WETLAND DELINEATION REPORT

11/17/2021

2021-402

4423 North Shore Drive Delineation

Orono, MN

Jacobson Environmental, PLLC

jacobsonenv@msn.com

Jacobson Environmental, PLLC www.jacobsonenvironmental.com
Environmental Consultants Wayne Jacobson, P.S.S., W.D.C., P.W.S., A.F.S.

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Table of Contents

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1.0 SUMMARY

Jacobson Environmental, PLLC (JE) visited the project site at 4423 North Shore Drive on 11/17/2021. The site was approximately 1.41 acres in size, and was located at Section 7, T117N, R23W, Orono, Minnesota. See Figure 1 for a Site Location Map.

The purpose of the investigation was to identify areas within the project boundary meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitat according to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation: Midwest Region.

Wetlands are areas that are saturated or inundated with surface and or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in hydric soil conditions. Examples of wetlands include seasonally flooded basins, floodplain forests, wet meadows, shallow and deep marshes, shrub swamps, wooded swamps, fens, and bogs.

Wetland boundaries were determined through a routine analysis of the vegetation, soils and hydrology which must all show wetland characteristics for an area to be delineated as a wetland.

One basin was delineated within the project area, which is summarized below and shown on Figure 5.

Basin ID	Circular 39	Cowardin	Eggers & Reed	Dominant Vegetation	Size (acres)
1	Type 5	PUBH	Open Water Pond	Riprap and Blue Green Algae	0.273

All figures and appendices referenced by this report are presented at the end of the text.

This wetland delineation was performed by Jacobson Environmental, PLLC under the direction of Wayne Jacobson, Minnesota Professional Soil Scientist #30611, Society of Wetland Scientists – Professional Wetland Scientist #1000, University of Minnesota / BWSR Wetland Delineator, Certified #1019, American Fisheries Society – Associate Fisheries Scientist #A-171.

2.0 METHODS

2.1 EXISTING INFORMATION REVIEW

Prior to field delineation, Jacobson Environmental reviewed the following information:

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2.1.1 Antecedent Precipitation

The previous three month's precipitation data obtained from the Minnesota State Climatology Office suggest that the sampling period occurred under normal conditions. Antecedent precipitation data can be found in Appendix A. The growing season in this area is approximately from mid-April to mid-October, when the air temperature averages above 28 degrees F. This delineation was completed during the growing season.

2.1.2 National Wetlands Inventory

The National Wetlands Inventory (NWI) identified one, R2UPFx wetland complex within the property boundary (Figure 2).

2.1.3 Web Soil Survey

The National Resource Conservation Service Web Soil Survey (Figure 7) identified the following soils:

Soil	Hydric Rating
Lester-Kilkenny 6%-10% slopes	5
Lester-Kilkenny 10%-16% slopes	5
Lester-Kilkenny 16%-22% slopes	5

2.1.4 Public Waters Inventory

The Minnesota Department of Natural Resources Public Waters Inventory shows that two, Minnetonka West-arm and Forest public water exists on the property (Figure 4).

2.1.5 Topographic Map

A topographic map with aerial photo overlay was obtained from Hennepin County (Figure 6). This map was reviewed for suspected wetland areas based on topography and vegetative cover.

2.2 FIELD DELINEATION

The wetlands on the subject property were delineated using the routine determination methodology set forth in the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation: Midwest Region as follows:

1) The vegetative community was sampled in all present strata to determine whether 50% of the dominant plant species were hydrophytic using the 50/20 method.

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2) Soil pits were dug using a Dutch auger to depths of 18"-40", noting soil profiles and any hydric soil characteristics.

3) Signs of wetland hydrology were noted and were compared to field criteria such as depth to shallow water table and depth of soil saturation found in the soil pits.

Transects were established in representative areas of each wetland. Each transect consisted of one sample point within the wetland and one sample point in upland. Other areas which have one or more of the wetland vegetation, soils, or hydrologic characteristics present, or where questionable conditions exist may also have been sampled. Data sheets for each sample point are available in Appendix B.

Wetland classifications discussed in the text are set forth in *Wetlands and Deepwater Habitats of the United States* (FWS/OBS Publication 79/31, Cowardin et al. 1979) and *Wetlands of the United States* (USFWS Circular 39, Shaw and Fredine, 1971.) Additionally, plant community types as named by Eggers and Reed (1998) are given.

Wetland edges were marked with orange numbered pin flags. 4-foot wood lath marked with orange "wetland boundary" flagging tape or flagging tied on vegetation may be used if site conditions warrant. Sample points are marked with orange numbered pin flags.

Any wetlands or sample points were mapped using GPS.

2.2.1 Vegetation

The plant species within the parcel were cataloged and assigned a wetland indicator status according to: Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin, 2016. *The National Wetland Plant List:* 2016 Wetland Ratings, Phytoneuron 2016-30: 1-17.

In the text of this report and on the enclosed data forms, the plant indicator status follows the plant's scientific name unless a status has not been assigned. The hydrophytic plant criterion is met when more than 50 percent of the dominant species by the 50/20 rule for each stratum (herb, shrub/sapling, tree, and woody vine) were assigned an obligate (OBL)[1], facultative wet (FACW), and/or facultative (FAC) wetland status.

With the 50/20 rule, dominants are generally measured by absolute % cover in each stratum which individually or collectively account for more than 50% of total vegetative cover in the stratum, plus any other species which itself accounts for at least 20% of the total vegetative cover.

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[1] OBL=Obligate Wetland, occurs an estimated 99% in wetlands. FACW=Facultative Wetland, has an estimated 67%-99% probability of occurrence in wetlands. FAC=Facultative, is equally likely to occur in wetlands and non-wetlands, 34%-66% probability. FACU=Facultative Upland, occurs in wetlands only occasionally, 1%-23% probability. UPL=Upland, almost never occurs in wetlands, <1% probability. NI= No Indicator, insufficient information available to determine an indicator status. Positive or negative sign previously indicated a frequency toward higher (+) or lower (-) frequency of occurrence within a category.

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2.2.2 Hydric Soils

A hydric soil is a soil formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. If a soil exhibits the indicators of a hydric soil or is identified as a hydric soil the hydric soil criterion is met.

The break between hydric and non-hydric soils was determined by excavating soil pits along transects crossing the wetland/upland eco-tone and evaluating the soil colors, textures, and presence or absence of redoximorphic indicators (i.e., mottles, gley or oxidized rhizospheres). Hydric Soil Indicators for the Midwest Region were noted as presented in the National Technical Committee for Hydric Soils *Field Indicators of Hydric Soils in the United States version 8.1* (USDA NRCS 2017) if present at each sample point. Upper soil profiles were also compared to the mapped or inclusionary soil series found in the sample area for soil identification purposes.

2.2.3 Cautions Used in Applying the Field Indicators of Hydric Soils

There are hydric soils with morphologies that are difficult to interpret. These include soils with black, gray, or red parent material; soils with high pH; soils high or low in content of organic matter; recently developed hydric soils, and soils high in iron inputs. In some cases, we do not currently have indicators to assist in the identification of hydric soils in these situations. If the soil meets the definition of a hydric soil, the lack of an indicator does not preclude the soil from being hydric. The indicators were developed mostly to identify the boundary of hydric soil areas and generally work best on the margins. Not all the obviously wetter hydric soils will be identified by the indicators. Redoximorphic features are most likely to occur in soils that cycle between anaerobic (reduced) and aerobic (oxidized) conditions.

Morphological features of hydric soils indicate that saturation and anaerobic conditions have existed under either contemporary or former hydrologic regimes. Where soil morphology seems inconsistent with the landscape, vegetation, or observable hydrology, it may be necessary to obtain the assistance of an experienced soil or wetland scientist to determine whether the soil is hydric.

To clarify, when investigating hydric soils in this area, one must consider the following:

- Many of these soils have black or gray parent materials.
- Many of the soils have a high organic matter content.
- The hydric soil margin is typically higher than the wetland boundary margin on the site.
- Not all the obviously wetter soils will be identified by the indicators.
- Many of the hydric soils are Mollisols which are classic problem hydric soils in many cases.

3.0 RESULTS

3.1 WETLAND BASIN DESCRIPTIONS

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Basin 1

Basin 1 was an approximately 0.273 acres, Type 5, PUBH, Open Water Pond wetland. The basin was dominated by riprap and blue green algae.

Hydrology indicators included A2 (High Water Table) and A3 (Saturation).

Wetland soils met indicators A10 (2 cm Muck).

Adjacent upland was typically dominated by Kentucky bluegrass, common buckthorn, and American elm. Primary hydrology indicators were not observed at the upland sample point, and no hydric soil indicators were found in the upland sample point soil.

The wetland boundary followed a change in vegetation from wetland to upland plant communities, as well as a distinct change in topography. The basin was shown as a R2UPFx wetland on the NWI map (Figure 2) and was located within an area mapped as Lester-Kilkenny (Hydric Rating=5) and water by the Web Soil Survey (Figure 7).

Sample data sheets 1_Up and 1_Wet in Appendix B correspond to this basin.

4.0 CONFIRMATION OF JURISDICTIONAL STATUS

Jacobson Environmental is submitting this report to the client and regulatory agencies to request a wetland boundary and type determination. We have enclosed an official WCA Approval of Wetland Type and Boundary form in Appendix D along with a USCOE wetland delineation concurrence request.

5.0 CERTIFICATION

I certify that this wetland delineation meets the standards and criteria described in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation: Midwest Region. This was a Routine On-Site Determination and the results reflect the conditions present at the time of the delineation.

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I certify that this report has been prepared in accordance with regulatory standards. Thank you for the opportunity to provide wetland services on this important project.

If any wetland impacts are planned for this project, permits would be necessary from the LGU and other agencies.

Sincerely,

Wayne Jacobson, WDC, PSS
Wetland Delineator, Certified #1019
Professional Soil Scientist #30611
Jacobson Environmental, PLLC.

Figures

Hennepin County Property Map

Date: 11/15/2021

PARCEL ID: 0711723340001

OWNER NAME: Kingsbridge Properties Llc

PARCEL ADDRESS: 4423 North Shore Dr, Orono MN 55364

PARCEL AREA: 1.41 acres, 61,536 sq ft

A-T-B: Abstract

SALE PRICE: $1,575,000

SALE DATA: 10/2020

SALE CODE: Warranty Deed

ASSESSED 2020, PAYABLE 2021
PROPERTY TYPE: Residential
HOMESTEAD: Homestead
MARKET VALUE: $1,579,000
TAX TOTAL: $17,161.66

ASSESSED 2021, PAYABLE 2022
PROPERTY TYPE: Residential
HOMESTEAD: Homestead
MARKET VALUE: $1,592,000

Comments:

Figure 1 Site Location

This data (i) is furnished 'AS IS' with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this data.

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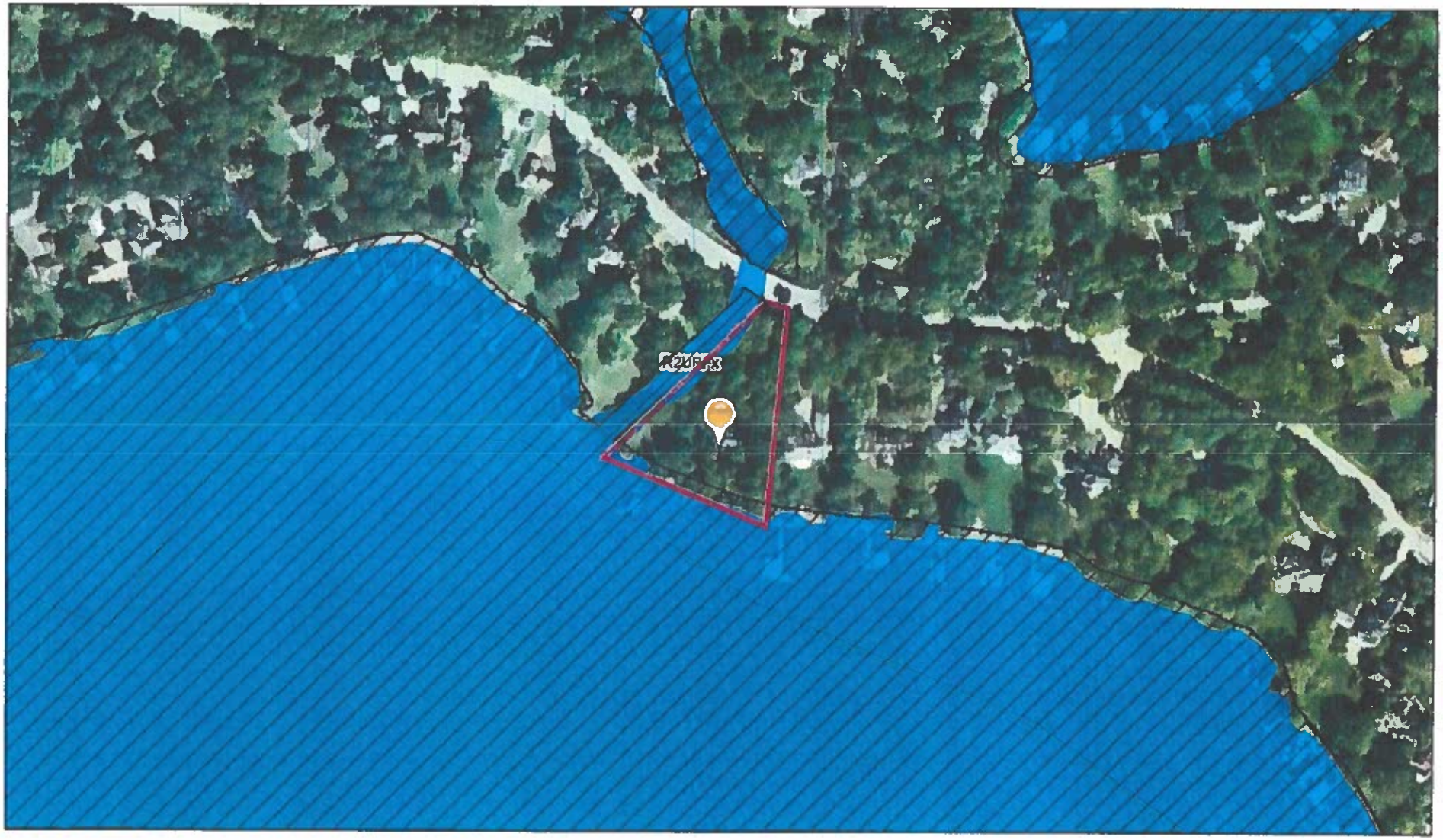
DEPARTMENT OF NATURAL RESOURCES

Figure 2 National Wetland Inventory



Cowardin Classification

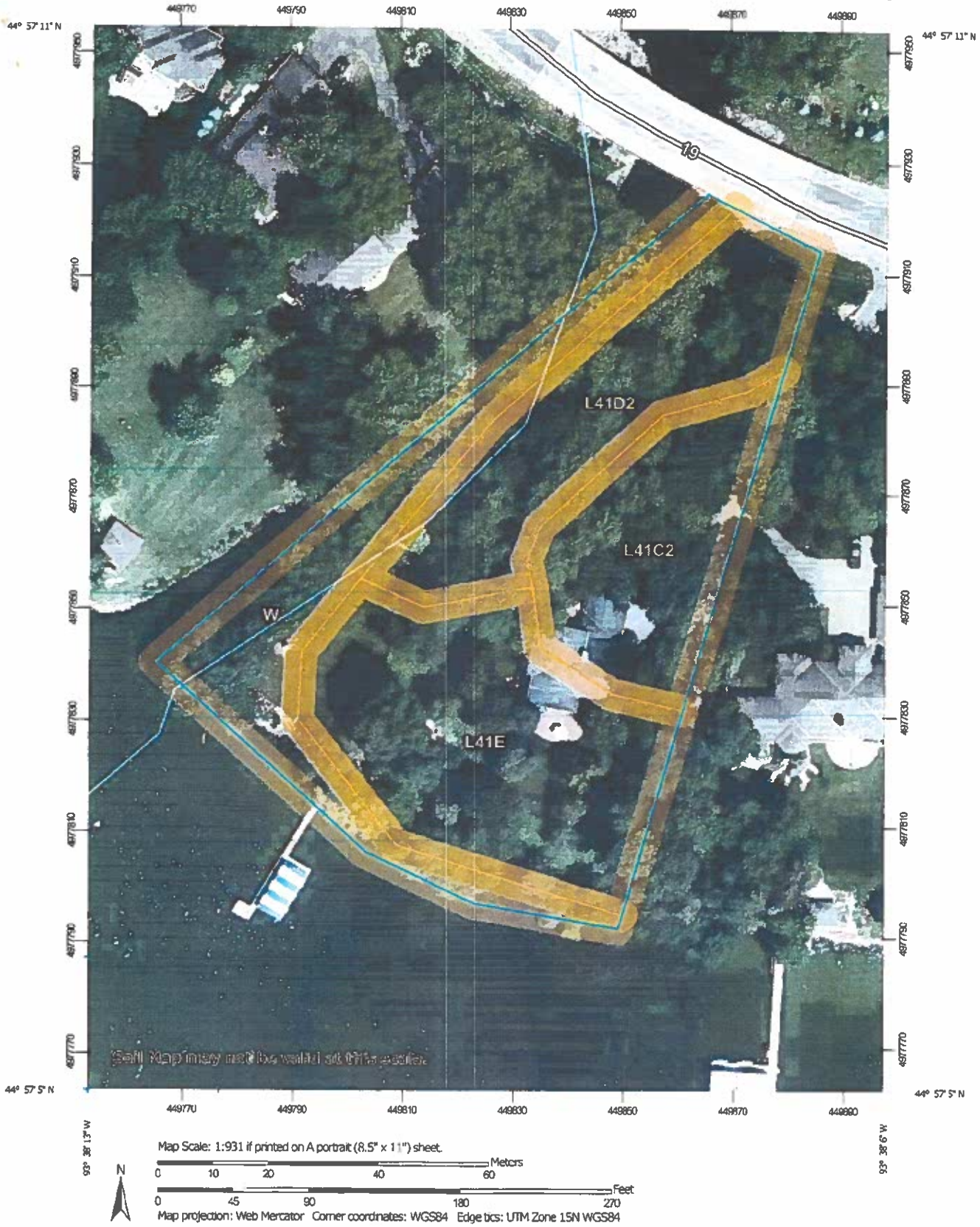
- Aquatic Bed/ Nonpersistent Emergent
- Emergent
- Forested
- Moss/Lichen
- Rock Bottom
- Rocky Shore
- Streambed (Intermittent)
- Scrub-Shrub
- Unconsolidated Bottom (Open Water)
- Unconsolidated Shore (Banks & Sandbars)
- Public Waters Basins
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse

0 0.05 0.1 0.2 mi

Date Printed: 11/15/2021

This map is for general reference only. Neither the state of Minnesota nor the Minnesota Department of Natural Resources make any representations or warranties with respect to the use of or reliance on the data. There are no guarantees as to the accuracy, currency, completeness, suitability or reliability of this data for any purpose.

Soil Map—Hennepin County, Minnesota
(Figure 3 Soils Map)



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
L41C2	Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded	0.4	19.5%
L41D2	Lester-Kilkenny complex, 10 to 16 percent slopes, moderately eroded	0.5	25.4%
L41E	Lester-Kilkenny complex, 16 to 22 percent slopes	0.7	33.3%
W	Water	0.4	21.8%
Totals for Area of Interest		**2.0**	**100.0%**

Figure 4 PWI Map

Figure 5 Delineation Map

Hennepin County Natural Resources Map

Date: 11/15/2021

Legend

2 Foot Elevation Contours

- Index
- Intermediate

PID: 0711723340001
Address: 4423 North Shore Dr,
Orono 55364
Owner: Kingsbridge Properties
Llc
Acres: 1.41

Comments:
Figure 6 Topographic Map

1 inch = 100 feet

N

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Hydric Rating by Map Unit—Hennepin County, Minnesota
(Figure 7 Hydric Rating Map)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hennepin County, Minnesota
Survey Area Data: Version 17, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 30, 2020—Jul 3, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
L41C2	Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded	5	0.4	19.5%
L41D2	Lester-Kilkenny complex, 10 to 16 percent slopes, moderately eroded	5	0.5	25.4%
L41E	Lester-Kilkenny complex, 16 to 22 percent slopes	5	0.7	33.3%
W	Water	0	0.4	21.8%
Totals for Area of Interest			**2.0**	**100.0%**

Appendix A

Antecedent Precipitation Data

Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Hennepin** township number: **117N**
township name: **Excelsior** range number: **23W**
nearest community: **Saga Hill** section number: **7**

Aerial photograph or site visit date:
Monday, November 15, 2021

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: **October 2021**	second prior month: **September 2021**	third prior month: **August 2021**
estimated precipitation total for this location:	**2.62R**	**2.82R**	**6.13R**
there is a 30% chance this location will have less than:	1.17	2.18	2.92
there is a 30% chance this location will have more than:	3.17	4.37	5.00
type of month: dry normal wet	**normal**	**normal**	**wet**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 3 = 3**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**13 (Normal)**		

Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- *Evaluating Antecedent Precipitation Conditions* (BWSR)

Appendix B

Sample Data Sheets

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 4423 North Shore Drive | City/County: Orono | Sampling Date: 11/17/2021
Applicant/Owner: Jonathan Blaseg | State: MN | Sampling Point: 1_Up
Investigator(s): Jessica Lillie | Section, Township, Range: Sec. 7, T117N, R23W
Landform (hillslope, terrace, etc.): Footlsope | Local relief (concave, convex, none): convex
Slope (%): 4% | Lat: | Long: | Datum:
Soil Map Unit Name: Lester-Kilkenny Complex | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ulmus americana*	25	Y	FACW
2			
3			
4			
5			
	25	= Total Cover	

Sapling/Shrub stratum (Plot size: 15)			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5)			
1 *Poa pratensis*	80	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	80	= Total Cover	

Woody vine stratum (Plot size: 30)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	105 (A)		290 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: 1_Up

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR2/2	100					loam	
18-24	10YR3/1	100					sandy loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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:

- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes ___	No	X	Depth (inches):	
Water table present?	Yes ___	No	X	Depth (inches):	>24
Saturation present? (includes capillary fringe)	Yes ___	No	X	Depth (inches):	>24

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 4423 North Shore Drive | City/County: Orono | Sampling Date: 11/17/2021
Applicant/Owner: Jonathan Blaseg | State: MN | Sampling Point: 1_Wet
Investigator(s): Jessica Lillie | Section, Township, Range: Sec. 7, T117N, R23N
Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave
Slope (%): 10% | Lat: | Long: | Datum:
Soil Map Unit Name: Lester-Kilkenny Complex, Water | NWI Classification: R2UPFx
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	If yes, optional wetland site ID:
Indicators of wetland hydrology present? Y	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15)			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5)			
1 *Typha angustifolia*	10	Y	OBL
2			
3			
4			
5			
6			
7			
8			
9			
10			
	10	= Total Cover	

Woody vine stratum (Plot size: 30)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	10 (A)		10 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

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

For Herb Stratum 30% of ground coverage is Riprap and 60% water.

SOIL

Sampling Point: 1_Wet

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR2/1	100					mucky loam	
8-24	10YR4/1	100					sandy loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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:

- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ 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): 8		
Saturation present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3		

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water (Lake Minnetonka) was present at bottom of the riprap slope. Underneath the riprap is mucky loam soil.

Appendix C

Site Photographs

Basin 1

1_Up

1_Wet

Appendix D

Wetland Type and Boundary Approval Forms

Project Name and/or Number: 2021-402

PART ONE: Applicant Information

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

Applicant/Landowner Name: Jonathan Blaseg
Mailing Address: 3242 Winpark Drive, Minneapolis, MN 55427
Phone: 612-226-3063
E-mail Address: jonathan@pebl.design

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

Agent Name: Wayne Jacobson, WDC, PSS Jacobson Environmental
Mailing Address: 5821 Humboldt Ave N Brooklyn Center, MN 55430
Phone: 612-802-6619
E-mail Address: jacobsonenv@msn.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Orono**
Parcel ID and/or Address: 4423 North Shore Drive
Legal Description (Section, Township, Range): Section 7, T117N, R23W
Lat/Long (decimal degrees):
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 1.41 acres

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

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

PART THREE: General Project/Site Information

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

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

Project Name and/or Number: 2021-402

PART FOUR: Aquatic Resource Impact[1] Summary

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

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]

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

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

PART FIVE: Applicant Signature

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

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

Signature: X _____ Date: 11/17/2021

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

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

Project Name and/or Number: 2021-402

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

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

☒ **Wetland Type Confirmation**

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

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

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

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

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

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

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

M.R. 8420.0315 A landowner may apply to the LGU for a no loss decision. The landowner must provide proof of the no loss which in this case is the delineation report that shows no wetlands on the property, just an adjacent waterbody, Lake Minnetonka, which is adjacent to the property down a steep rip-rapped bank. This was verified by the BWSR representative during the growing season of 2021 who agreed there were no wetlands on the property during a field inspection.

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

Per USCOE regulations we have attached a delineation map showing the Lake Minnetonka Waterbody on the delineation map.