Item 7E.
BCWMC
11-14-18

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit (LGU)	Address
City of Plymouth	**3400 Plymouth Blvd.** **Plymouth, MN 55447**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
Jim Touve	**Touve Parcel**	**10/05/2018**	**N/A**

Type of Application (check all that apply):

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Summary and description of proposed project (attach additional sheets as necessary):

Kjolhaug Environmental investigated and delineation the 8.03 acre Touve Parcel located along Medicine Lake, City of Plymouth, MN. The site was located in Section 26, TWP 118N, and Range 22W. During the delineation on August 25th, 2018, one wetland was delineated.

The comment period closes on November 7th, 2018.

2. APPLICATION REVIEW AND DECISION

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 3 provides notice that an application was made to the LGU under the Wetland Conservation Act as specified above. A copy of the application is attached. Comments can be submitted to:

Name and Title of LGU Contact Person	Comments must be received by (minimum 15 business-day comment period):
Michael Thompson **City of Plymouth**	**November 7, 2018**
Address (if different than LGU) **3400 Plymouth Blvd,** **Plymouth, MN 55447**	Date, time, and location of decision: **November 8, 2018**
Phone Number and E-mail Address **763-509-5501** **mthompson@plymouthmn.gov**	Decision-maker for this application: ☒ Staff ☐ Governing Board or Council

Signature: _____ **Date:** 10/17/2018

3. LIST OF ADDRESSEES

☒ SWCD TEP member: **Ms. Stacey Lijewski, HCD, 701 Fourth Avenue South, Suite 700, Minneapolis, MN, 55415-1600** (sent electronically)
☒ BWSR TEP member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN, 55401-1397** (sent electronically)
☒ LGU TEP member (if different than LGU Contact): **Ben Scharenbroich, City of Plymouth 3400, Plymouth Blvd, Plymouth, MN 55447** (sent electronically)
☒ DNR TEP member: **Becky Horton, MN DNR, 1200 Warner Road, St. Paul, MN, 55106** (sent electronically)
☒ DNR Regional Office (if different than DNR TEP member) **Jason Spiegel, Area Hydrologist, MN DNR, 1200 Warner Road, St. Paul, MN, 55106** (sent electronically)
☒ WD or WMO (if applicable): **BCWMC, c/o Laura Jester, Keystone Waters LLC, 16145 Hillcrest Lane, Eden Prairie, MN, 553467** (sent electronically)
☒ Applicant (notice only) and Landowner (if different)
Jim Touve ,17216 Peterborg Road, Eden Prairie, MN 55346

☒ Members of the public who requested notice (notice only): **Melissa Barrett, Kjolhaug Environmental Services, Inc. 2500 Shadywood Road, Suite 130, Orono, MN 55331** (sent electronically)
☒ Corps of Engineers Project Manager (notice only) **Army Corps of Engineers, 180 5th Street East, Suite 700, St. Paul, MN, 55101-1678** (sent electronically)
☐ BWSR Wetland Bank Coordinator (wetland bank plan applications only)

4. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/contact/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.
Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources
2115 Birchmont Beach Rd. NE	1201 E. Hwy. 2	1200 Warner Road	261 Hwy. 15 South
Bemidji, MN 56601	Grand Rapids, MN 55744	St. Paul, MN 55106	New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687
or send to:
➢

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

5. ATTACHMENTS

In addition to the application, list any other attachments:
☒ **Touve Parcel Wetland Delineation Report**

Touve Parcel

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

Prepared for

Jim Touve

by

Kjolhaug Environmental Services Company, Inc.
(KES Project No. 2018-111)

October 1, 2018

Touve Parcel

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

Touve Parcel

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

1. WETLAND DELINEATION SUMMARY

- The 8.03-acre Touve Parcel was inspected on August 14, 2018 for the presence and extent of wetland.
- The National Wetlands Inventory (NWI) map showed one PFO1A wetland within site boundaries.
- The soil survey showed the hydric soil type within site boundaries included Medo soils.
- The DNR Public Waters Inventory showed DNR Public Water 27-104P (Medicine Lake) within and along site boundaries.
- The National Hydrography Dataset showed one Lake/Pond surface waters feature within and along site boundaries.
- One wetland was delineated within the review area as summarized below.

Table 1. Wetlands delineated on the Touve Parcel site

Wetland ID	Wetland Type			Dominant Vegetation
	Circular 39	Cowardin	Eggers and Reed	
1 (~4.5 acres)	1/3	PFO1A/PEMC	Deciduous forested, seasonally flooded basin and shallow marsh	Green ash, common buckthorn, glossy buckthorn, willow, wood nettle, boxelder, cottonwood, cattail, reed canary grass

2. OVERVIEW

The 8.03-acre Touve Parcel was inspected on August 14, 2018 for the presence and extent of wetland. The site was located in Section 26, Township 118 North, Range 22 West, City of Plymouth, Hennepin County, Minnesota. The review area was located immediately north of Sunrise Bay Condominiums which are located northeast of the intersection of West Medicine Lake Drive and 12th Avenue North and the Luce Line Trail (**Figure 1**). The site corresponded to Hennepin County PID 2611822440006 (address unassigned).

The site consisted of an upland peninsula surrounded by Medicine Lake. In order to access the peninsula a narrow span of water was crossed via a rudimentary bridge. A gravel road extended through the site and ended in the north portion of the site which appeared to be a former home/homes site. Upland woodland vegetation observed included: cottonwood, basswood, American elm, green ash, European aspen, common buckthorn (trees and shrubs), glossy buckthorn, lady fern, enchanter's nightshade, Virginia creeper, baneberry, catnip, upright carrion plant, rue anemone, false Solomon's seal, Jack-in-the-pulpit, Solomon's seal, chokecherry, sumac, boxelder, hog peanut, white snakeroot, annual ragweed, burdock, and motherwort.

One (1) wetland was delineated within the review area boundaries. Delineated wetland boundaries and existing conditions are shown on **Figure 2**.

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary and type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence from the U.S. Army Corps of Engineers (USACE) for Section 404 of the Federal Clean Water Act.

3. METHODS

3.1 Wetland Delineation

Wetlands were identified using the Routine Determination method described in the Corps of Engineers Wetlands Delineation Manual (Waterways Experiment Station, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act.

Wetland boundaries were identified as the upper-most extent of wetland that met criteria for hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were marked with pin flags that were located by Lot Surveys Company. Boundaries shown on Figure 2 do not represent an official survey.

Soils, vegetation, and hydrology were documented at a representative location along the wetland-upland boundary. Plant species dominance was estimated based on the percent aerial or basal

coverage visually estimated within a 30-foot radius for trees and vines, a 15-foot radius for the shrub layer, and a 5-foot radius for the herbaceous layer within the community type sampled.

Soils were characterized to a minimum depth of 24 inches (unless otherwise noted) using a Munsell Soil Color Book and standard soil texturing methodology. Hydric soil indicators used are from Field Indicators of Hydric Soils in the United States (USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Technical Committee for Hydric Soils, Version 8.1, 2017).

Mapped soils are separated into five classes based on the composition of hydric components and the Hydric Rating by Map Unit color classes utilized on Web Soil Survey. The five classes include Hydric (100 percent hydric components), Predominantly Hydric (66 to 99 percent hydric components), Partially Hydric (33 to 65 percent hydric components), Predominantly Non-Hydric (1 to 32 percent hydric components), and Non-Hydric (less than one percent hydric components).

Plants were identified using standard regional plant keys. Taxonomy and indicator status of plant species was taken from the 2016 National Wetland Plant List (U.S. Army Corps of Engineers 2016. National Wetland Plant List, version 3.3, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH).

4. RESULTS

4.1 Review of NWI, Soils, Public Waters and NHD Information

The National Wetlands Inventory (NWI) (Minnesota Geospatial Commons 2009-2014 and U.S. Fish and Wildlife Service) showed one PFO1A wetland within site boundaries (**Figure 3**).

The Soil Survey (USDA NRCS 2015) showed the hydric soil type within site boundaries included Medo soils. Soil types mapped on or adjacent to the property are listed in **Table 2** and a map showing soil types is included in **Figure 4**.

Table 2. Soil types mapped on the Touve Parcel site

Symbol	Soil Name	Acres	% of Area	% Hydric	Hydric Category
L2D	Malardi-Hawick complex, 12 to 18 percent slopes	3	7.50%	0	Non-hydric
L30A	Medo soils, depressional, 0 to 1 percent slopes	14.6	36.00%	100	Hydric
U2A	Udorthents, wet substratum, 0 to 2 percent slopes	0.6	1.50%	0	Non-hydric
W	Water	22.3	55.00%	0	Non-Hydric

The Minnesota DNR Public Waters Inventory (Minnesota Department of Natural Resources 2015) showed DNR Public Water 27-104P (Medicine Lake) within and along site boundaries.

The National Hydrography Dataset (U.S. Geological Survey 2015) showed one Lake/Pond surface waters feature within and along site boundaries (**Figure 6**).

4.2 Wetland Determinations and Delineations

Potential wetlands were evaluated during field observations on August 14, 2018. One (1) wetland was identified and delineated on the property (**Figure 2**). Corresponding data forms are included in **Appendix B**. The following description of the wetland and the adjacent upland reflects conditions observed at the time of the field visit. Tree and shrubs had leaves, and herbaceous vegetation was actively growing. Climatic conditions were typical (normal) based on the gridded database method (3-month antecedent precipitation) (**Appendix C**) and field observations. A copy of the wetland boundary survey is included as **Appendix D**.

Wetland 1 was a Type 1/3 (PFO1A/PEMC) deciduous forested, seasonally flooded basin and shallow marsh wetland dominated in forested portions by green ash, cottonwood, glossy buckthorn, common buckthorn, and wood nettle and in shallow marsh areas by cattail, reed canary grass, purple loosestrife, willow, red osier dogwood, and sedge with lesser amounts of smartweed, green bulrush, Joe-Pye weed, giant goldenrod, and Canada bluejoint. The sample transect was taken within a very flat, forested portion of the site in soils that were difficult to sample due to their loose soil texture. Wetland hydrology and the delineated boundary was based on vegetation and slight changes in topogrpahy.

Adjacent upland consisted of upland dominated by green ash and common buckthorn with an understory of enchanter's nightshade. No primary or secondary hydrology indicators were observed on the upland.

The delineated boundary followed a change in vegetation from wetland to upland plant communities, and a generally slight in topography. Wetland 1 was shown as a PFO1A wetland on the NWI map and was located within an area mapped as Medo soils (Hydric) on the soil survey. Wetland 1 transitioned to the edge of Medicine Lake which surrounds the site.

4.3 Other Areas

No other depressional areas with hydrophytic vegetation or wetland hydrology were observed within site boundaries. No other areas were shown as hydric soil on the soil survey or as wetland on the NWI map.

4.5 Request for Wetland Boundary and Jurisdictional Determination

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary and type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence from the U.S. Army Corps of Engineers (USACE) for Section 404 of the Federal Clean Water Act.

5. CERTIFICATION OF DELINEATION

The procedures utilized in the described delineation are based on the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. This wetland delineation and report were prepared in compliance with the regulatory standards in place at the time the work was performed.

Site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation completed by: Melissa Lauterbach-Barrett, Wetland Specialist
Minnesota Certified Wetland Delineator No. 1085

Mark Kjolhaug, Professional Wetland Scientist

Report prepared by: Melissa Lauterbach-Barrett, Wetland Specialist
Minnesota Certified Wetland Delineator No. 1085

Report reviewed by: _____ Date: October 1, 2018
Mark Kjolhaug, Professional Wetland Scientist No. 000845

Touve Parcel

Wetland Delineation Report

FIGURES

1. Site Location
2. Existing Conditions
3. National Wetlands Inventory
4. Soil Survey
5. DNR Protected Waters Inventory
6. National Hydrography Dataset

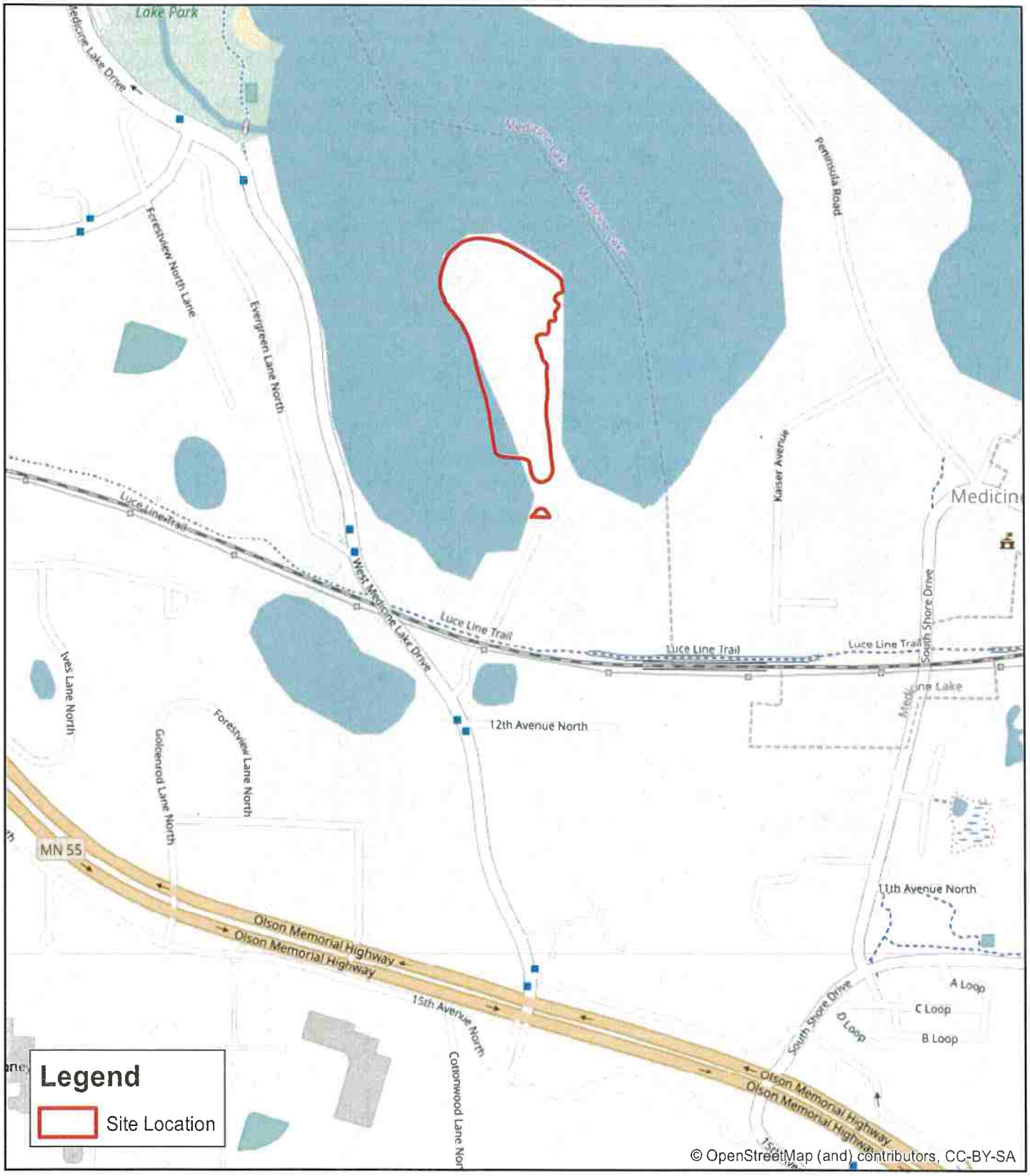


Figure 1 - Site Location

N

0 500 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: ESRI Streets Basemap

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

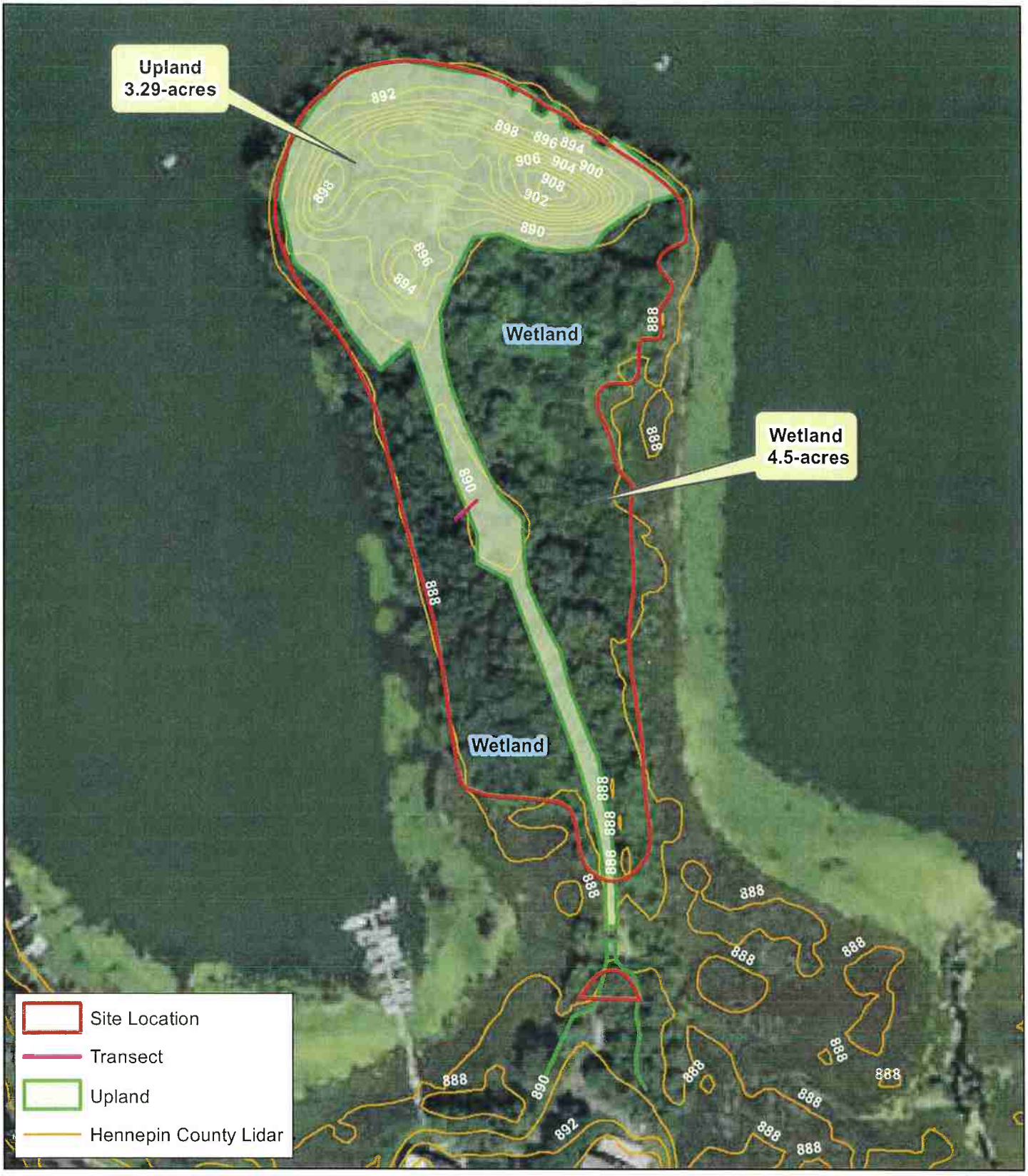


Figure 2 - Existing Conditions (2017 FSA Photo)

N

0 250 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MnGeo, ESRI Imagery Basemap

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

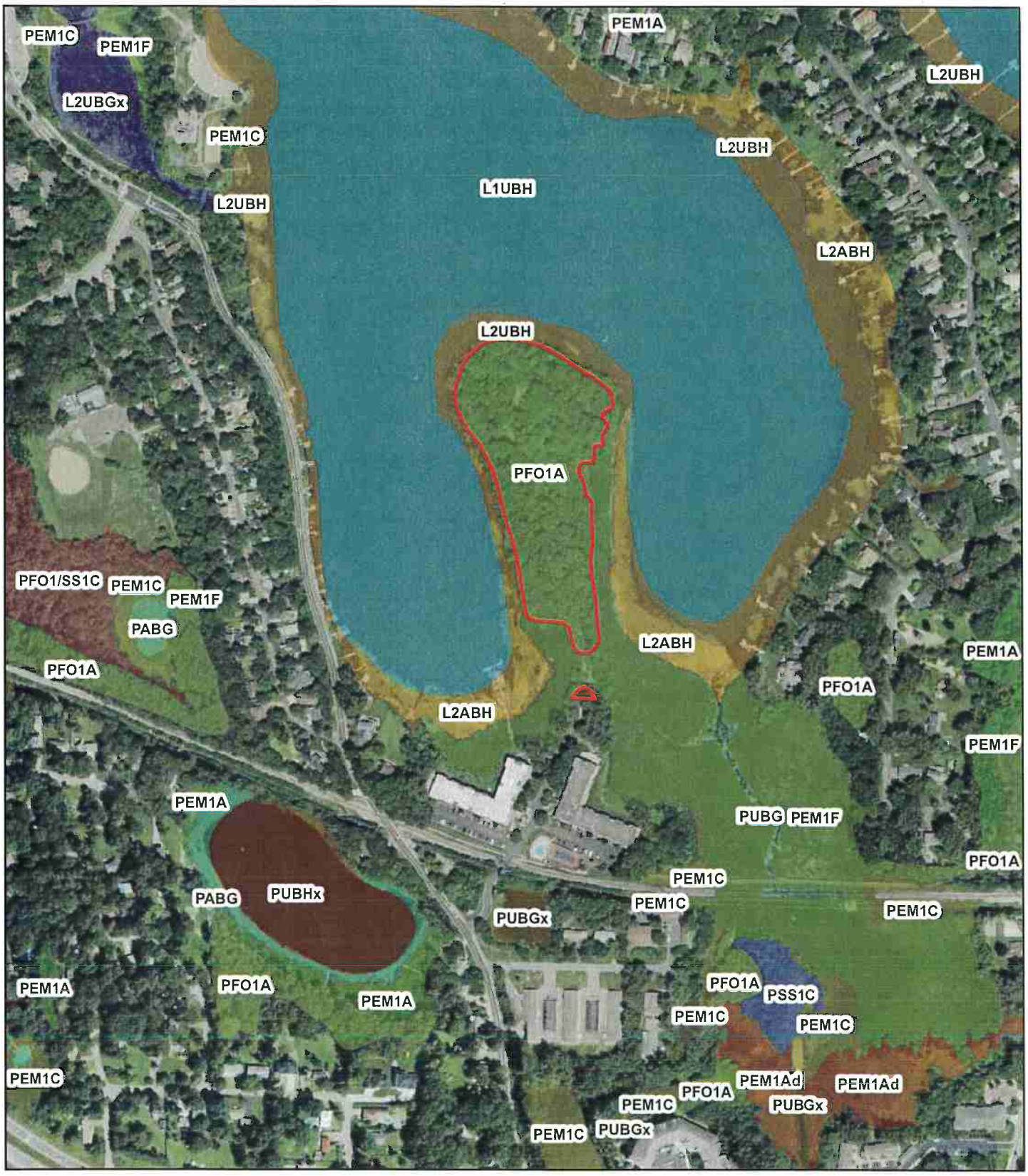


Figure 3 - National Wetlands Inventory

N

0 500 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR (2013), USFWS

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

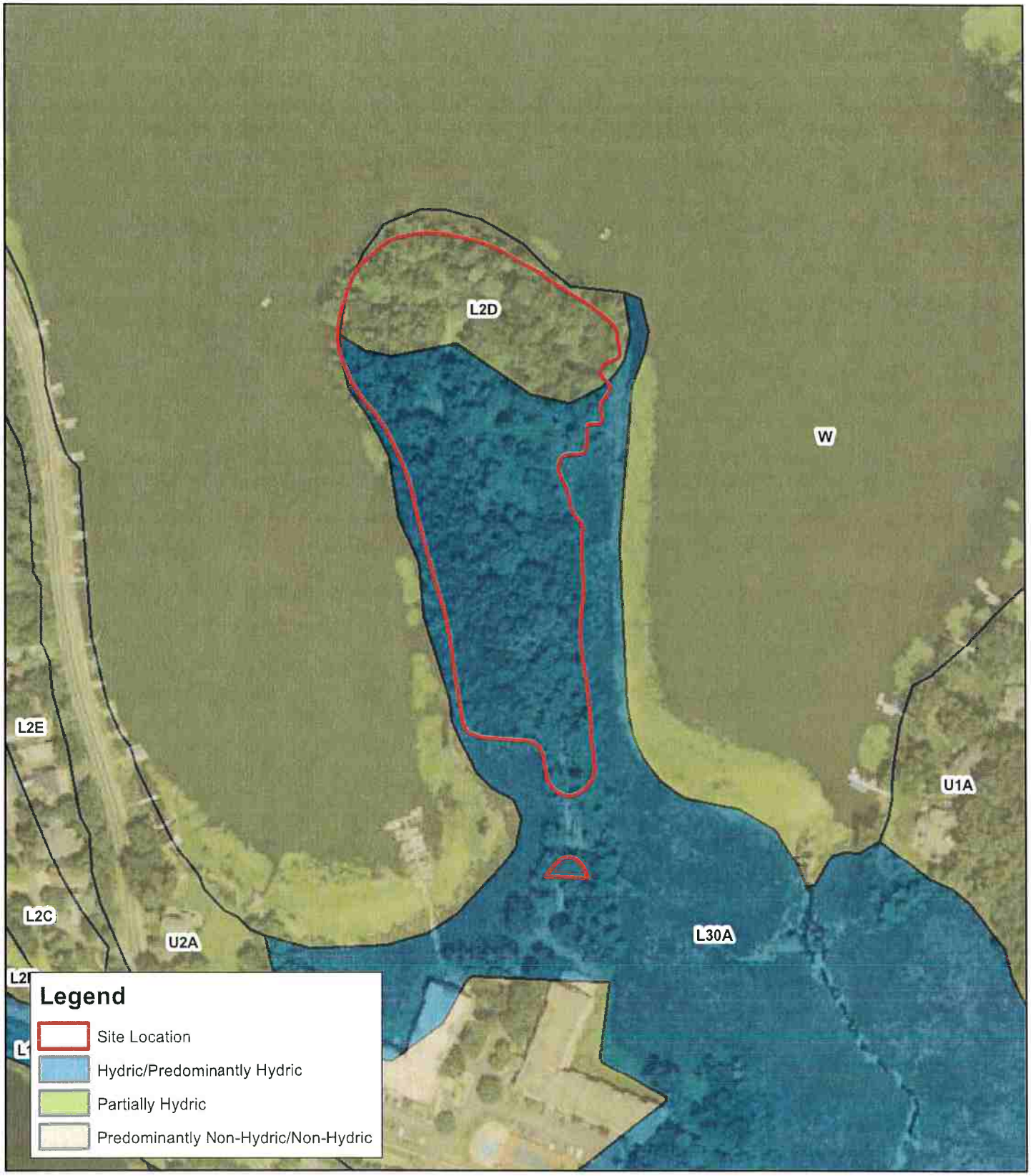


Figure 4 - Soil Survey

N

0 500 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: USDA, NRCS

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

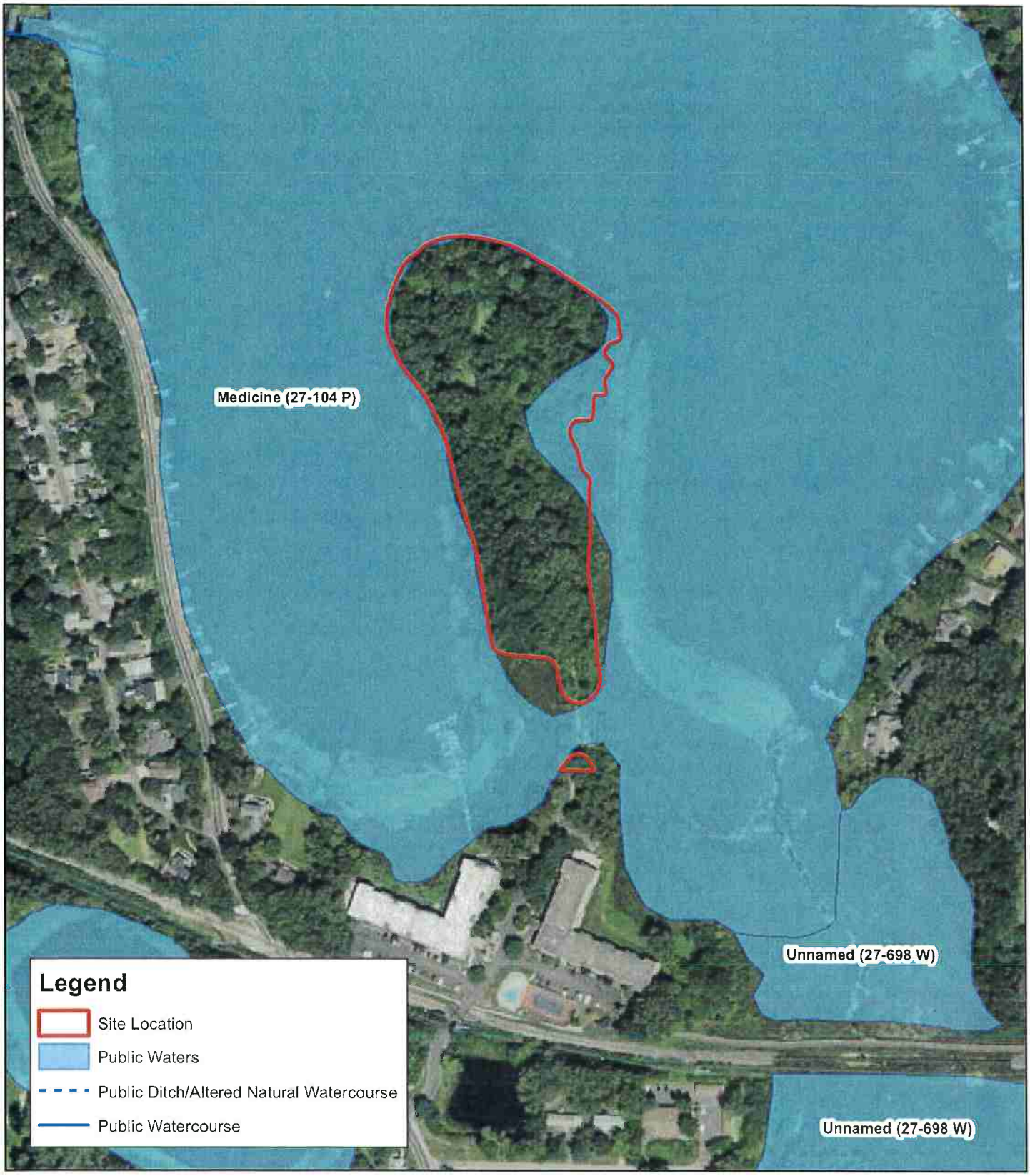


Figure 5 - DNR Public Waters Inventory

N

0 500 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

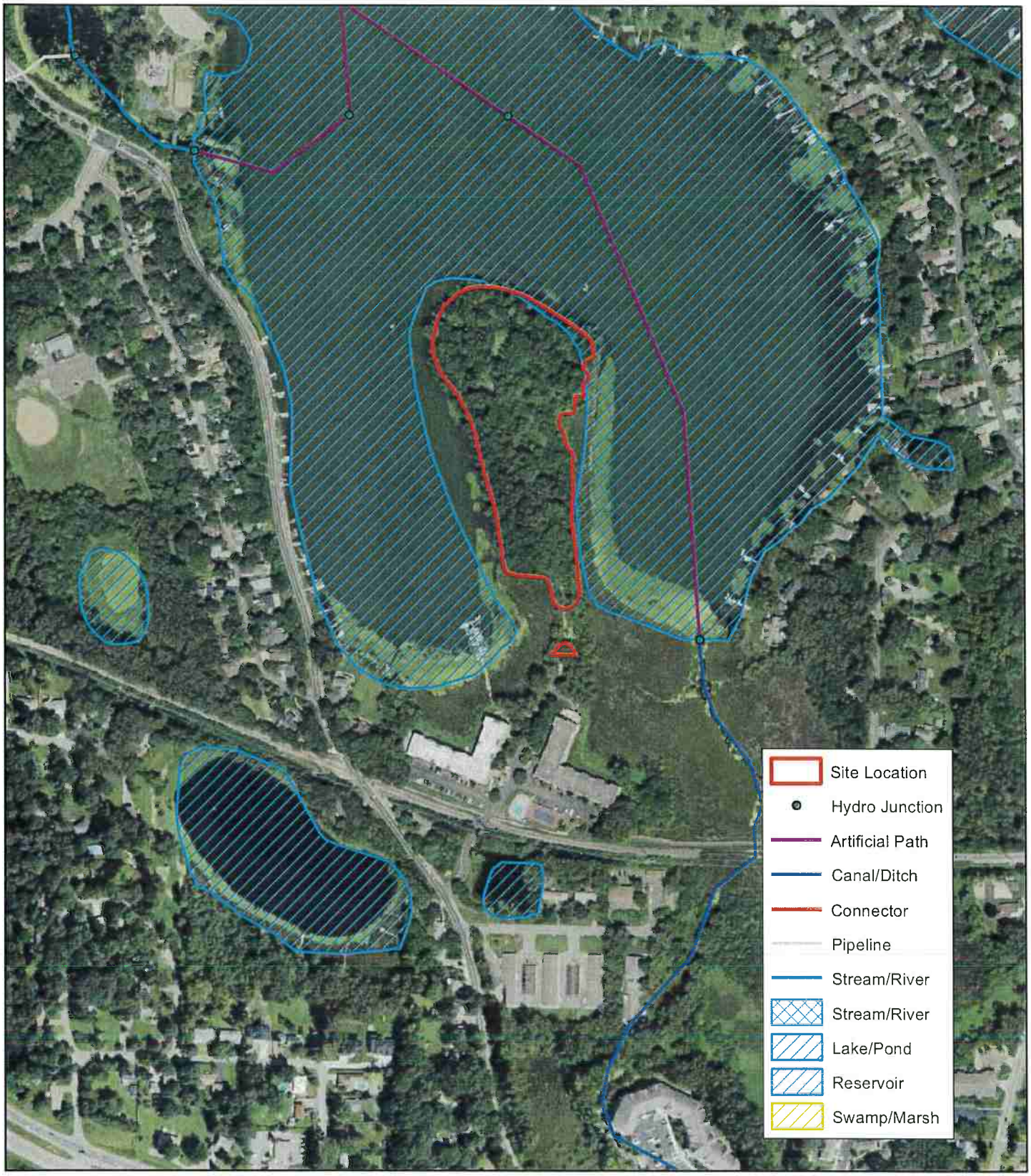


Figure 6 - National Hydrography Dataset

N

0 1,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: USGS

Touve Parcel (KES 2018-111)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Touve Parcel

Wetland Delineation Report

APPENDIX A

Joint Application Form for Activities Affecting Water Resources in Minnesota

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: Jim Touve
Mailing Address: 4300 Toledo Avenue, Robbinsdale, MN 55422
Phone: 763-533-1703
E-mail Address: juneT@goldengate.net

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

Agent Name: Melissa Barrett, Kjolhaug Environmental
Mailing Address: 2500 Shadywood Road, Suite 130, Orono, MN 55331
Phone: 952-401-8757
E-mail Address: melissa@kjolhaugenv.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Plymouth**
Parcel ID and/or Address: 2611822440006
Legal Description (Section, Township, Range): Sec 26, T118, R22
Lat/Long (decimal degrees): 44°59'48.64N, 93°25'26.58"W
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 8.03-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.

Application is for delineation review and concurrence.

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: _____ Date: 9-28-18

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

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

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

Touve Parcel

Wetland Delineation Report

APPENDIX B

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Touve Parcel | City/County: Plymouth/Hennepin | Sampling Date: 8-14-2018

Applicant/Owner: Jim Touve | State: MN | Sampling Point: SP1-upl

Investigator(s): M. Barrett | Section, Township, Range: Sec 26, T118, R22

Landform (hillslope, terrace, etc.): flat land | Local relief (concave, convex, none): linear/none

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

Soil Map Unit Name: Medo soils | NWI Classification: PFO1A

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?**	N
Hydric soil present?	N	f yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

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

Climatic conditions typical (normal) based on gridded database method.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1 *Fraxinus pennsylvanica*	40	Y	FACW
2 *Rhamnus cathartica*	15	Y	FAC
3			
4			
5			
	55	= Total Cover	

Sapling/Shrub stratur (Plot size: 15)			
1 *Rhamnus cathartica*	20	Y	FAC
2			
3			
4			
5			
	20	= Total Cover	

Herb stratum (Plot size: 5)			
1 *Circaea lutetiana*	15	Y	UPL
2 *Maianthemum racemosum*	5	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	20	= 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: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	15	x 5 =	75
Column totals	95 (A)		280 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphological 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: SP1-upl

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
0-6	10YR 2/1	100					loamy sand	
6-12	5Y 4/2	100					corse sand	gravelly loamy, CaCO3

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **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 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 weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Too dry and loose texture to sample further.

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

Indicators of wetland hydrology present? N

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

Remarks:

At least 2 feet in elevation above the lake water level - which would be local groundwater level.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Touve Parcel | City/County: Plymouth/Hennepin | Sampling Date: 8-14-2018

Applicant/Owner: Jim Touve | State: MN | Sampling Point: SP1-wet

Investigator(s): M. Barrett | Section, Township, Range: Sec 26, T118, R22

Landform (hillslope, terrace, etc.): flat land | Local relief (concave, convex, none): linear/none

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

Soil Map Unit Name: Medo soils | NWI Classification: PFO1A

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	f yes, optional wetland site ID:	Wetland 1
Indicators of wetland hydrology present?	Y		

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

Climatic conditions typical (normal) based on gridded database method.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1 *Fraxinus pennsylvanica*	40	Y	FACW
2			
3			
4			
5			
	40 = Total Cover		
Sapling/Shrub stratur (Plot size: 15)			
1 *Frangula alnus*	15	Y	FACW
2			
3			
4			
5			
	15 = Total Cover		
Herb stratum (Plot size: 5)			
1 *Laportea canadensis*	5	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	5 = 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: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (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	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	60 (A)		120 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphological 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: SP1-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
0-6	10YR 2/1	100					loamy sand	
6-12	10YR 5/1	100					coarse sand	gravelly loamy

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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 weltand 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)
- ___ 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)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Indicators of wetland hydrology present? Y

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

Remarks:

Slighly lower in topogrpahy than upland sample point. Depleted soil indicates saturation at some time.

Touve Parcel

Wetland Delineation Report

APPENDIX C

Precipitation Data

Minnesota State Climatology Office

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Hennepin** township number: **118N**
township name: **Plymouth** range number: **22W**
nearest community: **Medicine Lake** section number: **26**

Aerial photograph or site visit date:
Tuesday, August 14, 2018

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: **July 2018**	second prior month: **June 2018**	third prior month: **May 2018**
estimated precipitation total for this location:	**3.68R**	**4.22R**	**2.45**
there is a 30% chance this location will have less than:	2.63	3.28	2.82
there is a 30% chance this location will have more than:	4.13	5.18	4.00
type of month: dry normal wet	**normal**	**normal**	**dry**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 1 = 1**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (Normal)**		

Other Resources:

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

Touve Parcel, Plymouth, MN: Precipitation Summary
Source: Minnesota Climatology Working Group

Monthly Totals: 2018

Target: T118 R22 S26 (latitude: 45.00039 longitude: 93.43099)

mon	year	cc	tttN	rrW	ss	nnnn	oooooooo	pre (inches)
Jan	2018	27	118N	21W	20	NWS	NEW HOPE	1.30
Feb	2018	27	118N	21W	20	NWS	NEW HOPE	1.50
Mar	2018	27	118N	21W	20	NWS	NEW HOPE	1.46
Apr	2018	27	118N	22W	24	MOSQ	GREEN R	2.10
May	2018	27	118N	22W	24	MOSQ	GREEN R	1.79
Jun	2018	27	118N	22W	24	MOSQ	GREEN R	4.31
Jul	2018	27	118N	21W	20	NWS	NEW HOPE	4.15
Aug	2018	27	118N	21W	20	NWS	NEW HOPE	3.55

June/July/August Daily Records

Jun	1, 2018	0
Jun	2, 2018	0
Jun	3, 2018	.21
Jun	4, 2018	0
Jun	5, 2018	0
Jun	6, 2018	.20
Jun	7, 2018	0
Jun	8, 2018	-
Jun	9, 2018	-
Jun	10, 2018	.33
Jun	11, 2018	0
Jun	12, 2018	-
Jun	13, 2018	.12
Jun	14, 2018	0
Jun	15, 2018	-
Jun	16, 2018	.50
Jun	17, 2018	.17
Jun	18, 2018	.86
Jun	19, 2018	.30
Jun	20, 2018	.27
Jun	21, 2018	0
Jun	22, 2018	-
Jun	23, 2018	-
Jun	24, 2018	-
Jun	25, 2018	-
Jun	26, 2018	1.30
Jun	27, 2018	.03
Jun	28, 2018	0
Jun	29, 2018	0
Jun	30, 2018	.02

Jul	1, 2018	1.37
Jul	2, 2018	0
Jul	3, 2018	.09
Jul	4, 2018	.13
Jul	5, 2018	0
Jul	6, 2018	0
Jul	7, 2018	0
Jul	8, 2018	0
Jul	9, 2018	T
Jul	10, 2018	T
Jul	11, 2018	.12
Jul	12, 2018	1.13
Jul	13, 2018	.17
Jul	14, 2018	0
Jul	15, 2018	0
Jul	16, 2018	m
Jul	17, 2018	0
Jul	18, 2018	0
Jul	19, 2018	.16
Jul	20, 2018	.23
Jul	21, 2018	0
Jul	22, 2018	0
Jul	23, 2018	0
Jul	24, 2018	0
Jul	25, 2018	.48
Jul	26, 2018	.15
Jul	27, 2018	0
Jul	28, 2018	.11
Jul	29, 2018	.01
Jul	30, 2018	T
Jul	31, 2018	0

Aug	1, 2018	.13
Aug	2, 2018	0
Aug	3, 2018	1.40
Aug	4, 2018	.09
Aug	5, 2018	0
Aug	6, 2018	0
Aug	7, 2018	0
Aug	8, 2018	0
Aug	9, 2018	0
Aug	10, 2018	0
Aug	11, 2018	0
Aug	12, 2018	0
Aug	13, 2018	0
Aug	14, 2018	0
Aug	15, 2018	0
Aug	16, 2018	0
Aug	17, 2018	0
Aug	18, 2018	0
Aug	19, 2018	0
Aug	20, 2018	.06
Aug	21, 2018	0
Aug	22, 2018	0
Aug	23, 2018	0
Aug	24, 2018	1.53
Aug	25, 2018	0
Aug	26, 2018	0
Aug	27, 2018	.07
Aug	28, 2018	.27
Aug	29, 2018	0
Aug	30, 2018	0
Aug	31, 2018	0

1981-2010 Summary Statistics

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*WARM*	*ANN*	*WAT*
30%	0.52	0.39	1.30	2.16	2.82	3.28	2.63	3.27	2.35	1.26	1.08	0.73	17.89	29.16	27.63
70%	1.18	0.97	2.09	2.90	4.00	5.18	4.13	5.06	3.86	3.54	2.03	1.42	21.77	34.13	35.05
mean	0.86	0.82	1.89	2.71	3.61	4.51	4.22	4.16	3.41	2.49	1.79	1.22	19.90	31.67	31.48

Touve Parcel

Wetland Delineation Report

APPENDIX D

Wetland Boundary Survey

The Gregory Group, Inc.
d/b/a
LOT SURVEYS COMPANY
Established in 1962
LAND SURVEYORS
REGISTERED UNDER THE LAWS OF STATE OF MINNESOTA
7601 73rd Avenue North (763) 560-3093
Minneapolis, Minnesota 55428 Fax No. 560-3522

Surveyors Certificate

INVOICE NO. 88100
F.B.NO. 1092-42
SCALE: 1" = 50'

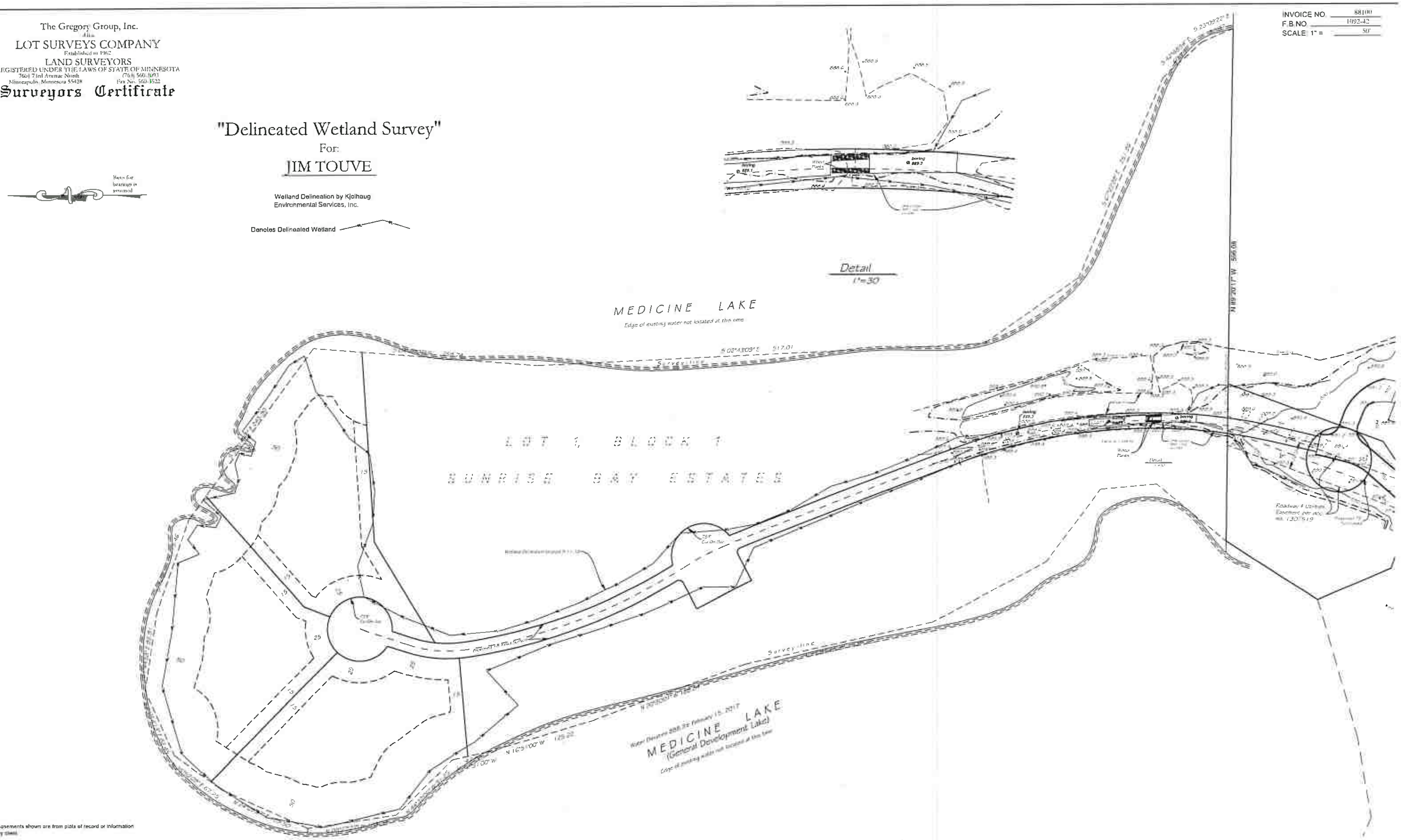
"Delineated Wetland Survey"

For:

JIM TOUVE

Wetland Delineation by Kjolhaug Environmental Services, Inc.

Denotes Delineated Wetland



The only easements shown are from plats of record or information provided by client.

I certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed land Surveyor under the laws of the State of Minnesota.

Surveyed by us this 11th day of September 2018.

Lot 1, Block 1, SUNRISE BAY ESTATES
Hennepin County, Minnesota

Drawn By: S. Munson

Signed: Gregory R. Prasch, Minn. Reg. No. 24992

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit (LGU)	Address
City of Plymouth	**3400 Plymouth Blvd.** **Plymouth, MN 55447**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
City of Plymouth	**CSAH 9 (Rockford Rd)/ I-494 Interchange Project**	**10/11/2018**	**N/A**

Type of Application (check all that apply):

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Summary and description of proposed project (attach additional sheets as necessary):

WSB and Associates investigated and delineation the CSAH 9 (Rockford Road) and I-494 Interchange Project on September 25, 2018. During the delineation, 4 wetlands, 8 wet ditches, and two stormwater ponds were identified.

This Notice of Application is only for wetland resources located outside of MnDOT Right-of-Way which include Wetland 1, a portion of Wetland 2, and a portion of Wetland 4.

The comment period closes on November 9th, 2018.

2. APPLICATION REVIEW AND DECISION

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 3 provides notice that an application was made to the LGU under the Wetland Conservation Act as specified above. A copy of the application is attached. Comments can be submitted to:

Name and Title of LGU Contact Person	Comments must be received by (minimum 15 business-day comment period):
Michael Thompson **City of Plymouth**	**November 9, 2018**
Address (if different than LGU) **3400 Plymouth Blvd,** **Plymouth, MN 55447**	Date, time, and location of decision: **November 10, 2018**
Phone Number and E-mail Address **763-509-5501** **mthompson@plymouthmn.gov**	Decision-maker for this application: ☒ Staff ☐ Governing Board or Council

Signature: _____ **Date:** 10/17/2018

3. LIST OF ADDRESSEES

☒ SWCD TEP member: **Ms. Stacey Lijewski, HCD, 701 Fourth Avenue South, Suite 700, Minneapolis, MN, 55415-1600** **(sent electronically)**
☒ BWSR TEP member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN, 55401-1397** **(sent electronically)**
☒ LGU TEP member (if different than LGU Contact): **Ben Scharenbroich, City of Plymouth 3400, Plymouth Blvd, Plymouth, MN 55447** **(sent electronically)**
☒ DNR TEP member: **Becky Horton, MN DNR, 1200 Warner Road, St. Paul, MN, 55106** **(sent electronically)**
☒ DNR Regional Office (if different than DNR TEP member) **Jason Spiegel, Area Hydrologist, MN DNR, 1200 Warner Road, St. Paul, MN, 55106** **(sent electronically)**
☐ WD or WMO (if applicable): **BCWMC, c/o Laura Jester, Keystone Waters LLC, 16145 Hillcrest Lane, Eden Prairie, MN, 553467** **(sent electronically)**
☒ Applicant (notice only) and Landowner (if different)
Hennepin County Public Works - Transportation c/o Joshua Potter, 1600 Prairie Drive, Medina, MN 55340 **(sent electronically)**
Minnesota Department of Transportation c/o Jerome Adams, 1500 West County Road B2, Roseville, MN 55113 , **(sent electronically)**

☒ Members of the public who requested notice (notice only): **WSB & Associates c/o Roxy Franta, 701 Xenia Avenue S, Suite 300, Minneapolis, MN 55416** (sent electronically)
☒ Corps of Engineers Project Manager (notice only) **Army Corps of Engineers, 180 5th Street East, Suite 700, St. Paul, MN, 55101-1678** **(sent electronically)**
☐ BWSR Wetland Bank Coordinator (wetland bank plan applications only)

4. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/contact/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.
Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources
2115 Birchmont Beach Rd. NE	1201 E. Hwy. 2	1200 Warner Road	261 Hwy. 15 South
Bemidji, MN 56601	Grand Rapids, MN 55744	St. Paul, MN 55106	New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687
or send to:
➢

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

5. ATTACHMENTS

In addition to the application, list any other attachments:

☒ **CSAH 9 (Rockford Road)/I-494 Interchange Project Wetland Delineation Report**

☒ **CSAH 9 (Rockford Road)/I-494 Interchange Joint Application**

701 Xenia Avenue South | Suite 300 | Minneapolis, MN 55416 | (763) 541-4800

Memorandum

To: ***Sarma Straumanis, MnDOT***
Ben Scharenbroich, City of Plymouth
Michael Thompson, City of Plymouth

Cc: ***Derek Schmidt, WSB & Associates***

From: ***Roxy Franta, WSB & Associates***

Date: ***October 1, 2018***

Re: ***CSAH 9 (Rockford Road) / I-494 Interchange Project***
WSB Project No. 011485-000

The City of Plymouth is proposing to replace the Rockford Road bridge crossing interstate I-494, reconstruct the bridge approaches and portions of the I-494 ramps, construct a multiuse trail along the north side of Rockford Road (including bridge), reconstruct a multiuse trail along the south side of Rockford Road, reconstruct a retaining wall north of Rockford Road, and make drainage improvements. This report is intended to address all jurisdictional WCA, Public Water, or Section 404 wetlands and/or waters for final design and permitting of this project.

This delineation report is being submitted as a request for approval of the following within each LGU jurisdiction:

MnDOT:

- Boundary/Type approval for Wetland 2 (partially in R/W), Wetland 3, and Wetland 4 (partially in R/W).
- No Loss for incidentally created wetlands: Wet Ditches 1-7, Stormwater Ponds 1 and 2.

City of Plymouth:

- Boundary/Type approval for Wetland 1, Wetland 2 (partially on city property), and Wetland 4 (partially on city property).

The application for Boundary and Type/No Loss Approval is included along with this report.

City of Plymouth Minnesota

LEVEL 2 WETLAND DELINEATION REPORT

CSAH 9 (ROCKFORD ROAD) / I-494 INTERCHANGE PROJECT

OCTOBER 1, 2018

Prepared for:
City of Plymouth
3400 Plymouth Boulevard
Plymouth, MN 55447

WSB PROJECT NO. 011485-000

WSB

LEVEL 2 WETLAND DELINEATION REPORT

CSAH 9 (ROCKFORD ROAD) / I-494 INTERCHANGE PROJECT

For:

City of Plymouth

October 1, 2018

Prepared By:

CERTIFICATION

The report was prepared by:

Roxy Franta, WDC No.1317

Date: October 1, 2018 Title: Environmental Scientist

I hereby certify that this report was reviewed by me and that I am a Certified Wetland Delineator in the State of Minnesota.

Alison Harwood, WDC No.1238

Date: October 4, 2018 Title: Senior Environmental Scientist

TABLE OF CONTENTS

SECTION I

I. Introduction

A. Project Location

The project is located at the CSAH 9 (Rockford Road) and I-494 interchange in the City of Plymouth, Hennepin County, Minnesota. The project area consists of approximately 0.30 mile of Rockford Road including Bridge No. 27W45 over I-494 and approximately 500 feet to the east and to the west of the bridge. The project also includes approximately 500 feet of the northbound entrance ramp to I-494, 600 feet of the southbound entrance ramp to I-494, 250 feet of the northbound exit ramp onto Rockford Road, and 160 feet of the southbound exit ramp onto Rockford Road. The project is located in Section 15 of Township 118 and Range 22, Major Watershed No. 20, BSA No. 7 (**Figure 1, Appendix A**).

B. Project Purpose

The City of Plymouth is proposing to replace the Rockford Road bridge crossing I-494, reconstruct the bridge approaches and portions of the I-494 ramps, construct a multiuse trail along the north side of Rockford Road (including bridge), reconstruct a multiuse trail along the south side of Rockford Road, reconstruct a retaining wall north of Rockford Road, and make drainage improvements. This report is intended to address all jurisdictional WCA, Public Water, or Section 404 wetlands and/or waters for final design and permitting of this project. This project was authorized by the City of Plymouth.

C. Project Scope

The scope of this project was to delineate all wetlands within the outlined project area.

D. Summary of Findings

A Level 2 wetland delineation was performed on the site. A total of four wetlands, seven wet ditches, and two stormwater ponds were identified and delineated in the preparation of this report, as summarized in **Table 1**. For a visual representation of the wetland locations and sizes, please see **Figure 6**, **Appendix B**. All potential wetland areas (mapped hydric soils, NWI signatures, and low depressional areas) were reviewed on-site and either delineated or determined to be upland.

Table 1. Summary of Delineated Wetlands, CSAH 9/I-494 Interchange, Hennepin County, Minnesota

Wetland ID	Delineation Method	No. Flags/ Transects	Eggers and Reed	Circular 39) (Cowardin)	NWI*	DNR PWI**	County Soil Survey (Hydric/ Non-Hydric)***
Wetland 1	Level 2	1-10/1	Seasonally Flooded/ Shallow Marsh/ Open Water	Type 1/3/5 (PEMA/ PEM1C/ PUBGx)	PEM1C/ PABGx	No	**L23A**/L37B
Wetland 2	Level 2	1-5/1	Fresh (Wet) Meadow	Type 2 (PEMB)	PEM1A	No	L37B

SECTION I

Wetland ID	Delineation Method	No. Flags/ Transects	Eggers and Reed	Circular 39) (Cowardin)	NWI*	DNR PWI**	County Soil Survey (Hydric/ Non-Hydric)***
Wetland 3	Level 3	0/1	Seasonally Flooded Basin/ Shallow Marsh	Type 1/3 (PEMA/ PEMC)	PEM1C/ PABGx	No	U3B
Wetland 4	Level 2	1-7/0	Shallow Marsh	Type 3 (PEMC)	N/A	No	U1A
Wet Ditch 1	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	L37B
Wet Ditch 2	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	L37B/U3B/ **L36A**
Wet Ditch 3	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	L22C2/U3B
Wet Ditch 4	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	L37A/L25A/ L22C2
Wet Ditch 5	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	U3B
Wet Ditch 6	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	U3B/L22C2
Wet Ditch 7	Level 2	0/0	Seasonally Flooded Basin	Type 1 (PEMA)	N/A	No	U1A/L22C2
Stormwater Pond 1	Level 2	0/0	Shallow Marsh/Open Water	Type 3/5 (PEMC/ PUBGx)	N/A	No	U3B/**L36A**
Stormwater Pond 2	Level 2	0/0	Shallow Marsh	Type 3 (PEMC)	N/A	No	U3B/L22C2

** "Yes" indicates wetland is mapped in the NWI and "No" indicates the wetland is not mapped in the NWI.*

*** "NA" indicates the wetland is not mapped in the PWI. Numbers listed are the DNR ID, indicating the wetland is mapped in the PWI.*

****Bolded numbers indicate hydric soils.*

SECTION II

II. Delineation Procedure

A. Off-Site Determination: Base Map Review

Topography: The landform is generally lower at the interchange where the configuration of I-494 has created low points for drainage. Rockford Road slopes from west to east. Water generally flows to the southeast towards Medicine Lake (DNR PWI No. 51465). The wetlands were located at low points adjacent to I-494, the I-494 ramps, and Rockford Road (**Figure 2, Appendix A**).

The *DNR Public Waters and Wetlands Map, Hennepin County, MN* (Minnesota Department of Natural Resources 1983) shows no public waters within the project area **(Figure 3, Appendix A)**.

The *National Wetlands Inventory Map* (Minnesota Department of Natural Resources) identified several wetlands as part of the National Wetlands Inventory (NWI) **(Figure 4, Appendix A)**. The NWI identifies the following wetland types: PEM1C, PABGx, and PEM1A.

The *Soil Survey of Hennepin County, Minnesota* (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) identified the following soils (**Table 2**) within the project area (**Figure 5, Appendix A**):

Table 2. Soil Survey

Map Symbol	Soil Unit Name	Percent Hydric	Hydric Rating
L23A	Cordova loam	95	Predominantly hydric
L37B	Angus loam	5	Predominantly non-hydric
L36A	Hamel, overwash-Hamel complex	45	Partially Hydric
L22C2	Lester loam	2	Predominantly non-hydric
U3B	Udorthents (cut and fill land)	0	Non-hydric
L22D2	Lester loam	0	Non-hydric
U1A	Urban land-Udorthents wet substratum	0	Non-hydric
L44A	Nessel loam	10	Predominantly non-hydric
L25A	Le Sueur loam	15	Predominantly non-hydric

Antecedent Climate Conditions: Historic climate data and WETS data were obtained from the Minnesota Climatology Working Group preceding the September 25, 2018 site visit, which fell within the normal precipitation range. Records of the precipitation can be found in **Appendix D**.

B. On-Site Determination

A Level 2 field investigation was conducted by Roxy Franta (WDC No. 1317) of WSB & Associates, Inc. on September 25, 2018 within the project area. No deviation or omissions were undertaken as part of this investigation.

SECTION II

The project area was delineated using the routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (US Army Corps of Engineers 1987), with additional guidance provided by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).* Wetlands were classified according to the methodologies set forth in *Wetlands of the United States (Circular 39),* USFWS Shaw and Fredine 1971; *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin 1979; and *Wetland Plants and Plant Communities of Minnesota and Wisconsin, 2nd ed.*, Eggers and Reed 1997. The wetland types in this report are classified by the Circular 39, Cowardin, and Eggers and Reed Classifications.

Soil types were researched prior to the on-site investigation with the assistance of the *Soil Survey of Hennepin County* from the National Resources Conservation Service. All soil test pits were excavated to a minimum depth of 24 inches unless otherwise noted. Soil colors were described on-site per the *Munsell Soil Color Charts* (2009 Revised Edition) from the test pits in and adjacent to the wetlands. Hydric soils were identified using the current technical criteria for hydric soils developed by the NRCS in 2017 (Version 8.1). The presence of water was observed after time was allowed for movement of water through the substrate. This time varied depending upon soil characteristics.

The quadrant sampling method was employed for all sample points unless otherwise noted. Vegetation was measured as actual areal cover and may exceed 100 percent of total area due to overlap. Grasses and herbaceous vegetative cover were measured within a circular plot of a 5-foot-radius, all woody shrubs and saplings were measured within a circular plot with a 15-foot-radius, and trees and woody vines were measured in a 30-foot-radius circular plot. Regional plant identification resources were utilized in the identification of plant species, with indicator status taken from the *2016 National Wetland Plant List* (US Army Corps of Engineers 2016). Plant species dominance was estimated based on the absolute percent coverage for herbaceous, shrub-sapling, and tree strata if present. In addition to the use of indicators of hydrology, hydric soils, and the presence of hydrophytic vegetation, other evidence such as topographic breaks and watershed characteristics were used to determine the wetland boundary.

Midwest Regional Supplement Routine Wetland Delineation data forms were used to record vegetation, hydrology, and soil characteristics at sample points in and adjacent to the wetlands (**Appendix B**). Sampling transects were taken along the wetland-upland boundary of the wetland. Transects and delineated wetland boundaries were field surveyed using a sub-meter accuracy hand held GPS unit. Approximate sampling points and delineated wetland edges are shown on **Figure 6, Appendix B.** Pictures of each wetland can be found in **Appendix C**.

SECTION III

III. Results and Wetland Information

The wetland delineation data forms (**Appendix B**) and photos (**Appendix C**) are attached. A summary of the delineation is below.

A. Wetland 1
Circular 39: Type 1/3/5
Cowardin: PEMA/PEM1C/PUBGx
Eggers and Reed Field Classification: Seasonally Flooded/Shallow Marsh/Open Water
Soil mapping unit: Cordova loam, 0 to 2 percent slopes (L23A)/Angus loam, 2 to 6 percent slopes (L37B)
No. Transects: 1 **No. Additional Sample Points:** 0
Wetland Flags: 10
Wetland Size (within Project Area): 0.30 acre

Wetland 1 is positioned north of Rockford Road to the west of the I-494 interchange. The wetland is adjacent to a paved parking lot to the north which contributes water to the wetland. A retaining wall is adjacent to the south. The wetland is characterized as a shallow marsh on the west end and an open water wetland on the east end. There is a seasonally flooded swale that connects between these two plant community types. The wetland has an overflow at the east edge where water flows overland downhill to Wetland 2. The wetland boundary is outlined in **Figure 6, Appendix B**.

Dominant vegetation in the wetland consisted of narrow-leaved cattail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea)* in the herb stratum. Hydric soil indicators consisted of Redox Dark Surface (F6). Hydrology indicators included Dry-Season Water Table (C2) and FAC-Neutral Test (D5).

Dominant vegetation in the upland consisted of green ash (*Fraxinus pennsylvanica*) in the tree stratum and Kentucky bluegrass (*Poa pratensis*) in the herb stratum. Hydric soil indicators consisted of Redox Dark Surface (F6). No hydrology indicators were identified at this sample point.

The wetland boundary was placed along a slight topographic break where there was transition from the presence of wetland hydrology to the lack of wetland hydrology.

B. Wetland 2
Circular 39: Type 2
Cowardin: PEMB
Eggers and Reed Field Classification: Fresh (Wet) Meadow
Soil mapping unit: Angus Loam, 2 to 6 percent slopes (L37B)
No. Transects: 1 **No. Additional Sample Points:** 0
Wetland Flags: 5
Wetland Size (within Project Area): 0.22 acre

Wetland 2 is positioned to the north of Rockford Road and to the west of the southbound exit ramp to Rockford Road, adjacent to the roadway. The wetland is located at the toe of a large hill to the south and a steep roadway slope to the east. Water overflows from Wetland 1 into Wetland 2. A wet ditch (Wet Ditch 1) also flows along the ramp from the south into Wetland 2. The wetland is characterized as fresh (wet) meadow. The wetland boundary is outlined in **Figure 6, Appendix B**.

Dominant vegetation in the wetland consisted of reed canary grass (*Phalaris arundinacea*) in the herb stratum. Hydric soil indicators consisted of Redox Dark Surface (F6). Hydrology indicators included Dry-Season Water Table (C2) and FAC-Neutral Test (D5).

Dominant vegetation in the upland consisted of Kentucky bluegrass (*Poa pratensis*) in the herb stratum. No hydric soil indicators or hydrology indicators were identified at this sample point.

The wetland boundary was placed along a slight topographic break slightly above the toe of the adjacent slopes.

C. Wetland 3
Circular 39: Type 1/3
Cowardin: PEMA/PEMC
Eggers and Reed Field Classification: Seasonally Flooded Basin/Shallow Marsh
Soil mapping unit: Udorthents (cut and fill land) (U3B)
No. Transects: 1 **No. Additional Sample Points:** 0
Wetland Flags: 0
Wetland Size (within Project Area): 1.8 acres

Wetland 3 is positioned north of Rockford Road and east of the I-494 northbound entrance ramp. A constructed slope to a parking lot is located at the east side of the basin. The wetland has a seasonally flooded, forested perimeter to the north, east, and south. The west side of the wetland is adjacent to the entrance ramp slope. The wetland transitions from the seasonally flooded perimeter to a shallow marsh towards the center. The wetland boundary is outlined in **Figure 6, Appendix B**.

Dominant vegetation in the wetland consisted of common buckthorn (*Rhamnus cathartica*) and eastern cottonwood (*Populus deltoides*) in the tree stratum, common buckthorn (*Rhamnus cathartica*) in the herb stratum, and bittersweet nightshade (*Solanum dulcamara*) in the woody vine stratum. Hydric soil indicators consisted of Depleted Below Dark Surface (A11). Hydrology indicators included Water-Stained Leaves (B9).

Dominant vegetation in the upland consisted of box elder (*Acer negundo*) in the tree stratum, box elder (*Acer negundo*) and common buckthorn (*Rhamnus cathartica*) in the sapling/shrub stratum, and Virginia creeper (*Parthenocissus quinquefolia*) in the woody vine stratum. No hydric soil indicators or hydrology indicators were identified at this sample point.

The wetland boundary was placed along a slight topographic break slightly above the toe of the adjacent slopes.

D. Wetland 4
Circular 39: Type 3
Cowardin: PEMC
Eggers and Reed Field Classification: Shallow Marsh
Soil mapping unit: Urban land-Udorthents, wet substratum, complex (U1A)
No. Transects: 0 **No. Additional Sample Points:** uphill of connected Wet Ditch 6
Wetland Flags: 7
Wetland Size (within Project Area): 0.54 acre

Wetland 4 is positioned east of the northbound exit ramp to Rockford Road. The wetland is located downhill of Wet Ditch 6 and of Wet Ditch 7. Wetland 4 outlets to the northeast. The wetland is characterized as a shallow marsh. The wetland boundary is outlined in **Figure 6, Appendix B**. No sample points were taken at Wetland 4, but wetland and upland sample points were taken at the top of Wet Ditch 6, which contained similar plant community characteristics to Wetland 4.

Dominant vegetation at the wetland sample point consisted of reed canary grass (*Phalaris arundinacea*) in the herb stratum. Hydric soil indicators consisted of Redox Dark Surface (F6). Hydrology indicators included Geomorphic Position (D2) and FAC-Neutral Test (D5).

Dominant vegetation in the upland consisted of reed canary grass (*Phalaris arundinacea*) in the herb stratum. No hydric soil indicators or hydrology indicators were identified at this sample point.

The wetland boundary of Wetland 4 was placed along a topographic break slightly above the toe of the adjacent slopes.

E. Additional Sampled Areas

No additional areas were sampled.

F. Additional Water Resources

In addition to the wetlands identified within this report, the project area also contained a total of seven wet ditches and two stormwater ponds. The following are descriptions of the additional water resources:

Wet Ditch 1: Wet Ditch 1 is located north of Rockford Road and west of the southbound exit ramp onto Rockford Road. The ditch flows from the corner of these two roadways to the north into Wetland 2. The areas adjacent to the east, west, and south are upland.

Wet Ditch 2: Wet Ditch 2 is located to the west of I-494 and to the east of the I-494 southbound exit ramp to Rockford Road. The ditch is located adjacent to a hill to the west and roadway to the east, both of which are upland areas.

Wet Ditch 3: Wet Ditch 3 is located to the west of I-494 and to the east of the I-494 southbound entrance ramp onto I-494. The ditch is located adjacent to a hill to the west and a roadway to the east, both of which are upland areas.

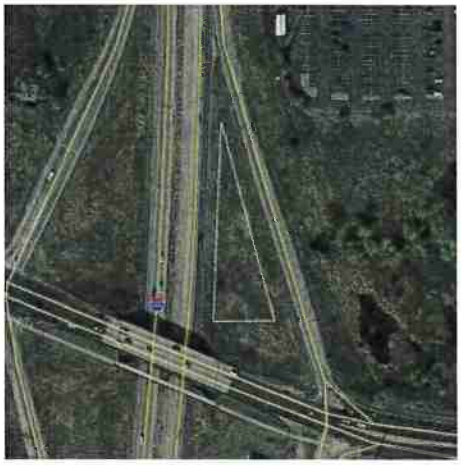
Wet Ditch 4: Wet Ditch 4 is located to the west of the I-494 southbound entrance ramp onto I-494. The ditch is adjacent to a roadway to the east and a hill to the west, both of which are upland areas.

Wet Ditch 5: Wet Ditch 5 is located to the east of the northbound entrance ramp onto I-494. The wet ditch generally flows from north to south through an upland area into Wetland 3.

Wet Ditch 6: Wet Ditch 6 is located to the east of the northbound exit ramp onto Rockford Road. The ditch generally begins near the top of the ramp and flows south through an upland area into Wetland 4.

Wet Ditch 7: Wet Ditch 7 is located to the east of I-494 and south of Wetland 4. The wet ditch generally flows from the south to the north through upland into Wetland 4.

Stormwater Pond 1: Pond 1 is located within the interchange to the east of I-494 and to the west of the northbound ramp onto I-494. The area is a shallow marsh near the edges and shallow open water at the center. The stormwater pond was developed within MnDOT right-of-way for drainage. Based on historic aerial photography, the stormwater pond was created in 2015. The pond was excavated from within an upland area. The general stormwater pond area is outlined in white on the photos below.

2014 

2015 

Stormwater Pond 2: Pond 2 is located within the interchange to the east of I-494 and to the west of the northbound exit ramp onto Rockford Road. The pond is used as an infiltration area by MnDOT and was developed between 2016 and 2017, as shown on aerial photographs. The pond was excavated from within an upland area. The general pond area is outlined in white on the photos below.

2016 

2017 

SECTION V

V. References

The following sources of information were reviewed to assist in performing the wetland delineation.

Literature Sources

Board of Water and Soil Resources. 2009. Wetland Conservation Act Rules, Chapter 8420. Print Communication Division, St. Paul.

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APPENDIX

APPENDIX A

Figure 1: Project Location
Figure 2: Topography
Figure 3: DNR Public Waters Inventory
Figure 4: National Wetlands Inventory
Figure 5: Hennepin County Soil Survey

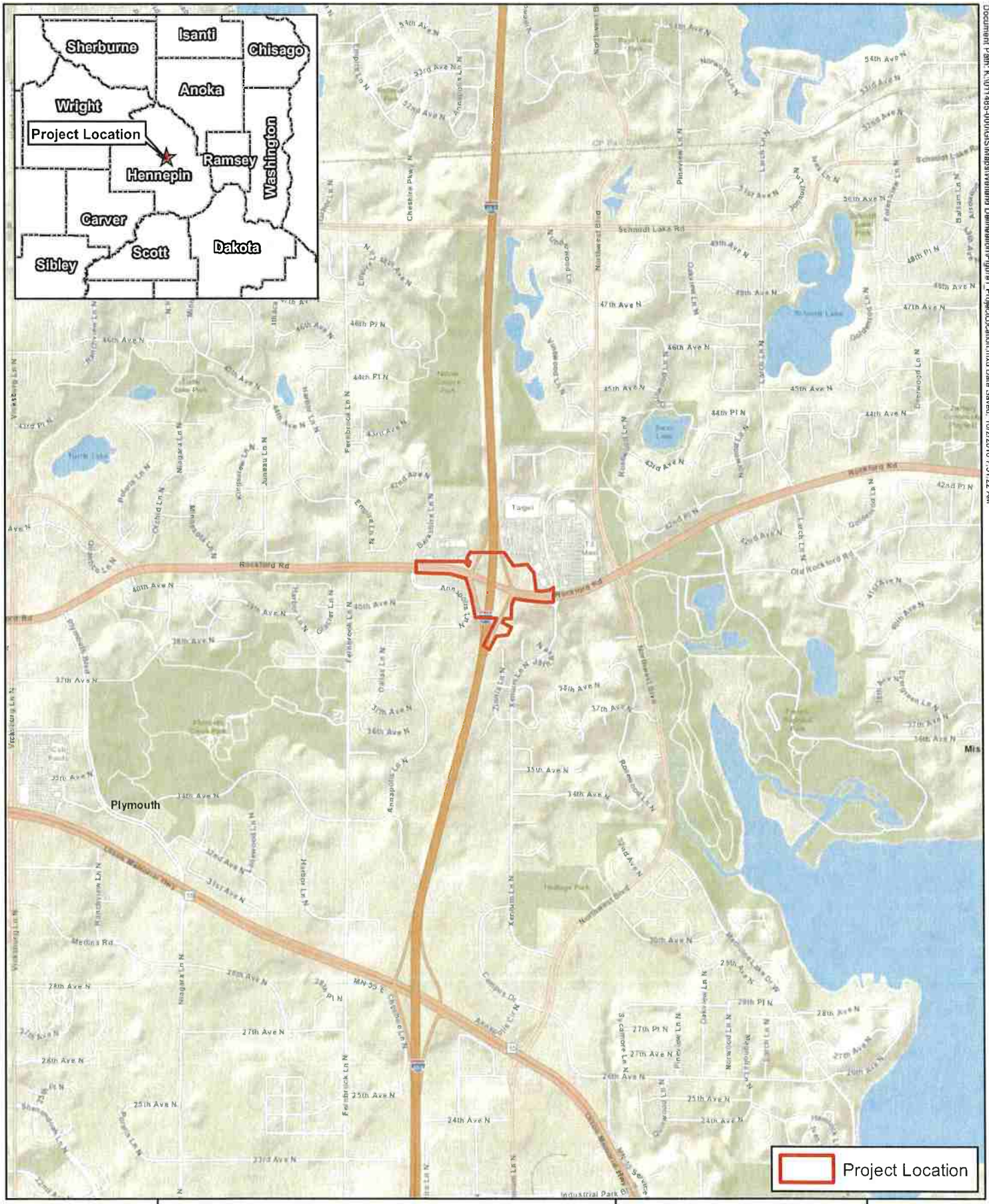

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Figure 1 - Project Location

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

City of Plymouth Minnesota

N

0 2,000 Feet

1 inch = 2,000 feet

WSB

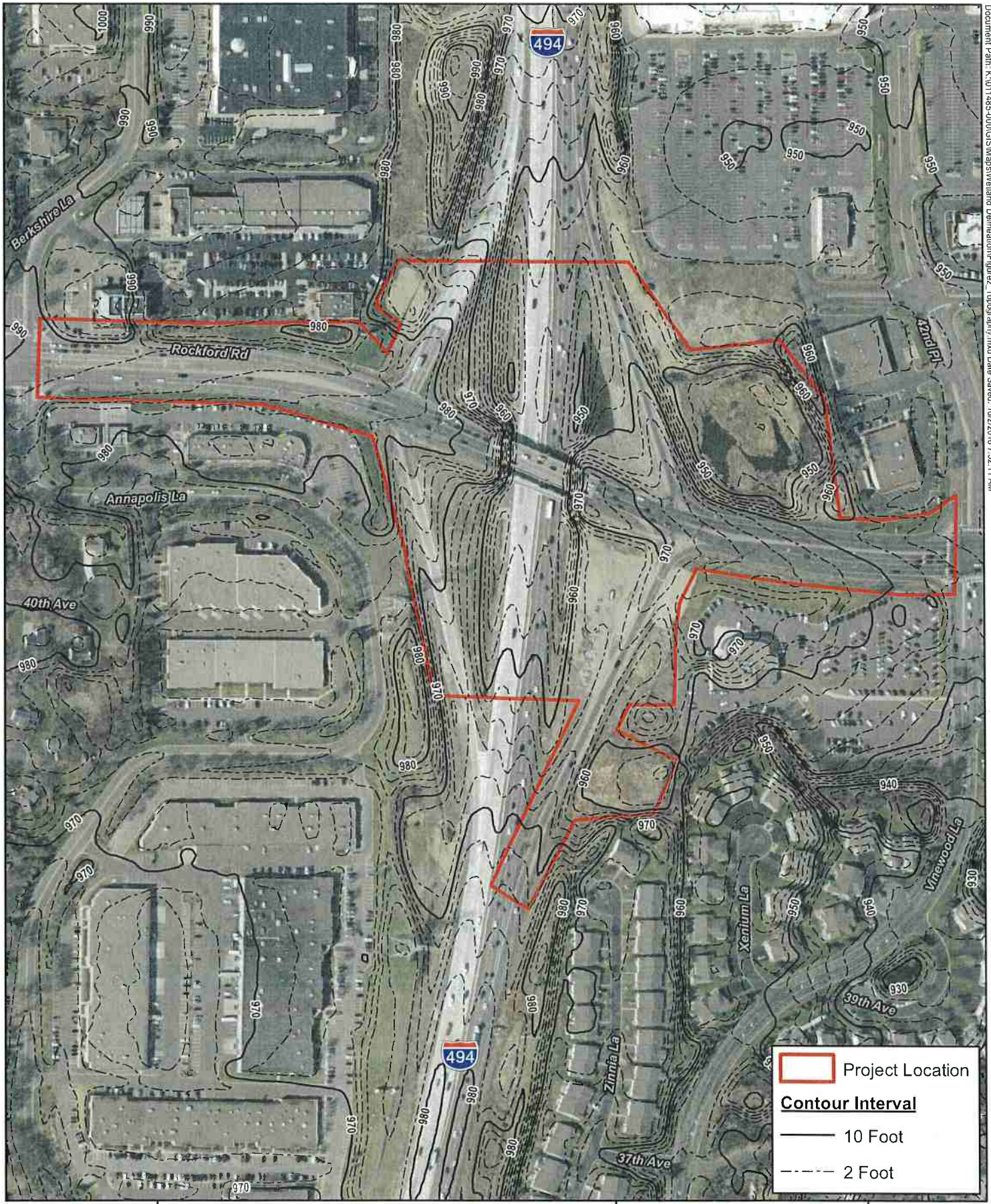

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Figure 2 - Topography

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

City of Plymouth Minnesota

N

0 300 Feet

1 inch = 300 feet

WSB

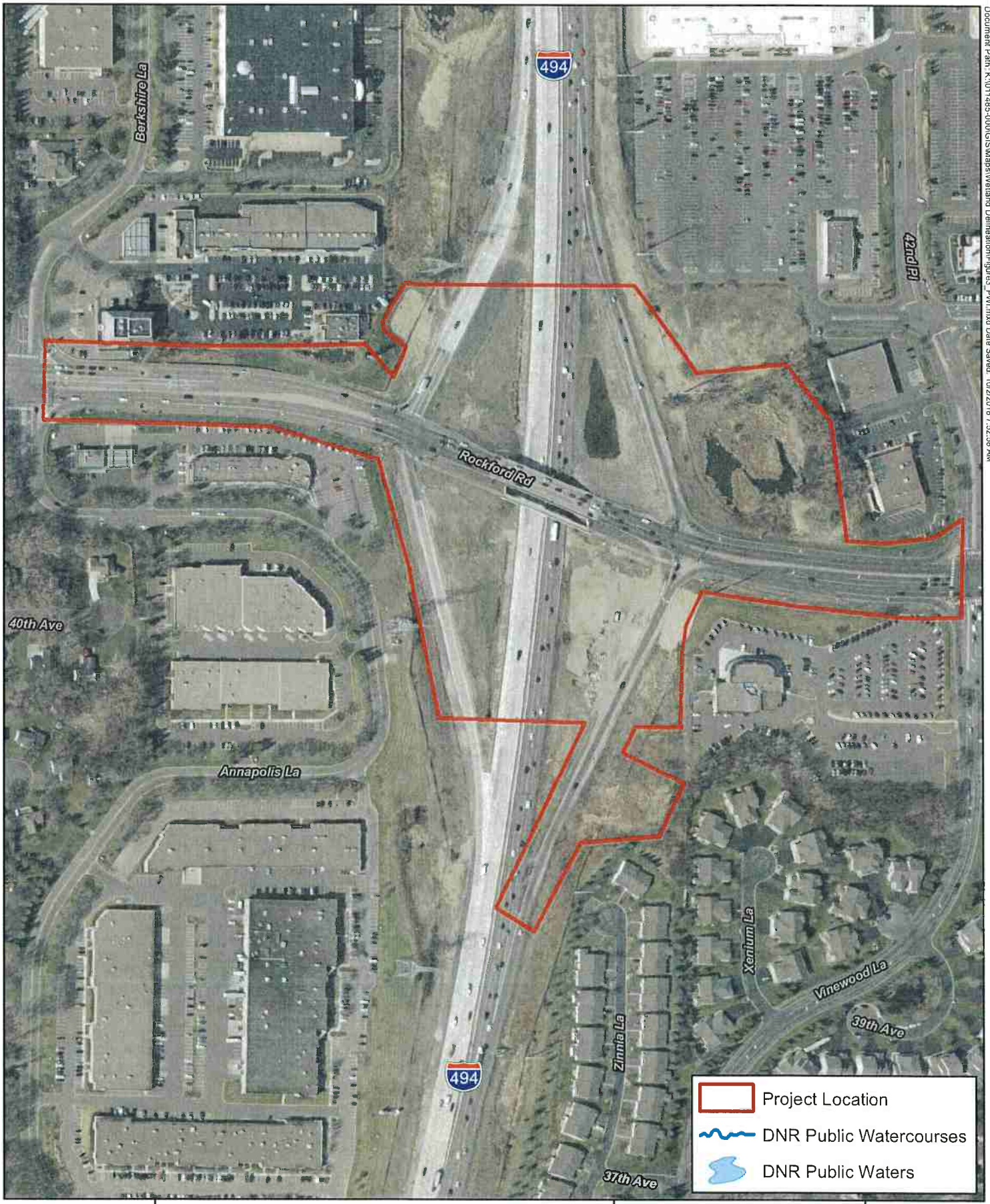

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Figure 3 - DNR Public Waters Inventory

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

City of Plymouth Minnesota

N

0 300 Feet

1 inch = 300 feet

WSB

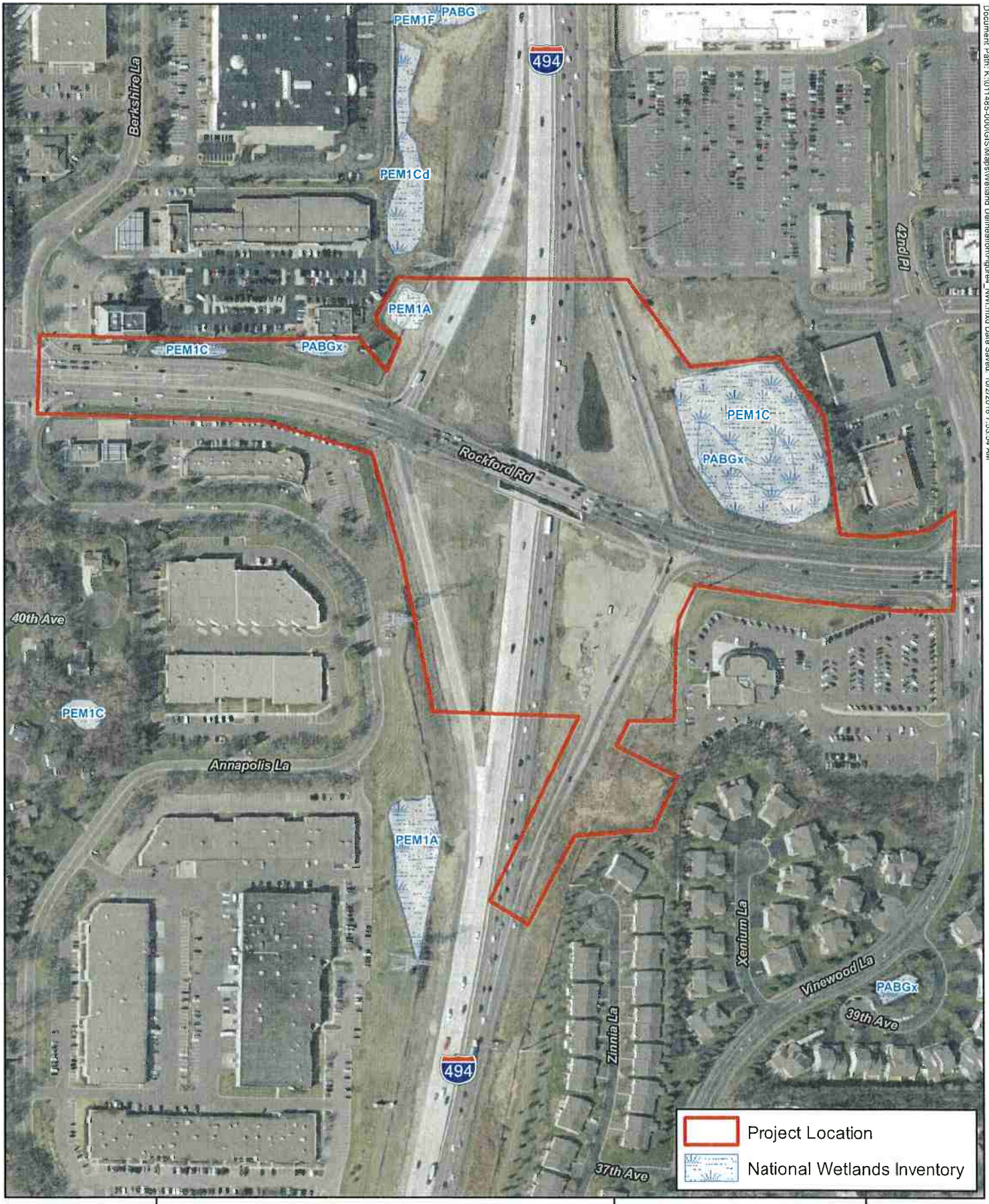

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Figure 4 - National Wetlands Inventory

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

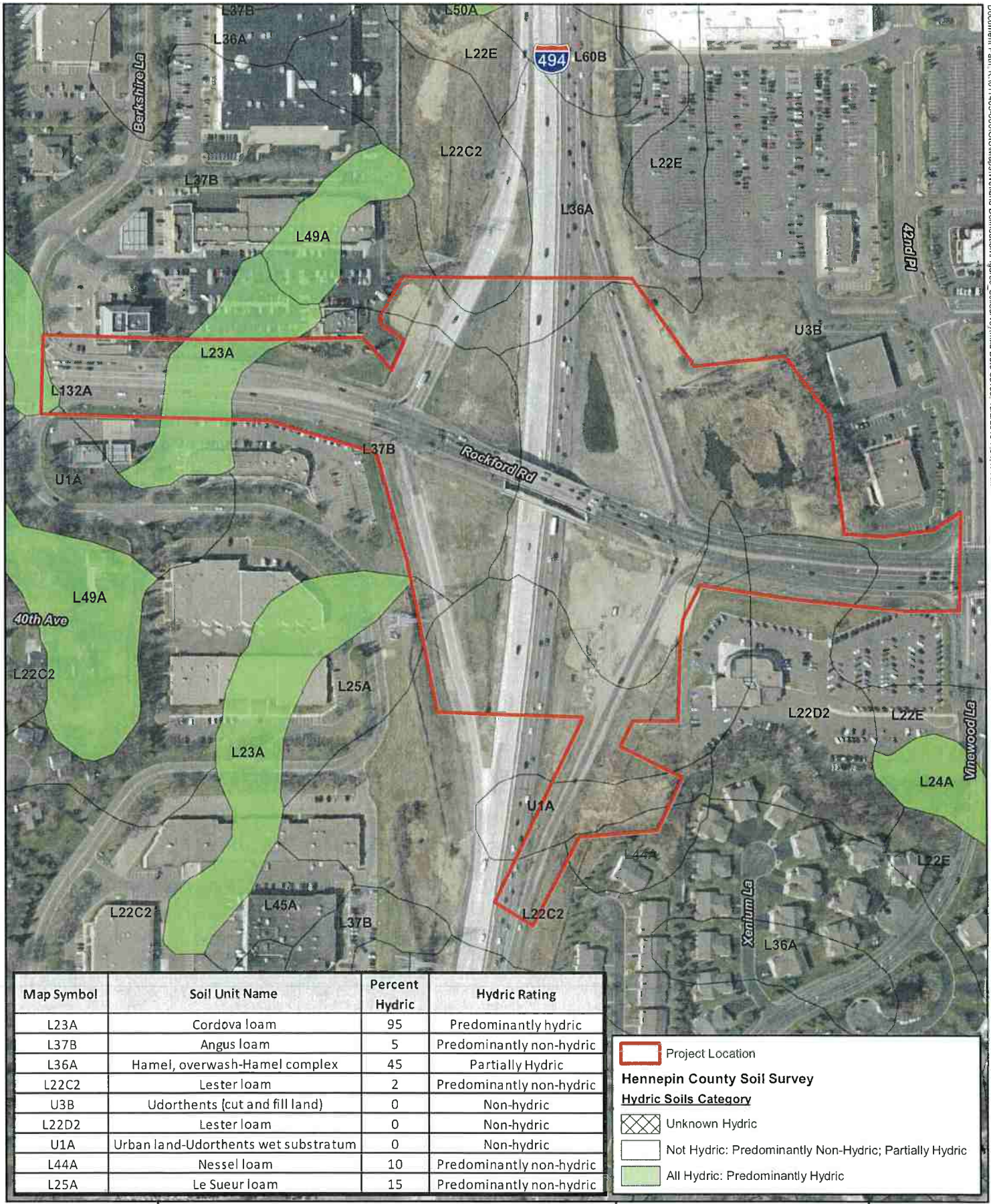
City of Plymouth Minnesota

N

0 300 Feet

1 inch = 300 feet

WSB



Map Symbol	Soil Unit Name	Percent Hydric	Hydric Rating
L23A	Cordova loam	95	Predominantly hydric
L37B	Angus loam	5	Predominantly non-hydric
L36A	Hamel, overwash-Hamel complex	45	Partially Hydric
L22C2	Lester loam	2	Predominantly non-hydric
U3B	Udorthents (cut and fill land)	0	Non-hydric
L22D2	Lester loam	0	Non-hydric
U1A	Urban land-Udorthents wet substratum	0	Non-hydric
L44A	Nessel loam	10	Predominantly non-hydric
L25A	Le Sueur loam	15	Predominantly non-hydric

Figure 5 - Hennepin County Soil Survey

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

City of Plymouth Minnesota

N

0 300 Feet

1 inch = 300 feet

WSB

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APPENDIX

APPENDIX B

Figure 6: Wetland Boundary
Wetland Determination Data Forms

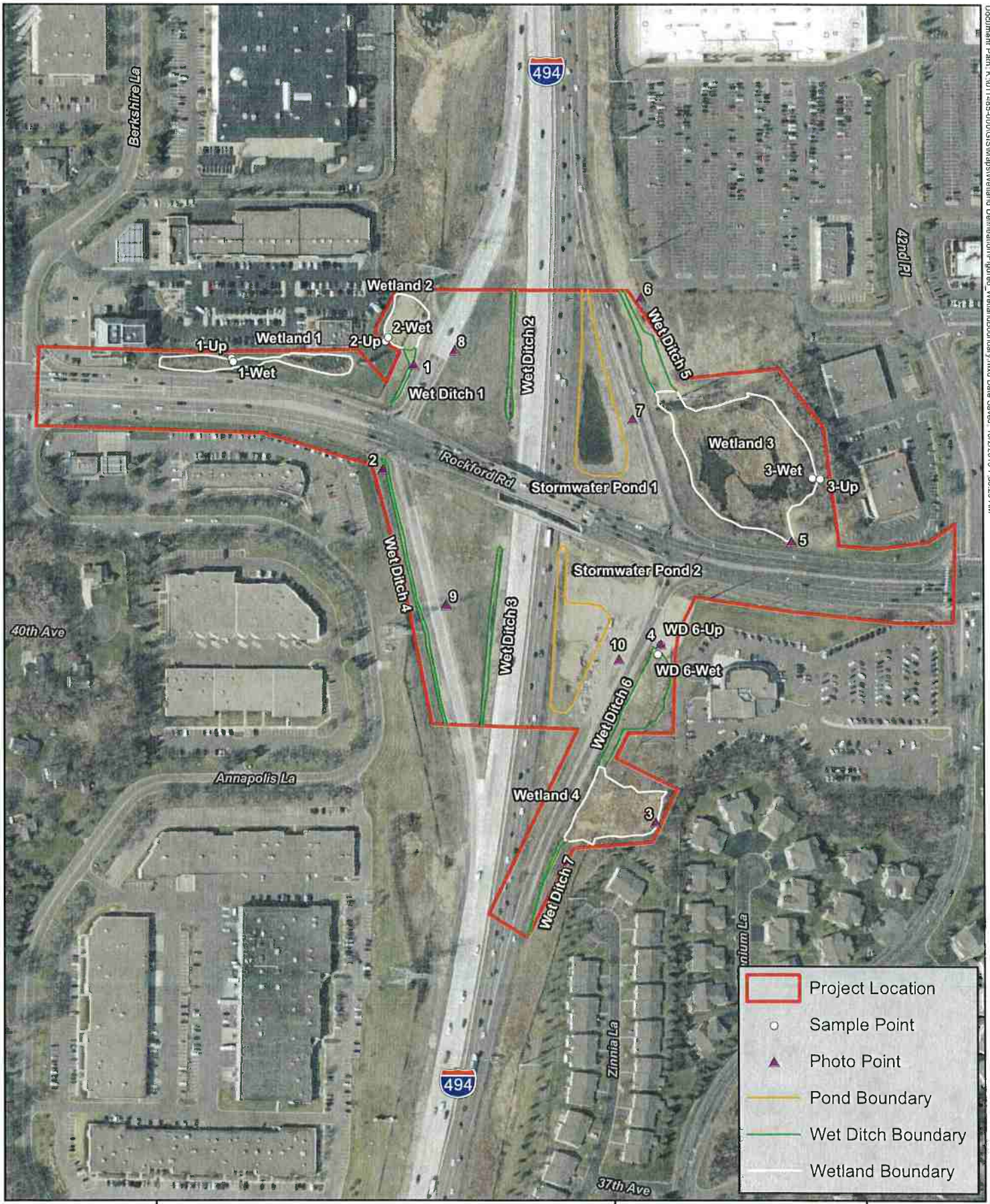

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Figure 6 - Wetland Boundary

CSAH 9 (Rockford Road)/I-494 Interchange Project
City of Plymouth

City of Plymouth Minnesota

N

0 300 Feet

1 inch = 300 feet

WSB

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-Up

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 20 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Cordova loam, 0 to 2 percent slopes | 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" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

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

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

Area is mowed.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus pennsylvanica*	10	Y	FACW
2			
3			
4			
5			
	10 = Total Cover		
Sapling/Shrub stratum (Plot size: 15)			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5)			
1 *Poa pratensis*	95	Y	FAC
2 *Glechoma hederacea*	5	N	FACU
3 *Taraxacum officinale*	3	N	FACU
4 *Cirsium arvense*	2	N	FACU
5			
6			
7			
8			
9			
10			
	105 = 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	10	x 2 =	20
FAC species	95	x 3 =	285
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	115 (A)		345 (B)

Prevalence Index = B/A = 3.00

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)

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
0-6	10YR 2/1	100					Clay Loam	
6-9	10YR 2/1	98	10YR 4/6	2	C	M	Clay Loam	
9-12	10YR 2/1	80	10YR 4/6	10	C	M	Clay Loam	
			10YR 6/3	10	D	M	Clay Loam	Fill

*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)
- X 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 weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric soil present? Y

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

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: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-Wet
Investigator(s): RF | Section, Township, Range: 15, 118, 22
Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84
Soil Map Unit Name: Cordova loam, 0 to 2 percent slopes | NWI Classification: PEM1C
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? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	Wetland 1

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

There is a parking lot to the north and a retaining wall to the south. Much of the surrounding area is mowed.

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*	70	Y	OBL
2 *Phalaris arundinacea*	30	Y	FACW
3 *Poa pratensis*	15	N	FAC
4 *Juncus effusus*	15	N	OBL
5			
6			
7			
8			
9			
10			
	130	= 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	85	x 1 =	85
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	130 (A)		190 (B)

Prevalence Index = B/A = 1.46

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-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
0-6	10YR 2/1	100	10YR 4/6	2	C	M	Sandy Clay Loam	
6-18	10YR 2/1	95	10YR 4/6	5	C	M	Sandy Clay 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)
- X 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 weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 18"

Hydric soil present? Y

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	16"
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	12"

Indicators of wetland hydrology present? Y

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2-Up

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 0 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Hamel, overwash-Hamel complex, 0 to 3 percent slopes | 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" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: PEM1A

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

Mowed area.

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 *Poa pratensis*	98	Y	FAC
2 *Trifolium repens*	2	N	FACU
3 *Cirsium arvense*	2	N	FACU
4			
5			
6			
7			
8			
9			
10			
	102	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	98	x 3 =	294
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column totals	102 (A)		310 (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ 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: 2-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
0-6	10YR 2/1	100					Loam	
6-12	10YR 2/2	100					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 weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12"

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

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: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2-Wet

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 0 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Hamel, overwash-Hamel complex, 0 to 3 percent slopes | NWI Classification:

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? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	PEM1A

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 *Phalaris arundinacea*	95	Y	FACW
2 *Poa pratensis*	15	N	FAC
3 *Solidago gigantea*	5	N	FACW
4			
5			
6			
7			
8			
9			
10			
	115 = Total Cover		
Woody vine stratum (Plot size: 30)			
1 *Solanum dulcamara*	2		FAC
2			
	2 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	117 (A)		251 (B)

Prevalence Index = B/A = 2.15

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: 2-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
0-5	10YR 2/1	95	10YR 5/8	5	C	M	Mucky Loam	
5-18	10YR 2/1	60	10YR 7/1	30	D	M	Clay Loam	
			10YR 5/8	10	C	M	Clay Loam	
18-24	10YR 2/1	100					Clay 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)
- X 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 weltand 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)
- ___ 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)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	X	No	___	Depth (inches):	12
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	9

Indicators of wetland hydrology present? Y

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 3-Up

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 30 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Hamel, overwash-Hamel complex, 0 to 3 percent slopes | 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" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: PEM1A

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

Constructed slope adjacent to parking lot.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	80	Y	FAC
2			
3			
4			
5			
	80	= Total Cover	
Sapling/Shrub stratum (Plot size: 15)			
1 *Acer negundo*	10	Y	FAC
2 *Rhamnus cathartica*	10	Y	FAC
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size: 5)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size: 30)			
1 *Parthenocissus quinquefolia*	5	Y	FACU
2			
	5	= 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: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column totals	105 (A)		320 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ 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: 3-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
0-24	10YR 2/2	100					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 weltand 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): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

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: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 3-Wet

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 20 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Udorthents (cut and fill land), 0 to 6 percent slopes | 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" 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	f yes, optional wetland site ID: PEM1C
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 *Rhamnus cathartica*	85	Y	FAC
2 *Populus deltoides*	70	Y	FAC
3			
4			
5			
	155 = Total Cover		
Sapling/Shrub stratum (Plot size: 15)			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5)			
1 *Rhamnus cathartica*	85	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	85 = Total Cover		
Woody vine stratum (Plot size: 30)			
1 *Solanum dulcamara*	2		FAC
2			
	2 = 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: 3 (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	0	x 2 =	0
FAC species	242	x 3 =	726
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	242 (A)		726 (B)

Prevalence Index = B/A = 3.00

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)

SOIL

Sampling Point: 3-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
0-3	10YR 2/1	100					Loam	
3-9	10YR 2/2	98	10YR 6/1	2	D	M	Loam	
9-24	10YR 4/1	98	10YR 7/8	2	C	M	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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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)
- ___ 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)
- X 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):	___
Saturation present? (includes capillary fringe)	Yes ___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: WD 6-Up

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 25 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Hamel, overwash-Hamel complex, 0 to 3 percent slopes | 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" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

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

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

Area is adjacent to I-494 to the west and a car dealership to the east.

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 *Phalaris arundinacea*	45	Y	FACW
2 *Solidago gigantea*	15	N	FACW
3 *Trifolium repens*	10	N	FACU
4 *Setaria faberi*	8	N	FACU
5 *Tanacetum vulgare*	5	N	UPL
6 *Poa pratensis*	5	N	FAC
7 *Cirsium arvense*	2	N	FACU
8			
9			
10			
	90	= 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	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	5	x 3 =	15
FACU species	20	x 4 =	80
UPL species	5	x 5 =	25
Column totals	90 (A)		240 (B)

Prevalence Index = B/A = 2.67

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: WD 6-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
0-12	10YR 5/3	90	10YR 4/6	10	C	M	Clay/Fill	

*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 weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

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

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: CSAH 9/I-494 Interchange Project | City/County: Plymouth/Hennepin | Sampling Date: 9/25/18

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: WD 6-Wet

Investigator(s): RF | Section, Township, Range: 15,118,22

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

Slope (%): 20 | Lat: 45.029414 | Long: -93.455788 | Datum: WGS 84

Soil Map Unit Name: Udorthents (cut and fill land), 0 to 6 percent slopes (U3B) | 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		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	f yes, optional wetland site ID:	None

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

Area is adjacenet to I-494 to the west and a car dealership to the east.

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 *Phalaris arundinacea*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= 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	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

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)

SOIL

Sampling Point: WD 6-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
0-12	10YR 2/1	98	10YR 4/6	2	C	M	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)
- X 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 weltand 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)
- ___ 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Indicators of wetland hydrology present? Y

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

Remarks:

APPENDIX C

Wetland Photos

Photo 1 - Wetland 2 facing north

Photo 2 - Wet Ditch 4 facing south

Photo 3 - Wetland 4 facing northwest

Photo 4 - Wet Ditch 6 facing south

Photo 5 - Wetland 3 facing north

Photo 6 - Wet Ditch 5 facing northwest

Photo 7a - Stormwater Pond 1 facing northwest

Photo 7b - Stormwater Pond 1 facing southwest

Photo 8 - Wet Ditch 2 facing southeast

Photo 9 - Wet Ditch 3 facing northeast

Photo 10 - Stormwater Pond 2 facing northwest

APPENDIX D

Antecedent Precipitation Data

Minnesota State Climatology Office

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Hennepin** township number: **118N**
township name: **Plymouth** range number: **22W**
nearest community: **Plymouth** section number: **15**

Aerial photograph or site visit date:
Tuesday, September 25, 2018

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: **August 2018**	second prior month: **July 2018**	third prior month: **June 2018**
estimated precipitation total for this location:	**3.32R**	**3.63R**	**4.34R**
there is a 30% chance this location will have less than:	3.26	2.55	3.42
there is a 30% chance this location will have more than:	5.12	4.52	5.64
type of month: dry normal wet	**normal**	**normal**	**normal**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 2 = 2**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**12 (Normal)**		

Other Resources:

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

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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: City of Plymouth (Michael Thompson)
Mailing Address: 3400 Plymouth Boulevard, Plymouth, MN 55447
Phone: 763-509-5501
E-mail Address: mthompson@plymouthmn.gov

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

Agent Name: WSB & Associates (Roxy Franta)
Mailing Address: 701 Xenia Ave S, Suite 300, Minneapolis, MN 55416
Phone: 763-762-2844
E-mail Address: rfranta@wsbeng.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Plymouth**
Parcel ID and/or Address: I-494 interchange at Rockford Road
Legal Description (Section, Township, Range): S 15, T118N, R22W
Lat/Long (decimal degrees): 45.028443, -93.452465
Attach a map showing the location of the site in relation to local streets, roads, highways. Figure 1
Approximate size of site (acres) or if a linear project, length (feet): 0.30 miles of CSAH 9, entrance and exit ramps

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.*

No known delineation approval has been granted for the project area.

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

The City of Plymouth is proposing to replace the Rockford Road bridge crossing interstate I-494, reconstruct the bridge approaches and portions of the I-494 ramps, construct a multiuse trail along the north side of Rockford Road (including bridge), reconstruct a multiuse trail along the south side of Rockford Road, reconstruct a retaining wall north of Rockford Road, and make drainage improvements.

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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: _____ *Date:*

I hereby authorize **WSB & Associates (Roxy Franta)** *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.*

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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:

MN Rules 8420.0105 SCOPE Subpart 2.D.

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:

Incidental wetlands are wetland areas that were created in non-wetland areas, not for the purpose of creating wetlands. Often, incidental wetlands occur as wet ditches along roadsides where drainage is concentrated. Seven wet ditches and two stormwater ponds were identified during the wetland delineation which appear to have been incidentally created in upland. Descriptions of the following aquatic resources are included in Section III.F of the attached delineation report.

- Wet Ditch 1
- Wet Ditch 2
- Wet Ditch 3
- Wet Ditch 4
- Wet Ditch 5
- Wet Ditch 6
- Wet Ditch 7
- Stormwater Pond 1
- Stormwater Pond 2

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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: City of Plymouth (Michael Thompson)
Mailing Address: 3400 Plymouth Boulevard, Plymouth, MN 55447
Phone: 763-509-5501
E-mail Address: mthompson@plymouthmn.gov

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

Agent Name: WSB & Associates (Roxy Franta)
Mailing Address: 701 Xenia Ave S, Suite 300, Minneapolis, MN 55416
Phone: 763-762-2844
E-mail Address: rfranta@wsbeng.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Plymouth**
Parcel ID and/or Address: I-494 interchange at Rockford Road
Legal Description (Section, Township, Range): S 15, T118N, R22W
Lat/Long (decimal degrees): 45.028443, -93.452465
Attach a map showing the location of the site in relation to local streets, roads, highways. Figure 1
Approximate size of site (acres) or if a linear project, length (feet): 0.30 miles of CSAH 9, entrance and exit ramps

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

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Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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: _____ 10/17/2018 *Date:*

I hereby authorize **WSB & Associates (Roxy Franta)** *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.*

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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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

Project Name and/or Number: CSAH 9 (Rockford Road) / I-494 Interchange Project

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

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- Wet Ditch 2
- Wet Ditch 3
- Wet Ditch 4
- Wet Ditch 5
- Wet Ditch 6
- Wet Ditch 7
- Stormwater Pond 1
- Stormwater Pond 2

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit (LGU)	Address
City of Plymouth	**3400 Plymouth Blvd.** **Plymouth, MN 55447**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
Wayzata Public Schools	**Sunset Hills Elementary School**	**11/06/2018**	**N/A**

Type of Application (check all that apply):

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Summary and description of proposed project (attach additional sheets as necessary):

Pinnacle Engineering investigated and delineation the Sunset Hills Elementary School site on September 27, 2018. During the delineation, 1 wetland area was investigated and delineated. A portion of Wetland 1 is DNR Public Waters #27069600.

The comment period closes on November 28th, 2018.

2. APPLICATION REVIEW AND DECISION

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 3 provides notice that an application was made to the LGU under the Wetland Conservation Act as specified above. A copy of the application is attached. Comments can be submitted to:

Name and Title of LGU Contact Person	Comments must be received by (minimum 15 business-day comment period):
Michael Thompson **City of Plymouth**	**November 28, 2018**
Address (if different than LGU) **3400 Plymouth Blvd,** **Plymouth, MN 55447**	Date, time, and location of decision: **November 29, 2018**
Phone Number and E-mail Address **763-509-5501** **mthompson@plymouth.gov**	Decision-maker for this application: ☒ Staff ☐ Governing Board or Council

Signature: _____ **Date:** 11/6/2018

Fee Pd 11/5/18 B.S.

3. LIST OF ADDRESSEES

☒ SWCD TEP member: *Ms. Stacey Lijewski, HCD, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600 (sent electronically)*
☒ BWSR TEP member: *Ben Carlson, BWSR 520 Lafayette Road North, St. Paul, MN 55401 (sent electronically)*
☒ LGU TEP member (if different than LGU Contact): *Ben Scharenbroich, City of Plymouth, 3400 Plymouth Blvd, Plymouth, MN 55447 (sent electronically)*
☒ DNR TEP member: *Becky Horton, MnDNR, 1200 Warner Road, St. Paul, MN 55106 (sent electronically)*
☐ DNR Regional Office (if different than DNR TEP member)
☒ WD or WMO (if applicable): *BCWMC, c/o Laura Jester, Keystone Waters, LLC, 16145 Hillcrest Lane, Eden Prairie, MN 55346 (sent electronically)*
☒ Applicant (notice only) and Landowner (if different) *Arlee Carlson, Sunde Land Surveying, 9001 East Bloomington Freeway, Suite 118, Bloomington, MN 55420 (sent electronically)*
☐ Members of the public who requested notice (notice only): *Scott Thelen, Pinnacle Engineering, Inc., 11541 95th Ave North, Minneapolis, MN 55369 (sent electronically)*
☒ Corps of Engineers Project Manager (notice only) Melissa Jenny *USACE, 180 5th Street East, Suite 700, St. Paul, MN 55101 (sent electronically)*
☐ BWSR Wetland Bank Coordinator (wetland bank plan applications only)

4. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/contact/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.
Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources
2115 Birchmont Beach Rd. NE	1201 E. Hwy. 2	1200 Warner Road	261 Hwy. 15 South
Bemidji, MN 56601	Grand Rapids, MN 55744	St. Paul, MN 55106	New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687
or send to:

➢

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:

Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

5. ATTACHMENTS

In addition to the application, list any other attachments:
☒ **Sunset Hills Elementary School Wetland Delineation Report**

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

October 17, 2018

Mr. Arlee Carlson
Sunde Land Surveying
9001 East Bloomington Freeway, Suite 118
Bloomington, MN, 55420

RE: Wetland Services
Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441
Pinnacle Project Number: EM20180974

Dear Mr. Carlson:

Pinnacle Engineering Inc. (Pinnacle) has performed a Wetland Determination and Delineation of the Sunset Hills Elementary School (ISD#284) campus located at 13005 Sunset Trail in Plymouth, Hennepin County, Minnesota, which is within the SE ¼ of the SE ¼ of Section 34, Township 118N, Range 23W. The Site consists of an elementary school building, parking areas, wooded areas, manicured lawns, and a wetland. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The attached report documents the methods and findings of the delineation.

During the field assessment, it was determined that one area within the project limits met all three of the mandatory criteria of a wetland. Its boundary was flagged for survey by Sunde Land Surveying. The delineation will be reviewed by a representative of the City of Plymouth, who serves as the local governmental unit administering Minnesota's Wetland Conservation Act, and the U.S. Army Corps of Engineers, who administers the Clean Water Act.

If you have any questions or wish to discuss any particular aspect of the project, please contact me at (763) 277-8410. We look forward to being of continued service to you.

Sincerely,

PINNACLE ENGINEERING, INC.

Scott Thelen
Senior Project Scientist, Certified Wetland Scientist# 1249

WETLAND DELINEATION REPORT

FOR:

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, Minnesota 55441

PREPARED FOR:

Sunde Land Surveying
9001 East Bloomington Freeway,
Suite 118
Bloomington, Minnesota 55420

SUBMITTED TO:

City of Plymouth
3400 Plymouth Boulevard
Plymouth, Minnesota 55447

PREPARED BY:

Pinnacle Engineering, Inc.
11541 95th Avenue North
Maple Grove, Minnesota 55369

October 17, 2018

Pinnacle Project Number: EM20180974

WETLAND DETERMINATION AND DELINEATION

FOR:

SUNSET HILLS ELEMENTARY SCHOOL
13005 SUNSET TRAIL
PLYMOUTH, MINNESOTA 55441

PREPARED FOR:

SUNDE LAND SURVEYING
9001 EAST BLOOMINGTON FREEWAY
SUITE 118
BLOOMINGTON, MINNESOTA 55420

PREPARED BY:

PINNACLE ENGINEERING, INC.
11541 95th AVENUE NORTH
MAPLE GROVE, MINNESOTA 55369

PINNACLE PROJECT NUMBER: EM20180974

OCTOBER 17, 2018

Prepared By:

Breeka Li Goodlander
Staff Scientist

Reviewed By:

Scott Thelen
Senior Scientist
MN Certified Wetland Delineator # 1249

Table of Contents

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 Introduction

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation of the Sunset Hills Elementary School campus located at 13005 Sunset Trail in Plymouth, Hennepin County, Minnesota which is in the SE ¼ of the SE ¼ of Section 34, Township 118N, Range 22W (Lat: 44.979669°; Long: -93.445081°, WGS84). The Site consists of an elementary school building, parking areas, wooded areas, manicured lawns, and a wetland. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The attached report documents the methods and findings of the delineation.

1.2 Scope

Pinnacle conducted the on-site Level 2 Wetland Determination and Delineation in accordance with the criteria established in the 1987 U. S. Army Corps of Engineers Wetland Delineation Manual, updated in 1997, utilizing the Midwest Region Supplement. The work included the following items:

- Review of County Soil Surveys, USGS topographic maps, National Wetland Inventory (NWI) Maps, Public Water Inventory (PWI) maps, and aerial photographs.
- A site reconnaissance to determine if and where jurisdictional wetlands exist.
- Delineation of the identified wetlands within the area of interest boundaries.
- Preparation and submittal of this report summarizing the findings of our work.

2.0 BACKGROUND INFORMATION

2.1 Site Location and Use

The project area is located at the Sunset Hills Elementary School campus, 13005 Sunset Trail in Plymouth, Hennepin County, Minnesota which is within the SE ¼ of the SE ¼ of Section 34, Township 118N, Range 22W (Lat: 44.979669°; Long: -93.445081°, WGS84). The Site consists of an elementary school building, parking areas, wooded areas, manicured lawns, and a wetland. The Site is approximately 19-acres in size and has a property identification number (PID) of 3411822440013. Figure 1 shows the site in its current configuration.

2.2 Surveys and Maps

Pinnacle conducted a review of the Hennepin County Soil Survey, topographic maps, Protected Waters Inventory (PWI), and National Wetland Inventory (NWI) maps for the vicinity of the Site. The following sections summarize the information available at the time of this review.

2.2.1 Topographic Maps

The Site is situated in a sloping topographic setting that ranges from approximately 960 feet above mean sea level (MSL) to approximately 1,006 feet MSL. The Site slopes to the east from the buildings in the western portion of the Site. The slope descends in elevation from approximately 1006 MSL to 964 MSL, dropping approximately 42 feet. Based on the contour intervals on the topographic map and our Site observations, surficial drainage appears to be to the eastern portion of the Site, towards Wetland 1.

2.2.2 Soil Survey

The Natural Resources Conservation Service (NRCS) Web Soil Survey map, which is included as Figure 3, was reviewed for information pertaining to the Site soils. The Soil Survey indicated the Site soil units consist of: Lester loam, 6 to 10 %slopes, moderately eroded (L22C2); Lester loam, 10 to 22 %slopes (L22E); Lester loam, morainic, 25 to 35 %slopes (L22F); Angus loam, 2 to 6 %slopes (L37B); Klossner soils, depressional, 0 to 1 %slopes (L49A); Urban land-Udorthents, wet substratum, complex, 0 to 2 %slopes (U1A); Udorthents (cut and fill land), 0 to 6 %slopes (U3B); Urban land-Udorthents (cut and fill land) complex, 0 to 6 %slopes (U6B); water (W). Of the identified soil types, Klossner soils are considered hydric soils. Soil samples collected during the wetland delineation were characterized and recorded on the Wetland Determination Data Form – Midwest Regional Supplement Data Forms, which are included as Appendix A.

2.2.3 Wetland Inventory Maps

The United States Fish and Wildlife Service (USFWS)-National Wetland Inventory (NWI) map for the Site area depicted four wetland types within or adjacent to the Site boundaries: two palustrine, aquatic bed, intermittently exposed (PABG) wetlands in the central and eastern portion of the Site; a palustrine, broad-leaved forested, temporarily flooded (PFO1A) wetland surrounding the central PABG wetland; and a palustrine, persistent, emergent, semi-permanently flooded (PEM1F) wetland. Each NWI identified wetland type corresponds to Wetland 1. NWI maps generally show the approximate location of wetlands as of the time of publication. The NWI map, as reviewed by Pinnacle, were compiled based on aerial photo interpretation and field surveys and is included as Figure 4.

2.2.4 Public Waters Inventory

The Minnesota Department of Natural Resources Public Waters Inventory (PWI) produces a map of the protected wetlands and waters of the State. The PWI map, which is included as Figure 5, identified a protected waterbody that corresponds to Wetland 1 (Unnamed (Lake ID#27069600)) in the southeast portion of the Site.

3.0 WETLAND DETERMINATION

3.1 Methodology

The wetland determination was made utilizing the techniques of the Routine Onsite Method, as described in the 1987 U. S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997 and utilizing the Midwest Region Supplement. Determination of hydric soils, site hydrology, and hydrophytic vegetation were made according to the procedures and guidelines described in the manual. Sampling locations were selected to be representative of wetland/upland transition areas.

Scott Thelen and Breeka Li Goodlander of Pinnacle assessed the wetlands in the project area on September 27, 2018. A portion of wetland 1 was surrounded by a chain link fence, limiting access. The assessment included probing the soils to observe the color and moisture, as well as other available hydric soil indicators, such as mottling, gleying, and oxidized root channels. The characteristics noted for each sampling location are documented in the data forms, which are included in Appendix A. Survey markers were placed along the delineated northern, southern, and western edge of Wetland 1 for survey. A figure of the wetland area is included as Figure 2.

To date, 2018 seasonal rainfall amounts were average for this area. Rain precipitation in the amount of 6.23 inches occurred the fourteen days prior to the wetland delineation field visit. Pinnacle delineated one wetland within the Site during the field assessment.

3.2 Wetland Descriptions

Table 3.2.1 below summarizes the findings of the field investigation. Data forms for the field investigation may be found in Appendix A and photographs in Appendix C.

Wetland ID	Delineated Wetland Type	Wetland Size ac/sf		NWI Wetland Type	Dominant Wetland Vegetation	Hydric Soil (Yes/No)	Hydric Soil Indicator	Hydrology
1	Type 3, Shallow marsh Type 5, Open water wetland Type 7, Wooded swamp	3.88	15,702	PEM1F, PABG, PFO1A	Reed canary grass, pin oak, American elm, green ash, jewelweed, buckthorn, riverbank grape, red-osier dogwood	Yes	Depleted Below Dark Surface (A11), Depleted Matrix (F3), Redox Dark Surface (F6)	Geomorphic Position (D2), FAC-Neutral Test (D5), Saturation Visible on Aerial Imagery (C9)

Wetland Type PEM1F
The NWI Cowardin wetland classification system identifies the PEM1F label for a wetland that consists of a palustrine basin, with persistent emergent vegetation, dominated by species that normally remain stand at least until the beginning of the next growing season; such as perennial plants and other erect, rooted herbaceous hydrophytes, excluding mosses and lichens. This wetland is semi-permanently flooded. Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface. The NWI map for the Site area indicated one PEM1F wetland partially contained within the Site boundaries, which corresponds to Wetland 1. The soil survey indicates that hydric soils are located within the wetland area.

Wetland Type PABG
The NWI Cowardin wetland classification system identifies the PABG label for a wetland that consists of a palustrine basin, with an aquatic bed, that is intermittently exposed. The NWI map for the Site area indicated one PABG wetland contained within the Site boundaries and one PABG wetland partially contained the Site boundaries, both of which correspond to Wetland 1. The soil survey indicates that hydric soils are located within the wetland area.

Wetland Type PFO1A
The NWI Cowardin wetland classification system identified the PFO1A label for a wetland that consists of a palustrine basin, with a broad-leaved deciduous woody forest, that is temporarily flooded. Surface water is present for brief periods during the growing season, but the water table usually lies well below the ground surface for most of the season. The NWI map for the Site area indicated one PFO1A wetland contained within the Site boundaries, which corresponds to Wetland 1. The soil survey indicates that hydric soils are located within the wetland area.

4.0 DISCUSSION

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation of the Sunset Hills Elementary School campus located at 13005 Sunset Trail in Plymouth, Hennepin County, Minnesota which is in the SE ¼ of the SE ¼ of Section 34, Township 118N, Range 22W (Lat: 44.979669°; Long: -93.445081°, WGS84). The Site consists of an elementary school building, parking areas, wooded areas, manicured lawns, and a wetland. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The Site is approximately 19-acres in size and has a property identification number (PID) of 3411822440013.

The USGS topographic map review indicated the project area is steeply sloping from the school building to the east towards Wetland 1, and ranges in elevation from approximately 960 MSL to approximately 1,006 MSL. The soil survey map indicated Klossner soils, located in the Wetland 1 area, are considered hydric soils. The NWI map identified four wetland types on the Site that correspond to Wetland 1. The PWI map identified one

protected waterbody within the project area that corresponds to Wetland 1. The PWI lists the waterbody as Unnamed.

To date, 2018 seasonal rainfall amounts were the average amount of rainfall for this area. Rain precipitation in the amount of 6.23 inches occurred the fourteen days prior to the wetland delineation field visit.

Wetland 1 consists of two basins appear to be connected via a drainage from the eastern basin to the western basin, then drain to the north towards public water Cavanaugh under Sunset Trail. The PABG portion of Wetland 1 located in the central portion of the site was fully enclosed with a chain link fence. Sampling points W1-3U and W1-3W were sampled outside of the fenced area.

One area within the Site displayed wetland characteristics and met all three of the required wetland criteria during the on-site investigation; therefore, Pinnacle delineated the portion of the wetland area within the Site borders by placing pin flags along the northern, western, and southern portions of the wetland. Wetland 1 extends off-Site beyond the eastern Site boundary.

The local governmental unit, City of Plymouth, and U.S. Army Corps of Engineers will determine the jurisdictional wetland status of the identified wetland area.

5.0 CONCLUSION

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation of the Sunset Hills Elementary School campus located at 13005 Sunset Trail in Plymouth, Hennepin County, Minnesota. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Regional Supplement.

During the field assessment, it was determined that one area within the Site met all three of the mandatory criteria of a wetland, and the boundary was flagged and surveyed by Sunde Land Surveying. The delineation will be reviewed by the City of Plymouth, who serve as the local governmental unit administering Minnesota's Wetland Conservation Act and the U.S. Army Corps of Engineers, who administers the Clean Water Act.

6.0 STANDARD OF CARE

Environmental services performed by Pinnacle for the project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by environmental professionals currently practicing in this area under similar budget and time constraints. Recommendations or opinions contained in this report represent our professional judgment and are generally based upon available information and currently accepted practices for environmental professionals. Other than this, no other warranty is implied nor is it expressed.

7.0 REFERENCES

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FIGURE 1

Site Location Map

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 1.
Site Location

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

LEGEND

Site Boundary

Site Location

File: Figure 1 - Site Location 10.5.mxd

FIGURE 2

Site Layout

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

Figure 2.
Site Layout

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

LEGEND
- Site Boundary
- Sampling Points
- Transect
- Wetland
- 2ft Contour

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/17/2018

File: Figure 2 - Site layout.mxd

FIGURE 3

Soil Survey

WETLAND DETERMINATION AND DELINEATION

L22C2 Lester loam, 6 to 10 percent slopes, moderately eroded
L22E Lester loam, 10 to 22 percent slopes
L22F Lester loam, morainic, 25 to 35 percent slopes
L37B Angus loam, 2 to 6 percent slopes
L49A Klossner soils, depressional, 0 to 1 percent slopes
U1A Urban land-Udorthents, wet substratum, complex, 0 to 2 percent slopes
U3B Udorthents (cut and fill land), 0 to 6 percent slopes
U6B Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes
W Water

Pinnacle Engineering
11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 3.
NRCS Soils

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

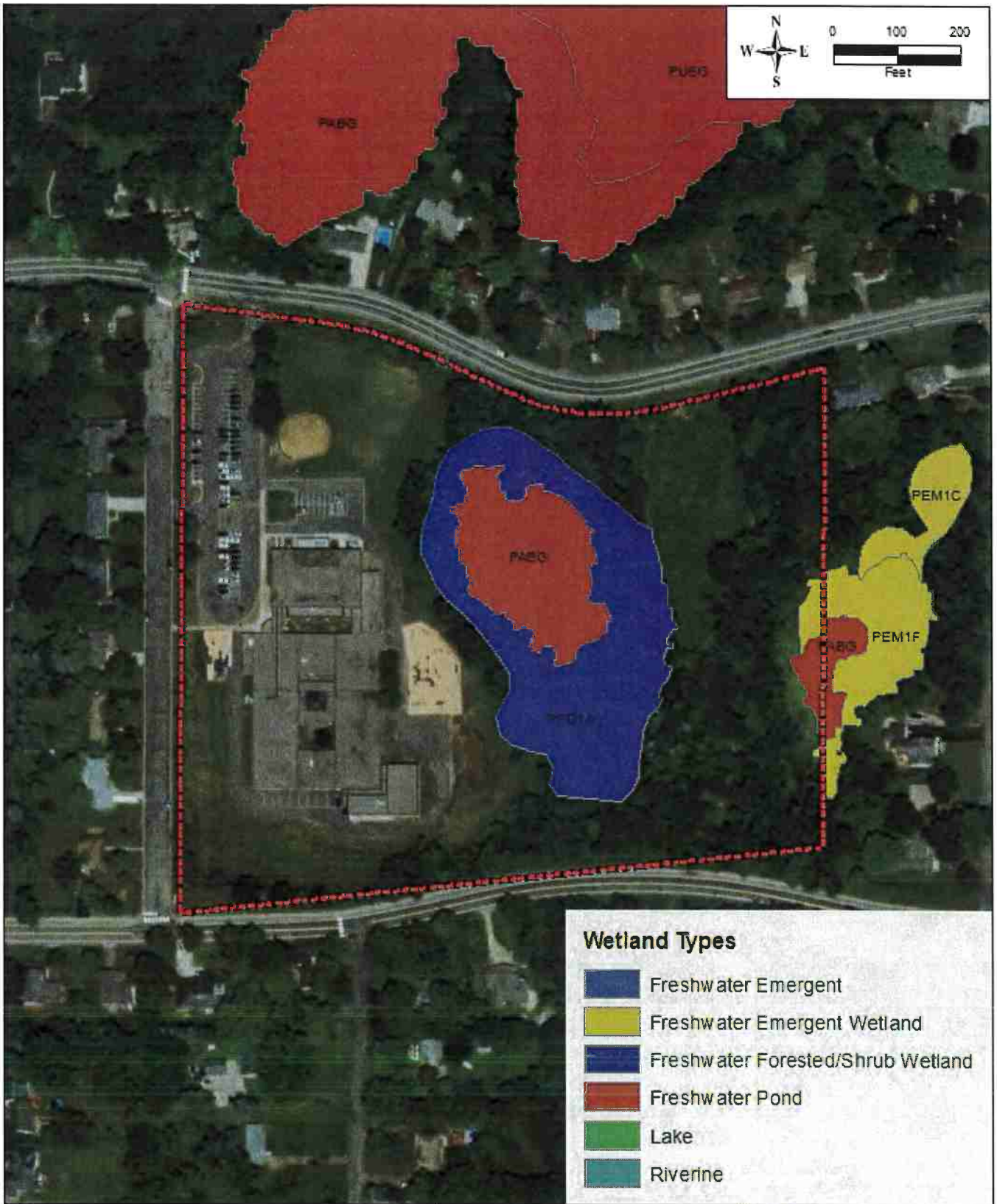
LEGEND
Site Boundary
NRCS Soils

File: Figure 3 - NCRS Soils.mxd

FIGURE 4

National Wetland Inventory

WETLAND DETERMINATION AND DELINEATION



Pinnacle Engineering

11641 95th Ave N.
Minneapolis, MN 55369
(763) 315-4601
www.pineng.com

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 4.
NWI Wetlands Map

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

LEGEND
Site Boundary

File: Figure 4 - NWI Map.mxd

FIGURE 5

Public Waters Inventory

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 5.
MnDNR PWI Map

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

LEGEND
- Site Boundary
- Public Waters
- PWI Watercourses

File: Figure 5 - PWI Map.mxd

FIGURE 6

Wetland Communities Sketch

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180974 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 6.
Wetland Communities

Sunset Hills Elementary School
13005 Sunset Trail
Plymouth, MN 55441

LEGEND
- Site Boundary
- Wooded Swamp
- Shallow Marsh
- Open Water Wetland

File: Figure 6 - Wetland Communities.mxd

APPENDIX A

WETLAND DETERMINATION DATA FORMS
Midwest Region

WETLAND DETERMINATION AND DELINEATION

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sunset Hills Elementary School City/County: Plymouth/Hennepin Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-1W

Investigator(s): Scott Thelen, Breeka Li Goodlander Section, Township, Range: S34 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.979669 Long: -93.445081 Datum: WGS84

Soil Map Unit Name: Klossner soils, depressional, 0 to 1 percent slopes NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	10	Yes	FACW
2. *Ulmus americana*	10	Yes	FACW
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4.			
5.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	20	Yes	FACW
2. *Phalaris arundinacea*	40	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-1W

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
0-4	10YR 2/1	100					Loamy/Clayey	
4-18	10YR 5/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 24

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

Saturation Present? Yes X No ___ Depth (inches): 4

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Standing water in middle of basin.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sunset Hills Elementary School City/County: Plymouth/Hennepin Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-1U

Investigator(s): Scott Thelen, Breeka Li Goodlander Section, Township, Range: S34 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.979669 Long: -93.445081 Datum: WGS84

Soil Map Unit Name: Klossner soils, depressional, 0 to 1 percent slopes NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera tatarica*	10	Yes	FACU
2.			
3.			
4.			
5.			
	10 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Glechoma hederacea*	20	Yes	FACU
2. *Cirsium vulgare*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
	10 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	60 (A)		240 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: W1-1U

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	100					Loamy/Clayey	
12-18	10YR 5/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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)
- X Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sunset Hills Elementary School City/County: Plymouth/Hennepin Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-2W

Investigator(s): Scott Thelen, Breeka Li Goodlander Section, Township, Range: S34 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.979669 Long: -93.445081 Datum: WGS84

Soil Map Unit Name: Udorthents (cut and fill land), 0 to 6 percent slopes NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2.			
3.			
4.			
5.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	40	Yes	FAC
2.			
3.			
4.			
5.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	60 (A)		160 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-2W

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
0-4	10YR 3/1	100					Loamy/Clayey	
4-12	10YR 4/2	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
12-18	10YR 4/1	95	10YR 4/6	5	C	M	Sandy	Prominent redox concentrations

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 13

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: Sunset Hills Elementary School City/County: Plymouth/Hennepin Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-2U

Investigator(s): Scott Thelen, Breeka Li Goodlander Section, Township, Range: S34 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.979669 Long: -93.445081 Datum: WGS84

Soil Map Unit Name: Udorthents (cut and fill land), 0 to 6 percent slopes NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Ulmus americana*	10	Yes	FACW
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
	30	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2. *Lonicera tatarica*	20	Yes	FACU
3.			
4.			
5.			
	30	=Total Cover	

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	60 (A)		180 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-2U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/1	100					Loamy/Clayey	
9-20	10YR 4/2	100					Loamy/Clayey	

[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 Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ 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:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sunset Hills Elementary School | City/County: Plymouth/Hennepin | Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 | State: MN | Sampling Point: W1-3W

Investigator(s): Scott Thelen, Breeka Li Goodlander | Section, Township, Range: S34 T118N R22W

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

Slope (%): 3 | Lat: 44.979669 | Long: -93.445081 | Datum: WGS84

Soil Map Unit Name: Water | NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Wetland sampling point approximately 1ft lower than upland sampling point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	10	Yes	FACW
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3.			
4.			
5.			
	20	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	10	Yes	FACW
2. *Rhamnus cathartica*	10	Yes	FAC
3.			
4.			
5.			
	20	=Total Cover	

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	10	Yes	FACW
2.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		150 (B)

Prevalence Index = B/A = 2.14

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-3W

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
0-4	10YR 3/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
4-12	10YR 4/2	100					Loamy/Clayey	

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Standing water in middle of basin.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sunset Hills Elementary School | City/County: Plymouth/Hennepin | Sampling Date: 9/27/2018

Applicant/Owner: ISD 284 | State: MN | Sampling Point: W1-3U

Investigator(s): Scott Thelen, Breeka Li Goodlander | Section, Township, Range: S34 T118N R22W

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

Slope (%): 3 | Lat: 44.979669 | Long: -93.445081 | Datum: WGS84

Soil Map Unit Name: Water | NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Symphyotrichum lanceolatum*	2	No	FAC
2. *Glechoma hederacea*	20	Yes	FACU
3. *Poa pratensis*	30	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	52 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	32	x 3 =	96
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	52 (A)		176 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: W1-3U

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 3/1	100					Loamy/Clayey	
8-12	10YR 4/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ 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:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

APPENDIX B

WETLAND BOUNDARY APPLICATIONS

WETLAND DETERMINATION AND DELINEATION

Project Name and/or Number:

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: ISD#284
Mailing Address: 210 County Road 101 N, P.O. Box 660, Wayzata, MN 55391
Phone: 763-745-5171
E-mail Address: Steven.dey@wayzataschools.org

Authorized Contact (do not complete if same as above): Pinnacle Engineering, Inc., Scott Thelen
Mailing Address: 11541 95th Avenue N, Maple Grove, MN 55369
Phone: 763-277-8410
E-mail Address: sthelen@pineng.com

Agent Name: Scott Thelen
Mailing Address: 11541 95th Avenue N, Maple Grove, MN 55369
Phone: 763-277-8410
E-mail Address: sthelen@pineng.com

PART TWO: Site Location Information

County: Hennepin **City/Township:** Plymouth
Parcel ID and/or Address: 3411822440013/ 13005 Sunset Trail Plymouth, MN 55441
Legal Description (Section, Township, Range): Section 34, Township 118N, Range 22W
Lat/Long (decimal degrees): Lat: 44.979669°; Long: -93.445081°
Attach a map showing the location of the site in relation to local streets, roads, highways. Attached
Approximate size of site (acres) or if a linear project, length (feet): 19-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.

Building and grounds renovation.

Project Name and/or Number:

PART FOUR: Aquatic Resource Impact[1] Summary

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

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

[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: _____ Date: October 17, 2018

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

---

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

Project Name and/or Number:

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

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

☐ **Wetland Type Confirmation**

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

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

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

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

APPENDIX E

Wetland Photographs

WETLAND DETERMINATION AND DELINEATION

View of Wetland 1 near sampling point W1-1W looking northeast.

View of Wetland 1 near sampling point W1-1W looking southeast.

View of wetland channel looking south near W1-2W.

View of culvert leading in to Wetland 1 near W1-2W.

View of Wetland 1 looking north from southern portion of open water area.

View of Wetland 1 looking northeast near W1-3W (note chain link fence).

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit (LGU)	Address
City of Plymouth	**3400 Plymouth Blvd.** **Plymouth, MN 55447**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
Wayzata Public Schools	**Oakwood Elementary School**	**11/06/2018**	**N/A**

Type of Application (check all that apply):

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Summary and description of proposed project (attach additional sheets as necessary):

Pinnacle Engineering investigated and delineation the Oakwood Elementary School site on October 9, 2018. During the delineation, 3 wetland areas were investigated and delineated.

The comment period closes on November 28th, 2018.

2. APPLICATION REVIEW AND DECISION

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 3 provides notice that an application was made to the LGU under the Wetland Conservation Act as specified above. A copy of the application is attached. Comments can be submitted to:

Name and Title of LGU Contact Person	Comments must be received by (minimum 15 business-day comment period):
Michael Thompson **City of Plymouth**	**November 28, 2018**
Address (if different than LGU) **3400 Plymouth Blvd,** **Plymouth, MN 55447**	Date, time, and location of decision: **November 29, 2018**
Phone Number and E-mail Address **763-509-5501** **mthompson@plymouth.gov**	Decision-maker for this application: ☒ Staff ☐ Governing Board or Council

Signature: _____ **Date:** 11/6/2018

Fee Pd 11/5/18 BS.

Rec'd 8/18/18

3. LIST OF ADDRESSEES

☒ SWCD TEP member: *Ms. Stacey Lijewski, HCD, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600 (sent electronically)*
☒ BWSR TEP member: *Ben Carlson, BWSR 520 Lafayette Road North, St. Paul, MN 55401 (sent electronically)*
☒ LGU TEP member (if different than LGU Contact): *Ben Scharenbroich, City of Plymouth, 3400 Plymouth Blvd, Plymouth, MN 55447 (sent electronically)*
☒ DNR TEP member: *Becky Horton, MnDNR, 1200 Warner Road, St. Paul, MN 55106 (sent electronically)*
☐ DNR Regional Office (if different than DNR TEP member)
☒ WD or WMO (if applicable): *BCWMC, c/o Laura Jester, Keystone Waters, LLC, 16145 Hillcrest Lane, Eden Prairie, MN 55346 (sent electronically)*
☒ Applicant (notice only) and Landowner (if different) *Arlee Carlson, Sunde Land Surveying, 9001 East Bloomington Freeway, Suite 118, Bloomington, MN 55420 (sent electronically)*
☐ Members of the public who requested notice (notice only): *Scott Thelen, Pinnacle Engineering, Inc., 11541 95th Ave North, Minneapolis, MN 55369 (sent electronically)*
☒ Corps of Engineers Project Manager (notice only) *Melissa Jenny USACE, 180 5th Street East, Suite 700, St. Paul, MN 55101 (sent electronically)*
☐ BWSR Wetland Bank Coordinator (wetland bank plan applications only)

4. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/contact/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.
Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources	Div. Ecol. Resources
2115 Birchmont Beach Rd. NE	1201 E. Hwy. 2	1200 Warner Road	261 Hwy. 15 South
Bemidji, MN 56601	Grand Rapids, MN 55744	St. Paul, MN 55106	New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687
or send to:

➢

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

5. ATTACHMENTS

In addition to the application, list any other attachments:
☒ **Oakwood Elementary School Wetland Delineation Report**

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

October 18, 2018

Mr. Arlee Carlson
Sunde Land Surveying
9001 East Bloomington Freeway, Suite 118
Bloomington, MN, 55420

RE: Wetland Services
Oakwood Elementary School
17340 County Road 6
Plymouth, Minnesota 55447
Pinnacle Project Number: EM20180989

Dear Mr. Carlson:

Pinnacle Engineering Inc. (Pinnacle) has performed a Wetland Determination and Delineation of the Oakwood Elementary School campus located at 17340 County Road 6 in Plymouth, Hennepin County, Minnesota, which is within the SW ¼ of SW ¼ and NW ¼ of Section 29, Township 118N, Range 22W. The Site consists of an elementary school, playgrounds, parking areas, wooded areas, manicured lawns, and wetlands. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The attached report documents the methods and findings of the delineation.

During the field assessment, it was determined that three areas within the project limits met all three of the mandatory criteria of a wetland. The boundaries were flagged for survey by Sunde Land Surveying. The delineation will be reviewed by a representative of the City of Plymouth, who serves as the local governmental unit administering Minnesota's Wetland Conservation Act, and the U.S. Army Corps of Engineers, who administers the Clean Water Act.

If you have any questions or wish to discuss any particular aspect of the project, please contact me at (763) 277-8410. We look forward to being of continued service to you.

Sincerely,

PINNACLE ENGINEERING, INC.

Scott Thelen
Senior Project Scientist, Certified Wetland Scientist# 1249

WETLAND DELINEATION REPORT

FOR:

Oakwood Elementary School
17340 County Road 6
Plymouth, Minnesota 55447

PREPARED FOR:

Sunde Land Surveying
9001 East Bloomington Freeway,
Suite 118
Bloomington, Minnesota 55420

SUBMITTED TO:

City of Plymouth
3400 Plymouth Rd
Plymouth, Minnesota 55447

PREPARED BY:

Pinnacle Engineering, Inc.
11541 95th Avenue North
Maple Grove, Minnesota 55369

October 18, 2018

Pinnacle Project Number: EM20180989

WETLAND DETERMINATION AND DELINEATION

FOR:

OAKWOOD ELEMENTARY SCHOOL
17340 COUNTY ROAD 6
PLYMOUTH, MINNESOTA 55447

PREPARED FOR:

SUNDE LAND SURVEYING
9001 EAST BLOOMINGTON FREEWAY, SUITE 118
BLOOMINGTON, MINNESOTA 55420

PREPARED BY:

PINNACLE ENGINEERING, INC.
11541 95th AVENUE NORTH
MAPLE GROVE, MINNESOTA 55369

PINNACLE PROJECT NUMBER: EM20180989

OCTOBER 18, 2018

Prepared By:

Breeka Li Goodlander
Staff Scientist

Reviewed By:

Scott Thelen
Senior Scientist
MN Certified Wetland Delineator # 1249

Table of Contents

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 Introduction

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation of the Oakwood Elementary School campus located at 17340 County Road 6 in Plymouth, Hennepin County, Minnesota, which is within the SW ¼ of SW ¼ and NW ¼ of Section 29, Township 118N, Range 22W (Lat: 44.996814°; Long: -93.499994°). The Site consists of an elementary school, playground, parking areas, wooded areas, manicured lawns, and wetlands. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The attached report documents the methods and findings of the delineation.

1.2 Scope

Pinnacle conducted the on-site Level 2 Wetland Determination and Delineation in accordance with the criteria established in the 1987 U. S. Army Corps of Engineers Wetland Delineation Manual, updated in 1997, utilizing the Midwest Region Supplement. The work included the following items:

- Review of County Soil Surveys, USGS topographic maps, National Wetland Inventory (NWI) Maps, Public Water Inventory (PWI) maps, and aerial photographs.
- A site reconnaissance to determine if and where jurisdictional wetlands exist.
- Delineation of the identified wetlands within the area of interest boundaries.
- Preparation and submittal of this report summarizing the findings of our work.

2.0 BACKGROUND INFORMATION

2.1 Site Location and Use

The project area is located at the Oakwood Elementary School campus, 17340 County Road 6 in Plymouth, Hennepin County, Minnesota, which is within the SW ¼ of SW ¼ and NW ¼ of Section 29, Township 118N, Range 22W (Lat: 44.996814°; Long: -93.499994°). The Site consists of an elementary school, playground, parking areas, wooded areas, manicured lawns, and a wetland. The elementary school campus is approximately 40-acres in size and has property identification number (PID) of 2911822320003. Figure 1 shows the site in its current configuration.

2.2 Surveys and Maps

Pinnacle conducted a review of the Hennepin County Soil Survey, topographic maps, Protected Waters Inventory (PWI), and National Wetland Inventory (NWI) maps for the vicinity of the Site. The following sections summarize the information available at the time of this review.

2.2.1 Topographic Maps

The elevation of the Site ranges from 974 feet above mean sea level (MSL) in the northern portion of the Site to approximately 999 MSL in the west central portion of the Site. The Site slopes to the north away from the buildings in the southwest portion of the Site. Based on the contour intervals on the topographic map and our Site observations, surficial drainage appears to be from the southwest to the wetlands in the northern portion of the Site.

2.2.2 Soil Survey

The Natural Resources Conservation Service (NRCS) Web Soil Survey map, which is included as Figure 3, was reviewed for information pertaining to the Site soils. The Soil Survey indicated the Site soil units consist of: Malardi-Hawick complex, 1 to 6 %slopes (L2B); Malardi-Hawick complex, 6 to 12 %slopes (L2C); Le Sueur loam, 1 to 3 %slopes (L25A); Tomall loam, 0 to 2 % slopes (L46A); Tadkee-Tadkee, depressional, complex, 0 to 2 %slopes (L64A); and Urban land-Udipsamments (cut and fill land) complex, 0 to 2 % slopes (U4A). Of the identified soil types, Tomall loam are hydric soils. Soil samples collected during the wetland delineation were characterized and recorded on the Wetland Determination Data Form – Midwest Region Supplement Data Forms, which are included as Appendix A.

2.2.3 Wetland Inventory Maps

The United States Fish and Wildlife Service (USFWS)-National Wetland Inventory (NWI) map for the Site area depicted two wetland areas within or adjacent to the Site boundaries: a palustrine, unconsolidated bottom, intermittently exposed (PUBG) wetland which corresponds to Wetland 1 and a palustrine, forested, broad-leaved deciduous, temporarily flooded (PFO1A) wetland which corresponds to Wetland 3. NWI maps generally show the approximate location of wetlands as of the time of publication. The NWI map, as reviewed by Pinnacle, were compiled based on aerial photo interpretation and field surveys and is included as Figure 4.

2.2.4 Public Waters Inventory

The Minnesota Department of Natural Resources Public Waters Inventory (PWI) produces a map of the protected wetlands and waters of the State. The PWI map, which is included as Figure 5, identified no PWI watercourses or public waters within or adjacent to the Site.

3.0 WETLAND DETERMINATION

3.1 Methodology

The wetland determination was made utilizing the techniques of the Routine Onsite Method, as described in the 1987 U. S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997 and utilizing the Midwest Region Supplement.

Determination of hydric soils, site hydrology, and hydrophytic vegetation were made according to the procedures and guidelines described in the manual. Sampling locations were selected to be representative of wetland/upland transition areas.

Scott Thelen of Pinnacle assessed the wetlands in the project area on October 9, 2018. The assessment included probing the soils to observe the color and moisture, as well as other available hydric soil indicators, such as mottling, gleying, and oxidized root channels. The characteristics noted for each sampling location are documented in the data forms, which are included in Appendix A. Survey markers were placed along the delineated edge of the wetlands for survey by Sunde Land Surveying. A figure of the wetland areas is included as Figure 2.

To date, 2018 seasonal rainfall amounts were greater than the average amount of rainfall for this area. Rain precipitation in the amount of 4.80 inches occurred the fourteen days prior to the wetland delineation field visit. Pinnacle delineated three wetland basins within the Site during the field assessment.

3.2 Wetland Descriptions

Table 3.2.1 below summarizes the findings of the field investigation. Data forms for the field investigation may be found in Appendix A and photographs in Appendix C.

Wetland ID	Delineated Wetland Type	Wetland Size ac/sf		NWI Wetland Type	Dominant Wetland Vegetation	Hydric Soil (Yes/No)	Hydric Soil Indicator	Hydrology
1	Open water wetland	0.44	1,781	PUBG	Reed canary grass, buckthorn, red elm, sugar maple, red-osier dogwood	Yes	Depleted Below Dark Surface (A11), Depleted Matrix (F3)	Geomorphic Position (D2), Saturation Visible on Aerial Imagery (C9), FAC-Neutral Test (D5)
2	Wooded swamp	0.09	364		Red elm, buckthorn, common rush, water smartweed	Yes	Redox Dark Surface (F6)	Geomorphic Position (D2), FAC-Neutral Test (D5)
3	Wooded swamp	0.49	1,983	PFO1A	Cottonwood, buckthorn, red-osier dogwood	Yes	Depleted Matrix (F3)	Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2)

Wetland Type PUBG

The NWI Cowardin wetland classification system identified the PUBG label for a wetland that consists of a palustrine basin, with an unconsolidated bottom, intermittently exposed. Water covers the substrate throughout the year except in years of extreme drought. The NWI map for the Site area indicated one PUBG wetland contained within the Site

boundaries, which corresponds to Wetland 1. The soil survey indicated that hydric soils are not located within the wetland area.

Wetland Type PFO1A
The NWI Cowardin wetland classification system identified the PFO1A label for a wetland that consists of a palustrine basin, with a broad-leaved deciduous woody forest, that is temporarily flooded. Surface water is present for brief periods during the growing season, but the water table usually lies well below the ground surface for most of the season. The NWI map for the Site area indicated one PFO1A wetland contained within the Site boundaries, which corresponds to Wetland 3. The soil survey indicates that hydric soils are not located within the wetland area.

4.0 DISCUSSION

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation at the Oakwood Elementary School campus located at 17340 County Road 6 in Plymouth, Hennepin County, Minnesota, which is within the SW ¼ of SW ¼ and NW ¼ of Section 29, Township 118N, Range 22W (Lat: 44.996814°; Long: -93.499994°). The Site consists of an elementary school, playground, parking areas, wooded areas, manicured lawns, and a wetland. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Region Supplement. The elementary school campus is approximately 40-acres in size and has property identification number (PID) of 2911822320003.

The USGS topographic map review indicated the project area is gently sloping from the southwest portion of the Site to the northern portion of the Site and ranges in elevation from approximately 999 MSL to approximately 974 MSL. In general, the Site appears to drain to the northern portion of the Site. The soil survey map indicated Urban land-Udipsamments located within the wetland areas, which are not considered hydric soils. The NWI map identified two wetlands and the PWI maps identified no protected water bodies within the project area.

To date, 2018 seasonal rainfall amounts were greater than the average amount of rainfall for this area. Rain precipitation in the amount of 4.80 inches occurred the fourteen days prior to the wetland delineation field visit.

Three areas within the Site displayed wetland characteristics and met all three of the required wetland criteria during the on-site investigation; therefore, Pinnacle delineated the portion of the wetland areas within the Site borders by placing pin flags along the wetland edges.

Wetland 1 was defined by a significant topography change over the majority of wetland area. Drains appears to enter Wetland 1 from the athletic fields south of the wetland area. Wetland 2 consists of a seasonally flooded wooded basin with standing water in the middle. The northwestern portion of Wetland 2 contained recent grass clippings and other

debris. An attempt to remove common buckthorn (Rhamnus cathartica) in the eastern portion of Wetland 3 was evidenced by the short growth of new buckthorn plants. Standing water was present in the middle of the wetland areas and hydrology appeared to be present. Culverts appear to drain into the wetland areas.

The local governmental unit, City of Plymouth, and U.S. Army Corps of Engineers will determine the jurisdictional wetland status of the identified wetland areas.

5.0 CONCLUSION

Pinnacle Engineering, Inc. (Pinnacle) performed a Wetland Determination and Delineation of the Oakwood Elementary School campus located at 17340 County Road 6 in Plymouth, Hennepin County, Minnesota. The delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Regional Supplement.

During the field assessment, it was determined that three areas within the Site met all three of the mandatory criteria of a wetland, and the boundaries were flagged and surveyed by Sunde Land Surveying. The delineation will be reviewed by the City of Plymouth, who serve as the local governmental unit administering Minnesota's Wetland Conservation Act and the U.S. Army Corps of Engineers, who administers the Clean Water Act.

6.0 STANDARD OF CARE

Environmental services performed by Pinnacle for the project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by environmental professionals currently practicing in this area under similar budget and time constraints. Recommendations or opinions contained in this report represent our professional judgment and are generally based upon available information and currently accepted practices for environmental professionals. Other than this, no other warranty is implied nor is it expressed.

7.0 REFERENCES

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

Lyon, John Grimson, Practical Handbook for Wetland Identification and Delineation, 1993, Lewis Publishers, Boca Raton, Florida

United States Department of Agricultural, Natural Resources Conservation Service, Data Gateway <http://datagateway.nrcs.usda.gov/> (October 17, 2018).

Hennepin County Interactive Maps < https://gis.hennepin.us/naturalresources/map/default.aspx> (October 17, 2018).

U.S Fish and Wildlife Service National Wetlands Inventory http://www.fws.gov/wetlands/data/WebMapServices.html > (October 17, 2018).
U. S. Army Corps of Engineers, U. S. Army Corps of Engineers Wetland Delineation Manual, 1987, updated on February 25, 1997, Washington, D. C.

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, October 2010, Washington, D. C.

Minnesota Geospatial Commons (https://gisdata.mn.gov/dataset/water-mn-public-waters), NWI data (https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014), generated by Scott Thelen using <https://gisdata.mn.gov/>, October 17, 2018.

FIGURE 1

Site Location Map

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180989 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 1.
Site Location

Oakwood Elementary School
17340 Co Rd 6
Plymouth, MN 55447

LEGEND

Site Boundary

Site Location

File: Figure 1 - Site Location 10.5.mxd

FIGURE 2

Site Layout

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

Figure 2.
Site Layout

Oakwood Elementary School
17340 Co Rd 6
Plymouth, MN 55447

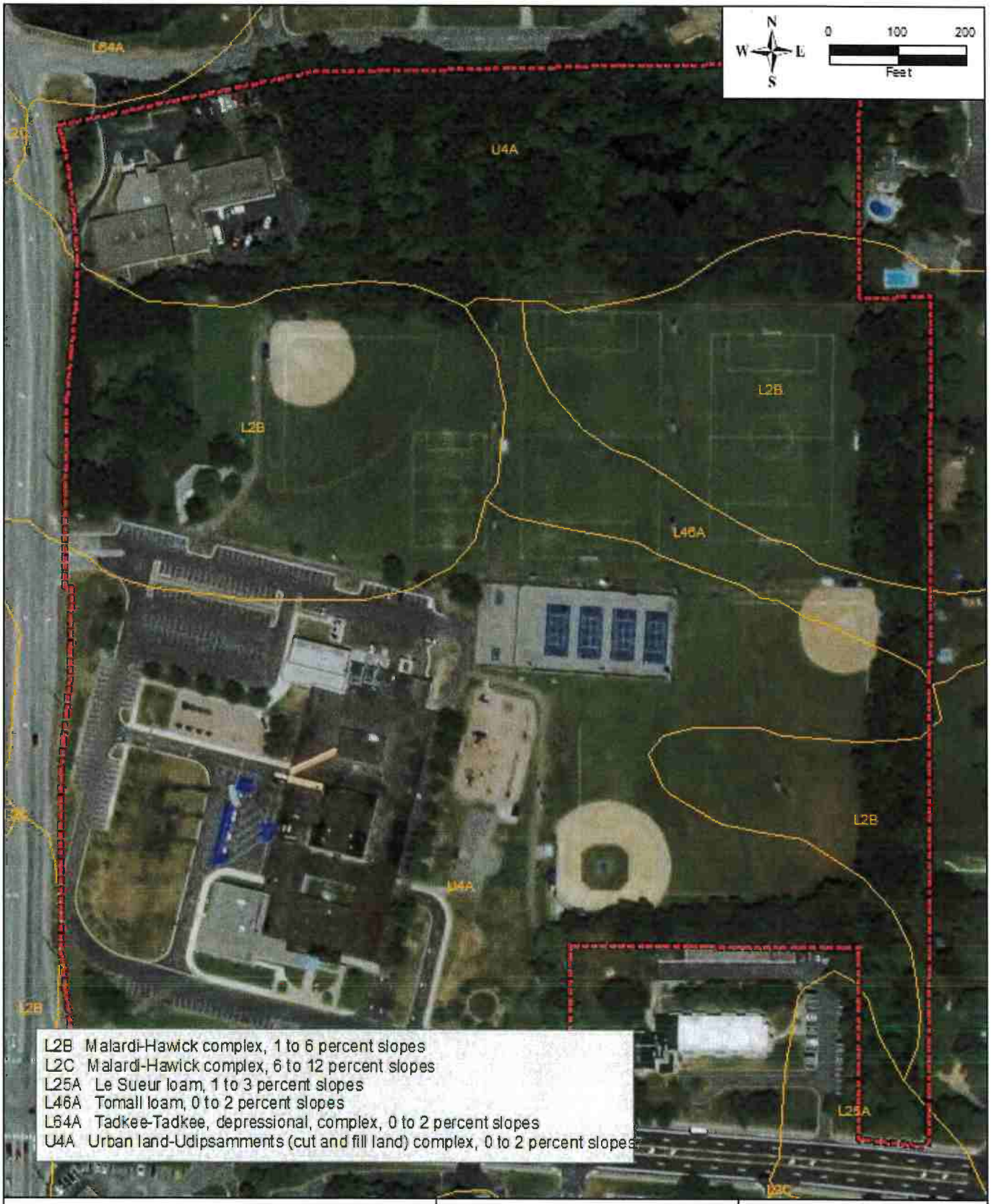
PROJECT NUMBER: EM2018/0989 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

File: Figure 2 - Site Layout.mxd

FIGURE 3

Soil Survey

WETLAND DETERMINATION AND DELINEATION



Pinnacle Engineering

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Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180989 | DRAWN: BG | REVIEWED: MB | DATE: 10/17/2018

Figure 3.
NRCS Soils

Oakwood Elementary School
17340 Co Rd 6
Plymouth, Ave 55447

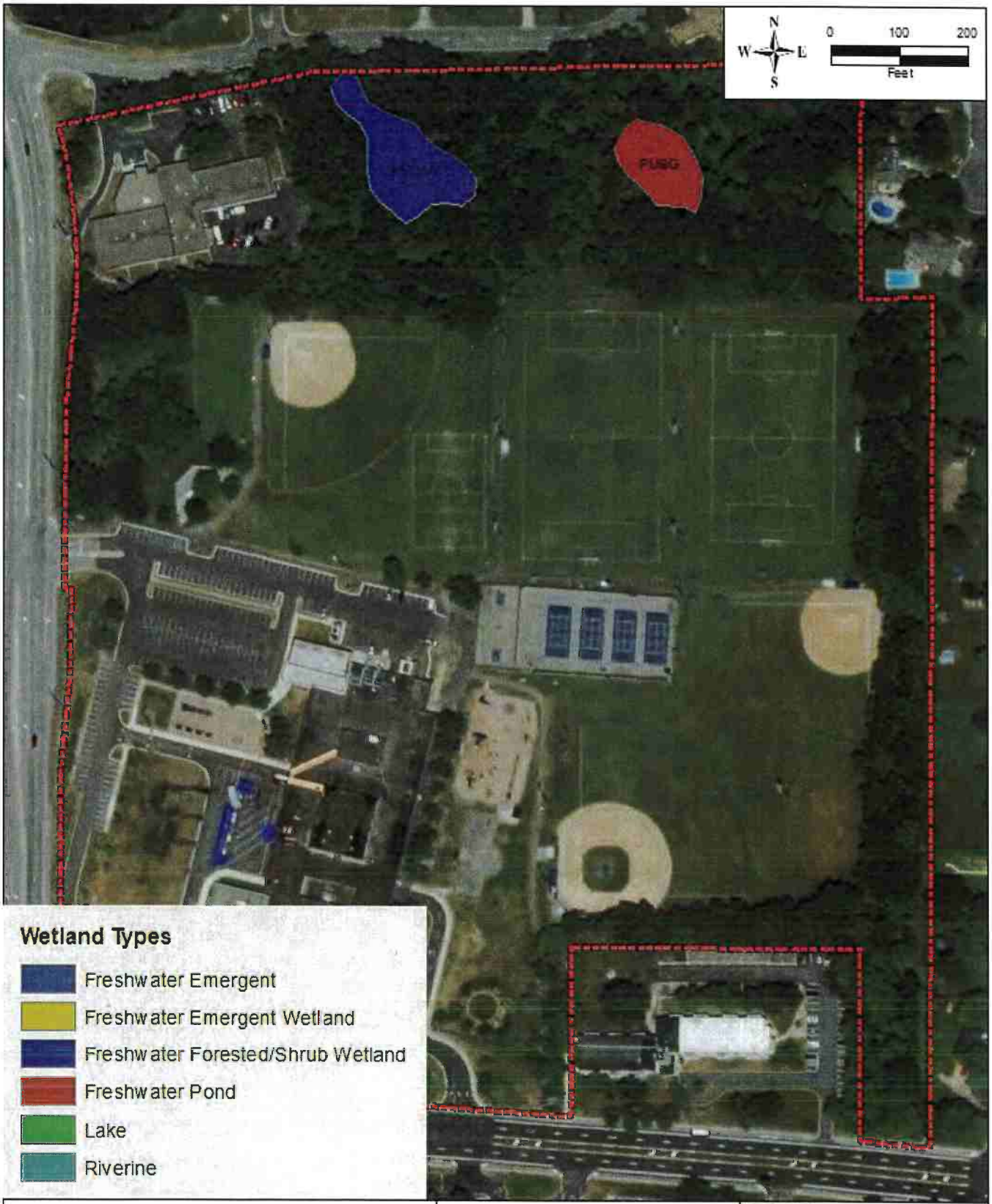
LEGEND
Site Boundary
NRCS Soils

File: Figure 3 - NCRS Soils.mxd

FIGURE 4

National Wetland Inventory

WETLAND DETERMINATION AND DELINEATION



Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180989 | DRAWN: BG | REVIEWED: MB | DATE: 10/17/2018

Figure 4.
NWI Wetlands Map

Oakwood Elementary School
17340 Co Rd 6
Plymouth, MN 55447

LEGEND
Site Boundary

File: Figure 4 - NWI Map.mxd

FIGURE 5

Public Waters Inventory

WETLAND DETERMINATION AND DELINEATION

Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180989 | DRAWN: BG | REVIEWED: MB | DATE: 10/16/2018

Figure 5.
MnDNR PWI Map

Oakwood Elementary School
17340 Co Rd 6
Plymouth, MN 55447

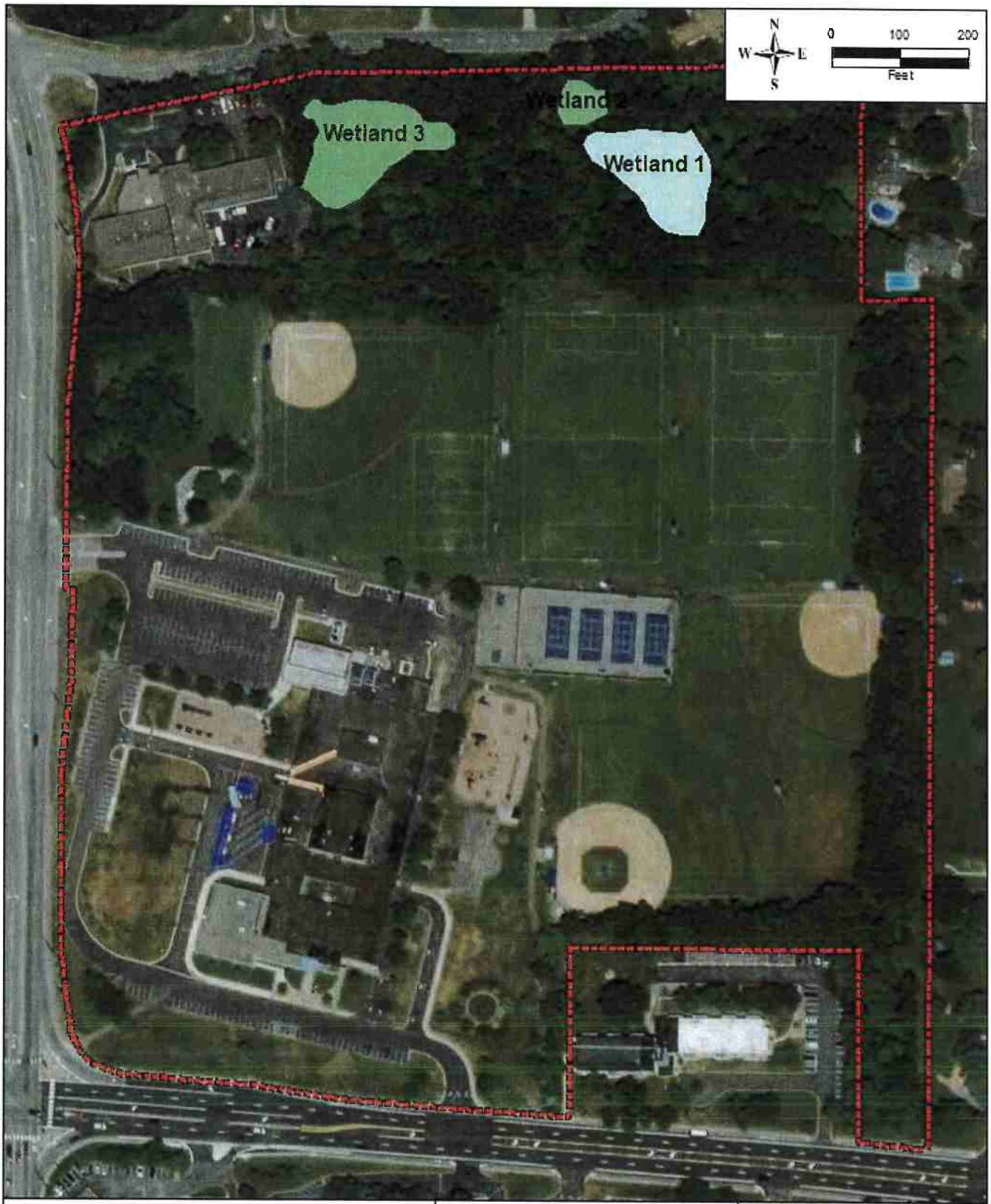
LEGEND
- Site Boundary
- Public Waters
- PWI Watercourses

File: Figure 5 - PWI Map.mxd

FIGURE 6

Wetland Communities Sketch

WETLAND DETERMINATION AND DELINEATION



Pinnacle Engineering

11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

PROJECT NUMBER: EM20180989 | DRAWN: BG | REVIEWED: MB | DATE: 10/17/2018

Figure 6.
Wetland Communities

Oakwood Elementary School
17340 Co Rd 6
Plymouth, MN 55447

LEGEND
- Site Boundary
- Open Water Wetland
- Wooded Swamp

Fig6 Figure 6 - Wetland Communities.mxd

APPENDIX A

WETLAND DETERMINATION DATA FORMS Midwest Region

WETLAND DETERMINATION AND DELINEATION

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-1W

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urband land-Udipsamments NWI classification: PUBG

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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:
Adjacent to manicured lawns and playfields.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	10	Yes	FAC
2. *Acer saccharinum*	10	Yes	FACW
3. *Acer negundo*	10	Yes	FAC
4.			
5.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	10	Yes	FACW
2. *Rhamnus cathartica*	10	Yes	FAC
3.			
4.			
5.			
	20	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		210 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-1W

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
0-4	10YR 3/1	100					Loamy/Clayey	
4-6	10YR 4/1	100					Loamy/Clayey	
6-12	10YR 4/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
12-15	10YR 2/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 15
Water Table Present?	Yes X	No ___	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Standing water in wetland area, standing water in bore hole at 4 in depth.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W1-1U

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urban land-Udipsamments NWI classification: PUBG

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Adjacent to manicured lawns and playfields. Upland sampling point aprroximatley 8 inches higher in elevation than wetland sampling point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3. *Acer saccharinum*	5	Yes	FACW
4. *Acer negundo*	5	Yes	FAC
5.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Galium boreale*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	10	Yes	FACW
2.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	65 (A)		175 (B)
Prevalence Index = B/A =			2.69

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W1-1U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100					Loamy/Clayey	
6-13	10YR 4/1	100					Loamy/Clayey	
13-18	10YR 4/1	95	10YR 4/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W2-1W

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urban land-Udipsamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	40	Yes	FAC
2.			
3.			
4.			
5.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex blanda*	10	Yes	FAC
2. *Persicaria amphibia*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	65 (A)		185 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W2-1W

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
0-4	10YR 2/1	100					Loamy/Clayey	
4-12	10YR 3/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 6
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Standing water in middle of wetland area.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W2-1U

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urban-land Udipsamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Adjacent to manicured lawns and playfields.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Acer saccharinum*	10	Yes	FACW
4.			
5.			
	30	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
	10	=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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	50 (A)		140 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W2-1U

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
0-13	10YR 3/1	100					Loamy/Clayey	
13-18	10YR 4/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W3-1W

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urban land-Udipsamments NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	40	Yes	FAC
2. *Cornus racemosa*	5	No	FAC
3.			
4.			
5.			
	45	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	65 (A)		195 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W3-1W

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
0-3	10YR 3/1	100					Loamy/Clayey	
3-6	10YR 5/3	100					Loamy/Clayey	
6-15	10YR 4/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[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 Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 6

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Standing water in middle of wetland area, culvert at northwestern portion of wetland drains in to wetland area.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Oakwood Elementary School City/County: Plymouth/Hennepin Sampling Date: 10/9/2018

Applicant/Owner: ISD 284 State: MN Sampling Point: W3-1U

Investigator(s): Scott Thelen Section, Township, Range: S29 T118N R22W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave

Slope (%): 3 Lat: 44.996814 Long: -93.499994 Datum: WGS84

Soil Map Unit Name: Urban land-Udipsamments NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juniperus virginiana*	15	Yes	FACU
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	10	Yes	FACW
2.			
	10	=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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)
Prevalence Index = B/A =			3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: W3-1U

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
0-4	10YR 3/1	100					Loamy/Clayey	
4-15	10YR 5/3	95	10YR 4/6	5	C	M	Loamy/Clayey	Distinct redox concentrations

[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 Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ 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:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? Yes ____ No ____ Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

APPENDIX B

WETLAND BOUNDARY APPLICATIONS

WETLAND DETERMINATION AND DELINEATION

Project Name and/or Number:

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: Wayzata Public Schools (ISD#284)
Mailing Address: 210 County Road 101 N, P.O. Box 660, Wayzata, MN 55391
Phone: 763-745-5171
E-mail Address: Steven.dey@wayzataschools.org

Authorized Contact (do not complete if same as above): Pinnacle Engineering, Inc., Scott Thelen
Mailing Address: 11541 95th Avenue N, Maple Grove, MN 55369
Phone: 763-277-8410
E-mail Address: sthelen@pineng.com

Agent Name: Scott Thelen
Mailing Address: 11541 95th Avenue N, Maple Grove, MN 55369
Phone: 763-277-8410
E-mail Address: sthelen@pineng.com

PART TWO: Site Location Information

County: Hennepin **City/Township:** Plymouth
Parcel ID and/or Address: 2911822320003/ 17340 County Road 6 Plymouth, MN 55447
Legal Description (Section, Township, Range): Section 29, Township 118N, Range 22W
Lat/Long (decimal degrees): Lat: 44.996814°; Long: -93.499994°
Attach a map showing the location of the site in relation to local streets, roads, highways. Attached
Approximate size of site (acres) or if a linear project, length (feet): 40-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.

Building and grounds renovation.

Project Name and/or Number:

PART FOUR: Aquatic Resource Impact[1] Summary

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

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

[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: _____ Date: October 18, 2018

I hereby authorize Pinnacle Engineering, Inc. 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.

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

Project Name and/or Number:

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

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

☐ **Wetland Type Confirmation**

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

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

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

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

APPENDIX C

Wetland Photographs

WETLAND DETERMINATION AND DELINEATION

View from Wetland 1 looking southwest.

View from Wetland 1 looking southeast.

View from Wetland 2 looking northeast.

View of Wetland 2 looking northwest from eastern wetland edge.

View of Wetland 3 looking southwest.

View of Wetland 3 looking west near culvert entering wetland area.

View of Wetland 3 looking northwest.

View of Wetland 3 looking west.