BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit: Minnehaha Creek Watershed District **County:** Hennepin
Applicant Name: Lorelei Ritter **Applicant Representative:** Wyatt Benton, Anderson Engineering
Project Name: 3505 Watertown Road **LGU Project No. (if any):** W22-025
Date Complete Application Received by LGU: June 1, 2022
Date this Notice was Sent by LGU: June 6, 2022
Date that Comments on this Application Must Be Received By LGU[1]: June 17, 2022

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

WCA Decision Type - check all that apply

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

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Impact Area Proposed:

Application Materials

☒ Attached ☐ Other[1] (specify):

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

Comments on this application should be sent to:

LGU Contact Person: Abigail Ernst
E-Mail Address: aernst@minnehahacreek.org
Address and Phone Number: (952) 641-4504
Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other (specify):

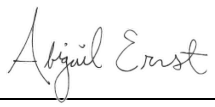
Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Stacey Lijewski- stacey.lijewski@co.hennepin.mn.us
☒ BWSR TEP Member: Ben Meyer- ben.meyer@state.mn.us
☐ LGU TEP Member (if different than LGU contact):
☒ DNR Representative: Wes Saunders-Pearce – Wes.saunders-pearce@state.mn.us
☐ Watershed District or Watershed Mgmt. Org.:
☒ Applicant (notice only): lorelei@topollc.com
☒ Agent/Consultant (notice only): wbenton@ae-mn.com

Optional or As Applicable:

☒ Corps of Engineers: usace_requests_mn@usace.army.mil
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature:	Date:
	6/6/2022

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

WETLAND INVESTIGATION

TOPO LLC

3505 WATERTOWN ROAD
ORONO, MINNESOTA

May 24, 2022
AE JOB NO. 16982

ANDERSON

13605 1st Avenue North #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090
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APPENDICES

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Anderson Engineering of Minnesota, LLC
13605 1st Avenue North
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Phone: (763) 412-4000
Fax: (763) 412-4090

EXECUTIVE SUMMARY

Anderson Engineering of Minnesota, LLC was retained to provide professional wetland services using the 1987 United States Army Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1; January 1987) and all supplemental guidance documents to identify areas meeting wetland criteria at 3505 Watertown Road located in Orono, Hennepin County, Minnesota. This project area is in Section 32, Township 118 North, Range 23 West.

Delineated aquatic resources or, portions thereof, was identified and delineated within the project area and summarized in Table 1 and depicted in Appendix A, Figure 5.

Table 1. Summary of delineated aquatic resources, corresponding sizes, and wetland type classifications.

FEATURE	FEATURE TYPE	APPROXIMATE SIZE[1]	FEATURE TYPE CLASSIFICATION			MnRAM Classification
			CIRCULAR 39	COWARDIN	EGGERS & REED	
1	Wetland	0.27 Ac.	Type 1/2/3	PEM1C/B/FO1A	Floodplain Forest/Fresh Wet Meadow/Shallow Marsh	Manage 1

[1] Approximate size within the project area expressed in acres (ac), square feet (SF), or tributary linear feet (LF). Areas less than 0.01 acre are presented in square feet.

BACKGROUND

As requested by Lorelei Ritter, Anderson Engineering of Minnesota, LLC completed a wetland investigation at 3505 Watertown Road located in Orono, Hennepin County, Minnesota (Appendix A, Figure 1). This project area is in Section 32, Township 118 North, Range 23 West.

The wetland delineation was completed in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and the published regional supplement to the Army Corps Wetland Delineation Manual, Midwest Regional Supplement.

The purpose of this study was to identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitats in the project area.

Fieldwork for this site investigation was completed by Dylan Kruzel and Wyatt Benton, on May 18, 2022. The weather was sunny and 70 degrees Fahrenheit.

METHODOLOGY

U.S. Geologic Service 7.5" Topographic Quadrangle maps, U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps, Minnesota Department of Natural Resources Public Water Inventory (PWI) maps, U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey, and available aerial photographs were consulted to initially locate potential wetland habitats.

Routine On-site Determination Method was used during this investigation. In this method, the following procedures were used:

1. The vegetative community was sampled in all present strata to determine whether it met hydrophytic vegetation criteria based on the indicators identified in the Midwest Regional Supplement.
2. Soil pits were dug using a Dutch auger to depths of sixteen to thirty-six inches. The soil profile was noted in addition to any hydric soil characteristics.
3. Signs of wetland hydrology were noted and compared to field criteria such as depth to shallow water table and depth of soil saturation found in the soil pits.

Data from sample points were recorded on Army Corps of Engineers Midwest Region Wetland Determination Data Forms (Appendix B). At least one sample point transect crosses the delineated wetland edge. This transect consists of an upland sample point and a wetland sample point. Other sample points may be in areas which have one or more other wetland criteria present; where questionable conditions exist; or to verify the absence of wetland criteria. Photographs of each resource is included in the resource review summary pages.

Sample points were marked in the field with orange flags. The identified aquatic resource was marked with sequentially numbered pink flags and ribbon. All sample points and the delineated aquatic resource extent were located using a Trimble Geo XH sub-meter GPS unit.

Delineated resources were evaluated using Board of Soil and Water Resource's Minnesota Routine Assessment Method version 3.2 (MnRAM). Information from desktop and field assessment was evaluated in the system and a management classification ranging from exceptional quality to low quality is output as Preserve, Manage 1, Manage 2, and Manage 3. Resulting classifications are typically utilized in development planning.

RESOURCE REVIEW

The below described data were reviewed as part of the aquatic resource field delineation. A summary of each resource contained within the project area follows.

NATIONAL WETLANDS INVENTORY

The National Wetlands Inventory identifies one PEM1C wetland within the project area (Appendix A, Figure 2).

USDA – NATURAL RESOURCES CONSERVATION SERVICE SOIL SURVEY

Soil survey data for Hennepin County was obtained and reviewed prior to the delineation. Table 2 provides a list of the mapped soils in the project area. Figure 3 in Appendix A depicts USDA Natural Resources Conservation Service mapped soils within the project categorized by total percentage of hydric components.

Table 2. Summary of mapped soil units in the project area.

MAP UNIT SYMBOL	MAP UNIT NAME	HYDRIC STATUS	HYDRIC RATING	DRAINAGE CLASSIFICATION	PERCENT COVER
L40B	Angus-Kilkenny complex, 2 to 6 percent slopes	5%	Hydric Soil Unit	Well drained	30%
L41D2	Lester-Kilkenny complex, 10 to 16 percent slopes, moderately eroded	5%	Non-Hydric Soil Unit	Well drained	29%
L41E	Lester-Kilkenny complex, 16 to 22 percent slopes	5%	Non-Hydric Soil Unit	Well drained	20%
L22D2	Lester loam, 10 to 16 percent slopes, moderately eroded	0%	Non-Hydric Soil Unit	Well drained	19%
L41C2	Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded	5%	Non-Hydric Soil Unit	Well drained	1%

Hydric soils are defined in the *Field Indicators of Hydric Soils in the United States: Guide for Identifying and Delineating Hydric Soils, version 8.2, 2018*; The *1987 United States Army Corps of Engineers Wetlands Delineation Manual;* and The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).*

MINNESOTA DEPARTMENT OF NATURAL RESOURCES PUBLIC WATER INVENTORY

The Minnesota Department of Natural Resources Public Water Inventory for Hennepin County does not identify public water in the project extent (Appendix A, Figure 4).

30-DAY ROLLING PRECIPITATION DATA

A review of the 30-day rolling precipitation data collected from the University of Minnesota Climatology Working Group (Appendix D) indicates that precipitation totals for the weeks prior to the site visit were above the range of average in the general project area. The overall hydrologic conditions were suitable, however, for completing an accurate wetland determination and boundary delineation.

RESOURCE 1

FIELD DELINEATED 5/18/2022

FIELD INVESTIGATION CONCLUSION[1]

Viewing Southwest | Gradual Transition to Wetland

Wetland	RESOURCE TYPE
0.27-Acre	TOTAL AREA WITHIN ECB
1.5-Acres	TOTAL EST. AREA
Floodplain Forest/Fresh Wet Meadow/Shallow Marsh	EGGERS & REED
Type 1/2/3	CIRCULAR 39
PEM1C/B/FO1A	COWARDIN
Manage 1	MnRAM[2]

DOMINANT HYDROPHYTIC VEGETATION	
Juglans nigra	Black walnut
Fraxinus pennsylvanica	Green ash
Acer saccharum	Sugar maple
Rhamnus cathartica	European buckthorn
Phalaris arundinacea	Reed canary grass
Urtica dioica	Stinging nettle

HYDRIC SOIL INDICATORS	
Redox Dark Surface	F6

WETLAND HYDROLOGY DETERMINATION	
High Water Table	A2
Saturation	A3
Water Stained Leaves	B9
Geomorphic Position	D2
FAC-Neutral Test	D5

DESKTOP REVIEW

HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Lester loam, 10 to 16 percent slopes, moderately eroded (L22D2)
NATIONAL WETLAND INVENTORY	PEM1C
PUBLIC WATER INVENTORY	None

DISCUSSION

RATIONALE FOR DETERMINATION	The resource consists of a Type 2, PEM1B, Fresh Wet Meadow wetland fringed by a Type 1, PFO1A, Floodplain Forest wetland that leads south to a Type 3, PEM1C, Shallow Marsh basin. The wetland is dominated by reed canary grass and stinging nettle, with a shrub layer dominated by European buckthorn and a tree stratum dominated by green ash and boxelder. The wetland receives hydrology via a culvert to the north that runs under Watertown Road and overland flow from upland areas. The transition to upland was determined based on a lack of hydric soils and wetland hydrology. Upland areas were dominated by an herbaceous layer of eastern prickly gooseberry and garlic mustard, shrub stratum of European buckthorn and a tree stratum dominated by sugar maple and black walnut.
ATYPICAL/PROBLEMATIC CONDITIONS	Analysis of antecedent precipitation showed the 30-day rolling total was above the normal monthly average at the time of field visit, however, conditions were deemed suitable for delineation.
CONSISTENCY WITH DESKTOP REVIEW	NWI inventoried areas were found to be generally correct; however, additional wetland was identified bordering and north of the PEM1C basin.

[1] Appendix B contains wetland determination data forms supporting this investigated resource:

Wet Point(s): 1A
Up Point(s): 1B

[2] Appendix E contains MnRAM output

CONCLUSION

A total of one wetland, or portions thereof, was identified and delineated within the project area and in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual.

Project area aquatic resources may be regulated by several agencies at the local, state, and/or federal level. Activities which may potentially impact wetlands should be discussed in advance with the appropriate regulating agency regarding potential permit requirements. The Local Government Unit (LGU) responsible for implementing the Minnesota Wetland Conservation Act at this project location is in the Minnehaha Creek Watershed District.

The Watershed District may require vegetated buffers around all regulated wetland areas. Wetland buffers must meet the standards specified by the Watershed District for any project that is regulated under the Wetland Conservation Act.

This wetland investigation meets the standards and criteria described in the 1987 United States Army Corps of Engineers Wetland Delineation Manual and all applicable subsequent guidance for an on-site determination. The results reflect the conditions present at the time of the delineation.

I certify that I performed the field analysis and/or wrote the report for this wetland determination.

Wyatt Benton — May 24, 2022

Wyatt Benton
Environmental Scientist
Date

I certify that I performed the field analysis and/or wrote the report for this wetland determination.

Dylan Kruzel — May 24, 2022

Dylan Kruzel
Environmental Scientist
Date

I certify that I performed the field analysis and/or reviewed work completed by above staff.

Benjamin J. Hodapp — May 24, 2022

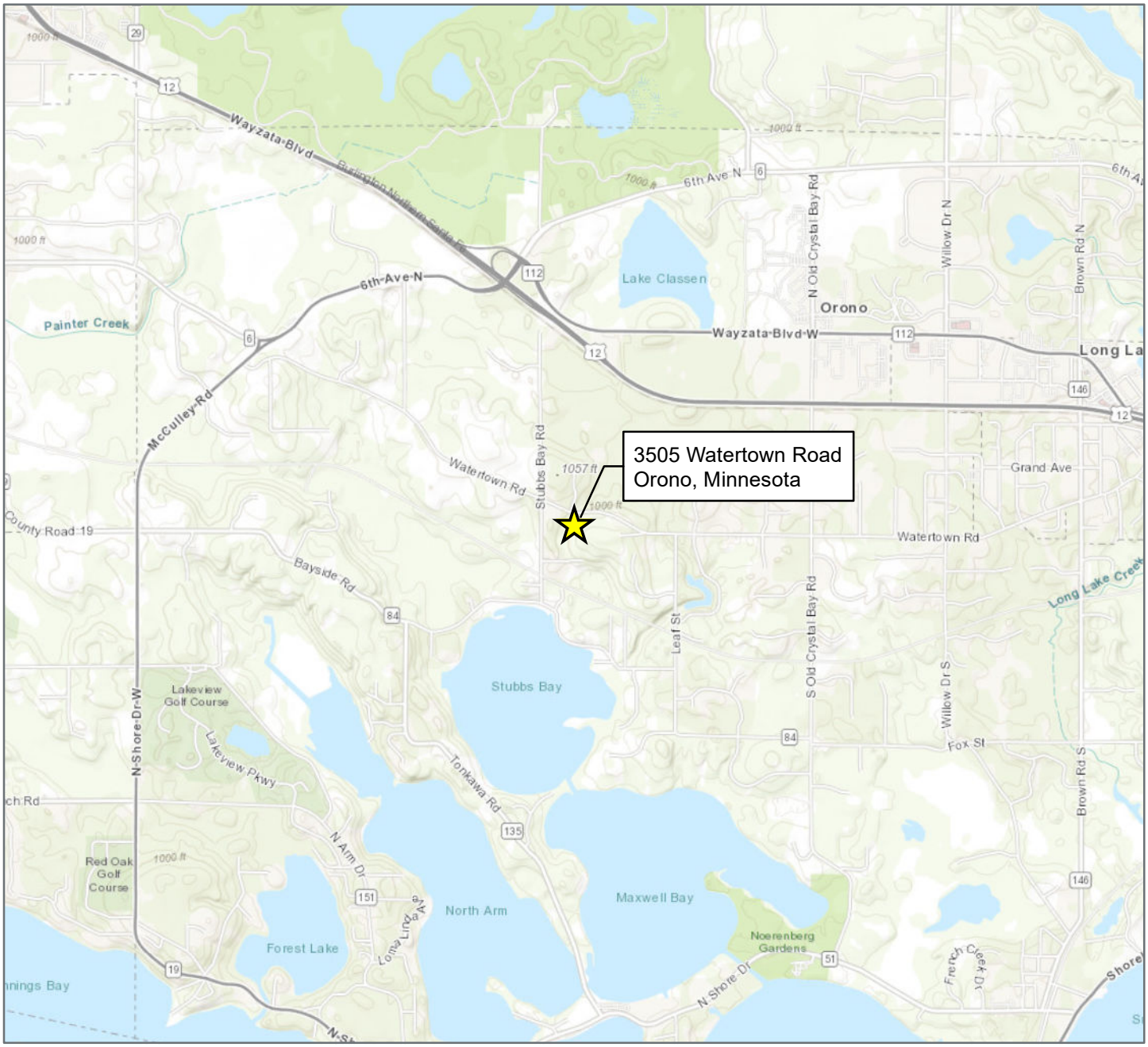
Benjamin J. Hodapp
Environmental Services Manager
MN Certified Wetland Delineator #1016
Date

Appendix A

FIGURES

Watertown Road Property
Orono, Minnesota

Figure 1
Project Location



Legend

Project Location

Address: 3505 Watertown Road
Orono, Minnesota
Lat/Long: 44.9791,-93.6122
PID: 3211823430007
Project No: 16982
Date: 5.12.2022

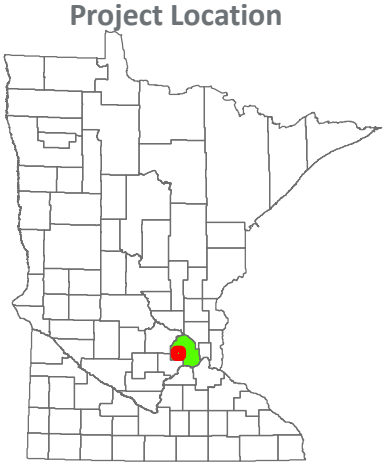
1 inch = 3,000 feet

0 1,500 3,000 6,000

Feet

ANDERSON
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090 **ae-mn**.com

Project Location



City of Orono
Hennepin County, MN

SOURCE: MN DNR, USDA, ESRI, TIGER, Bing, Hennepin Co., Anderson Engineering

Watertown Road Property
Orono, Minnesota

Figure 2
National Wetland Inventory

Legend

- Project Parcel
- Hennepin Co. Parcels
- National Wetland Inventory

Address: 3505 Watertown Road
Orono, Minnesota
Lat/Long: 44.9791,-93.6122
PID: 3211823430007
Project No: 16982
Date: 5.12.2022

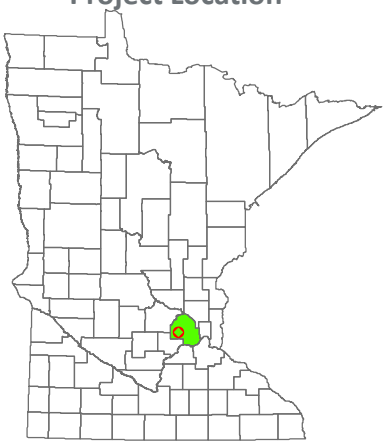
1 inch = 200 feet

0 100 200 400

Feet

ANDERSON
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090 **ae-mn**.com

Project Location

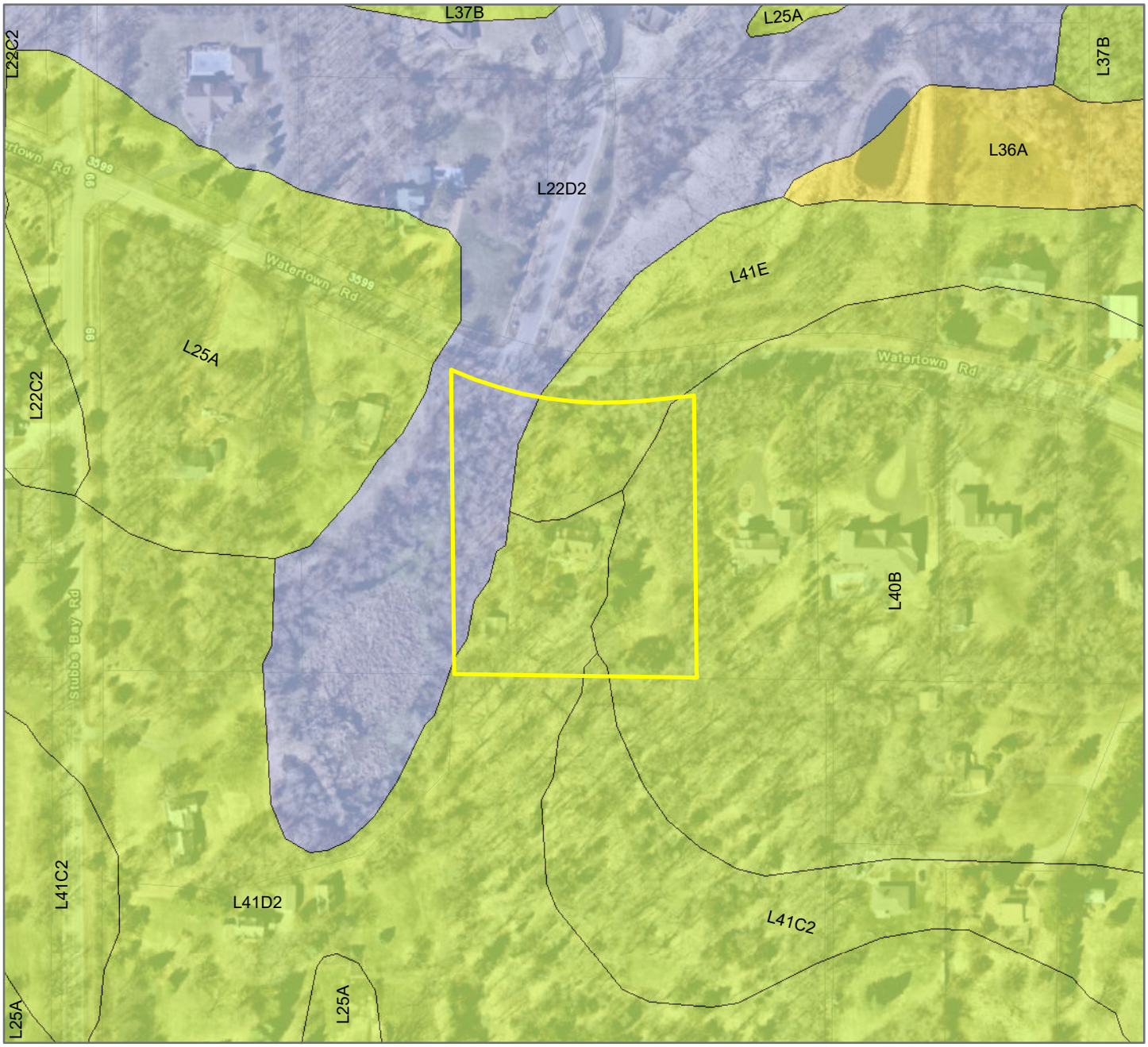


City of Orono
Hennepin County, MN

SOURCE: MN DNR, USDA, ESRI, TIGER, Bing, Hennepin Co., Anderson Engineering

Watertown Road Property
Orono, Minnesota

Figure 3
Hennepin Co. Soil Survey



Legend

- Project Parcel
- Hennepin Co. Parcels

Hydric Rating by Map Unit

- 0% Hydric Components
- 1-32% Hydric Components
- 33-65% Hydric Components
- 66-99% Hydric Components
- 100% Hydric Components

Address: 3505 Watertown Road
Orono, Minnesota
Lat/Long: 44.9791,-93.6122
PID: 3211823430007
Project No: 16982
Date: 5.12.2022

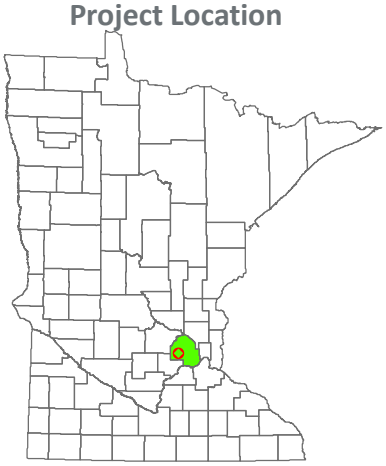
1 inch = 200 feet

0 100 200 400

Feet

ANDERSON
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090 **ae-mn**.com

Project Location



City of Orono
Hennepin County, MN

SOURCE: MN DNR, USDA, ESRI, TIGER, Bing, Hennepin Co., Anderson Engineering

Watertown Road Property
Orono, Minnesota

Figure 4
MnDNR Public Water Inventory

Legend

- Project Parcel
- Hennepin Co. Parcels
- MN DNR Inventoried Public Watercourse
- MN DNR Inventoried Public Waterbasin

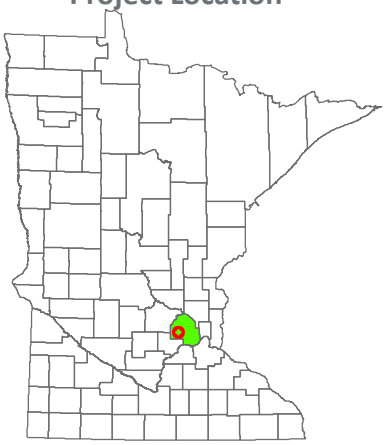
Address: 3505 Watertown Road
Orono, Minnesota
Lat/Long: 44.9791,-93.6122
PID: 3211823430007
Project No: 16982
Date: 5.12.2022

1 inch = 1,000 feet

0 500 1,000 2,000

Feet

Project Location



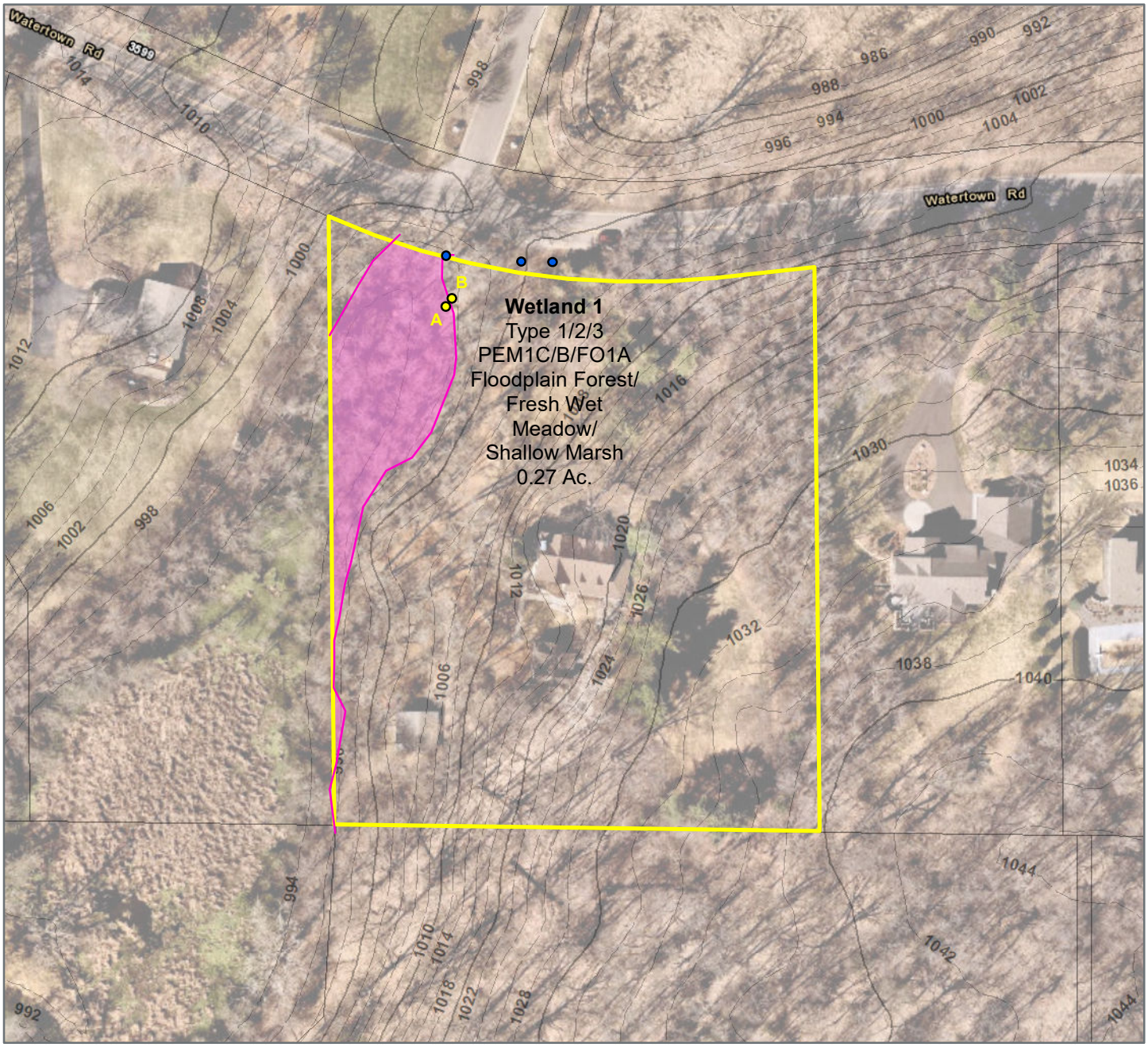
City of Orono
Hennepin County, MN

ANDERSON
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090 **ae-mn**.com

SOURCE: MN DNR, USDA, ESRI, TIGER, Bing, Hennepin Co., Anderson Engineering

Watertown Road Property
Orono, Minnesota

Figure 5
Delineation



Legend

- Project Parcel
- Hennepin Co. Parcels
- Wetland Field Delineated May 18th, 2022
- Sample Point
- Culvert

Address: 3505 Watertown Road
Orono, Minnesota
Lat/Long: 44.9791,-93.6122
PID: 3211823430007
Project No: 16982
Date: 5.24.2022

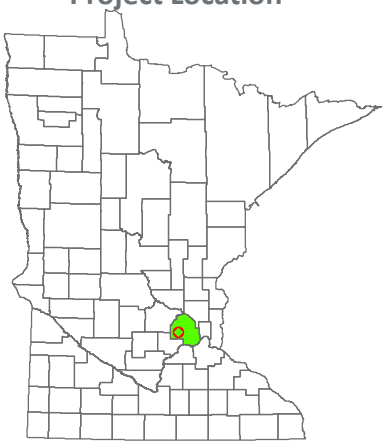
1 inch = 100 feet

0 50 100 200

Feet

ANDERSON
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 **F** 763.412.4090 **ae-mn**.com

Project Location



City of Orono
Hennepin County, MN

SOURCE: MN DNR, USDA, ESRI, TIGER, Bing, Hennepin Co., Anderson Engineering

Appendix B

ROUTINE ON-SITE DETERMINATION METHOD DATASHEETS

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 3505 Watertown Road (PID: 3211823430007) City/County: Orono/Hennepin Sampling Date: 05/18/2022
Applicant/Owner: Topo LLC State: MN Sampling Point: 1A
Investigator(s): Wyatt Benton, Dylan Kruzel Section, Township, Range: S32, T118N, R23W
Landform (hillslope, terrace, etc): TS Local relief (concave, convex, none): concave
Slope(%): 1 Lat: 44.97956879 Long: -93.61253537 Datum: WGS 84
Soil Map Unit Name: L22D2 NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Type 1/2/3, PEM1C/B/FO1A, Floodplain Forest/Fresh Wet Meadow/Shallow Marsh. Antecedent precipitation was above the normal monthly average at the time of field visit, however, conditions were deemed suitable for delineation.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra* / Black walnut	50	Yes	FACU
2. *Fraxinus pennsylvanica* / Green ash	20	Yes	FACW
3. *Acer saccharum* / Sugar maple	20	Yes	FACU
4. *Acer negundo* / Boxelder, Box elder	5	No	FAC
5.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft)			
1. *Rhamnus cathartica* / European buckthorn	40	Yes	FAC
2. *Juglans nigra* / Black walnut	20	Yes	FACU
3.			
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 5-ft)			
1. *Urtica dioica* / Stinging nettle	20	Yes	FACW
2. *Phalaris arundinacea* / Reed canarygrass, Reed canary gras	20	Yes	FACW
3. *Alliaria petiolata* / Garlic-mustard	10	No	FAC
4. *Arisaema triphyllum* / Jack-in-the-pulpit	5	No	FACW
5. *Toxicodendron radicans* / Eastern poison ivy	2	No	FAC
6.			
7.			
8.			
9.			
10.			
	57	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	57	x 3 =	171
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	212 (A)		661 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: 1A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	95	10YR 3/6	5	C	M	Loam	
12-24	10YR 2/1	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes X No ___ Depth (inches): 5

Saturation Present? Yes X No ___ Depth (inches): 3

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 3505 Watertown Road (PID: 3211823430007) City/County: Orono/Hennepin Sampling Date: 05/18/2022
Applicant/Owner: Topo LLC State: MN Sampling Point: 1B
Investigator(s): Wyatt Benton, Dylan Kruzel Section, Township, Range: S32, T118N, R23W
Landform (hillslope, terrace, etc): BS Local relief (concave, convex, none): none
Slope(%): 6 Lat: 44.9795916 Long: -93.61255219 Datum: WGS 84
Soil Map Unit Name: L22D2 NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Antecedent precipitation was above the normal monthly average at the time of field visit, however, conditions were deemed suitable for delineation.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum* / Sugar maple	40	Yes	FACU
2. *Juglans nigra* / Black walnut	40	Yes	FACU
3. *Fraxinus pennsylvanica* / Green ash	10	No	FACW
4. *Acer negundo* / Boxelder, Box elder	5	No	FAC
5.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. *Rhamnus cathartica* / European buckthorn	20	Yes	FAC
2. *Juglans nigra* / Black walnut	5	No	FACU
3. *Fraxinus pennsylvanica* / Green ash	5	No	FACW
4.			
5.			
	30	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. *Ribes cynosbati* / Eastern prickly gooseberry	30	Yes	FAC
2. *Alliaria petiolata* / Garlic-mustard	20	Yes	FAC
3. *Hydrophyllum virginianum* / Shawnee-salad	10	No	FAC
4. *Urtica dioica* / Stinging nettle	10	No	FACW
5. *Galium triflorum* / Sweet bedstraw, Sweet-scented bedstraw	5	No	FACU
6.			
7.			
8.			
9.			
10.			
	75	= Total Cover	

Woody Vine Stratum (Plot size: 30-ft)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0 (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	25	x 2 =	50	
FAC species	85	x 3 =	255	
FACU species	90	x 4 =	360	
UPL species	0	x 5 =	0	
Column Totals:	200	(A)	665	(B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: 1B

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loam	
8-18	10YR 3/1	100					Loam	
18-44	10YR 2/1	98	10YR 3/6	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Hit extent of sampling equipment at 44 inches. Soil assumed non-hydric based on lack of wetland hydrology, non-hydric soil map unit and best professional judgment.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes X No _____ Depth (inches): 16

Saturation Present? Yes X No _____ Depth (inches): 14

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

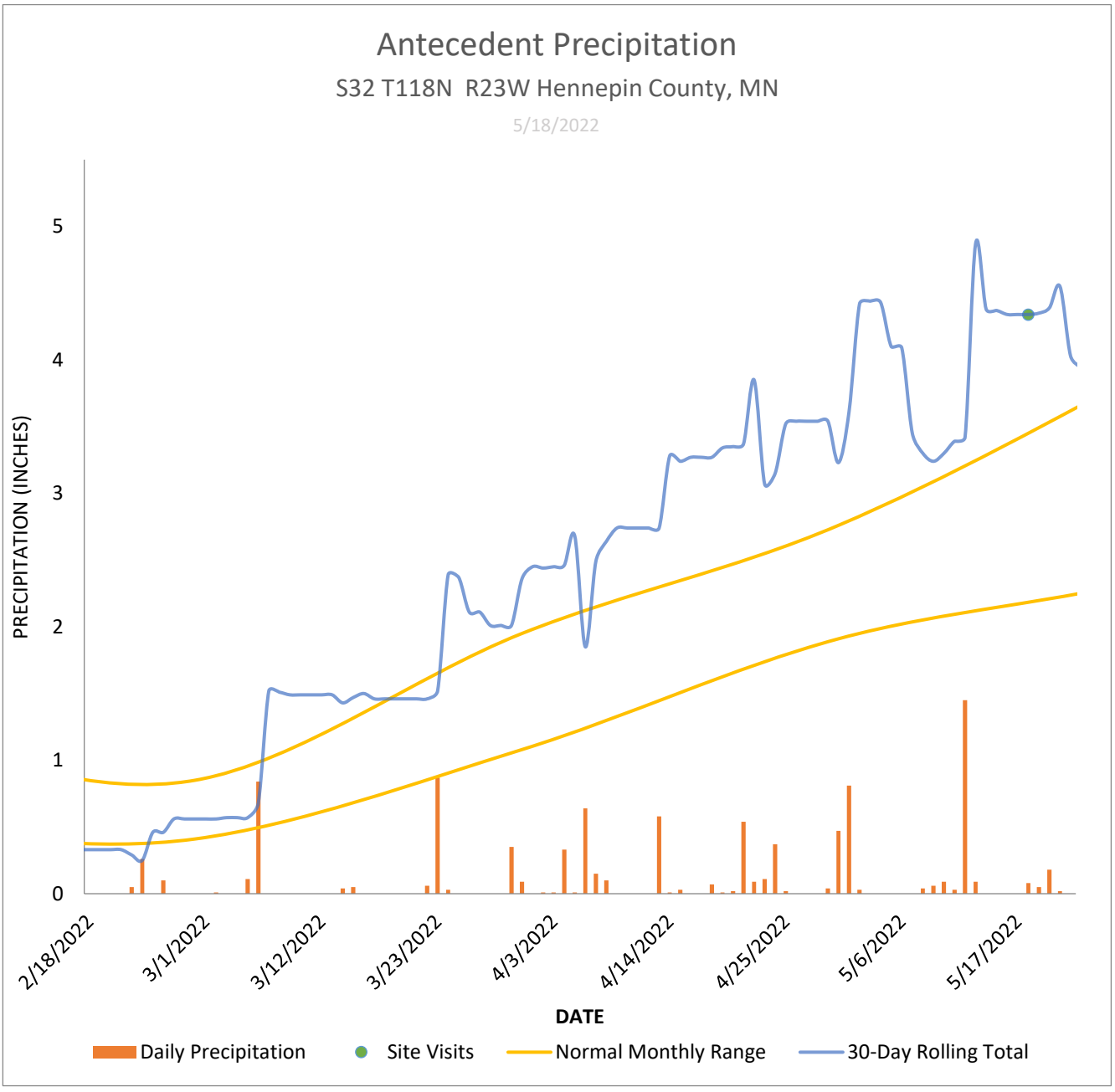
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

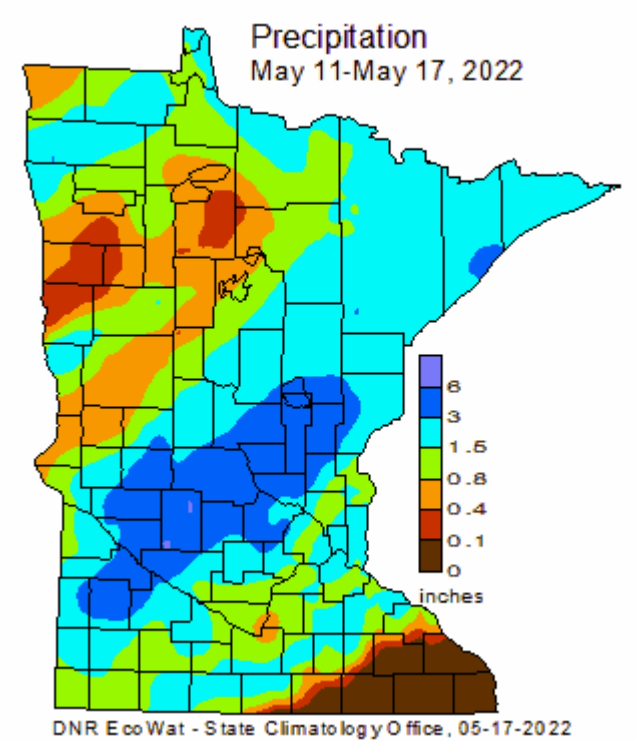
ANTECEDENT PRECIPITATION RECORD

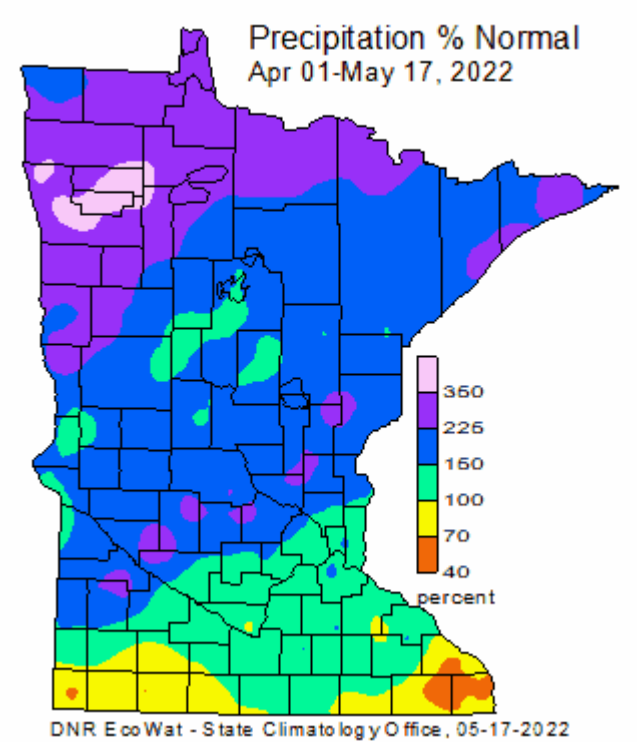
Appendix C, Figure 1. Graph of recent precipitation in comparison with the normal range of precipitation in the general site location. Daily precipitation data is plotted independently and as a 30-day rolling total up to the date of the site visit. The normal range is plotted from precipitation data recorded from 1981 to 2010. The normal range is represented in this graph with two lines, the 30th percentile and the 70th percentile of the period-of-record data distribution.

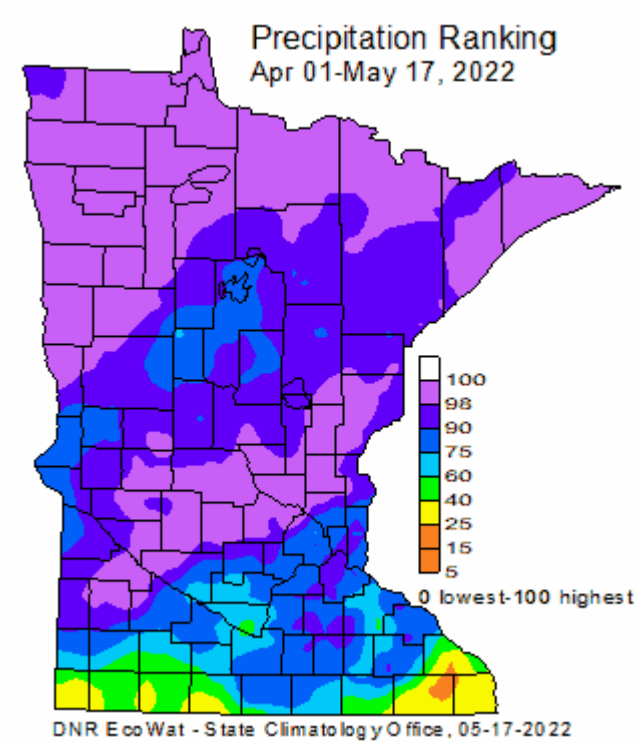


Source: http://climate.umn.edu/

Appendix C, Figure 2. Minnesota State Climatology Office map depicting total precipitation for the week of the site visit.







Source: https://www.dnr.state.mn.us/climate/weekmap/maps-produced-may-17-2022.html

Appendix D

MINNESOTA ROUTINE ASSESSMENT METHODOLOGY (MnRAM)

MnRAM 3.2 Digital Worksheet, Side 2

		Question Description	User entry	Rating								
	1	Veg. Table 2, Option 4		0.10								
		TOTAL VEG Rating	0.1	L								
	4	Listed, rare, special plant species?	n	next								
	5	Rare community or habitat?	n	next								
	6	Pre-European-settlement conditions?	n	next								
	7	hydrogeo & topo	FT	Depress'l/Flow-through								
	8	Water depth (inches)	4									
		Water depth (% inundation)	40%									
	9	Local watershed/immedita drainage (acres)	10									
	10	Existing wetland size	1.5									
Digital worksheet, section I	11	SOILS: Up/Wetland (survey classification + site)										
	12	Outlet characteristics for flood retention	A	1								
	13	Outlet characteristics for hydrologic regime	A	1								
	14	Dominant upland land use (within 500 ft)	B	0.5	0.5							
	15	Soil condition (wetland)	B	0.5								
	16	Vegetation (% cover)	95%	H	1							
	17	Emerg. veg. flood resistance	B	0.5								
	18	Sediment delivery	A	1								
	19	Upland soils (based on soil group)	C	1								
	20	Stormwater runoff pretreatment & detention	C	0.1	1							
	21	Subwatershed wetland density	C	0.1								
	22	Channels/sheet flow	A	1								
	23	Adjacent naturalized buffer average width (feet)	100	H	WQ	1	M	0.5				
	24	Adjacent Area Management: % Full	50%	0.5	3	**0.67**						
		adjacent area mgmt: % Manicured	30%	0.15								
		adjacent area mgmt: % Bare	20%	0.02								
	25	Adjacent Area Diversity & Structure: % Native	0%	0	2	**0.38**						
		adjacent area diversity: % Mixed	70%	0.35								
		adjacent area diversity: % Sparse/Inv./Exotic	30%	0.03								
	26	Adjacent Area Slope: % Gentle	20%	0.2	3	**0.44**						
		adjacent area slope: % Moderate	40%	0.2								
		adjacent area slope: % Steep	40%	0.04								
Digital worksheet, section II	27	Downstream sensitivity/WQ protection	A	1								
	28	Nutrient loading	B	0.5								
	29	Shoreline wetland?	N	N								
	30	Rooted shoreline vegetation (%cover)		Enter a percentage								
	31	Wetland in-water width (in feet, average)		Enter a percentage								
	32	Emergent vegetation erosion resistance		Enter valid choice								
	33	Shoreline erosion potential		Enter valid cho								
	34	Bank protection/upslope veg.		Enter valid choice								
	35	Rare Wildlife	N	N								
	36	Scarce/Rare/S1/S2 local community	N	N								
	37	Vegetation interspersion cover (see diagram 1)	1	L	0.1							
	38	Community interspersion (see diagram 2)	1	L	0.1				0			
	39	Wetland detritus	B	0.5								
	40	Wetland interspersion on landscape	A	1	0.5							
	41	Wildlife barriers	B	0.5								
	42	Amphibian breeding potential-hydroperiod	A	1								
	43	Amphibian breeding potential--fish presence	A	1								
	44	Amphibian & reptile overwintering habitat	C	0.1								
	45	Wildlife species (list)										
	46	Fish habitat quality	N/A	N/A								
	47	Fish species (list)										
	48	Unique/rare educ./cultural/rec.opportunity	N	N								
	49	Wetland visibility	B	0.5								
	50	Proximity to population	N	0.1								
	51	Public ownership	C	0.1								
	52	Public access	C	0.1								
	53	Human influence on wetland	B	0.5								
	54	Human influence on viewshed	B	0.5								
	55	Spatial buffer	B	0.5								
	56	Recreational activity potential	C	0.1								
	57	Commercial crop--hydrologic impact	N/A	N/A								

This comes in from Side 1 automatically using the weighted average. To use the highest rated veg. Community rating, please manually overwrite that value (shown to the right) into the field at E5.

Highest-rated: 0.1

Enter data starting here. Yellow boxes are used in calculations.

Scroll down to answer more questions and see formula calculations

Additional questions

58	*GW - Wetland soils*	R	R or D	0.1
59	*GW - Subwatershed land use*	D	R or D	1
60	*GW - Wetland size and soil group*	R	R or D	0.1
61	GW - Wetland hydroperiod	R	R or D	0.1
62	GW - Inlet/Outlet configuration	R	R or D	0.1
63	GW - Surrounding upland topographic relief	R	R or D	0.1
64	Restoration potential w/o flooding	N	Y or N	1.5
65	*Landowners affected by restoration*		*E a b c*	Enter valid choice
66A	*Existing wetland size (acres) [from #10]*	1.5	__ acres	
66B	Total wetland restoration size (acres)		__ acres	0.1
66C	(Calculated) Potential New Wetland Area [B-A]	-1.5	__ acres	% effectively drained: ####
67	Average width of naturalized upland buffer (poter	0	__ feet	0.1 value: ####
68	Likelihood of restoration success		a b c	Enter valid choice
69	Hydrologic alteration type		Outlet, Tile, Ditch, GW pump, Wtrshd div., Filling	
70	Potential wetland type (Circ. 39)		1, 2, 3, 4, 5, 6, 7, 8	
71	Wetland sensitivity to stormwater	B	E a b c	
72	Additional stormwater treatment needs	A	a b c	

Functional Rating Summaries

Function Name	Raw score	Final Rating	Rating Category
Vegetative Diversity/Integrity		0.10	L
Hydrology - Characteristic		0.75	High
Flood Attenuation		0.69	High
Water Quality--Downstream		0.72	High
Water Quality--Wetland		0.56	Med
Shoreline Protection		N/A	N/A
Characteristic Wildlife Habitat Structure	0.49	0.49	Med
Maintenance of Characteristic Fish Habitat	######	N/A	N/A
Maintenance of Characteristic Amphibian Habitat		0.52	Med
Aesthetics/Recreation/Education/Cultural	0.30	0.30	Low
Commercial use		N/A	N/A

Formula shown to the right.

0

Special Features listing: -

Groundwater Interaction	recharge	
Groundwater Functional Index		no special indicators
Restoration Potential (draft formula)	N/A	N/A
Stormwater Sensitivity (not active)		

Manage 1