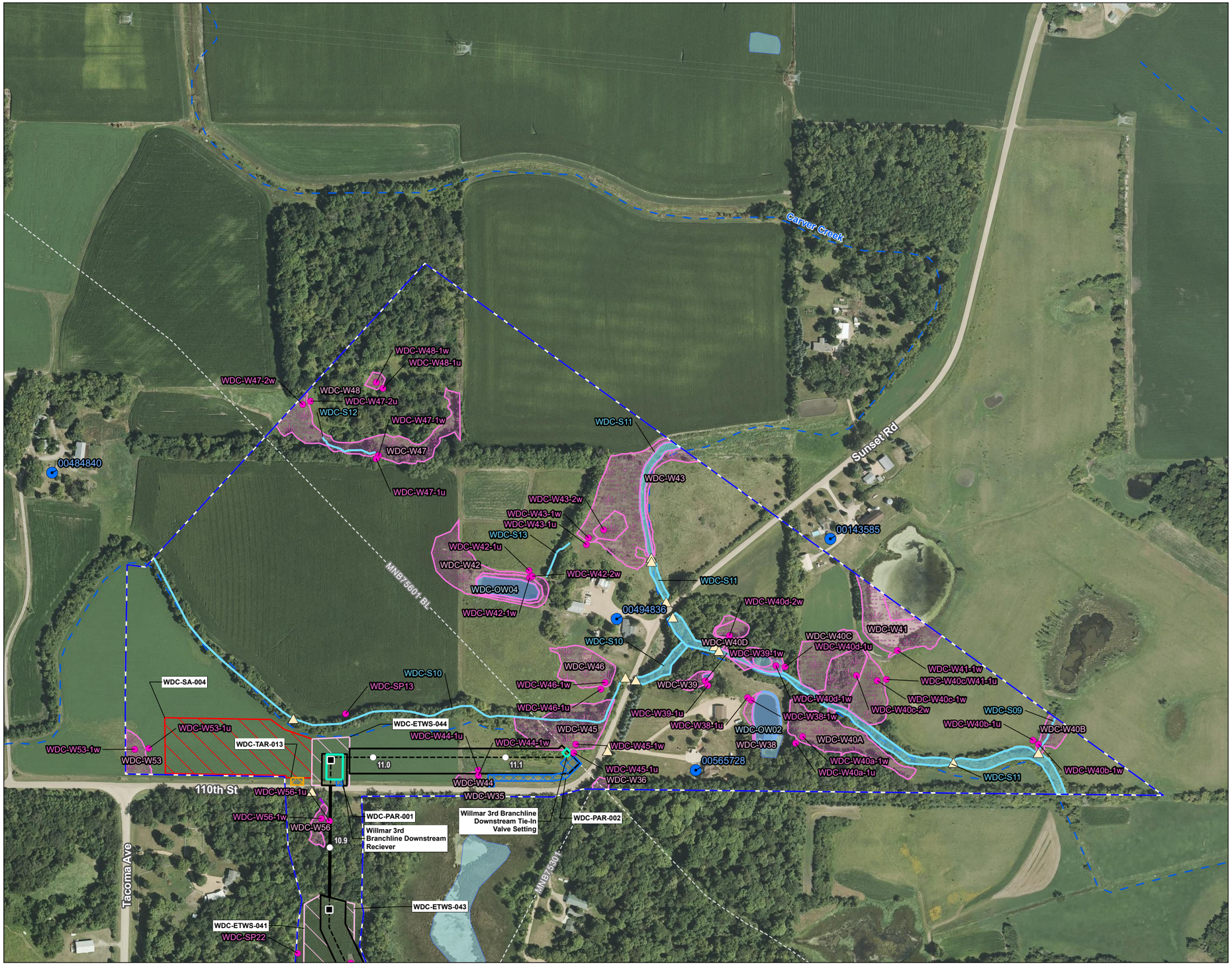


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Willmar 3rd Branch Line Downstream

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Carver County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

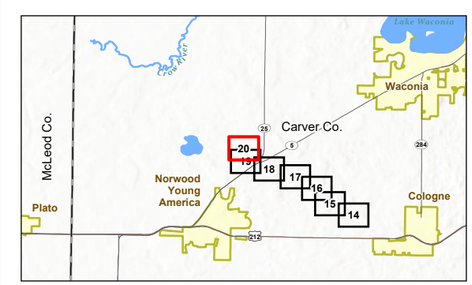
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Waterway
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway
- Field Delineated Open Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Northern Natural Gas

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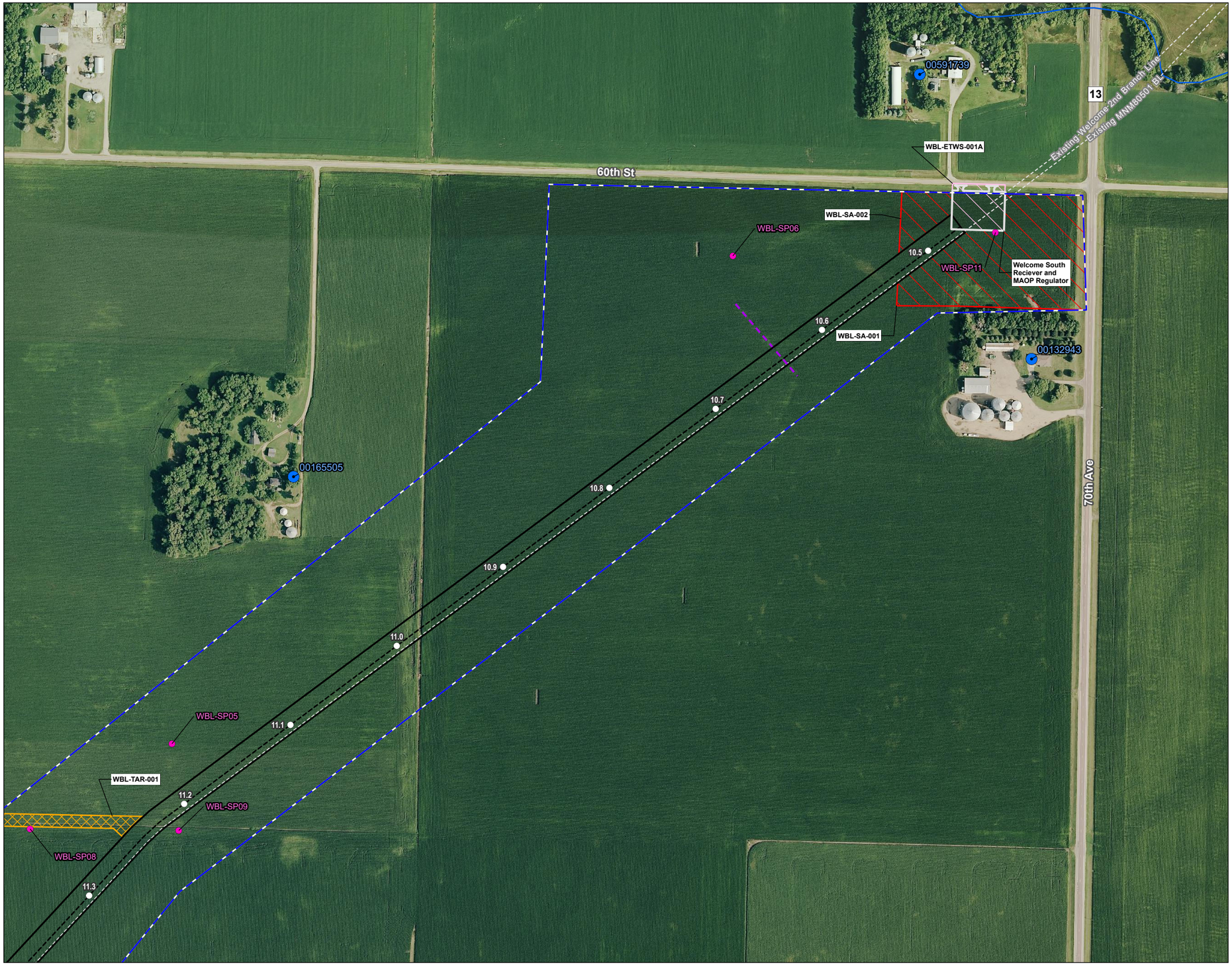


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Welcome 2nd Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Martin County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

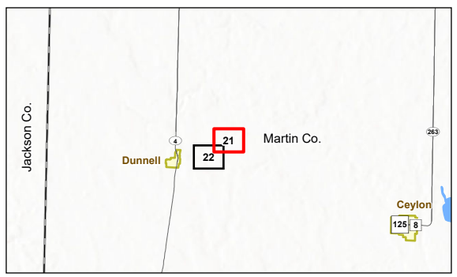
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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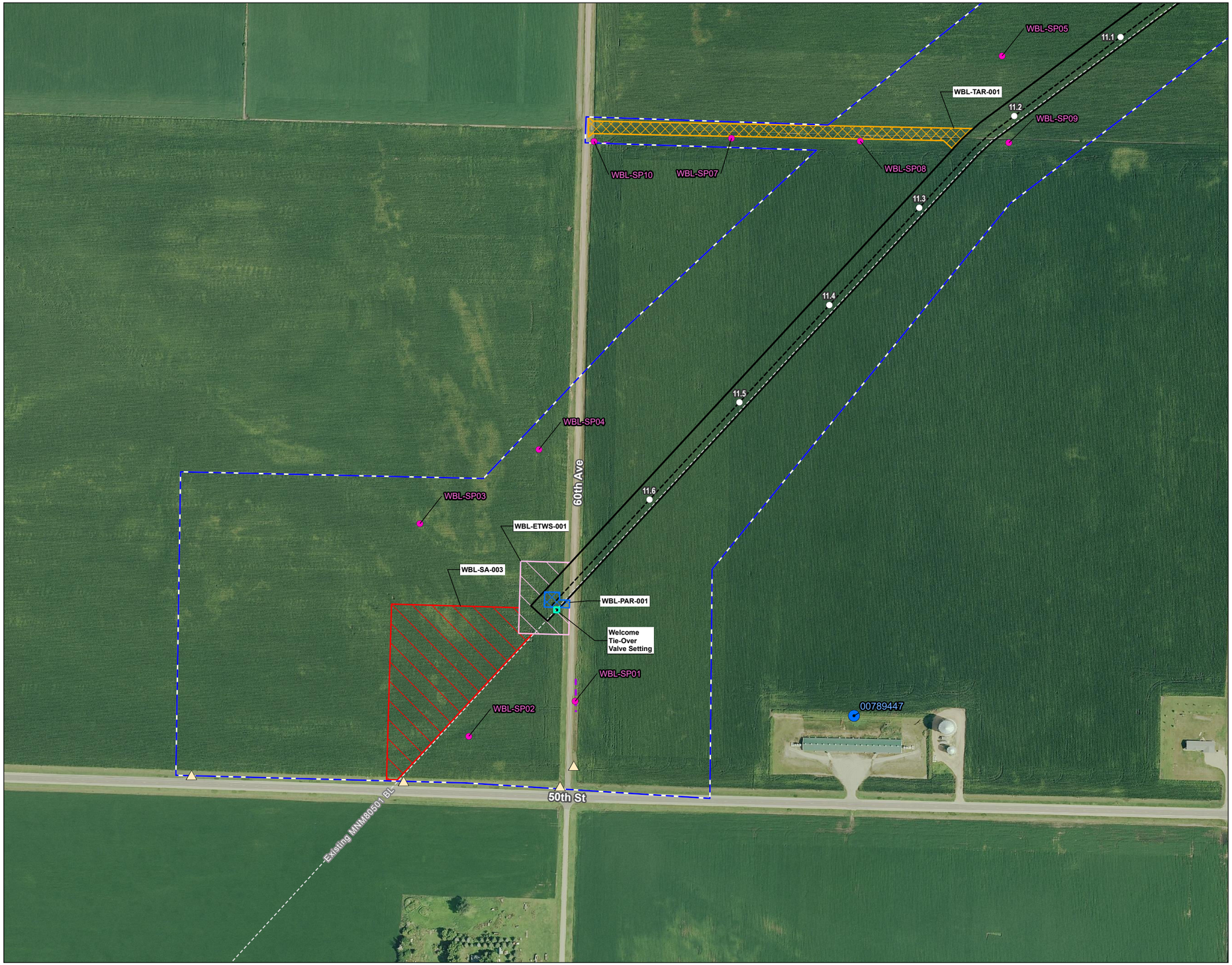

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Welcome 2nd Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Martin County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
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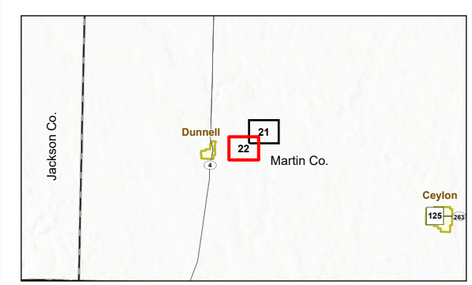
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



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Northern Natural Gas

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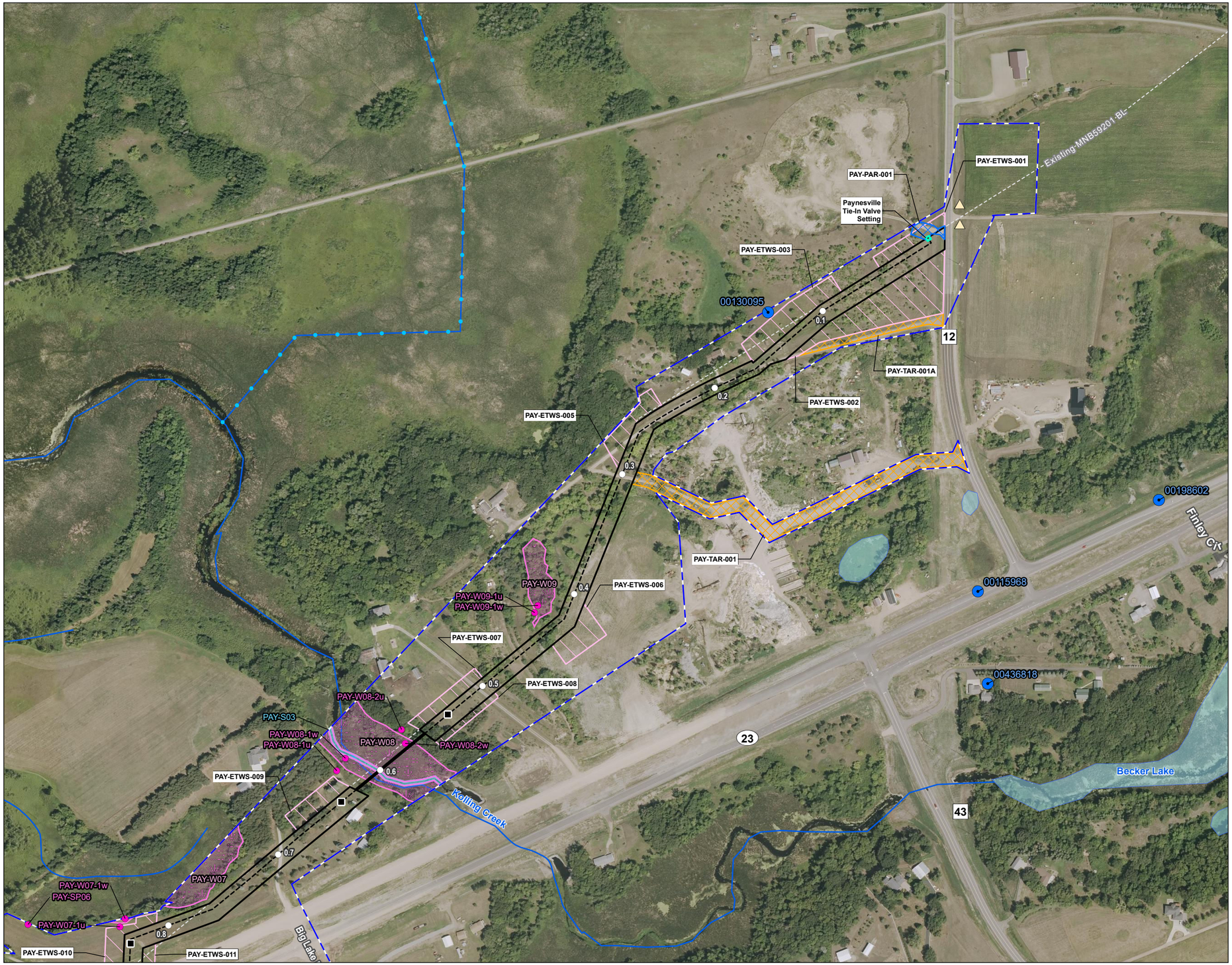

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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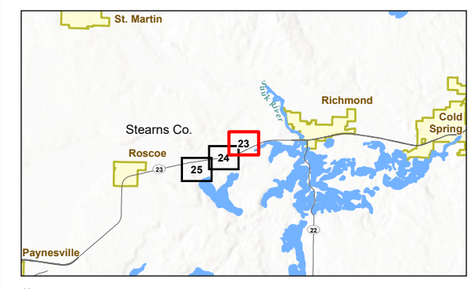
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

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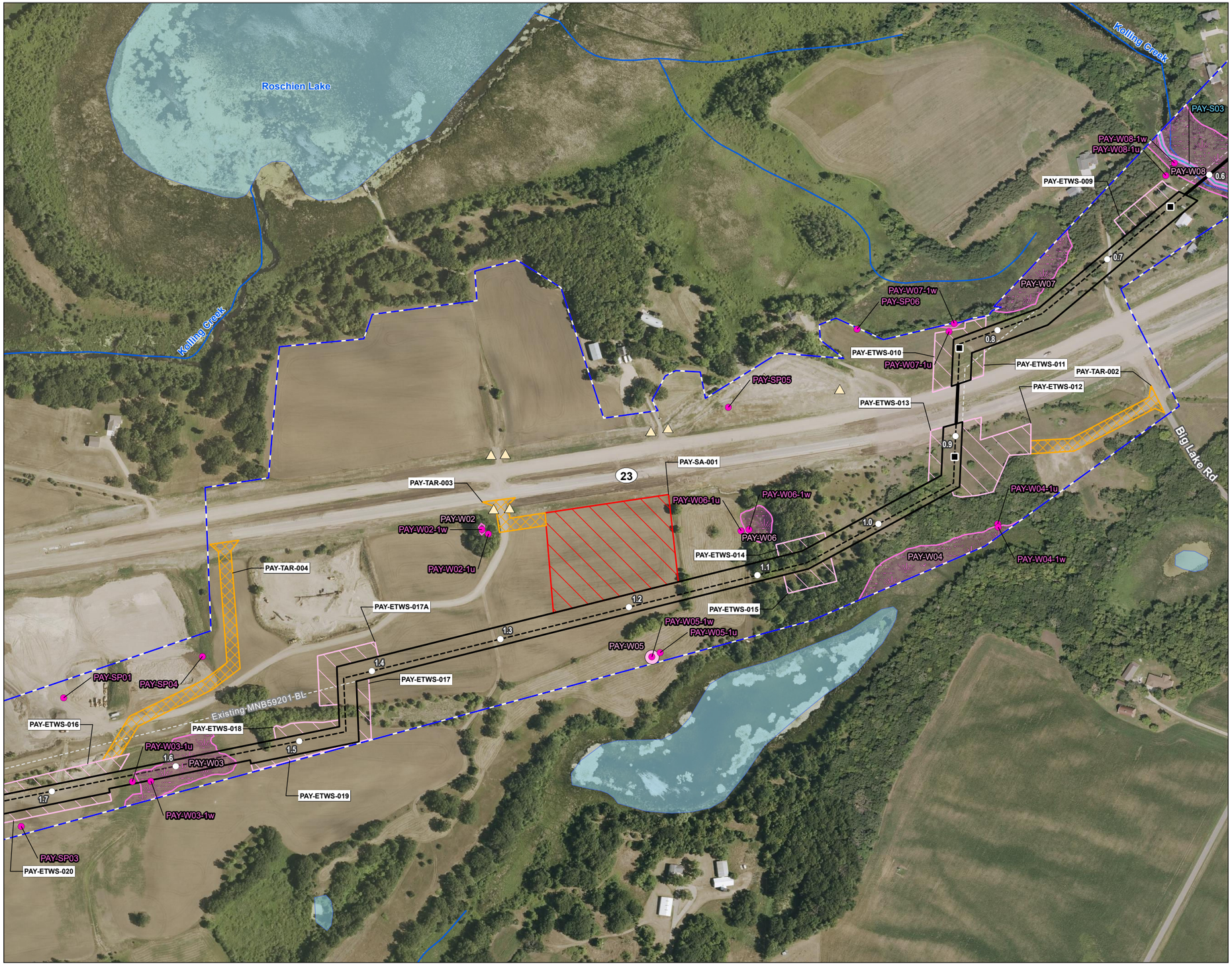

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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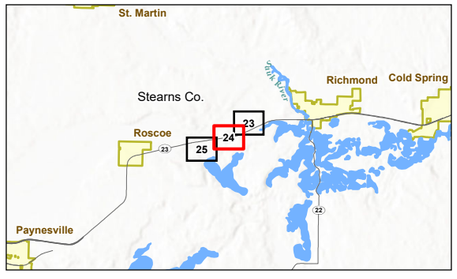
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Culvert
- Sample Point
- Field Delineated Wetland To Small to Delineate
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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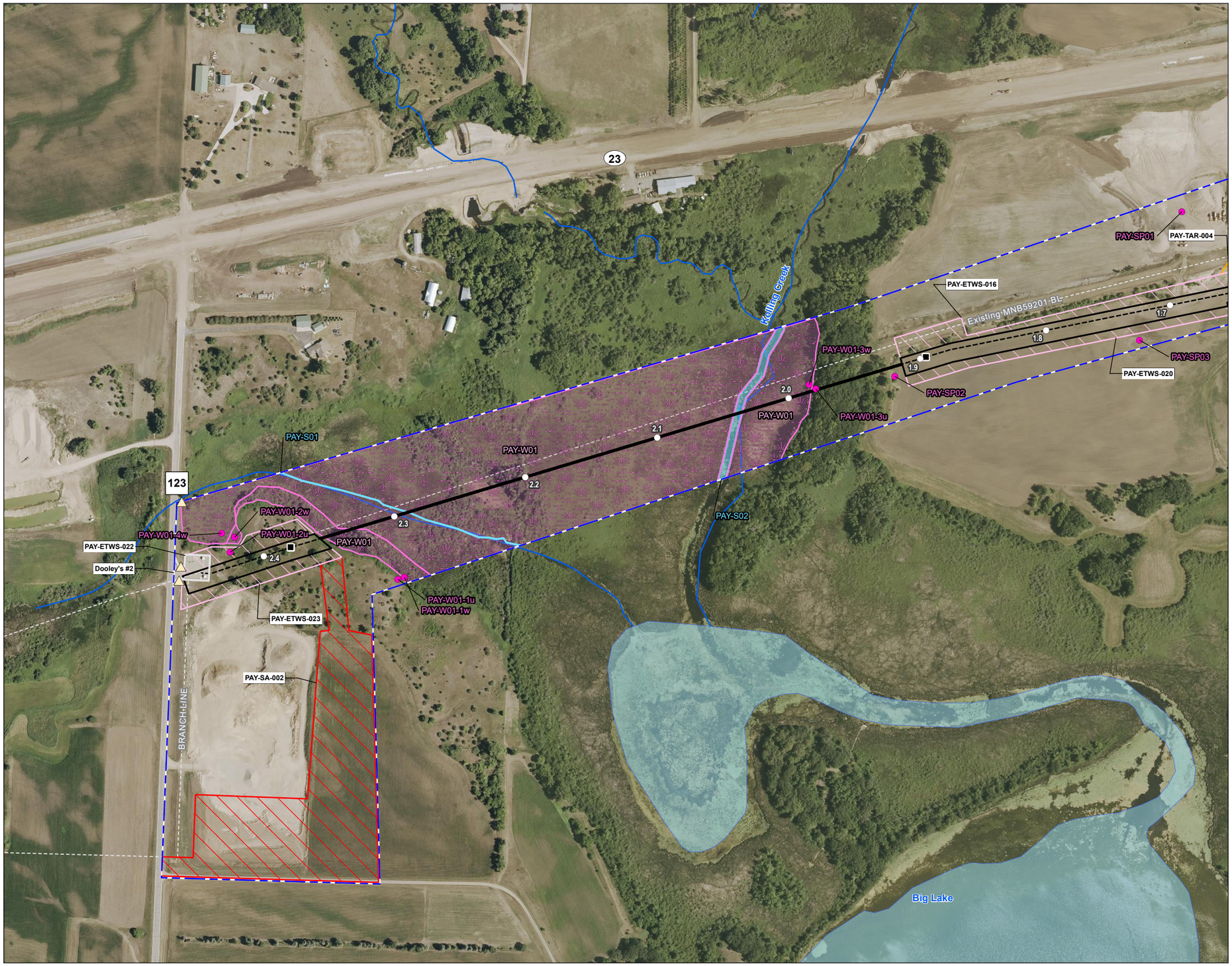

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Paynesville 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Stearns County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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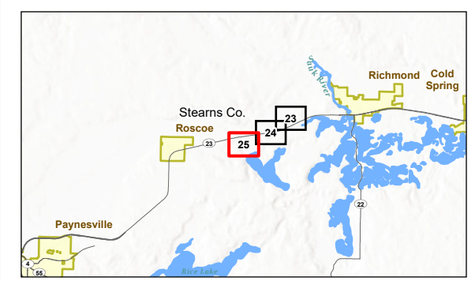
Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Culvert
- Sample Point
- Field Delineated Waterway
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

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(At original document size of 11x17)
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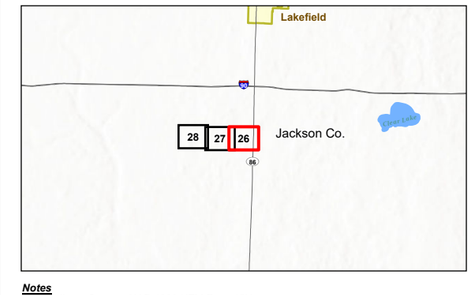
Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Upland Drainage
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

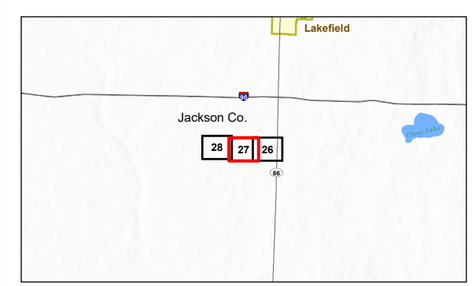

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Worthington 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Jackson County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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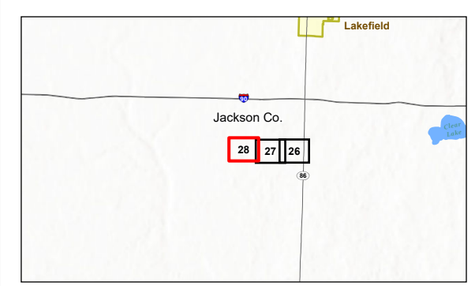
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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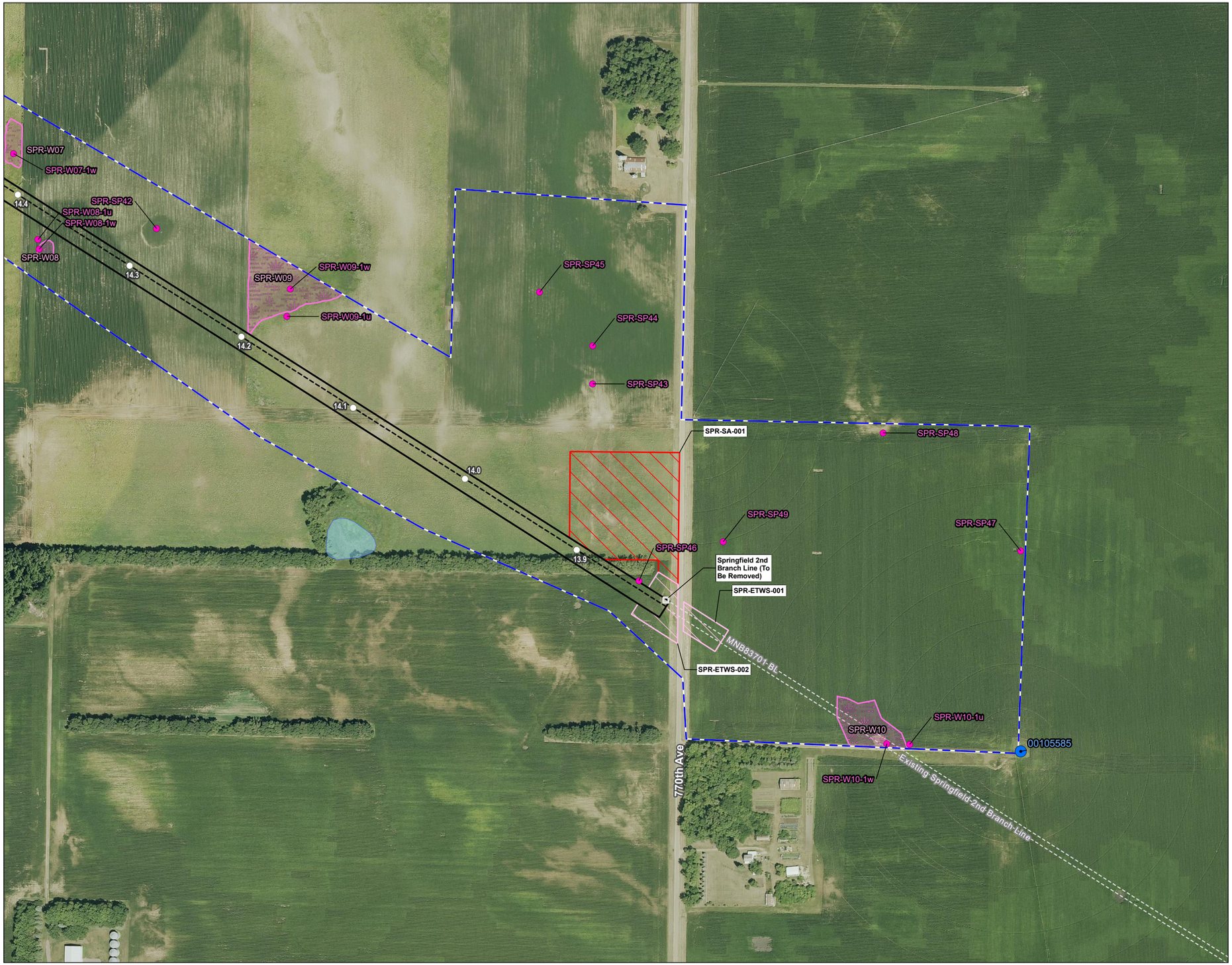


Figure No.
2-4

Title
Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project
172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

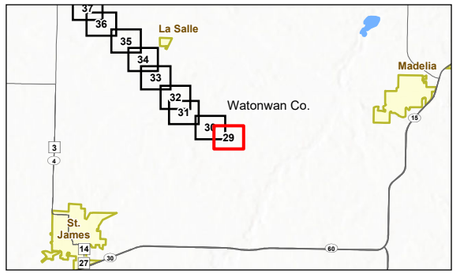
Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend
- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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3. Background: 2023 NAIP

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Northern Natural Gas

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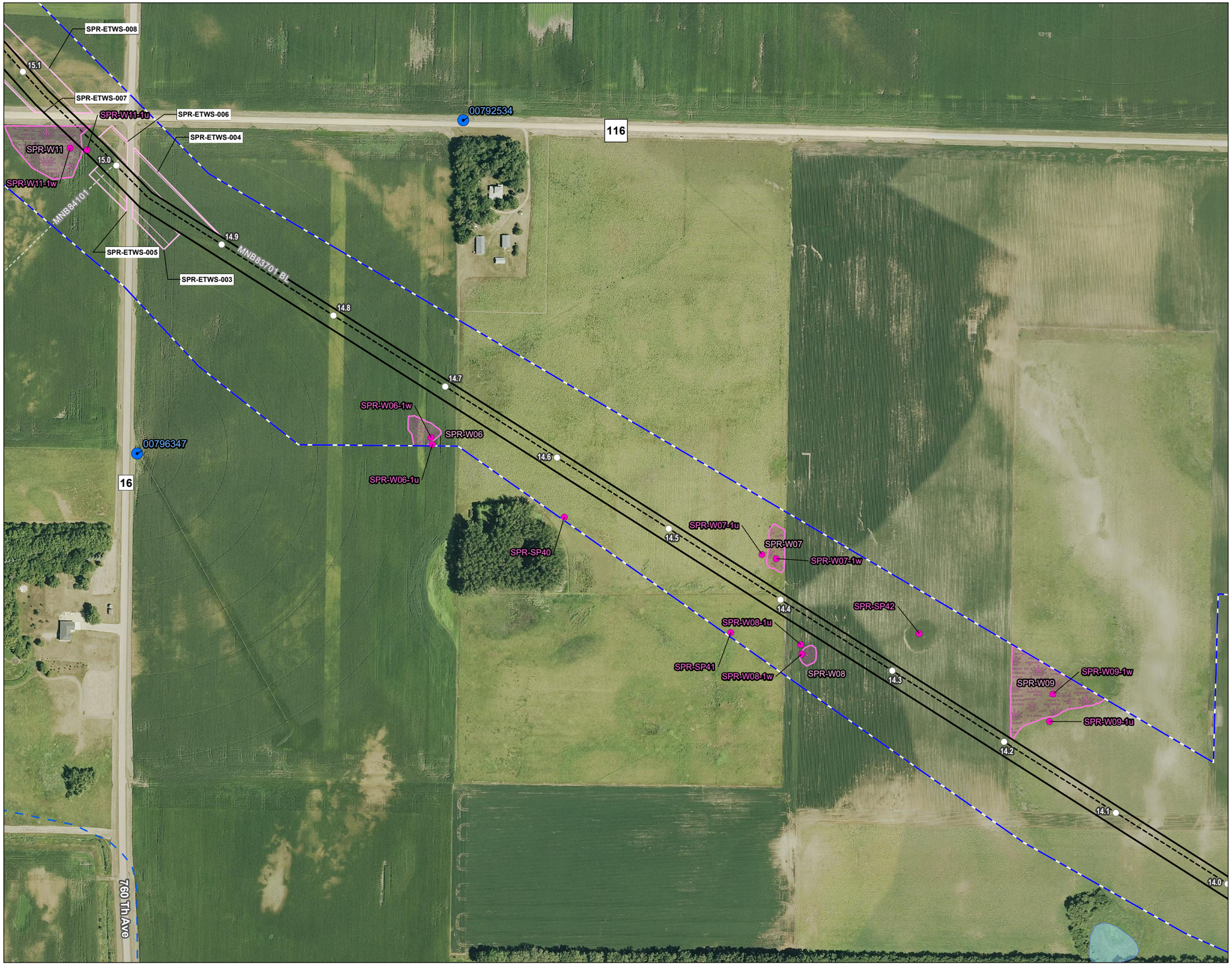


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

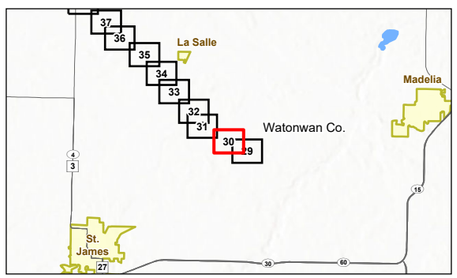
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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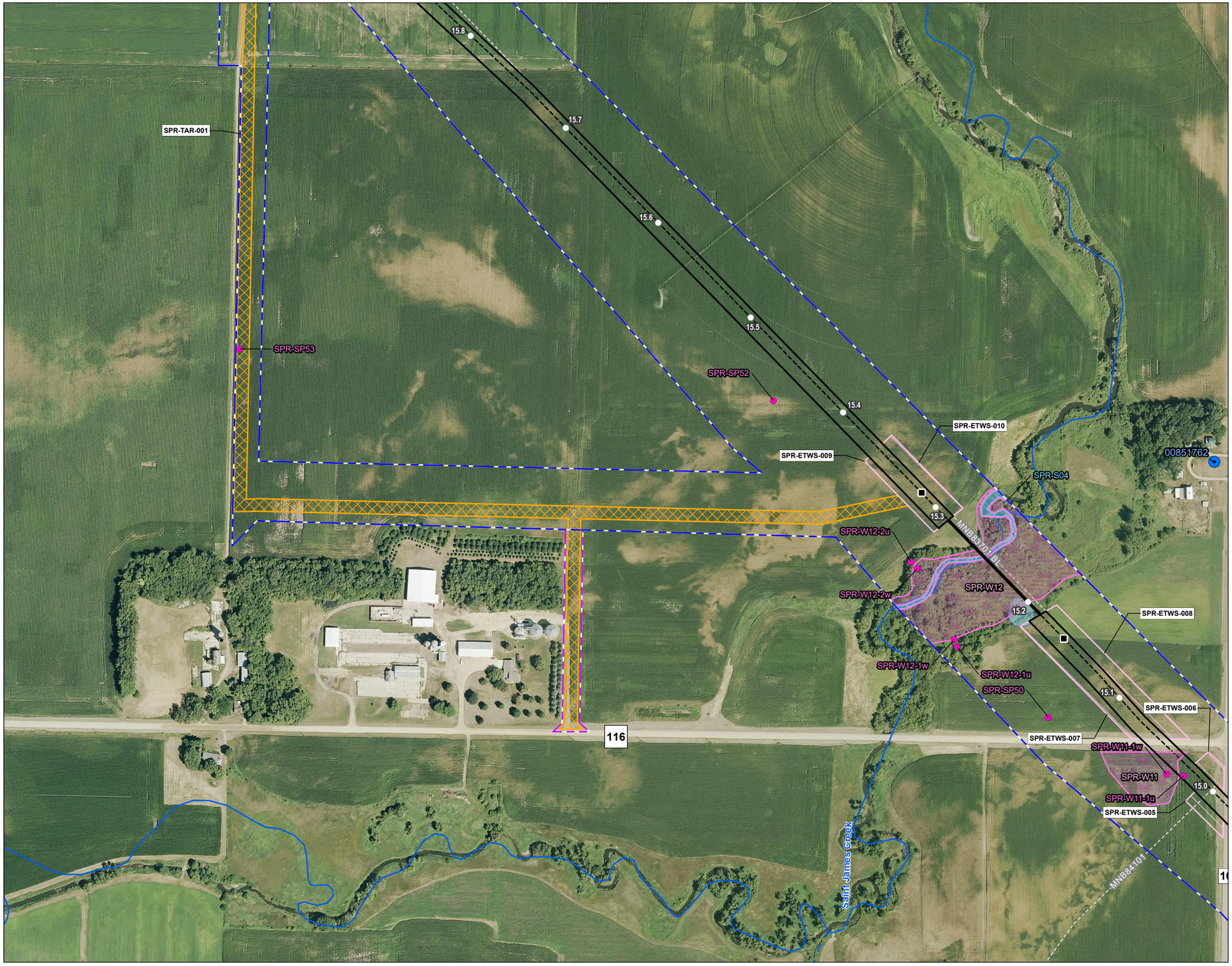


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

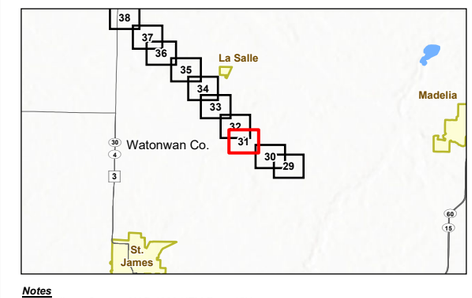
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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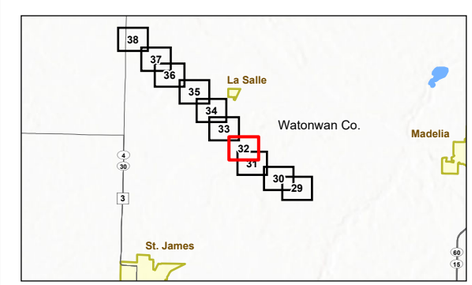
Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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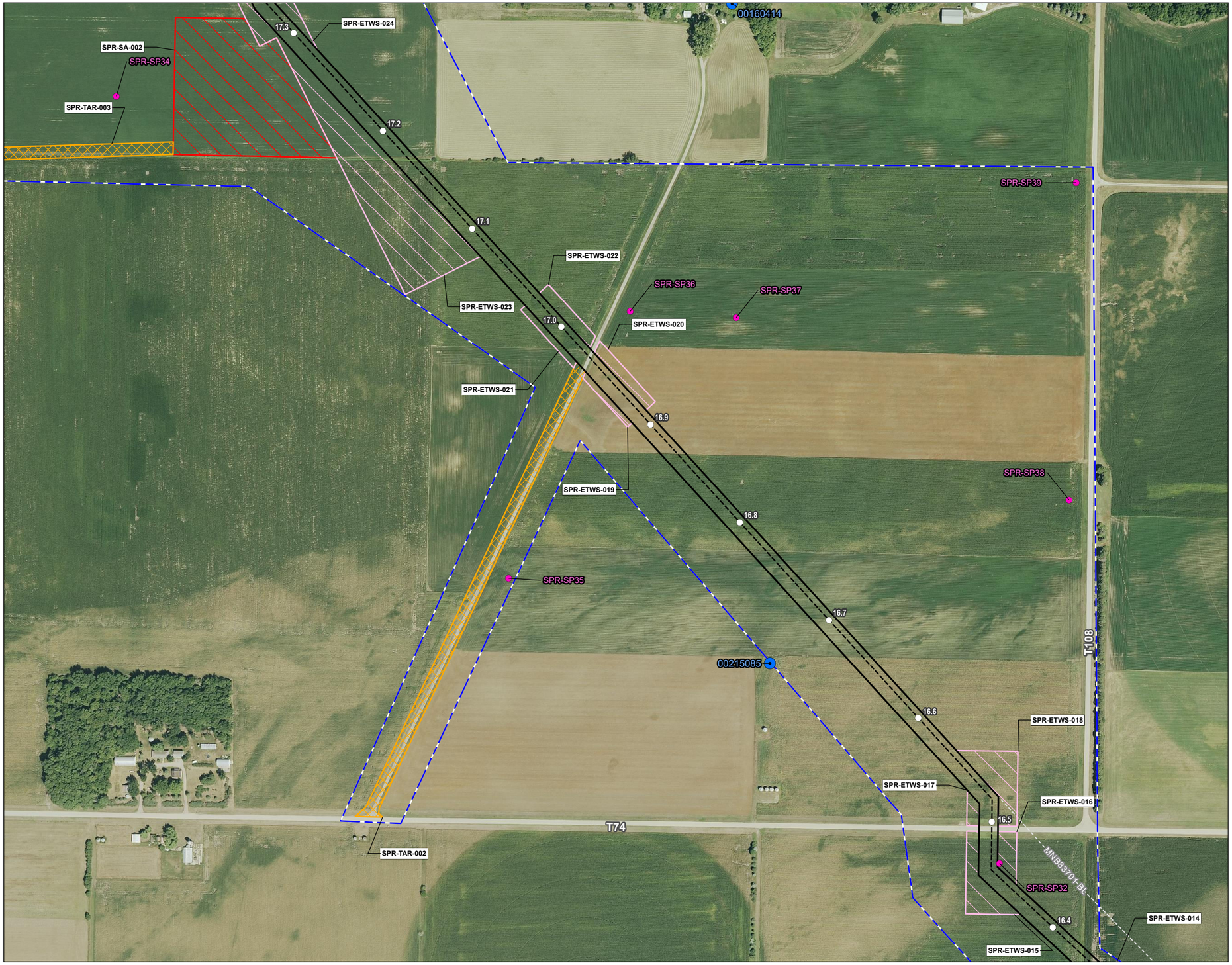


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

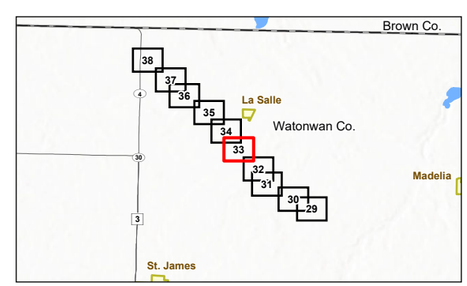
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
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Northern Natural Gas

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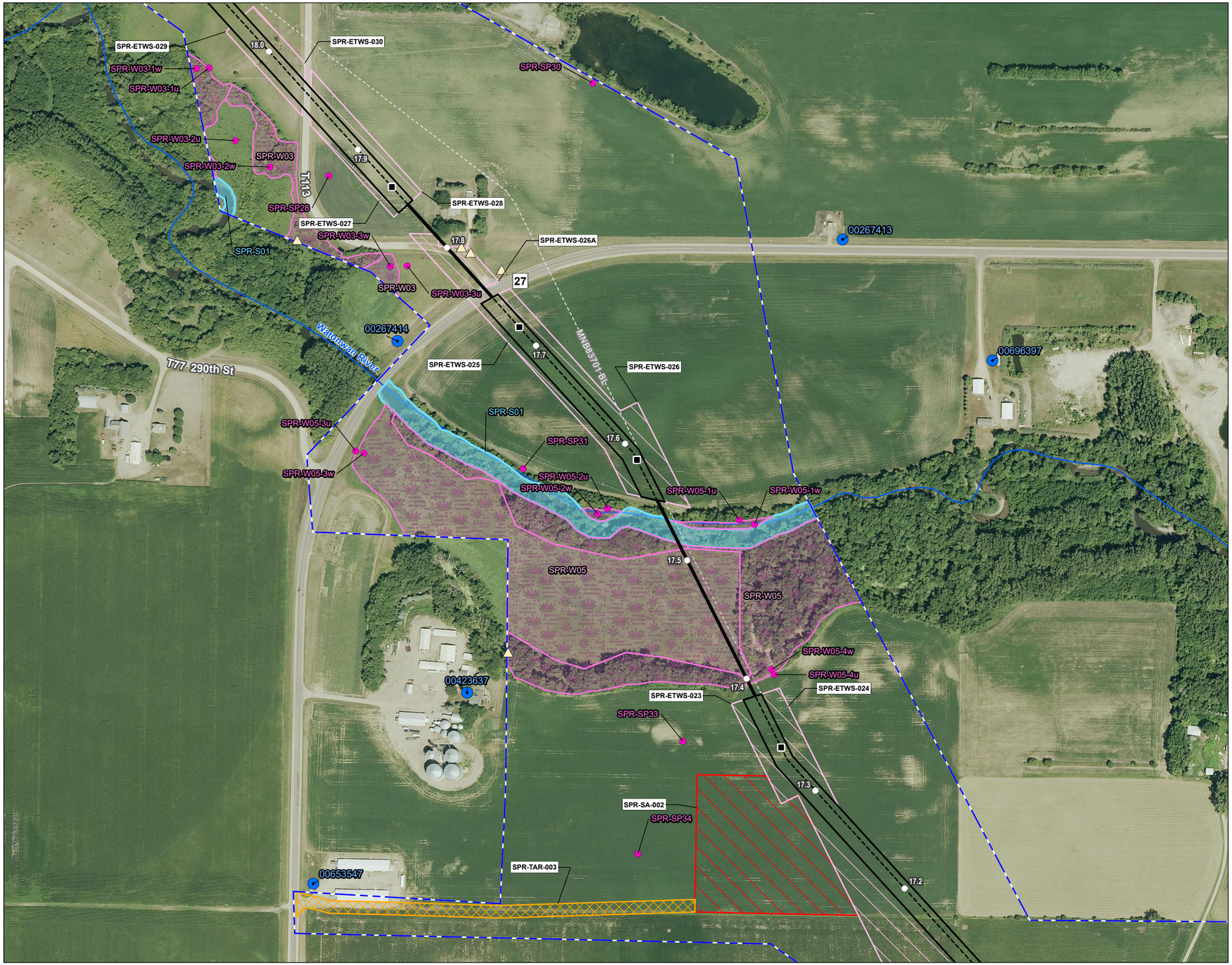


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

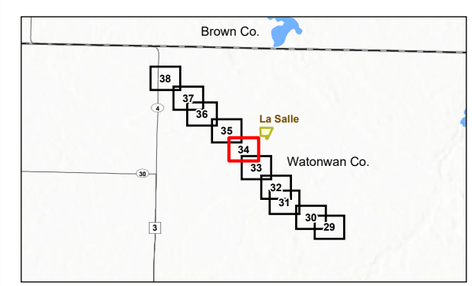
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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3. Background: 2023 NAIP

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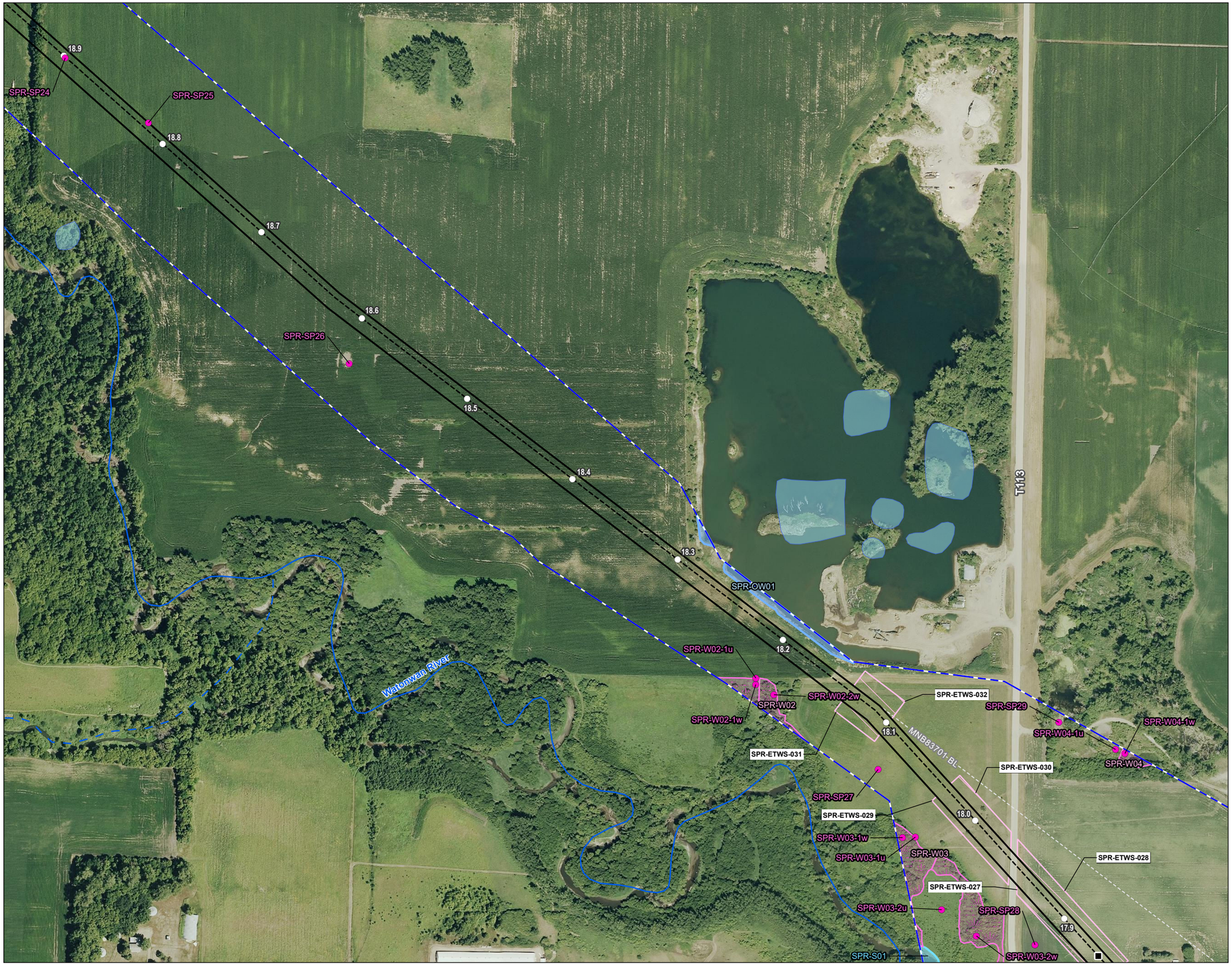


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

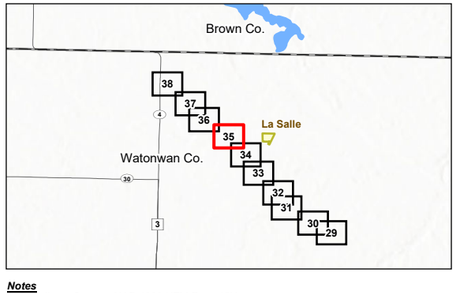
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway
- Field Delineated Open Water

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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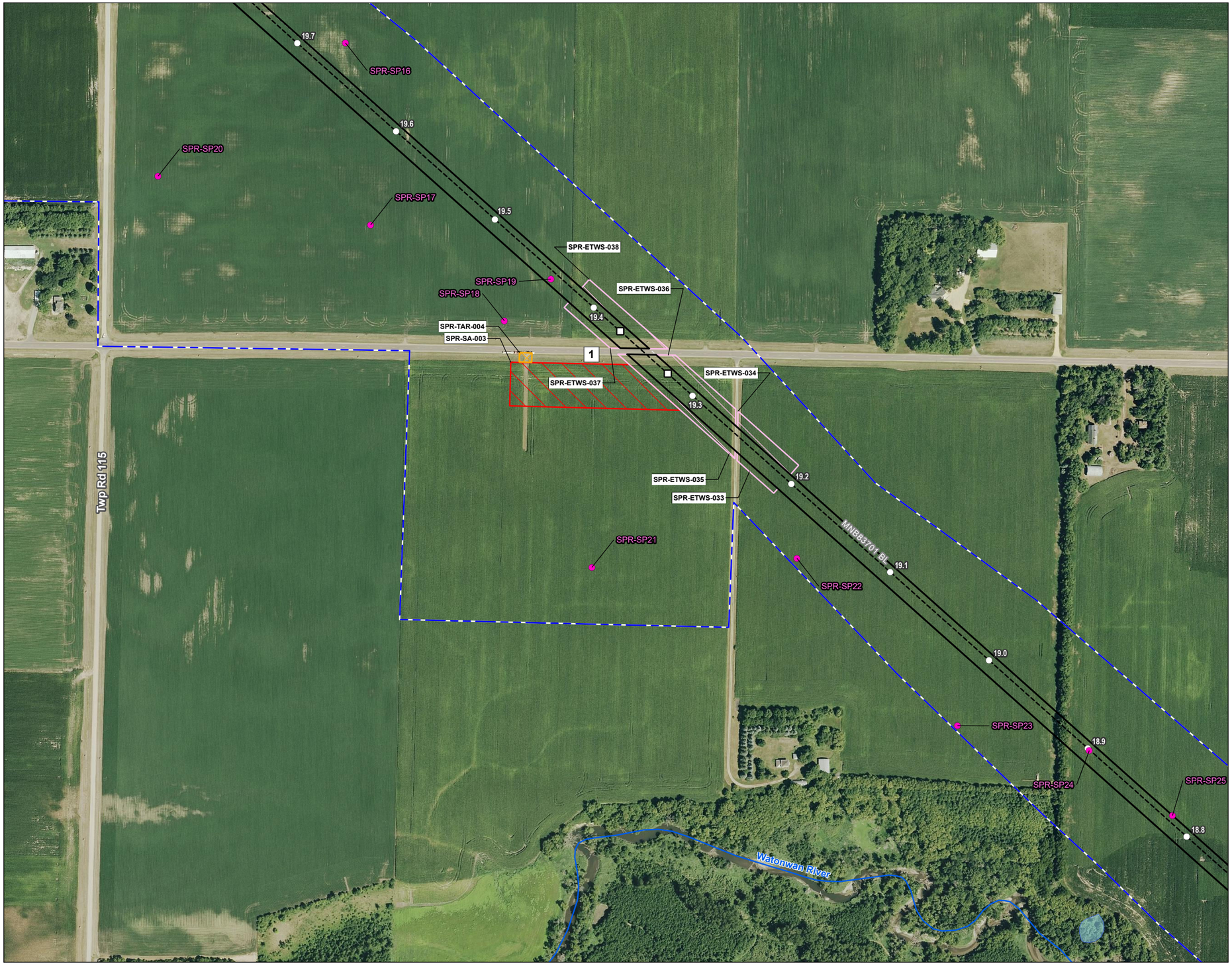


Figure No.
2-4

Title
Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project
172609138
Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

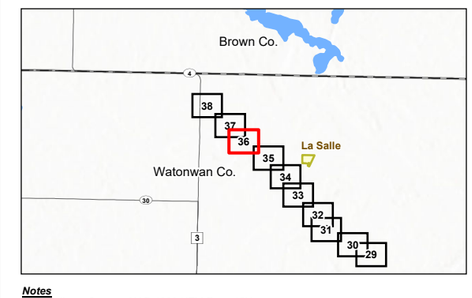
Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend
- Environmental Survey Boundary
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- Auger Bore
- Proposed Pipeline
- Existing Pipeline
- Sample Point

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec
Northern Natural Gas

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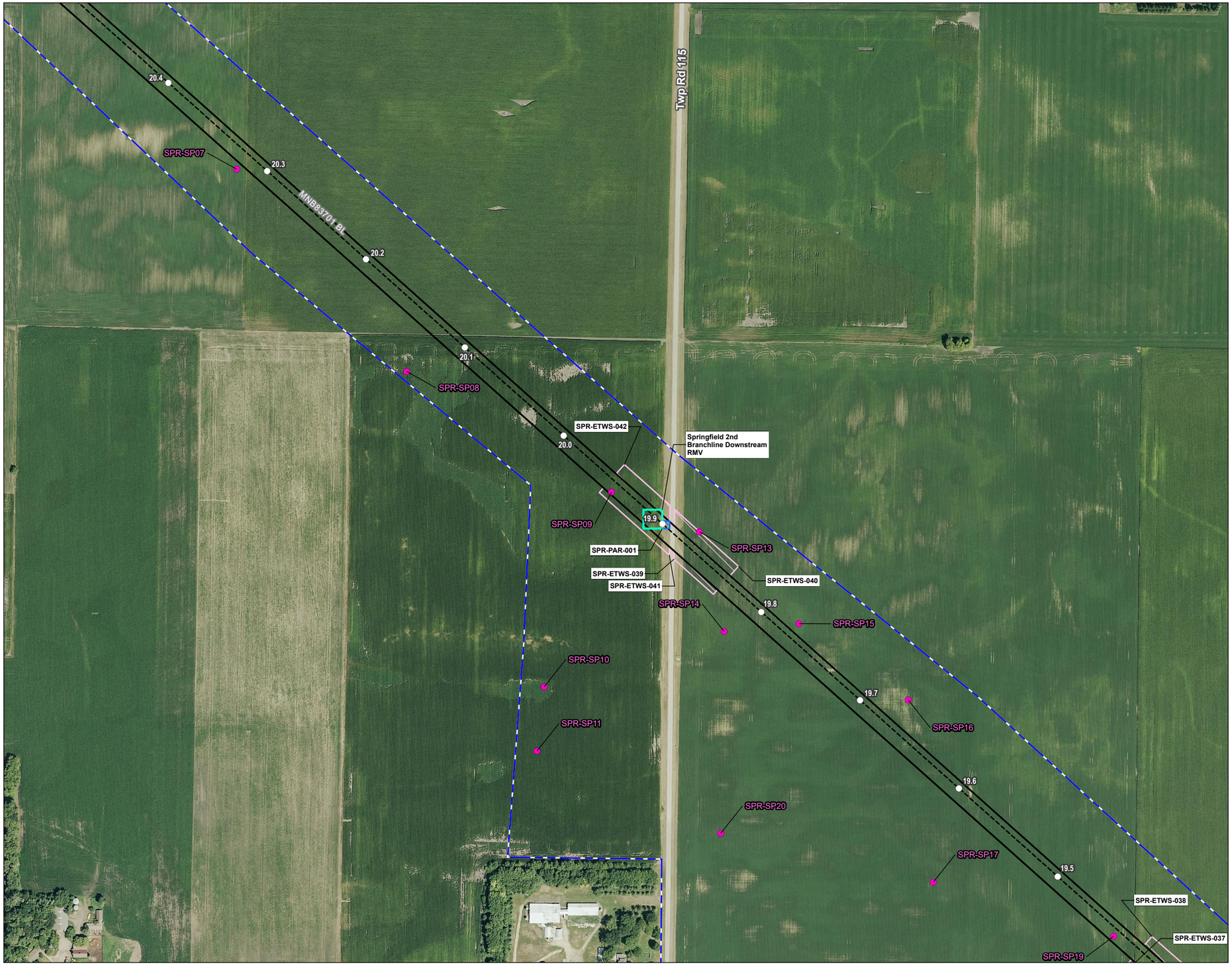

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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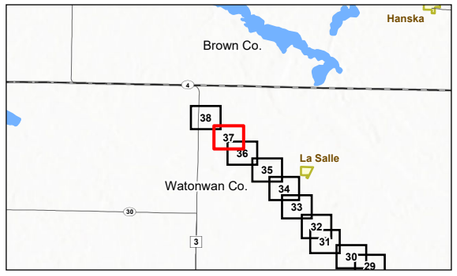
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Mile Post
- Proposed Pipeline
- Existing Pipeline
- Sample Point

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Springfield 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Watonwan County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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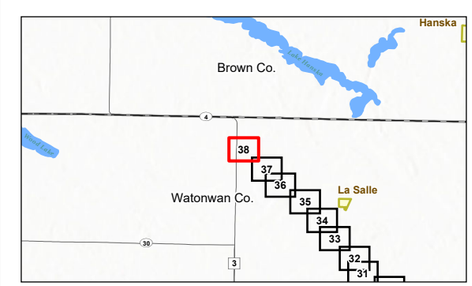
Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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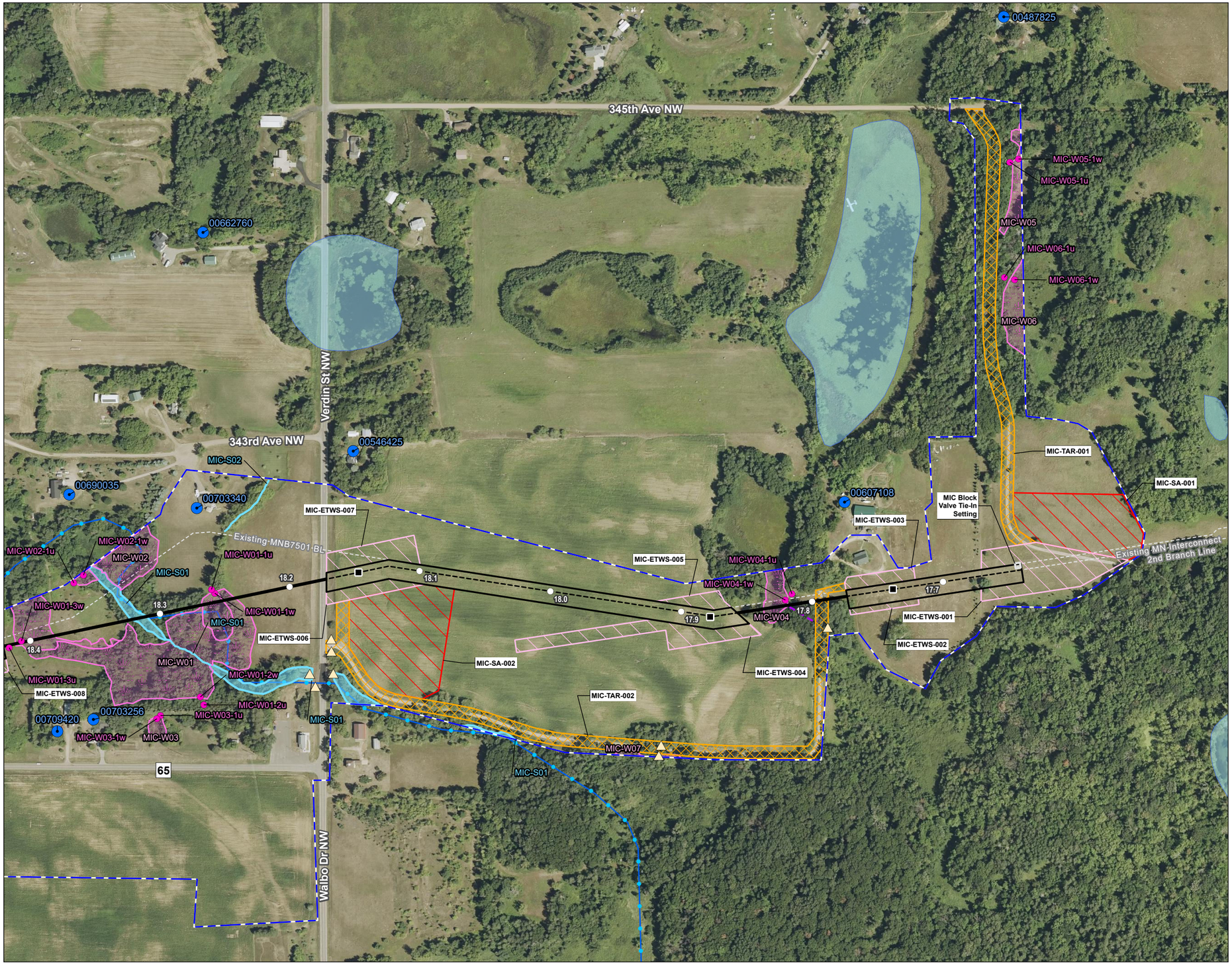

Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Minnesota Interconnect 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Isanti County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

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(At original document size of 11x17)
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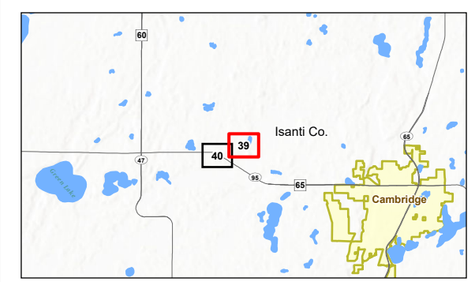
Legend

- Environmental Survey Boundary
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Waterway
- Upland Drainage
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Minnesota Interconnect 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Isanti County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

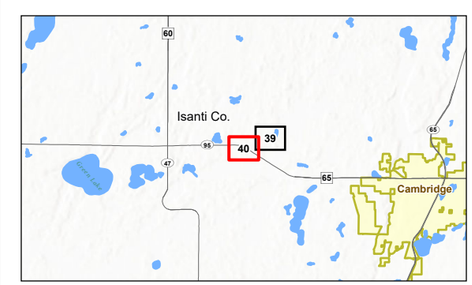
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
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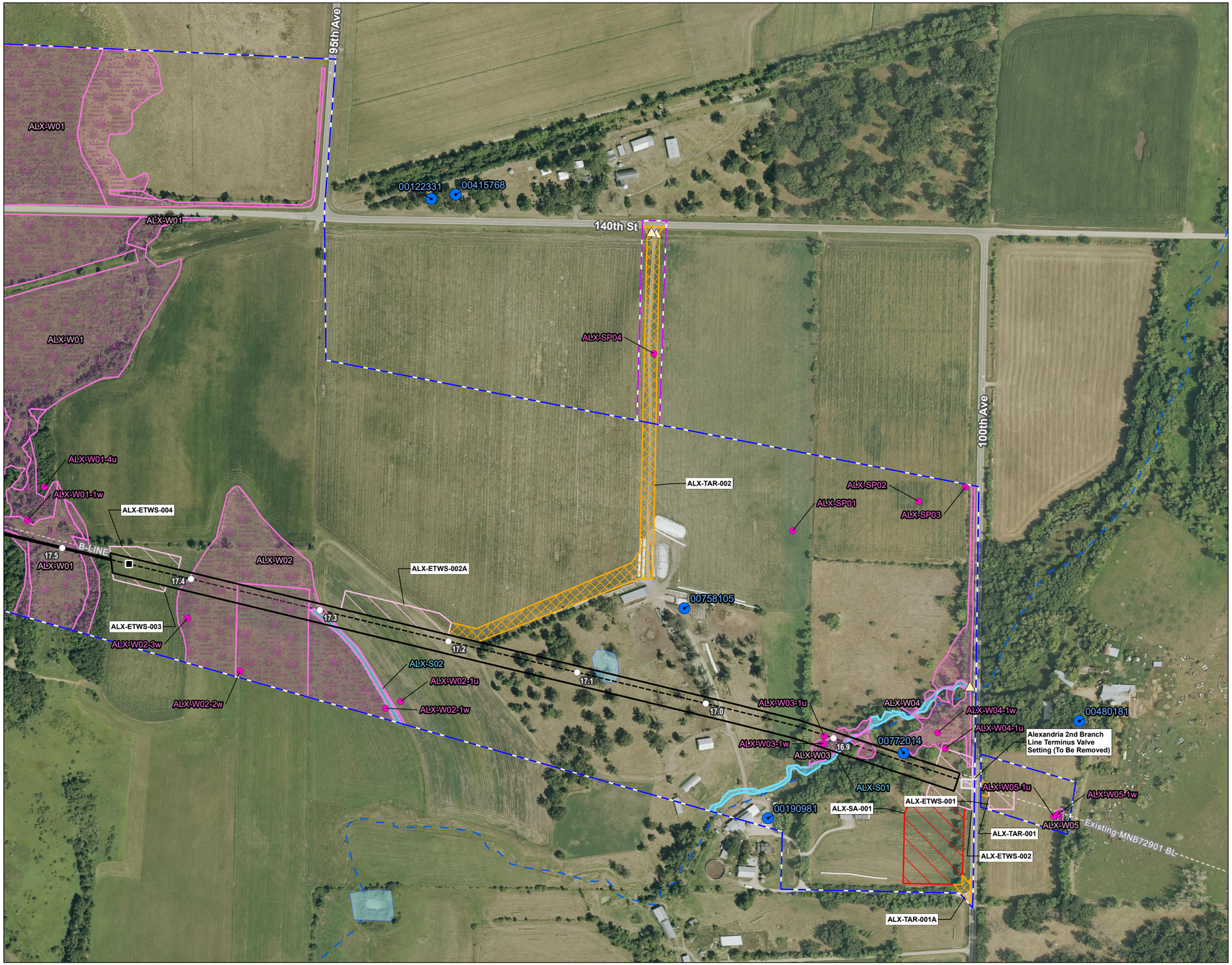


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Alexandria 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Morrison County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

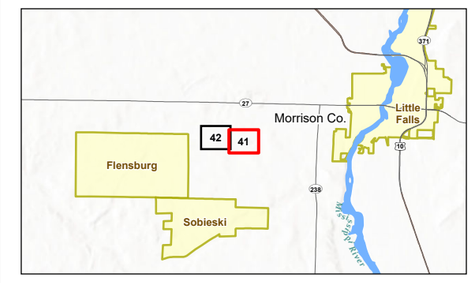
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Environmental Survey Boundary To Be Surveyed
- Existing Facility
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland
- Field Delineated Waterway

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody



Notes
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Northern Natural Gas

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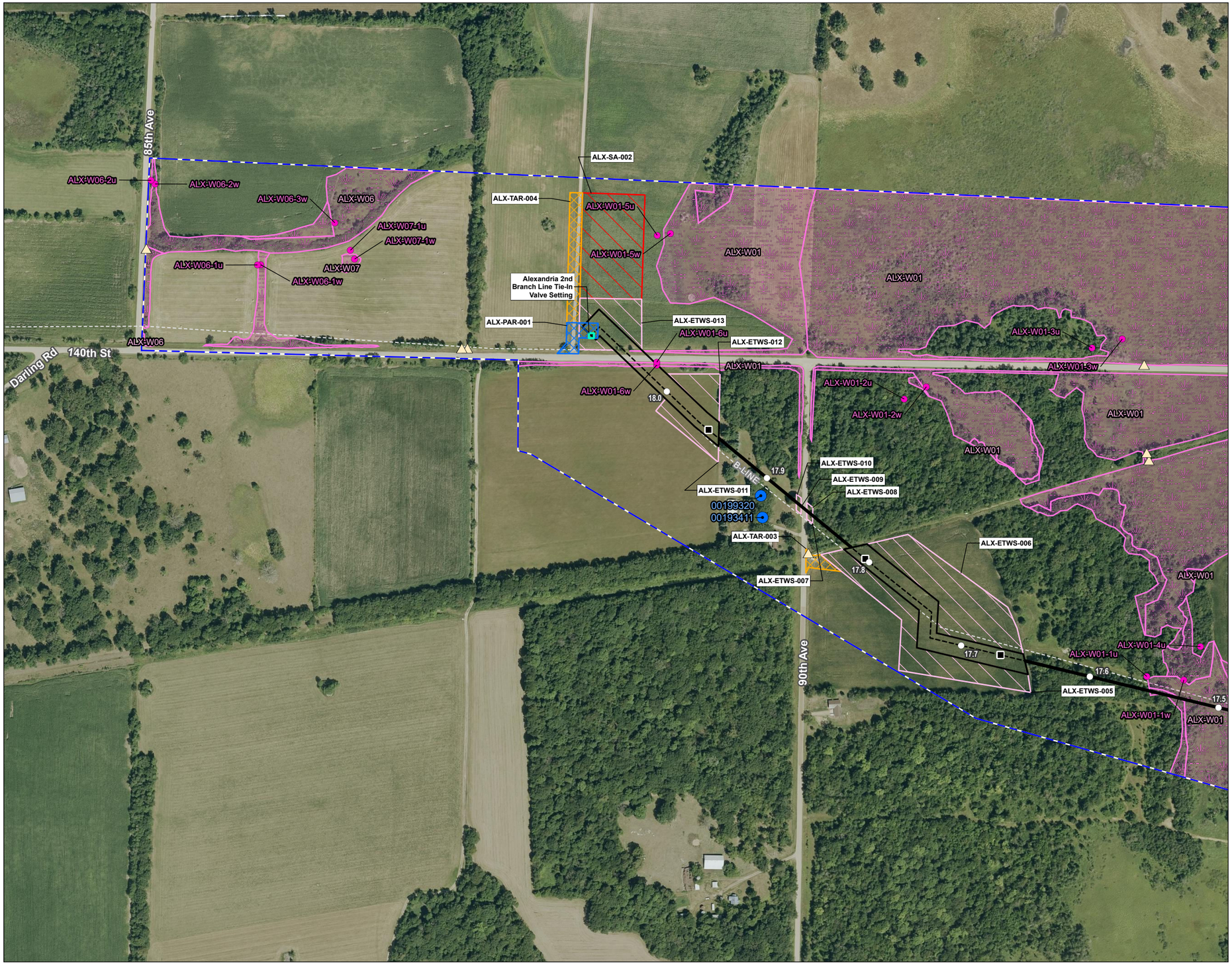


Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Alexandria 2nd Branch Line

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Morrison County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

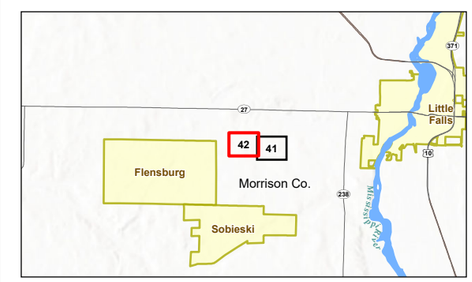
0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Proposed Facility
- Permanent Access Road
- Temporary Workspace
- Extra Temporary Workspace
- Temporary Access Road
- Staging Area
- Mile Post
- HDD
- Proposed Pipeline
- Existing Pipeline
- Well
- Culvert
- Sample Point
- Field Delineated Wetland

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch



Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Figure No.

2-4

Title

Field Delineated Wetlands & Waterbodies
NL27 - Hugo Compressor Station

Client/Project 172609138

Northern Natural Gas
Northern Lights 2027 Expansion Project

Project Location
Washington County, Minnesota

Prepared by JM on 2025-12-15
TR by SF on 2026-01-15
IR by SK on 2026-02-04

N

0 200 400 Feet
(At original document size of 11x17)
1:4,800

Legend

- Environmental Survey Boundary
- Existing Facility
- Existing Pipeline
- Well

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Canal/Ditch
- Waterbody

Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Stantec, Northern Natural Gas, Esri, USCB, USGS
3. Background: 2023 NAIP

Stantec

Northern Natural Gas

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Appendix 2A
Spill Prevention, Control and Countermeasure Plan for Both Projects

Northern Natural Gas
Spill Prevention, Control and Countermeasure (SPCC) Plan
For Construction Projects

Introduction

This SPCC Plan describes planning, prevention and control measures to minimize impacts resulting from spills of fuels, petroleum products, or other regulated substances as a result of pipeline facility construction. These measures will be implemented by the contractor, unless otherwise indicated, during Northern Natural Gas (Northern) pipeline facility construction projects. This SPCC Plan was developed in accordance with the Federal Energy Regulatory Commission's Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures) and satisfies the requirements for SPCC Plans described therein. This plan must remain on-site.

1 Planning and Prevention

Northern requires its contractors to implement proper planning and preventative measures to minimize the likelihood of spills, and to quickly and successfully clean up a spill should one occur. Northern developed this SPCC Plan to set forth the minimum standards for handling and storing regulated substances, and for cleaning up spills. Potential sources of construction-related spills include storage tank leaks, machinery and equipment failure, and fuel handling and transfer accidents. The contractor will be responsible for implementing, at a minimum, the following planning and prevention measures.

1.1 Roles and Responsibilities:

Contractor Spill Coordinator

1.1.1 A contractor spill coordinator shall be designated and employed by the contractor, subject to approval by Northern on projects where outside contractors are used for construction. The spill coordinator may also be a designated Northern employee.

1.1.2 The contractor spill coordinator shall notify the environmental inspector (EI) immediately of any spill, regardless of volume. If the EI is not available, the contractor spill coordinator shall notify Northern's Operations Communication Center (OCC) at 888-367-6671 within 30 minutes of the occurrence.

1.1.3 The contractor spill coordinator shall mobilize on-site personnel, equipment, and materials for containment and/or clean-up commensurate with the extent of the spill.

1.1.4 The contractor spill coordinator will assist the EI in completion of the Spill Release/Report form (environmental procedure 320.101a, Appendix A: Spill/Release Report Form).

1.1.5 The contractor spill coordinator will identify available emergency response contractors. The emergency response contractors will be subject to Northern's approval.

1.1.6 The contractor spill coordinator shall assist the emergency response contractor and monitor containment activities to ensure the actions are consistent with the requirements of this SPCC Plan.

1.1.7 The contractor spill coordinator, in consultation with the Division Environmental Specialist (DES), on-site Northern representative or appropriate agencies, will assist in determining when it is necessary to evacuate spill sites to safeguard human health.

1.1.8 The contractor spill coordinator should **not** contact any agency regarding a spill without authorization from Northern's environmental department.

Environmental Inspector (EI)

1.1.9 The EI may be a designated Northern employee or a third-party inspector assigned to monitor environmental compliance on the project.

1.1.10 The EI will monitor the contractor's compliance with the provisions of this SPCC Plan.

1.1.11 The EI will immediately report all spills to the OCC at 888-367-6671, the construction coordinator and other Northern personnel, as required.

1.1.12 The EI, with assistance from the contractor spill coordinator, is responsible for completing a Spill Release/Report Form and submitting it to the DES within 24 hours of the occurrence for all spills, regardless of volume.

1.1.13 Both the contractor spill coordinator and the EI, in conjunction with the DES or appropriate agencies, will assist in determining when it is necessary to evacuate spill sites to safeguard human health.

1.1.14 The EI should not contact any agency regarding a spill without authorization from the DES.

Construction Coordinator

1.1.15 The construction coordinator is a designated Northern representative who is responsible for the management of construction activities on the project.

1.1.16 The construction coordinator is responsible for documenting the general information regarding any spills such as, work stoppages, injuries, fires and the extent of exposure to on-site personnel.

1.1.17 The construction coordinator, in consultation with the DES or appropriate agencies, will assist in determining when it is necessary to evacuate spill sites to safeguard human health.

1.1.18 The construction coordinator is responsible for coordinating any emergency response services that may be required such as the Fire Department, the Sherriff's Department, or for contacting emergency response contractors.

Authorized Personnel

1.1.19 Authorized personnel are representatives of the contractor who are designated to handle fuel, lubricants or other regulated substances.

1.1.20 Authorized personnel shall be familiar with the requirements of this SPCC Plan and the consequences of non-compliance.

Contractor's Construction Superintendent

1.1.21 The contractor's construction superintendent, or representative, must immediately notify the EI of any spill of any liquid, (i.e. a petroleum product, hazardous liquid, water, casing wax, etc.), regardless of volume.

1.1.22 The contractor's construction superintendent is ultimately responsible for ensuring that construction personnel understand and comply with this SPCC Plan.

Construction Personnel

1.1.23 Construction personnel are representatives of the contractor involved with installation of the pipeline facility.

1.1.24 Construction personnel shall notify the crew foreman and/or contractor's spill coordinator immediately of any spill of any liquid (i.e. a petroleum product or hazardous liquid, water, casing wax, etc.), regardless of volume.

1.1.25 Construction personnel are responsible for beginning the initial spill containment and clean-up.

Environmental Specialist

1.1.26 The environmental specialist is a designated Northern employee who is responsible for the management of environmental compliance on the project.

1.1.27 The environmental specialist is the EI's initial point of contact when a spill occurs and will assist in determining the containment measures that may be required.

1.1.28 The environmental specialist will promptly report spills to appropriate Federal, State, and local agencies as required.

1.1.29 The environmental specialist will coordinate with these agencies regarding contacting additional parties or agencies.

1.1.30 The environmental specialist will promptly notify the U.S. Coast Guard National Response Center of spills, regardless of size, that enter lakes, streams or other standing or flowing waters. (The National Response Center phone number is listed in section 4.2 of this SPCC Plan).

1.1.31 The environmental specialist, in consultation with appropriate agencies, will assist in determining when spill sites will be evacuated, as necessary, to safeguard human health.

1.2 Training:

1.2.1 The contractor spill coordinator shall train all employees handling fuels and other regulated substances to follow and comply with this SPCC Plan.

1.2.2 The contractor's construction superintendent will be responsible for ensuring that such training is received prior to construction activities.

1.2.3 The EI will specifically address compliance with this SPCC Plan while delivering Environmental Training-Construction, environmental training Type B to contractor personnel and/or while reviewing safety procedure 110.180b, Contractor Orientation Checklist and Roster with contractor personnel. (See environmental procedure 380.201, Environmental Compliance for Construction Projects, for training program requirements.)

1.3 Equipment:

1.3.1 All equipment must be thoroughly cleaned prior to arrival on-site. Equipment with existing fluid leaks will not be allowed on-site.

1.3.2 All equipment repairs and maintenance must be completed offsite. In the event that a repair is required to remove the equipment, or removing the equipment is more likely to cause a spill than an onsite repair, adequate liquid storage must be utilized in addition to secondary containment to contain any liquids during the repair. Ensure the capacity of existing secondary containment is adequate for the repair.

1.3.3 Each piece of self-propelled equipment (i.e. dozers, excavators, side booms, etc.) must be equipped with a spill kit. At a minimum, the spill kit must include sufficient absorbent pads and plastic lining material to contain spills resulting from mechanical failure.

1.3.4 Directional drilling rigs must be equipped with a spill kit of appropriate size to contain any potential spills. At a minimum, spill kits must include absorbent pads, booms, a temporary disposal bag, disposable nitrile gloves and plastic lining material to contain spills resulting from mechanical failure.

1.3.5 Each piece of stationary equipment, excluding directional drilling rigs, (i.e. generators, air compressors, water pumps, etc.) must have access to a spill kit. The spill kit must be located in the immediate vicinity of the stationary equipment and in an easily accessible area no farther than 100 yards. At a minimum, spill kits must include absorbent pads, booms, a temporary disposal bag, disposable nitrile gloves and plastic lining material to contain spills resulting from mechanical failure. The appropriate quantities will depend on the number of pieces of stationary equipment and are subject to approval by the on-site Northern representatives.

1.3.6 Each piece of stationary equipment, including drilling rigs, must be parked inside appropriately sized and constructed secondary containment. Any self-propelled equipment parked for more than 24 hours is considered stationary.

1.3.7 Each contractor vehicle must be equipped with a catch pan and a spill kit containing a sufficient quantity of absorbent and barrier materials to

adequately contain and recover foreseeable spills. These kits may include, but are not limited to absorbent pads, straw bales, absorbent clay, sawdust, floor-drying agents, spill containment barriers, plastic sheeting, skimmer pumps and holding tanks.

1.3.8 For personal vehicles driven by contractor personnel and parked daily at construction project contractor yards, the contractor spill coordinator must provide on-site spill kits of adequate size to be stationed in easily accessible areas in the event of a spill resulting from a personal vehicle.

1.3.9 All fuel and service vehicles shall carry materials that are adequate to control foreseeable spills. Such material may include, but is not limited to, absorbent pads, commercial absorbent material, plastic bags with ties and a shovel.

1.3.10 Suitable plastic lining materials must also be available for placement below and on top of temporarily stored contaminated soils and materials.

1.3.11 The contractor spill coordinator will make known to authorized personnel, construction personnel, and the EI, the locations of spill control equipment and materials and have them readily accessible during construction activity. Spill kits must be replenished following each spill clean-up.

1.3.12 Construction equipment shall not be parked overnight or fueled within 200 feet of residential water wells, within 400 feet of municipal or community water wells, or within 100 feet of a wetland or waterbody. These activities may occur closer only if the EI finds, in advance, no reasonable alternative and the contractor has taken appropriate steps to prevent spills. These steps include secondary containment structures.

1.3.13 All fuel nozzles shall be equipped with functional automatic shut-offs.

1.3.14 In large wetlands where no upland site is available for refueling, auxiliary fuel tanks on construction equipment are recommended.

1.3.15 Fuel trucks transporting fuel to on-site construction equipment shall travel only on approved access roads.

1.4 Supervision and Inspection:

1.4.1 Prior to construction, the contractor spill coordinator, or designee, shall perform an inspection and test of all equipment to ensure that it is in good condition and free of leaks.

1.4.2 During construction, the contractor spill coordinator, or designee, shall perform daily inspections on hoses, hydraulic cylinders, fluid reservoirs, hydraulic connections, valves, pipes and tanks to ensure equipment is free of leaks.

1.4.3 On a daily basis, prior to commencing construction activities, the contractor spill coordinator, or designee, must complete Northern's Daily Equipment Spill Prevention Checklist (environmental procedure 380.201c, Daily Equipment Spill Prevention Checklist) and provide the original copy to the on-site EI or a Northern representative. The EI maintains these documents

in a file for the course of a week. If a spill occurs within the week, this document is attached to the Spill/Release Report Form.

2 Liquid Transfer Plans:

2.1 The contractor spill coordinator will prepare a site-specific liquid transfer plan prior to the transfer of any liquids for construction activities which require manipulation of valves or removal of plugs (e.g., pipeline liquids, hydrostatic test water, fuel, glycol or oil) where spills can occur.

2.2 The liquid transfer plan must also address any other activities that have potential to result in a liquid release without proper planning (e.g., pipeline cutting pig launching/removing or draining of drips).

2.2.1 For pipeline cutting activities, the liquid transfer plan must include step-by-step instructions with diagramed drawings for how to check for liquids prior to performing any cutting activities.

2.3 At a minimum, the liquid transfer plan must include detail for the correct location of secondary containment and positioning of all valves, plugs and hoses prior to, during and at the completion of the liquid transfer process.

2.4 The liquid transfer plan must be reviewed by the EI prior to execution of any liquid transfer. In the EI's absence, the chief inspector will review the liquid transfer plan.

2.5 The liquid transfer plan must be maintained by contractor personnel responsible for the respective liquid transfer process and updated as needed when procedures or processes change.

2.6 Contractor personnel will review the status of liquid transfer configurations during shift changes to ensure proper communication between crews.

3 Storage and Handling of Fuels/Hazardous Liquids

3.1 Typical Fuels, Lubricant and Hazardous Liquids:

3.1.1 The following table identifies fuels, lubricants and coolants generally present on pipeline construction spreads and identifies typical total volumes, storage and transportation methods. Contractors will have appropriate Safety Data Sheets (SDS) on-site, as required by the Occupation Safety and Health Administration (OSHA).

Typical Petroleum Storage and Handling Volumes on a Construction Spread

	Fluids	Typical Amounts	Storage	Typical Transport Mode
Fuels	Diesel	6,000-12,000 Gallons	1-3 Tanks or Tankers stored at contractor yard 5 gallon cans, 100 gallon storage in pickups, etc.	1-3 Fuel Trucks 1-3 "Fuel Skids"

	Military Aviation Kerosene [1]	6,000-12,000 Gallons		
	Kerosene [1]	6,000-12,000 Gallons		
	Gasoline	5,000 Gallons		
Lubricant	Engine Oil	< 500 Gallons	Bulk Storage or Retail Packaging at contractor yard warehouse	1-3 "Grease" Trucks
	Transmission/ Drive Train Oil	< 500 Gallons		
	Hydraulic Oil	< 500 Gallons		
	Gear Oil	< 500 Gallons		
	Lubricating Grease	20-30 cases of 24 cans per case		
Coolants	Ethylene Glycol	100 Gallons		
	Propylene Glycol	100 Gallons		

[1] Used straight or as additives only in extremely cold weather.

3.2 Storage of Fuel and Hazardous Liquids – General:

3.2.1 The contractor shall follow proper storage practices for fuels and hazardous liquids including, but not limited to, the following:

3.2.1.1 Fuel storage shall be at contractor yards only, or as approved by Northern.

3.2.1.2 Tools and materials to stop the flow of leaking tanks and pipes shall be kept on-site. Such equipment must include, but not be limited to, plugs of various sizes, a hammer, assorted sizes of metal screws with rubber washers, a screwdriver and plastic tape.

3.2.1.3 Fuels, lubricants, waste oil and any other regulated substances shall be stored in aboveground tanks only.

3.2.1.4 Storage tanks and containers must conform to all applicable industry codes.

3.2.1.5 A suitable secondary containment structure must be utilized at each fuel storage site. Portable secondary containment structures are preferred over site-constructed structures. If portable structures are not available, the site-constructed structures must be lined with seamless plastic sheeting. All structures must provide a minimum containment volume equal to the volume of the largest storage vessel; and provide at least 1 foot of freeboard.

3.2.1.6 If earthen containment dikes are used, they shall be constructed with slopes no steeper than 3:1 (horizontal to vertical) to limit erosion and provide structural stability.

3.2.1.7 It is the contractor's responsibility to remove all secondary containment structures at the conclusion of the project. The contractor is also responsible for returning the storage impoundment area to its original contour and appearance upon completion of the project.

3.2.1.8 Secondary containment areas must not have drains. If visual inspection indicates that no spillage has occurred in the secondary containment structure, accumulated water may be drawn off and sprayed on the surrounding upland areas in accordance with applicable permits. If spillage has occurred in the structure, accumulated waste shall be drawn off and pumped into drum storage for disposal. Water with a visible sheen must not be discharged on-site and must be hauled out for proper disposal.

3.2.1.9 Vehicle wastes resulting from equipment failure, including used oils and other fluids, shall be handled and managed by personnel trained in the procedures outlined in this Plan. Vehicle wastes will be stored and disposed of in accordance with section 6.0 of this SPCC Plan.

3.3 Refueling:

3.3.1 Fuels shall be dispensed by authorized personnel only. The contractor must provide adequate lighting for refueling after dark.

3.3.2 Personnel shall be actively holding the nozzle during all refueling. Absorbent pads shall be within reaching distance in the event of a nozzle malfunction.

3.3.3 Refueling shall not occur within 100 feet of a wetland or waterbody. These activities may occur closer only if the EI finds, in advance, no reasonable alternative and the contractor has taken appropriate steps to prevent spills. These steps include secondary containment structures.

3.3.4 Refueling shall not occur within 200 feet of residential water wells or within 400 feet of municipal or community water wells.

3.4 Refueling and Fuel Storage near Wetlands, Waterbodies or Rural Residences:

3.4.1 Northern requires that the storage of petroleum products, refueling and lubricating operations take place in upland areas that are more than 100 feet from wetlands, streams, and waterbodies (including drainage ditches), and 200 feet of residential water wells or within 400 feet of municipal or community water wells. In addition, the contractor must store hazardous materials, chemicals, fuel and lubricating oils, and perform concrete coating activities outside of these areas. Auxiliary fuel tanks solidly attached to

construction equipment or pumps are not considered storage and are acceptable.

3.4.2 In certain instances, refueling or fuel storage may be unavoidable due to site-specific conditions or unique construction requirements. Examples include continuously operating pumps and temporary stationary equipment associated with horizontal directional drilling (HDD) activities. These locations must be approved in advance by the EI. In addition to those practices described above, the following precautions will be taken when refueling within 100 feet of streams, wetlands, and waterbodies; within 200 feet of private water wells; or within 400 feet of municipal or community water wells:

3.4.2.1 Adequate amounts of absorbent materials and containment booms must be kept on-site by each construction crew to enable the rapid containment and clean-up of a spill incident.

3.4.2.2 If fuel must be stored within wetlands or near streams for refueling of continuously operating pumps, secondary containment must be provided.

3.4.2.3 A suitable secondary containment structure must be utilized at each fuel storage site. Portable secondary containment structures are preferred over site-constructed structures. If portable structures are not available, the site-constructed structures must be lined with seamless plastic sheeting. All structures must provide a minimum containment volume equal to the volume of the largest storage vessel; and provide at least 1 foot of freeboard.

3.4.2.4 Procedures regarding excavation and disposal of contaminated soil material from wetlands or near waterbodies are described in section 6.3 of this SPCC Plan.

3.4.2.5 Equipment operating within wetlands must be manned continuously or placed within proper secondary containment.

4 Initial Spill Management

4.1 Immediate Response:

4.1.1 Immediately upon learning of any fuel, oil, hazardous material or other regulated substance spill, or upon learning of conditions that will lead to an imminent spill, the person discovering the situation must:

4.1.1.1 Initiate actions to contain the fluid that has spilled or is about to spill, and initiate action to eliminate the source of the spill to the maximum extent that is safely possible.

4.1.1.2 Notify the contractor spill coordinator and the EI, and provide them with the following information:

4.1.1.2.1 Location and cause of the spill

4.1.1.2.2 The type and amount of material that has spilled

4.1.1.2.3 Whether the spill has reached, or is likely to reach, any surface water

4.1.1.3 Upon learning of a spill or a potential spill the contractor spill coordinator shall:

4.1.1.3.1 Assess the situation and determine the need for further action.

4.1.1.3.2 Direct subsequent activities and/or further assign responsibilities to other personnel.

4.1.1.3.3 Notify the EI

4.1.2 The EI will notify the OCC at 888-367-6671 and the construction coordinator.

4.2 Mobilization:

4.2.1 The contractor spill coordinator shall mobilize on-site personnel, equipment, and materials for containment and/or clean-up commensurate with the extent of the spill and notify the EI.

4.2.2 The DES will work with the EI and contractor spill coordinator to determine if a spill is reportable to an agency.

4.2.3 If the contractor spill coordinator and/or the EI determine that a spill is beyond the scope of on-site equipment and personnel, the contractor spill coordinator and/or the EI will immediately notify the contractor construction superintendent that an emergency response contractor is needed to contain and/or clean up the spill. The contractor is responsible for obtaining the services of an emergency response contractor.

4.2.4 The contractor spill coordinator shall assist the emergency response contractor and monitor containment procedures to ensure that the actions are consistent with the requirements of this SPCC Plan.

5 Spill Notification Responsibilities

5.1 The EI will immediately report all spills, regardless of volume, to Northern's OCC at 888-367-6671. The EI, or an applicable company representative, will participate on the OCC call to assess the spill. An environmental department representative will determine any requirements for further agency notification(s).

5.2 Spill Release/Report Form:

5.2.1 The EI, with assistance from the contractor spill coordinator, shall complete a Spill Release/Report Form for each release of a regulated substance, regardless of volume. The Spill Release/Report Form must be submitted to the DES within 24 hours of the occurrence of the spill.

5.2.2 All associated laboratory analysis and other documentation that may be required separately, on a case-specific basis, will be the responsibility of the contractor and should be provided to the EI. The EI will forward the information to the DES.

5.3 Agency Notification:

5.3.1 In the event of a reportable spill the DES will determine who is responsible for any required agency notification(s).

5.3.2 For projects in Minnesota, if there is any discharge of any substance or material, including hazardous materials, which, if not recovered, may cause pollution to waters of the state, the Minnesota Duty Officer shall be notified immediately. The Minnesota Duty Officer's phone numbers are 651-649-5451 and 800-422-0798.

5.3.3 For any spills that are determined to be the responsibility of Northern, the DES will promptly notify the appropriate Federal, State, and/or local agencies.

5.3.4 For any spills that are determined to be the responsibility of the contractor, the DES will request that the contractor spill coordinator promptly notify the appropriate Federal, State and/or local agencies.

5.3.5 The DES will promptly notify the National Response Center (NRC) at 800-424-8802 for all spills that impact streams, lakes or other waterbodies containing standing or flowing water.

5.3.6 The contractor spill coordinator will provide the EI and/or the Northern on-site representative all Spill Release/Report forms and associated information resulting from agency contact no later than 24 hours from the receipt of such documentation.

5.3.7 Northern's DESs and construction compliance personnel are listed below.

Name	Office Phone	Cell Phone
Kelly Henry	651-456-1712	612-759-8287
Naomi Cavalieri	402-398-7847	531-301-1176
*Steve San Miguel	402-398-7305	402-595-8554*
Michelle Brown	402-530-3502	806-231-4960
Christa Webber	402-398-7980	402-810-3769
Terry Plucker	402-398-7226	402-332-7081

6 Spill Containment and Clean-Up

6.1 In the event of a spill, the contractor will abide by applicable Federal, State and local regulations, in respect to cleaning up the spill. All clean-up and other construction related spill activities must be completed by, and costs assumed by, the contractor. Specific control and clean-up measures for both upland and wetland/waterbody spills are described below.

6.2 Spill Control and Clean-Up for Upland Areas:

6.2.1 If a spill should occur during refueling operations, **STOP** the operation until the spill can be controlled and the situation corrected.

6.2.1.1 Spill sources must be immediately identified and contained.

6.2.1.2 For large spills on land, the spills must be contained and pumped immediately into tank trucks. The contractor or, if necessary, an emergency response contractor, shall excavate the contaminated soil. It is the responsibility of the contractor to obtain Northern's approval prior to activities if waste vendors other than those approved by Northern (Clean Harbors and Safety-Kleen) may be used.

6.2.1.3 Spilled material and contaminated soil must be treated and/or disposed of in accordance with applicable Federal, State, and local requirements (section 6.0) and Northern's procedures.

6.2.1.4 Smaller spills on land shall be cleaned up with absorbent materials. Contaminated soil or other materials associated with these releases shall also be collected and disposed of in accordance with applicable regulations (section 6.0) and Northern's procedures.

6.2.1.5 Flowing spills must be contained and/or absorbed before reaching surface waters or wetlands.

6.2.1.6 Absorbent material(s) shall be placed over spills to minimize spreading and to reduce penetration into the soil.

6.2.1.7 The contractor spill coordinator and/or the DES, in consultation with appropriate agencies, shall determine when spill sites will be evacuated, as necessary, to safeguard human health. Evacuation parameters shall include consideration for the potential of fire, explosion, and hazardous gases.

6.3 Spill Control and Clean-Up for Wetlands and Waterbodies:

6.3.1 In addition to the measures described previously in this SPCC Plan, the following conditions shall apply if a spill, regardless of size, occurs near or into a stream, wetland or other waterbody:

6.3.1.1 If a spill should occur during refueling operations, **STOP** the operation until the spill can be controlled and the situation corrected.

6.3.1.2 For spills into streams, lakes or other waterbodies containing standing or flowing water, the contractor spill coordinator will immediately notify the nearest Northern representative and the OCC at 888-367-6671. The DES will promptly notify the NRC. (The NRC phone number is listed in section 4.2 of this SPCC Plan).

6.3.1.3 For spills in standing water floating booms, skimmer pumps and holding tanks shall be on-hand and used by the contractor to recover and contain released materials on the surface of the water.

6.3.1.4 If deemed necessary for large spills in waterbodies, the contractor must secure an emergency response contractor to further contain and clean up the spill. All contractors must be approved by Northern prior to construction.

6.3.1.5 Contaminated soils in wetlands must be excavated, and placed on, and covered by, plastic sheeting in bermed areas a minimum of 100 feet away from the wetland. Dispose of contaminated soil as soon as possible in accordance with section 6.0 of this SPCC Pan and Northern's procedures.

6.4 Inadvertent Mud Releases:

6.4.1 In the event of a drilling mud release (i.e., frac-out) to a sensitive resource area, including a waterbody, the contractor shall follow environmental procedure 380.203i, Appendix I: Plan for Inadvertent Release of Drilling Mud.

7 Storage and Disposal of Contaminated Materials

7.1 Environmental procedure 390.107, Approved Disposal Facilities, describes that all selected wastes generated at Northern facilities must be disposed of at Northern-approved waste facilities. The procedure also lists the locations of each Northern-approved disposal facility.

7.2 All contaminated soils, absorbent materials, and other wastes shall be stored and properly disposed by the contractor in accordance with applicable Federal and State regulations and Northern's procedures.

7.3 Only approved and licensed waste vendors and carriers may be used to transport contaminated material from the site to a Northern-approved disposal facility.

7.4 Used oil, glycol or hazardous wastes must be disposed by a Northern-approved contractor.

7.5 Environmental procedures regarding hazardous waste are located in the 390.000, Hazardous Waste Management, series of Northern's environmental operating procedures manual. The series includes procedures on manifesting and other transport requirements for off-site disposal.

7.6 Disposal of domestic wastes must be determined by the contractor and the information provided to the EI.

7.7 If it is necessary to temporarily store excavated soils on-site, these materials shall be 1) contained in plastic bags or, 2) placed on and covered by plastic sheeting. In addition, the perimeter of the storage area must include a berm to prevent and contain runoff.

8 REVISION HISTORY:

Responsibility for Procedure:

Address all questions on this procedure to the director of environmental.

Revisions:

Rev. 0	05/17/11	Initial procedure released.
Rev. 1	08/15/12	Changed Northern employee to Northern representative in section 1.1, Roles and Responsibilities, under Construction Coordinator. Updated information regarding spill kits in section 1.3, Equipment. Referenced Environmental Training-Construction. Included Minnesota Duty Officer contact information. Stated that the contractor shall follow Northern's Inadvertent Mud Release Plan for frac-outs. Added requirement for all contractor vehicles to be equipped with a catch pan. Updated formatting.
Rev. 2	12/14/12	Publish Only: Updated DES contact information.
Rev. 3	02/26/14	Added a section for liquid transfer planning and updated environmental department staff contact information.
Rev. 4	08/19/15	Publish Only: Updated DES and construction compliance personnel contact information.
Rev. 5	01/30/19	Publish Only: Division environmental specialists and construction compliance personnel contact information were updated in this procedure revision.
Rev. 6	01/06/21	Publish Only: Added section 1.3.5 stating existing practice for secondary containment for stationary equipment.
Rev. 7	02/17/21	Publish Only: Stated requirements for equipment repairs and maintenance.
Rev. 8	02/01/22	Publish Only: Division environmental specialist contact information was updated.