Item 7E. BCWMC 11-14-18

# **Minnesota Wetland Conservation Act Notice of Application**

Local Government Unit (LGU)		Address		
City of Plymouth		3400 Plymo		
<b>.</b>		Plymouth,	MN 55447	
1.	PROJECT INFOR	RMATION		
Applicant Name	Project Name		Date of	Application
Jim Touve	Touve Parcel		Application	Number
			10/05/2018	N/A
Type of Application (check all that a	pply):			
Wetland Boundary or Type	☐ No-Loss	Exemp	otion	Sequencing
Replacement	Plan	Banking	g Plan	
Summary and description of propose	d project (attach addit	ional sheets as i	iecessary).	
Kjolhaug Environmental investigated	* * `			ong Medicine
Lake, City of Plymouth, MN. The sit				
the delineation on August 25 <sup>th</sup> , 2018,			or, and Range 22	z w. During
une deminenten en 11agust 25°, 2010,	one were the contract of the c	ireatea.		
The comment period closes on Nove	mber 7 <sup>th</sup> , 2018.			
r	, ====			
2. APPLI	CATION REVIEW	AND DECIS	SION	
Signing and mailing of this complet	ed form to the appror	riate recinients	in accordance w	rith 8420 0255
Subp. 3 provides notice that an appli				
specified above. A copy of the appli	cation is attached. Co	mments can be	submitted to:	or various stor as
				/ · · ·
Name and Title of LGU Contact Pers			be received by	(minimum 15
Michael Thompson		usiness-day cor	1	
City of Plymouth		lovember 7, 20		
Address (if different than LGU)			ocation of decision	on:
3400 Plymouth Blvd,	l v	lovember 8, 20	18	
Plymouth, MN 55447	T	\ooisism1-	fanthia annt	
Phone Number and E-mail Address 763-509-5501			for this application	on:
		Staff ☐ Coverning D	and on C!1	
mthompson@plymouthmn.gov		☐ Governing B	oard or Council	

#### 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)
Corps of Engineers Project Manager (notice only) Army Corps of Engineers, 180 5 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: <a href="www.mvp.usace.army.mil/regulatory/default.asp?pageid=687">www.mvp.usace.army.mil/regulatory/default.asp?pageid=687</a> 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

BWSR Forms 7-1-10 Page 2 of 3

BWSR Forms 7-1-10 Page 3 of 3

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

Plymouth, Hennepin County, Minnesota

## **Wetland Delineation Report**

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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	Туре	
Wetland ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation
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 12<sup>th</sup> 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 <u>Corps of Engineers</u> Wetlands <u>Delineation Manual</u> (Waterways Experiment Station, 1987) and the <u>Regional Supplement to the Corps of Engineers Wetland Delineation Manual</u>: 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 wetlandupland 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 <u>Web Soil Survey</u>. 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 <u>2016 National Wetland Plant List</u> (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 <u>National Wetlands Inventory (NWI)</u> (Minnesota Geospatial Commons 2009-2014 and <u>U.S.</u> <u>Fish and Wildlife Service</u>) showed one PFO1A wetland within site boundaries (**Figure 3**).

The <u>Soil Survey</u> (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 <u>National Hydrography Dataset</u> (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

## 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

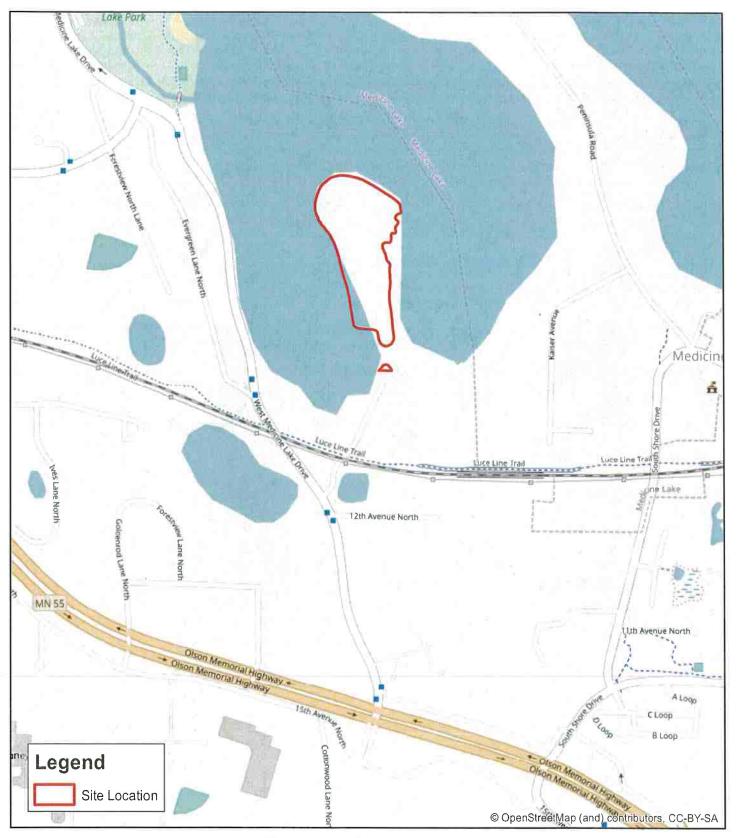


Figure 1 - Site Location



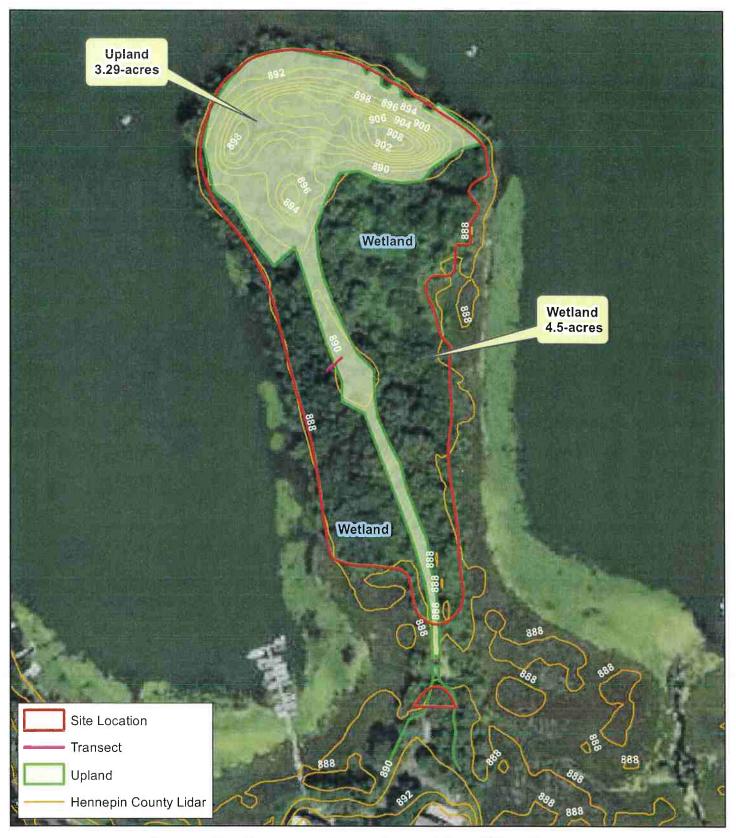
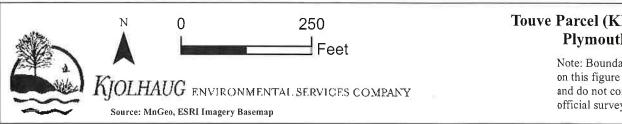


Figure 2 - Existing Conditions (2017 FSA Photo)



## Touve Parcel (KES 2018-111) Plymouth, Minnesota

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

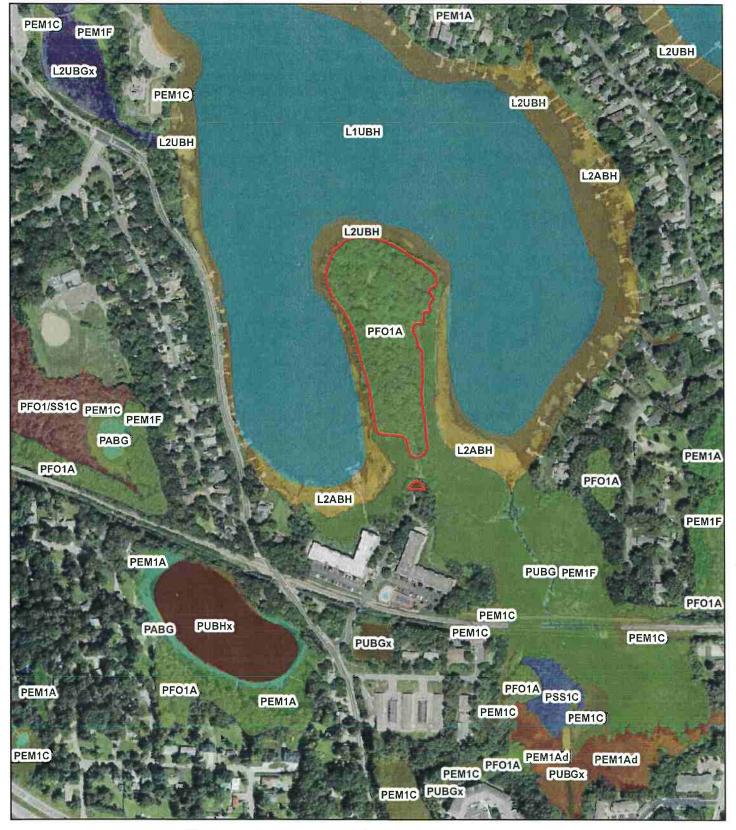
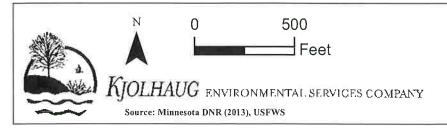


Figure 3 - National Wetlands Inventory



## Touve Parcel (KES 2018-111) Plymouth, Minnesota

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

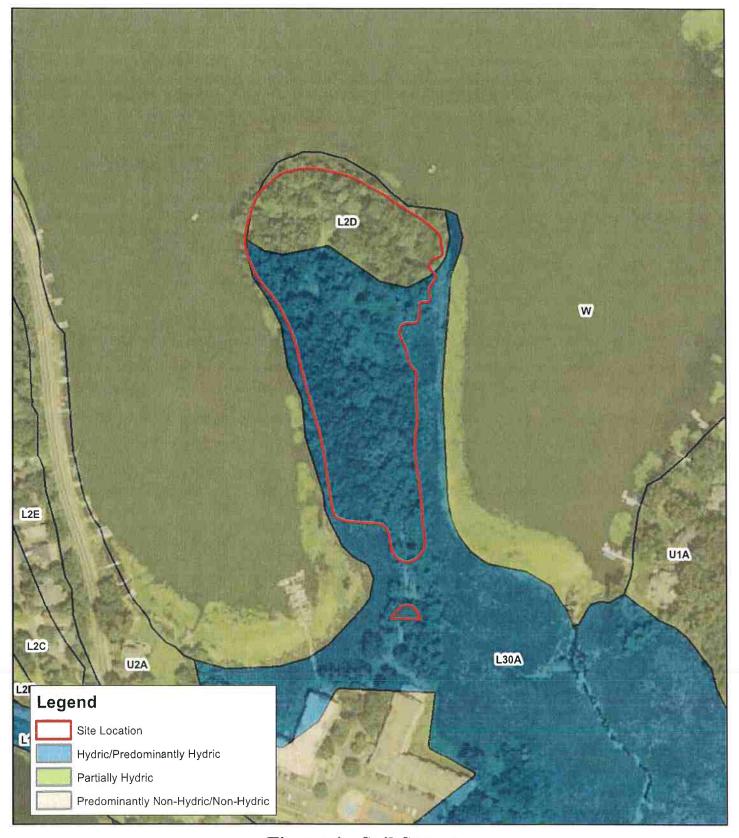
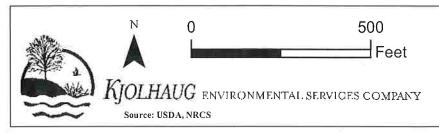


Figure 4 - Soil Survey



## Touve Parcel (KES 2018-111) Plymouth, Minnesota

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

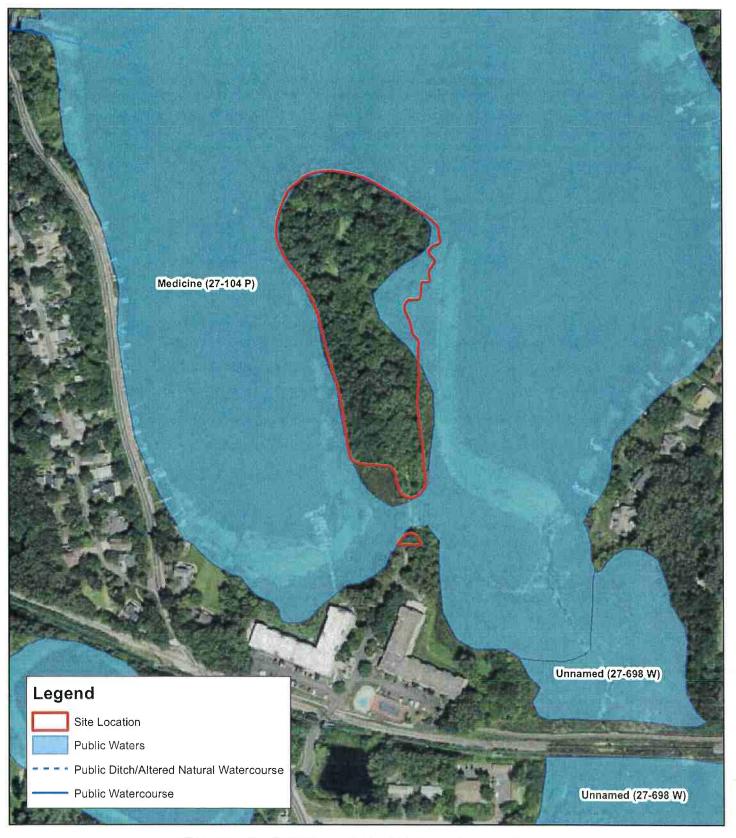
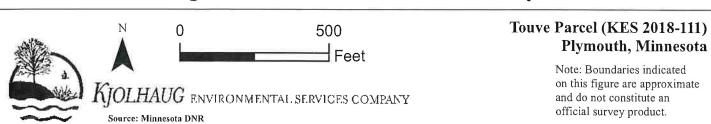


Figure 5 - DNR Public Waters Inventory



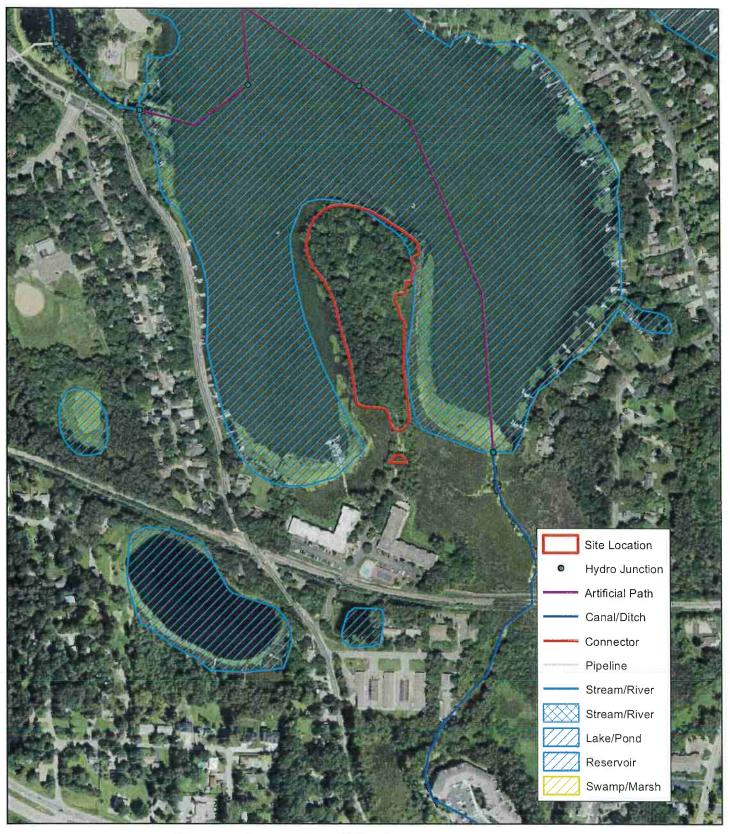
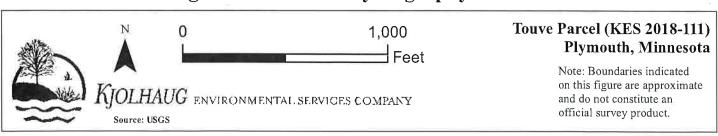


Figure 6 - National Hydrography Dataset



## Wetland Delineation Report

## **APPENDIX A**

Joint Application Form for Activities Affecting Water Resources in Minnesota Project Name and/or Number: Touve Parel, Plymouth KES#2018-111

## **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.armv.mil/Portals/57/docs/regulatory/Regulatory/Docs/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<sup>1</sup> 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.)	l drain or	Duration of Impact Permanent (P) or Temporary (T) <sup>1</sup>	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area <sup>4</sup>	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>

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)".

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 <u>pre-application</u> 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

I hereby authorize

9-28-1 8ate:

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.

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).

<sup>&</sup>lt;sup>3</sup>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".

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

<sup>&</sup>lt;sup>1</sup> 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: Touve Parel, Plymouth KES#2018-111

# **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). <a href="http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx">http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx</a>

# Wetland Delineation Report

## APPENDIX B

**Wetland Delineation Data Forms** 

#### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Touve Parcel	City/County: Plyn	nouth/Hennepin Sampling Date: 8-14-2018
Applicant/Owner: Jim Touve	State:	MN Sampling Point: SP1-upl
Investigator(s): M. Barrett	Section	n, Township, Range: Sec 26, T118, R22
Landform (hillslope, terrace, etc.): flat land		ef (concave, convex, none): linear/none
Slope (%): 0-1 Lat:	Long:	Datum:
Soil Map Unit Name Medo soils		VWI 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 dis	sturbed? Are "normal circumstances"
Are vegetation , soil , or hydrology	naturally probl	
SUMMARY OF FINDINGS		(If needed, explain any answers in remarks.)
Hydrophytic vegetation present? Y		9 6
Hydric soil present? N	Is the sam	pled area within a wetland? NN
Indicators of wetland hydrology present? N	f yes, optio	nal wetland site ID:
Remarks: (Explain alternative procedures here or in a sepa	arate report.)	
Climatic conditions typic	al (normal) based on gi	ridded database method.
<b>VEGETATION</b> Use scientific names of plants.		
Absorption Ose scientific flames of plants.	olute Dominant In	ndicator Dominance Test Worksheet
l .		Status Number of Dominant Species
1 Fraxinus pennsylvanica 4	0 Y F	FACW that are OBL, FACW, or FAC: 3 (A)
2 Rhamnus cathartica 1	5 Y	FAC Total Number of Dominant
3		Species Across all Strata: 5 (B)
4		Percent of Dominant Species
5	5 = Total Cover	that are OBL, FACW, or FAC: 60.00% (A/B)
Sapling/Shrub stratur (Plot size: 15 )	- Total Cover	Prevalence Index Worksheet
	0 Y	FAC Total % Cover of:
2		OBL species 0 x 1 = 0
3		FACW species 40 x 2 = 80
4		FAC species 35 x 3 = 105
5		FACU species 5 x 4 = 20
	0 = Total Cover	UPL species $15 \times 5 = 75$ Column totals $95 \times (A) \times 280 \times (B)$
	E V	
	5 Y -	FACU Prevalence Index = B/A = 2.95
3		Hydrophytic Vegetation Indicators:
4		Rapid test for hydrophytic vegetation
5		X Dominance test is >50%
6		X Prevalence index is ≤3.0*
7		Morphological adaptations* (provide
8		supporting data in Remarks or on a
9		separate sheet)
	20 = Total Cover	Problematic hydrophytic vegetation* (explain)
Woody vine stratum (Plot size: 30 )	*	*Indicators of hydric soil and wetland hydrology must h
1		present, unless disturbed or problematic
2		Hydrophytic
	= Total Cover	vegetation present?
December (Include of the control of	l 4\	prosent:
Remarks: (Include photo numbers here or on a separate s	neet)	

SP1-upl

Depth	<u>Matrix</u>			dox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-6	10YR 2/1	100					loamy san	d	
6-12	5Y 4/2	100					corse sand	1	gravelly loamy, CaCO3
_									
ype: C = C	Concentration, D =	= Depleti	on, RM = Reduce	d Matrix,	MS = M	asked Sa	and Grains.	**Locatio	on: PL = Pore Lining, M = Matrix
	il Indicators:								olematic Hydric Soils:
Hist	cosol (A1)		Sar	ndy Gley	ed Matrix	(S4)	Coa	st Prairie R	edox (A16) (LRR K, L, R)
— Hist	ic Epipedon (A2)			ndy Redo			— Dar	k Surface (S	S7) (LRR K, L)
— Blad	ck Histic (A3)			pped Ma			— Iron	-Manganes	e Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A	1)	Loa	 ımy Mucl	ky Minera	al (F1)	— Ver	y Shallow D	ark Surface (TF12)
	atified Layers (A5)	•		-	ed Matrix			•	in remarks)
	n Muck (A10)				atrix (F3)				
	leted Below Dark	Surface			Surface				
Thic	ck Dark Surface (	A12)			ark Surfa		*Indi	cators of hy	drophytic vegetation and weltan
— Sar	dy Mucky Minera	l (S1)	Red	dox Depr	essions (	(F8)			t be present, unless disturbed or
	m Mucky Peat or					,	,	3,	problematic
strictive	Layer (if observe	ed):				Ï			
pe:	•	•				l .	Hydri	c soil prese	ent? N
						1	HVUIN	. 5011 01656	
epth (inche	es):				•		Hydri	c son prese	
emarks:	-	ro to ea	male further		-			son prese	
emarks:	and loose textu	re to sa	mple further.				Tiyurk	c son prese	
emarks: Too dry a	and loose textu	re to sa	mple further.		•		nyun	L SOII PIES	
emarks: Too dry a	and loose textu		mple further.				nyun	L SOII PIES	
emarks: Too dry a YDROLO etland Hy	OGY drology Indicate	ors:		all that ar	aply)				
emarks: Too dry a YDROLO etland Hy imary India	OGY drology Indicate	ors: of one is	required; check a			:13)		Secondary	Indicators (minimum of two requi
marks: Foo dry a  PROLC  Torontal Hy  Mary India  Surface	OGY drology Indicate cators (minimum Water (A1)	ors: of one is	required; check a	Aquatic	Fauna (B			Secondary   Surfac	Indicators (minimum of two requi e Soil Cracks (B6)
Marks:  Too dry a  TDROLC  Toolule tland Hy  Mary India  Surface  High Wa	DGY drology Indicate cators (minimum Water (A1) tter Table (A2)	ors: of one is	required; check a	Aquatic True Aq	Fauna (B uatic Plar	nts (B14)		Secondary   Surfac	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10)
Marks:  FOO dry a  FOROLO  Etland Hy  Mary India  Surface  High Wa  Saturation	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3)	ors: of one is	required; check a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C		Secondary Surfac Draina Dry-Se	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2)
marks:  Too dry a  TDROLC  etland Hy  mary India  Surface  High Wa  Saturatio  Water M	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)	ors: of one is	required; check a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C		Secondary Surfac Draina Dry-Se Crayfis	Indicators (minimum of two requise Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8)
marks:  FOO dry a  FOO	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3)	ors: of one is	required; check a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (Co oheres on	1) Living Roots	Secondary Surfac Draina Dry-Se Crayfis Satura	Indicators (minimum of two require Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B2)	ors: of one is	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend	Fauna (B uatic Plar en Sulfide d Rhizosp ce of Redi	nts (B14) Odor (Control Otheres on	1) Living Roots	Secondary Surfac Draina Dry-Se Crayfis Satura	Indicators (minimum of two require Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) tarks (B1) arks (B2) posits (B2)	ors: of one is	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend	Fauna (B uatic Plar en Sulfide d Rhizosp ce of Redi	nts (B14) Odor (Control Otheres on	1) Living Roots (C4)	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two require Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicate cators (minimum water (A1) ter Table (A2) on (A3) tarks (B1) arks (B2) posits (B3) at or Crust (B4)	ors: of one is	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B uatic Plar en Sulfide d Rhizosp ce of Redi	nts (B14) Odor (Control of the control of the contr	1) Living Roots (C4)	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) tarks (B1) art Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ors: of one is	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B uatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	onts (B14) Odor (Coheres on uced Iron uction in Total	1) Living Roots (C4)	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely	drology Indicate cators (minimum Water (A1) on (A3) arks (B1) on Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria	ors: of one is I Imagery ve Surfac	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ack Surfac or Well Da	onts (B14) Odor (Coheres on uced Iron uction in Total	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S	drology Indicate cators (minimum Water (A1) arks (B1) arks (B2) cosits (B3) at or Crust (B4) cosits (B5) con Visible on Aeria Vegetated Concatained Leaves (B9	ors: of one is I Imagery ve Surfac	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ack Surfac or Well Da	nts (B14) Odor (Control of Control of Contro	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S eld Obser	drology Indicate cators (minimum Water (A1) arks (B1) arks (B2) cosits (B3) at or Crust (B4) cosits (B5) con Visible on Aeria Vegetated Concatained Leaves (B9	ors: of one is I Imagery ve Surfac	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (	Fauna (Buatic Planen Sulfided Rhizospee of Reduler Reduler Well Das Explain in	nts (B14) c Odor (C2) cheres on uced Iron uction in Tate (C7) ata (D9) Remarks	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S eld Obser	drology Indicate cators (minimum Water (A1) on (A3) arks (B1) on Deposits (B2) cosits (B3) or Crust (B4) cosits (B5) on Visible on Aeria vegetated Concatained Leaves (B9) vations:	ors: of one is I Imagery ve Surfac	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of	Fauna (Buatic Planen Sulfided Rhizospee of Reduction Red	nts (B14) Odor (Control of Control of Contro	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte Geome	Indicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO Vetland Hy rimary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S ield Obser	drology Indicated cators (minimum Water (A1) on (A3) darks (B1) on to Deposits (B2) doosits (B3) on Visible on Aeria vegetated Concatained Leaves (B9) vations: er present? present?	ors: of one is I Imagery ve Surface )	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge 6 Other (E	Fauna (Buatic Planen Sulfided Rhizospee of Reductor Well Date Explain in Depth (Depth (	nts (B14) codor (Croheres on uced Iron uction in Tage (C7) ata (D9) Remarks inches):	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte Geome	Indicators (minimum of two require Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S eld Obser urface water ater table aturation p	drology Indicated cators (minimum Water (A1) on (A3) darks (B1) on to Deposits (B2) doosits (B3) on Visible on Aeria vegetated Concatained Leaves (B9) vations: er present? present?	ors: of one is I Imagery ve Surface ) Yes Yes	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (Buatic Planen Sulfided Rhizospee of Reductor Well Date Explain in Depth (Depth (	nts (B14) c Odor (C2) cheres on uced Iron uction in Tage (C7) ata (D9) Remarks	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte Geome	Indicators (minimum of two require Soil Cracks (B6) ge Patterns (B10) eason Water Table (C2) sh Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)
YDROLO Vetland Hy rimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S eld Obser urface water dater table aturation p	drology Indicated cators (minimum Water (A1) on (A3) arks (B1) on to Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria vegetated Concatained Leaves (B9) vations: present?	ors: of one is I Imagery ve Surface ) Yes Yes Yes	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Planen Sulfide de Rhizosper Reduction Redu	nts (B14) Odor (Coheres on uced Iron uction in Tate (C7) ata (D9) Remarks inches): inches):	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte Geome	Indicators (minimum of two requestions of wetland
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S eld Obser urface water table aturation p	and loose textured by the second loose textured loose textured by the second loose textured loose te	ors: of one is I Imagery ve Surface ) Yes Yes Yes	required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Planen Sulfide de Rhizosper Reduction Redu	nts (B14) Odor (Coheres on uced Iron uction in Tate (C7) ata (D9) Remarks inches): inches):	1) Living Roots (C4) Tilled Soils	Secondary Surfac Draina Dry-Se Crayfis Satura Stunte Geome	Indicators (minimum of two requestions of wetland

### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Touve Parcel	City/	/County: P	lymouth/He	nnepin Sampling Date:	8-14-2018
Applicant/Owner: Jim Touve		State:	MN	<del></del>	SP1-wet
Investigator(s): M. Barrett			tion, Townsh		5, T118, R22
Landform (hillslope, terrace, etc.): flat la	and			ve, convex, none):	linear/none
Slope (%): 0-1 Lat:		Long:	, , , , , , , , , , , , , , , , , , ,	Datum:	
Soil Map Unit Name Medo soils		·	1WI	Classification:	PFO1A
Are climatic/hydrologic conditions of the site typical for	or this time	of the vear?		If no, explain in remarks)	
Are vegetation , soil , or hydrole		significantly		Are "normal circu	metancoe"
Are vegetation , soil , or hydrok		naturally pr		Ale normal circu	present? Yes
SUMMARY OF FINDINGS				(If needed, explain any a	
Hydrophytic vegetation present?	e e				
Hydric soil present?		Is the s	ampled are	a within a wetland?	Y
Indicators of wetland hydrology present? Y		f yes, op	tional wetla	nd site ID: Wetland 1	
Remarks: (Explain alternative procedures here or in a	a separate	report.)			
Climatic conditions	typical (no	rmal) based or	n gridded dat	abase method.	
VEGETATION Use scientific names of plan	nts.				
	Absolute	Dominant	Indicator	Dominance Test Works	sheet
Tree Stratum (Plot size: 30 )	% Cover	Species	Status	Number of Dominant Spec	
1 Fraxinus pennsylvanica	40	· — Y	_FACW	that are OBL, FACW, or FA	AC: 3 (A)
2				Total Number of Domin	
3				Species Across all Stra	``
5	-			Percent of Dominant Specthat are OBL, FACW, or FA	
	40	= Total Cover			100.0070 (700)
Sapling/Shrub stratur (Plot size: 15 )	-			Prevalence Index Work	sheet
1 Frangula alnus	15	Υ	FACW	Total % Cover of:	
2					x 1 =0
3					x 2 = <u>120</u>
4					x 3 = 0
5	15	= Total Cove			x 4 = 0 x 5 = 0
Herb stratum (Plot size: 5 )	- 10	- Total Cove			(A) 120 (B)
1 Laportea canadensis	5	Υ	FACW	Prevalence Index = B/A	
2				Trevalence mack - Birt	
3				Hydrophytic Vegetatio	n Indicators:
4				Rapid test for hydro	phytic vegetation
5				X Dominance test is >	50%
6				X Prevalence index is	≤3.0*
7				Morphological adap	
8		-		supporting data in R separate sheet)	temarks or on a
9 10		. ——	•	S	
10		= Total Cove	<del></del>	Problematic hydropl (explain)	nytic vegetation*
Woody vine stratum (Plot size: 30 )		· Otal Coro			
1				*Indicators of hydric soil and present, unless distu	
2				Hydrophytic	
	0	= Total Cove		vegetation	,
				present? Y	<u> </u>
Remarks: (Include photo numbers here or on a sepa	rate sheet)	1			
I					

SOIL

Sampling Point:

SP1-wet

(Inches) Color (moist) % Color (moist) % Type* Loc** Texture Remarks  0-6 10YR 2/1 1000   Ioamy sand   Ioamy sand sand   Ioamy sand sand   Ioamy sand sand sand   Ioamy sand sand sand sand sand sand sand sand	Depth				Redox Fea					
6-12 10YR 5/1 100	(Inches)	Color (moist)	%	Color (mois	:) %	Type*	Loc**	Tex	ture	Remarks
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. "Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators: Histosoi (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Coast Prainter Redox (A16) (AR, K, L, R) Histic Epipedon (A2) Sandy Redox (S5) Coast Prainter Redox (A16) (AR, K, L, R) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Statified Layors (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) Depleted Matrix (F2) 3 cm Muck (A10) Depleted Matrix (F3) 5 cm Mucky Mineral (S1) Redox Depressions (F8) Thick Dark Surface (A11) Redox Depressions (F8) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Thick Dark Surface (A12) Som Mucky Peat or Peat (S3) For Mucky Peat or Peat (S4) For Mucky Pe	0-6	10YR 2/1	100					loamy san	d	
pe: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. "Location: PL = Pore Lining, M = Matrix (Si) Indicators: Indicators for Problematic Hydric Soils: Histosoil (A1) Sandy Gleyed Matrix (S4) Coast Prainer Redox (A16) (LRR K, L) Sandy Redox (S5) Dark Surface (S7) (LRR K, L) Coast Prainer Redox (A16) (LRR K, L) Coast Prainer Redox (A17) (LRK K, L) Coast Prainer Redox (A17) (LRR K, L) Coast Prainer Redox (A17) (LRK K, L) Co	6-12	10YR 5/1	100					coarse sar	nd	gravelly loamy
Indicators for Problematic Hydric Soils:   Histosol (A1)										
ydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histosol (A2)  Sandy Redox (S5)  Dark Surface (S7) (LRR K, L, R)  Dark Surface (S7) (LRR K, L)  Stratified Layers (A5)  Loamy Mucky Mineral (F1)  Depleted Matrix (F3)  A Depleted Below Dark Surface (F12)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Redox Dark Surface (F7)  Sandy Mucky Peat or Peat (S3)  Strictive Layer (if observed):  Set  DROLOGY  tland Hydrology Indicators:  marks:    Hydric soil present?						+	+			
Indicators for Problematic Hydric Soils:   Histosol (A1)					_		<b>.</b>			
Indicators for Problematic Hydric Soils:   Histosol (A1)										
Indicators for Problematic Hydric Soils:   Histosol (A1)										
Indicators for Problematic Hydric Soils:   Histosol (A1)										
Indicators for Problematic Hydric Soils:   Histosol (A1)										
Indicators for Problematic Hydric Soils:   Histosol (A1)			<u> </u>			110		L		<u> </u>
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K, L, R) Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) (LRR K, L) Black Histic (A3) Stripped Matrix (S6) Iron-Manganese Masses (F12) (LRR K, L, R) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks)  Z cm Muck (A10) Pepleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Thick Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Hydrology must be present, unless disturbed problematic  5 cm Mucky Peat or Peat (S3) Hydrology Indicators:  mark Indicators (minimum of one is required: check all that apply)  Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Surface Water (A1) Drainage Patterns (B10) Surface (S3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Ton Deposits (B2) (C3) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Ton'th Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (G1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C5) Inundation Visible on Aerial Imagery (B1) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water-Stained Leaves (B9) Other (Explain in Remarks)  id Observations: face water present? Yes No X Depth (inches): Indicators of wetland hydrology present? Yes No X Depth (inches): Indicators (Morting), if available:			Depletion	on, RM = Redu	iced Matri	x, MS = N	lasked Sa			THE STATE OF THE S
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# Wetland Delineation Report

## APPENDIX C

**Precipitation Data** 

# Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

home | current conditions | journal | past data | summaries | agriculture | other sites | about us



# **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: <b>June 2018</b>	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) Target: T118 R22 S26 (Tatitude: 45.0003 mon year cc tttn rrw ss nnnn oooooooo Jan 2018 27 118N 21W 20 NWS NEW HOPE Feb 2018 27 118N 21W 20 NWS NEW HOPE Mar 2018 27 118N 21W 20 NWS NEW HOPE Apr 2018 27 118N 22W 24 MOSQ GREEN R May 2018 27 118N 22W 24 MOSQ GREEN R Jun 2018 27 118N 22W 24 MOSQ GREEN R Jul 2018 27 118N 21W 20 NWS NEW HOPE Aug 2018 27 118N 21W 20 NWS NEW HOPE pre (inches)
1.30 2.10

## June/July/August Daily Records

Jun	1, 2, 3, 4, 5, 6, 7, 8, 112, 13, 14, 15, 17, 18, 221, 223, 24, 26, 27, 28, 29, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	2018 2018 2018 2018 2018 2018 2018 2018	0 0 .21 0 0 .20 0 .33 0 

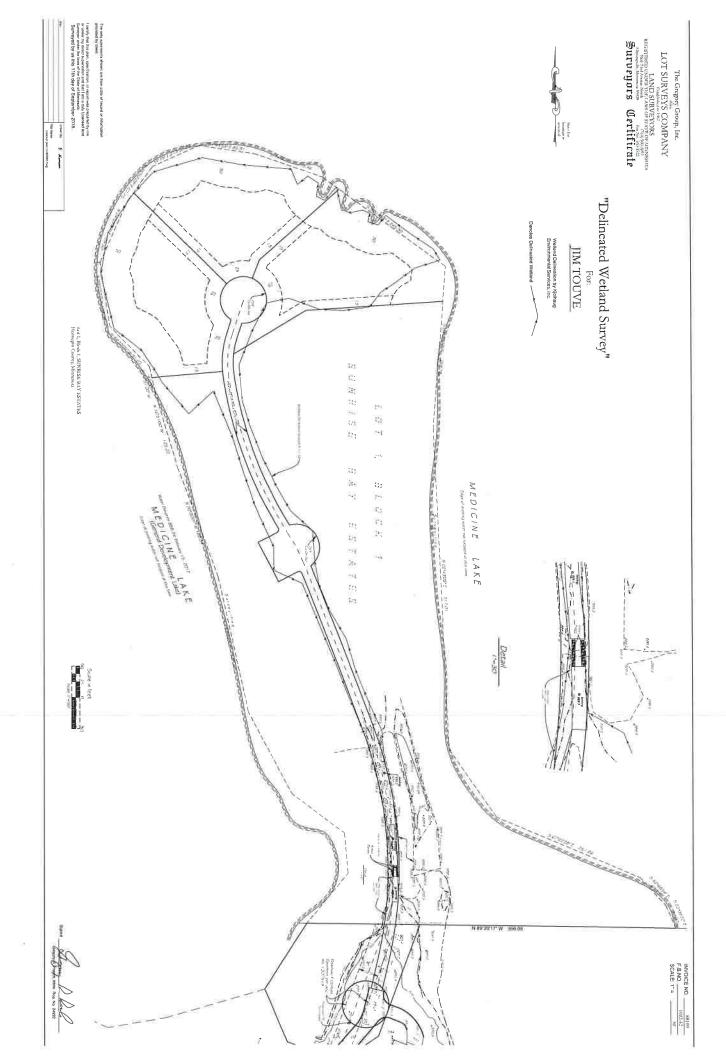
201 201 201 201 201 201 201 201 201 201	1, 2, 3, 4, 5, 6, 7, 89, 11, 12, 13, 14, 15, 17, 18, 20, 21, 22, 23, 24, 26, 27, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28	2018 2018 2018 2018 2018 2018 2018 2018	1.37 .09 .13 .00 .00 .12 1.13 .17 .00 .16 .23 .00 .00 .48 .15 .11 .01

*	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

Wetland Delineation Report

APPENDIX D

**Wetland Boundary Survey** 



# Minnesota Wetland Conservation Act **Notice of Application**

Local Government Unit (LGU)  City of Plymouth		Address 3400 Plymouth Blvd. Plymouth, MN 55447			
1.	PROJECT INFOR	MATION		The same of the same	
Applicant Name  City of Plymouth	Project Name CSAH 9 (Rockford Interchange Project		Date of Application 10/11/2018	Application Number N/A	
Type of Application (check all that a	pply):				
⊠ Wetland Boundary or Type ☐ Replacement	□ No-Loss t Plan	☐ Exem	_	Sequencing	
Summary and description of propose WSB and Associates investigated and Project on September 25, 2018. During ponds were identified.  This Notice of Application is only for include Wetland 1, a portion of Wetland The comment period closes on November 25, 2018.	d delineation the CSAF ng the delineation, 4 we be wetland resources loc and 2, and a portion of	I 9 (Rockford etlands, 8 wet	Road) and I-494 ditches, and two	stormwater	
A A DDY Y	CATION DEFINE	AND DECI	CION		
Signing and mailing of this complet Subp. 3 provides notice that an appli specified above. A copy of the applie	cation was made to the	iate recipients LGU under t	s in accordance whe Wetland Cons		
Name and Title of LGU Contact Pers Michael Thompson City of Plymouth	= bu	Comments must be received by (minimum 1 business-day comment period):  November 9, 2018			
Address (if different than LGU) 3400 Plymouth Blvd,	4	Date, time, and location of decision: November 10, 2018			

Signature:

Plymouth, MN 55447

BWSR Forms 7-1-10

763-509-5501

Phone Number and E-mail Address

mthompson@plymouthmn.gov

Date: 10/17/2018

Decision-maker for this application:

Staff
Governing Board or Council

Page 1 of 3

#### 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: <a href="https://www.mvp.usace.army.mil/regulatory/default.asp?pageid=687">www.mvp.usace.army.mil/regulatory/default.asp?pageid=687</a> 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

BWSR Forms 7-1-10 Page 2 of 3

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

BWSR Forms 7-1-10 Page 3 of 3



#### Memorandum

To:

Sarma Straumanis, MnDQT

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.





# 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



## **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,	VIDC No.1317
Date: October 1, 2018	Title: Environmental Scientist
I hereby certify that this report was Certified Wetland Delineator in the S	as reviewed by me and that I am a State of Minnesota.
lli	He
Alison Harwoo	d, WDC No.1238

Title: Senior Environmental Scientist

Date: October 4, 2018

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### 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	<b>L23A</b> /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/ <b>L36A</b>
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/ <b>L36A</b>
Stormwater Pond 2	Level 2	0/0	Shallow Marsh	Type 3 (PEMC)	N/A	No	U3B/L22C2

<sup>\* &</sup>quot;Yes" indicates wetland is mapped in the NWI and "No" indicates the wetland is not mapped in the NWI.

<sup>\*\* &</sup>quot;NA" indicates the wetland is not mapped in the PWI. Numbers listed are the DNR ID, indicating the wetland is mapped in the PWI.

<sup>\*\*\*</sup>Bolded numbers indicate hydric soils.

#### 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 (<a href="https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm">https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm</a>) identified the following soils (**Table 2**) within the project area (**Figure 5, Appendix A**):

Map Symbol	Soil Unit Name	Percent Hydric	Hydric Rating
L23A	Cordova loam	95	Predominantly hydric
L37B	Angus Ioam	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

Table 2. Soil Survey

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.

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**.

#### 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.

<u>Wet Ditch 2</u>: 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.

<u>Wet Ditch 3</u>: 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.

<u>Wet Ditch 6</u>: 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.





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.





### **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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- United States Army Corps of Engineers- St. Paul District and Minnesota Board of Water & Soil Resources. March 4, 2015. Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota, Version 2.0.
- United States Army Corps of Engineers. 1987 2014. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Version 2.0 Waterways Experiment Station.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture.

  Webs Soil Survey, Minnesota. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed 9/26/2018.

## **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

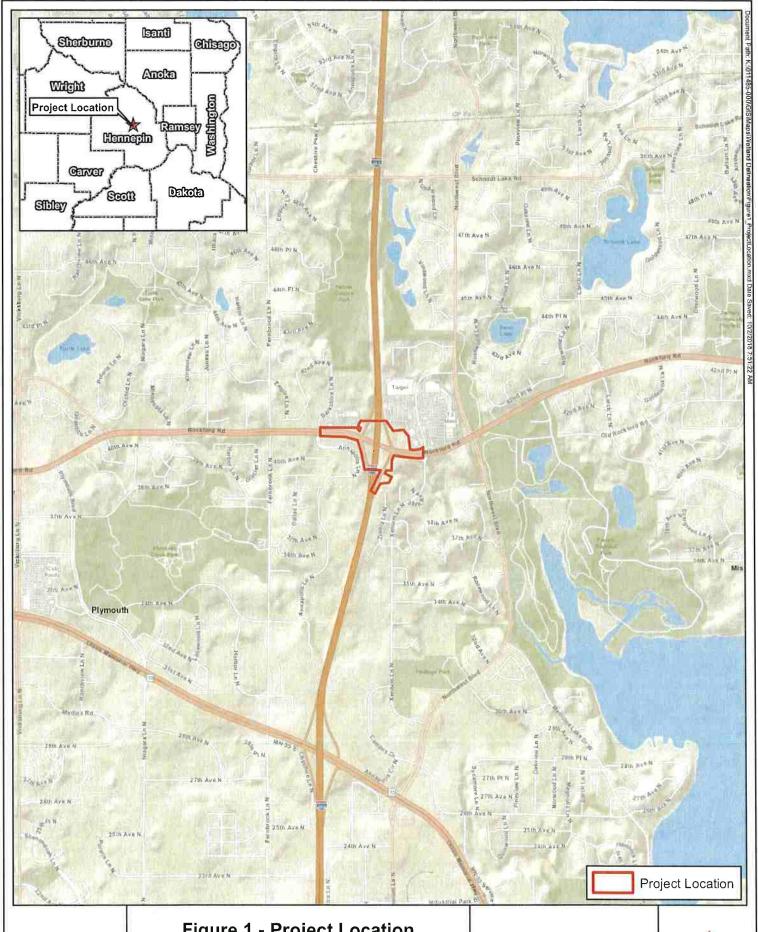




Figure 1 - Project Location

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



2,000 Feet 1 inch = 2,000 feet



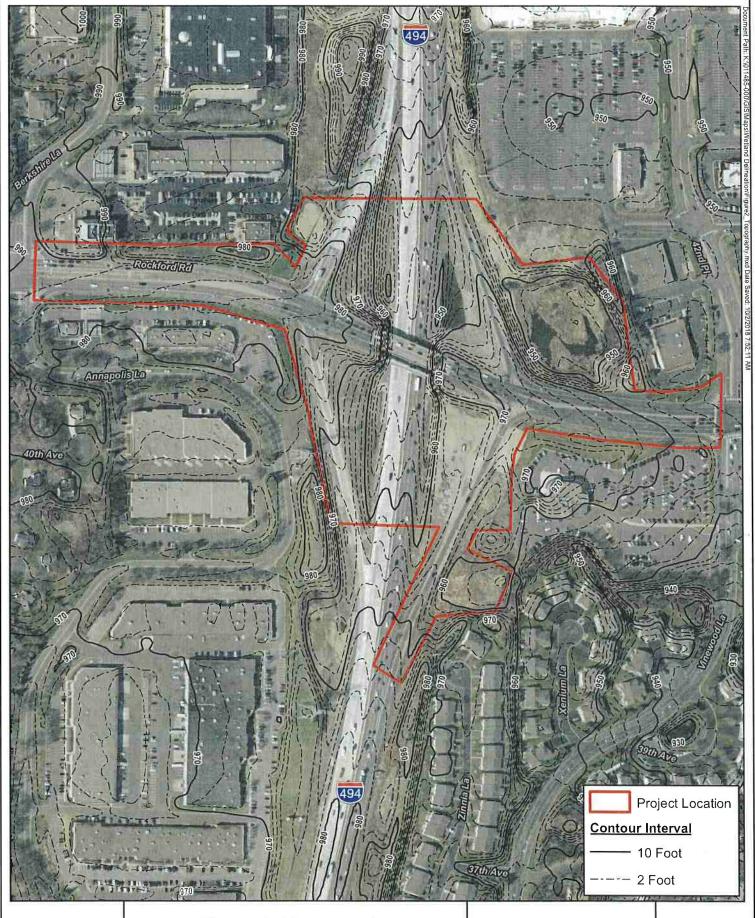
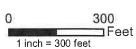




Figure 2 - Topography

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







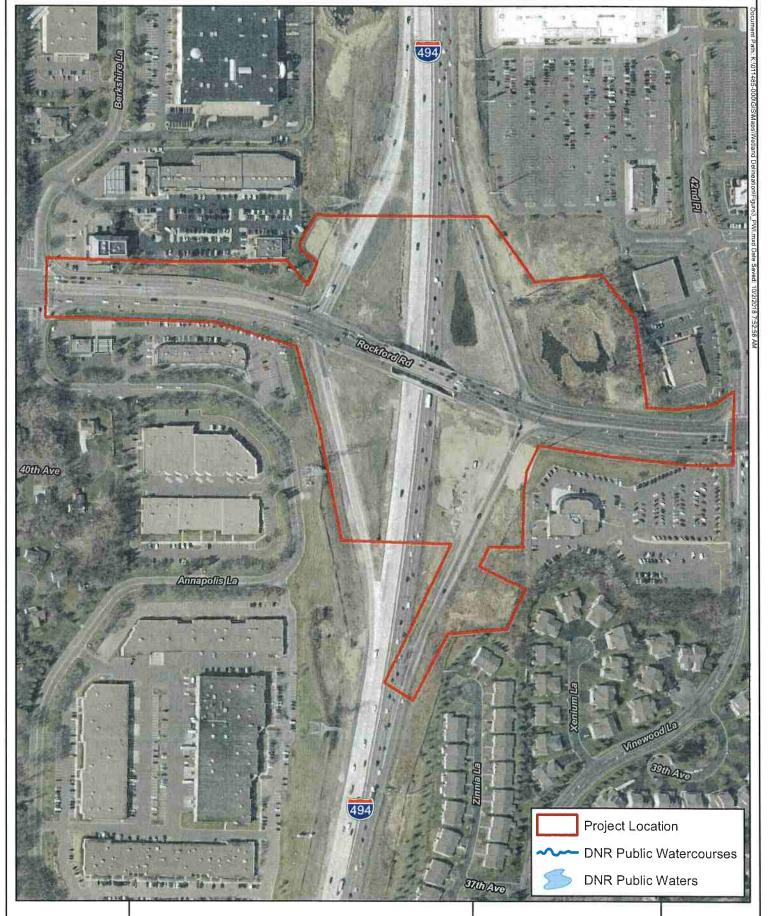




Figure 3 - DNR Public Waters Inventory

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











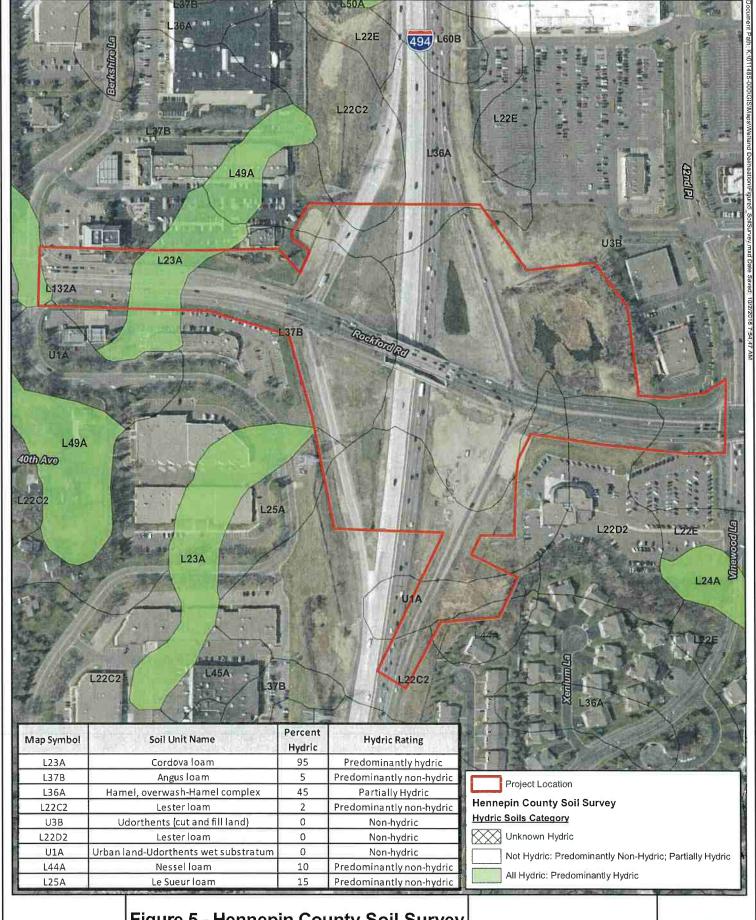
Figure 4 - National Wetlands Inventory

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











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



300 Feet 1 inch = 300 feet



### **APPENDIX**

### **APPENDIX B**

Figure 6: Wetland Boundary Wetland Determination Data Forms

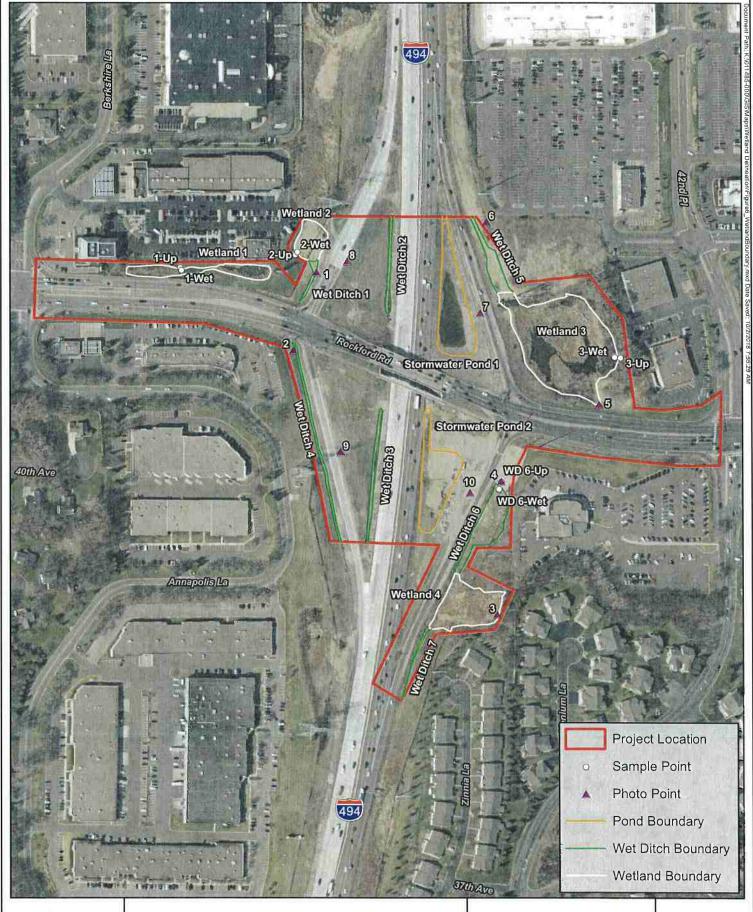




Figure 6 - Wetland Boundary

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







Project/Site CSAH 9/I-494 Interchange Project	City/C	county:	Plymouth/Her	nnepin S	ampling Date:	9/25/18
Applicant/Owner: City of Plymouth		State:	MN	S	ampling Point:	1-Up
Investigator(s): RF		Sec	tion, Township	p, Range:	15	,118,22
Landform (hillslope, terrace, etc.): Hillslope		 Local	relief (concav	e, convex, i	none):	Linear
Slope (%): 20 Lat: 45.029414		Long:	-93.45578	88 D	Datum:	WGS 84
Soil Map Unit Name Cordova loam, 0 to 2 percent slopes			/WI C	 Classificatio	n:	None
Are climatic/hydrologic conditions of the site typical for this		the year?	Y (I	f no, explair	n in remarks)	
Are vegetation , soil , or hydrology	,	significant	ly disturbed?	Δ	re "normal circu	mstances"
Are vegetation , soil , or hydrology	,	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed	d, explain any ar	nswers in remarks.)
Hydrophytic vegetation present?						
Hydric soil present?	1	Is the	sampled area	a within a v	vetland?	N
Indicators of wetland hydrology present?		f yes, o	ptional wetlar	nd site ID:	-	
Remarks: (Explain alternative procedures here or in a sep	narate re	nort \		-		
Tromains. (Explain atomative procedures here or in a sep	Jarate re	port.)				
	Area	is mowe	ed.			
VEGETATION Use scientific names of plants.						
	bsolute	Dominan	Indicator	Dominan	nce Test Works	heet
	Cover	t Species	Staus		f Dominant Speci	
1 Fraxinus pennsylvanica	10	Y	FACW		BL, FACW, or FA	
2				Total N	lumber of Domina	ant
3				Specie	es Across all Stra	ta: (B)
4			10)		f Dominant Speci	
5	10 =	Total Cov		that are O	BL, FACW, or FA	.C: 100.00% (A/B)
Sapling/Shrub stratum (Plot size: 15 )	-10 -	· Total Cov	er	Prevalen	ce Index Works	shoot
1				Total % C		Silect
2			ä <del></del>	OBL spec		(1 = 0
3			## <del></del>	FACW sp	pecies 10 x	(2 = 20
4			7	FAC spec		3 = 285
5				FACU sp		4 = 40
Harb strature (Dist size) 5	0 -	Total Cov	er	UPL spec		(5 = 0
Herb stratum (Plot size: 5 )	0.5	.,	E40	Column t		(A) <u>345</u> (B)
1 Poa pratensis 2 Glechoma hederacea	95 5		FACU	Prevalen	ce Index = B/A =	3.00
2 Glechoma hederacea 3 Taraxacum officinale	3	N	FACU	Hydronh	ytic Vegetation	Indicators:
4 Cirsium arvense	2	N	FACU		d test for hydrop	
5	-				inance test is >5	T
6				X Prev	alence index is ≤	3.0*
7				Morp	hogical adaptati	ons* (provide
8					orting data in Re	emarks or on a
9					rate sheet)	
10	105 =	Total Cov		Prob (expl	lematic hydrophy	ytic vegetation*
Woody vine stratum (Plot size: 30 )	100 -	- Total Cov	ei			
1					rs of hydric soil and r resent, unless distur	wetland hydrology must be bed or problematic
2					rophytic	
-	0 =	Total Cov	er		etation	
				pres	ent? Y	
Remarks: (Include photo numbers here or on a separate	sheet)					

Sampling Point:

1-Up

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the ab	sence of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	100					Clay Loam	
6-9	10YR 2/1	98	10YR 4/6	2	С	М	Clay Loam	
9-12	10YR 2/1	80	10YR 4/6	10	С	М	Clay Loam	
0.12	1011(2)1	- 00	10YR 6/3	10	D	М	Clay Loam	Fill
			1011/0/3	10		101	Clay Luain	1 1111
*Type: C = 0	Concentration, D	= Deplet	ion, RM = Reduce	ed Matrix	, MS = N	/lasked S	Sand Grains. **Lo	ocation: PL = Pore Lining, M = Matrix
	oil Indicators:		,					Problematic Hydric Soils:
	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)		e Redox (A16) (LRR K, L, R)
	tic Epipedon (A2)	+		ndy Redo				e (S7) (LRR K, L)
	ck Histic (A3)			pped Ma				nese Masses (F12) (LRR K, L, R)
-	drogen Sulfide (A	4)			ky Miner	al (F1)	_	w Dark Surface (TF12)
	atified Layers (A5				ed Matri			ain in remarks)
	m Muck (A10)	,			atrix (F3)			,
	oleted Below Darl	k Surface			Surface			İ
	ck Dark Surface (				ark Surfa		*Indicators of	hydrophytic vegetation and weltand
	ndy Mucky Minera				essions			nust be present, unless disturbed or
	m Mucky Peat or	, ,				, ,	.,	problematic
	Layer (if observ					<u> </u>		
l .	ill	eu).					Hudria sail pr	rogant? V
Type: F Depth (inch					-		Hydric soil pr	resent? Y
Берит (лист	es)				•			
Remarks:	-							
HYDROL								
Wetland Hy	drology Indicate	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	(ylqq		Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (E	313)	Su	rface Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plai	nts (B14)	Dra	ainage Patterns (B10)
Saturati				Hydroge	en Sulfide	Odor (C		/-Season Water Table (C2)
	farks (B1)				d Rhizosp	heres or		ayfish Burrows (C8)
	nt Deposits (B2)			(C3)				turation Visible on Aerial Imagery (C9)
	posits (B3)			-	ce of Red			unted or Stressed Plants (D1)
	at or Crust (B4)				Iron Redu	uction in		omorphic Position (D2)
	posits (B5)		(07)	(C6)		(00)	FA	C-Neutral Test (D5)
	on Visible on Aeria	-			ck Surfac			
	y Vegetated Conc			_	or Well D	٠, ,	-\	
	stained Leaves (B9	")		- Other (E	Explain in	Remarks	s)	
Field Obse					D = 0 /			
Surface wat		Yes	No No	X		inches):		Indicators of watland
Water table		Yes	No No	X		inches):		Indicators of wetland
Saturation p		Yes	No	X	- Depth (	inches):	-	hydrology present? N
	pillary fringe)			5341				
Describe re	corded data (stre	am gaug	e, monitoring wel	ı, aerial p	onotos, p	revious i	inspections), if availal	DIE:
Domarka								
Remarks:								
ľ								

Project/Site CSAH 9/I-494 Interchange Project	City/County:	Plymouth/He	ennepin Sampling [	Date: 9/25/18
Applicant/Owner: City of Plymouth	Sta	ate: MI	N Sampling F	Point: 1-Wet
Investigator(s): RF		Section, Townsh	ip, Range:	15, 118, 22
Landform (hillslope, terrace, etc.): Toeslope	Lo	ocal relief (conca	ve, convex, none):	Concave
Slope (%): 0 Lat: 45.029414	Long:			WGS 84
Soil Map Unit Name Cordova loam, 0 to 2 percent slopes			Classification:	PEM1C
Are climatic/hydrologic conditions of the site typical for this	s time of the ye	ar? Y	(If no, explain in remar	rks)
Are vegetation , soil , or hydrology	signifi	cantly disturbed?	Are "norma	al circumstances"
Are vegetation , soil , or hydrology		ally problematic?		present? No
SUMMARY OF FINDINGS			(If needed, explain	any answers in remarks.)
Hydrophytic vegetation present?				
Hydric soil present?	ls	the sampled are	ea within a wetland?	Υ
Indicators of wetland hydrology present?	f ye	es, optional wetla	and site ID: Wet	tland 1
Remarks: (Explain alternative procedures here or in a sep	arate report.)			
		Alexander NA		
There is a parking lot to the north and a reta	aining waii to	the south. ML	ich of the surround	ing area is mowed.
VEGETATION Use scientific names of plants.				
Ab	solute Domi	nan Indicator	Dominance Test	Worksheet
`	Cover t Spec	cies Staus	Number of Dominar	
1			that are OBL, FACV	V, or FAC:2 (A)
3			Total Number of	
4			Species Across	
5			Percent of Dominar that are OBL, FACW	•
	0 = Total	Cover		1,00.0070 (1,00)
Sapling/Shrub stratum (Plot size: 15 )			Prevalence Index	Worksheet
1			Total % Cover of:	
2		<del>_</del>	_	85 x 1 =85
3			_	30 x 2 =60
4			FAC species	15 x 3 = 45
5	0 = Total	Cover	FACU species	$ \begin{array}{c cccc} 0 & x & 4 & = & 0 \\ \hline 0 & x & 5 & = & 0 \end{array} $
Herb stratum (Plot size: 5 )	- Total	Cover		130 (A) 190 (B)
1 Typha angustifolia	70 Y	OBL	Prevalence Index	- N N
2 Phalaris arundinacea	30 Y		Trevalence index	
3 Poa pratensis	15 N		Hydrophytic Vege	etation Indicators:
4 Juncus effusus	15 N	OBL		hydrophytic vegetation
5			X Dominance te	st is >50%
6			X Prevalence inc	dex is ≤3.0*
7				daptations* (provide
8				ta in Remarks or on a
9	27/		separate shee	
10	130 = Total	Cover	(explain)	ydrophytic vegetation*
Woody vine stratum (Plot size: 30 )	100 - 10141	00101	K=====	
1				soil and wetland hydrology must be ess disturbed or problematic
2			Hydrophytic	
-	0 = Total	Cover	vegetation	V
			present?	<u> </u>
Remarks: (Include photo numbers here or on a separate s	sheet)			

1-Wet

Depth	Matrix	0.1		edox Feat					
(Inches)	Color (moist)	%	Color (moist)		Type*	Loc**	Texture		Remarks
0-6	10YR 2/1	100	10YR 4/6	2	С	M	Sandy Clay L	oam	
6-18	10YR 2/1	95	10YR 4/6	5	С	M	Sandy Clay L	oam	
				-	-	-			
				-	-	-			
vpe: C = 0	Concentration, D	= Depleti	ion. RM = Redu	ced Matri	x. MS = N	Masked S	Sand Grains.	**Location	: PL = Pore Lining, M = Matrix
	oil Indicators:								matic Hydric Soils:
-	tisol (A1)		S	andy Gley	ed Matrix	x (S4)			ox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			andy Red		(- ')			(LRR K, L)
	ck Histic (A3)			ripped Ma					Masses (F12) (LRR K, L, R)
	drogen Sulfide (A	4)		oamy Muc				_	Surface (TF12)
	atified Layers (A5			pamy Gley				explain in r	
	m Muck (A10)	,		epleted M				CAPIGITI	omano,
	oleted Below Dark	Surface		edox Dark					
	ck Dark Surface (			epleted D			*Indicate	ore of hydro	phytic vegetation and weltand
	ndy Mucky Minera	,		edox Dep		. ,			present, unless disturbed or
	m Mucky Peat or	, ,		odox Dop	100010110	(10)	Hydroid		problematic
	Layer (if observ	ed):							
						1	Hydric so	oil nracant	? Y
					÷:		,	on present	
epth (inch					- -			on present	
epth (inch					-			on present	
epth (inche	es):18"				•: •:		.,,	on present	
epth (inchesemarks:	es): 18"				<b>→</b> 2		.,,	on present	
epth (inche emarks: YDROLO /etland Hy	es):18"  OGY vdrology Indicato				-:				
PDROLO Petland Hy Pimary India	es):18"  OGY vdrology Indicato		required; chec		-1-1-1-1-1-1-1			ondary Indi	cators (minimum of two requir
YDROLO etland Hy imary Indi Surface	OGY vdrology Indicators (minimum) Water (A1)		required; chec	Aquatic	Fauna (E		Seco	ondary Indi Surface S	cators (minimum of two requir
YDROLO etland Hy imary Indi Surface High Wa	DGY vdrology Indicator icators (minimum Water (A1) ater Table (A2)		required; chec	Aquatic True Ac	Fauna (E Juatic Pla	nts (B14)	Sec	ondary Indi Surface S Drainage	cators (minimum of two requir ioil Cracks (B6) Pattems (B10)
YDROLO etland Hy imary Indi Surface High Wa Saturati	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3)		required; chec	Aquatic True Ac Hydroge	Fauna (E quatic Pla en Sulfide	nts (B14) e Odor (C	Second 1) X	ondary Indi Surface S Drainage	cators (minimum of two requir ioil Cracks (B6) Pattems (B10) on Water Table (C2)
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M	DGY rdrology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1)		required; chec	Aquatic True Ac Hydrogo Oxidize	Fauna (E quatic Pla en Sulfide	nts (B14) e Odor (C	Sec	ondary Indi Surface S Drainage Dry-Seas Crayfish E	cators (minimum of two requir soil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8)
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M Sedimer	DGY rdrology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2)		required; chec	Aquatic True Ac Hydrogo Oxidize (C3)	Fauna (E quatic Pla en Sulfide d Rhizosp	nts (B14) e Odor (C pheres on	Second 1) X	ondary Indi Surface S Drainage Dry-Sease Crayfish E Saturation	cators (minimum of two requir soil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9)
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M Sedimel	DGY rdrology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3)		required; chec	Aquatic True Ac Hydrogo Oxidize (C3) Presence	Fauna (E quatic Platen Sulfide d Rhizosp ce of Red	nts (B14) e Odor (C pheres on luced Iron	Second 1) X 1 Living Roots (C4)	ondary Indi Surface S Drainage Dry-Seas Crayfish E Saturatior Stunted o	cators (minimum of two requir soil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M Sedimel Drift De	DGY rdrology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		required; chec	Aquatic True Ac Hydrogo Oxidize (C3) Presence Recent	Fauna (E quatic Platen Sulfide d Rhizosp ce of Red	nts (B14) e Odor (C pheres on luced Iron	Second 1) X X In Living Roots Control	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requires foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2)
YDROLO YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep	DGY rdrology Indicatoricators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	of one is		Aquatic True Ac Hydrogo Oxidize (C3) Presence Recent (C6)	Fauna (E quatic Pla en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) e Odor (C pheres on luced Iron uction in 1	Second 1) X X In Living Roots Control	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requir soil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
YDROLO Petland Hyrimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	of one is	y (B7)	Aquatic True Ac Hydroge Oxidize (C3) Present (C6) Thin Mu	Fauna (E quatic Plai en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) e Odor (C pheres on luced Iron luction in 1	Second 1) X X In Living Roots Control	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requires foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2)
YDROLO YDROLO Yetland Hyrimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely	DGY vdrology Indicators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	of one is al Imager, ave Surfa	y (B7)	Aquatic True Ac Hydrogo Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surfacer)	nts (B14) e Odor (C pheres on luced Iron uction in 1 ce (C7) ata (D9)	Second 1) X X X X X X X X X X X X X X X X X X	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requires foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2)
YDROLU  YDROLU  YDROLU  Yetland Hy  rimary Indi  Surface  High Wa  Saturati  Water M  Sedimel  Drift Del  Algal Ma  Iron Dep Inundati  Sparsely  Water-S	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	of one is al Imager, ave Surfa	y (B7)	Aquatic True Ac Hydrogo Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surfacer)	nts (B14) e Odor (C pheres on luced Iron luction in 1	Second 1) X X X X X X X X X X X X X X X X X X	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requires foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2)
YDROLO emarks:  YDROLO etland Hyrimary Indi Surface High Water M Sedimer Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S eld Obser	DGY  vdrology Indicated icators (minimum) Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concastained Leaves (B9) rvations:	of one is al Imagery ave Surfa	y (B7) — ce (B8) —	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (Equatic Platen Sulfider of Red Iron Reduck Surface of Well Description in Fauna (Fauna	nts (B14) e Odor (C pheres on luced Iron uction in T ce (C7) ata (D9) i Remarks	Second 1) X X X X X X X X X X X X X X X X X X	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o	cators (minimum of two requires foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2)
YDROLO  YDROLO  YDROLO  YDROLO  Yetland Hy  rimary Indi  Surface  High Wa  Saturati  Water M  Sedimel  Drift Del  Algal Ma  Iron Dep  Inundati  Sparsely  Water-S  ield Obserurface wat	DGY vdrology Indicated icators (minimum) Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concastained Leaves (B9) rvations:	al Imagery ave Surfa	y (B7) ce (B8)	Aquatic True Ac Hydrogo Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge	Fauna (Equatic Planen Sulfider of Reduck Surfactor Well Depth (Depth (De	nts (B14) e Odor (C pheres on luced Iron uction in T ce (C7) ata (D9) e Remarks (inches):	Second 1) X X In Living Roots In (C4) In Tilled Soils X	ondary India Surface S Drainage Dry-Seasa Crayfish E Saturatior Stunted o Geomorp	cators (minimum of two requir foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2) tral Test (D5)
YDROLO  YDROLO  YDROLO  Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S  Yetla Observator table	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9 rvations: present?	al Imagery ave Surfa Yes Yes	y (B7) ce (B8)  No X	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (Equatic Platen Sulfider of Red Iron Reduck Surfactor Well December 2007)  Depth (Depth	nts (B14) e Odor (C pheres on luced Iron uction in T ce (C7) ata (D9) e Remarks (inches): (inches):	Second 1) X X In Living Roots In (C4) Tilled Soils X X In (C4) X I	ondary India Surface S Drainage Dry-Seasa Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires to calculate to the case of two sequires of two requires to the case of two sequires (B10) on Water Table (C2) (C3) on Water Table (C2) (C3) on Water Table (C3) on Water Tabl
YDROLO  YDROLO  Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S ield Obsel urface wat //ater table aturation p	DGY /drology Indicate icators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concate tained Leaves (B9 rvations: present?	al Imagery ave Surfa	y (B7) ce (B8)  No X	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (Equatic Platen Sulfider of Red Iron Reduck Surfactor Well December 2007)  Depth (Depth	nts (B14) e Odor (C pheres on luced Iron uction in T ce (C7) ata (D9) e Remarks (inches):	Second 1) X X In Living Roots In (C4) In Tilled Soils X	ondary India Surface S Drainage Dry-Seasa Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requir foil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2) tral Test (D5)
epth (inche emarks:  YDROL( /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S ield Obse urface wat /ater table aturation p ncludes ca	DGY vdrology Indicators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9) rvations: ter present? present? present? present?	al Imager, ave Surfa	y (B7) ce (B8)  X No No	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge Other (E	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surface or Well Dexplain in Depth (Depth	nts (B14) e Odor (C pheres on luced Iron luction in T ce (C7) ata (D9) l Remarks (inches): (inches):	Second	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires to calculate to the case of two sequires of two requires to the case of two sequires (B10) on Water Table (C2) (C3) on Water Table (C2) (C3) on Water Table (C3) on Water Tabl
epth (inche emarks:  YDROL  Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S  ield Obserurface wat /ater table aturation pencludes ca	DGY /drology Indicate icators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concate tained Leaves (B9 rvations: present?	al Imager, ave Surfa	y (B7) ce (B8)  X No No	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge Other (E	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surface or Well Dexplain in Depth (Depth	nts (B14) e Odor (C pheres on luced Iron luction in T ce (C7) ata (D9) l Remarks (inches): (inches):	Second	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires to calculate to the case of two requires to case of the case of two requires to case of two requires two requires to case of two requires to case of two requires two requires to case of two
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YDROLO YDROLO Yetland Hyrimary Indi Surface High Wa Saturati Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S Ield Observation procludes car	DGY vdrology Indicators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9) rvations: ter present? present? present? present?	al Imager, ave Surfa	y (B7) ce (B8)  X No No	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge Other (E	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surface or Well Dexplain in Depth (Depth	nts (B14) e Odor (C pheres on luced Iron luction in T ce (C7) ata (D9) l Remarks (inches): (inches):	Second	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires to calculate to the case of two sequires of two requires to the case of two sequires (B10) on Water Table (C2) (C3) on Water Table (C2) (C3) on Water Table (C3) on Water Tabl
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M Sedimen Drift Den Algal Ma Iron Den Inundati Sparsely Water-S eld Observater table atturation procludes cares	DGY vdrology Indicators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9) rvations: ter present? present? present? present?	al Imager, ave Surfa	y (B7) ce (B8)  X No No	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge Other (E	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surface or Well Dexplain in Depth (Depth	nts (B14) e Odor (C pheres on luced Iron luction in T ce (C7) ata (D9) l Remarks (inches): (inches):	Second	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires to calculate the case of two requires to case
YDROLO etland Hy imary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S etld Obsel offace water table atter table sturation p cludes ca	DGY vdrology Indicators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9) rvations: ter present? present? present? present?	al Imager, ave Surfa	y (B7) ce (B8)  X No No	Aquatic True Ac Hydrog Oxidize (C3) Presenc Recent (C6) Thin Mc Gauge Other (E	Fauna (Equatic Platen Sulfided Rhizospace of Reduck Surface or Well Dexplain in Depth (Depth	nts (B14) e Odor (C pheres on luced Iron luction in T ce (C7) ata (D9) l Remarks (inches): (inches):	Second	ondary India Surface S Drainage C Dry-Sease Crayfish E Saturatior Stunted o Geomorp FAC-Neur	cators (minimum of two requires oil Cracks (B6) Pattems (B10) on Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) hic Position (D2) tral Test (D5)

Project/Site CSAH 9/I-494 Interchange Project	City/County:	Plymouth/He	nnepin Sampling Date:	9/25/18
Applicant/Owner: City of Plymouth	Sta	te: MN	Sampling Point:	2-Up
Investigator(s): RF		Section, Townshi	p, Range:	5,118,22
Landform (hillslope, terrace, etc.): Hillslope	Lo	cal relief (concav	/e, convex, none):	Linear
Slope (%): 0 Lat: 45.029414	Long:	-93.4557	88 Datum:	WGS 84
Soil Map Unit Name Hamel, overwash-Hamel complex, 0 t	to 3 percent slop	oes VVI	Classification:	None
Are climatic/hydrologic conditions of the site typical for this	s time of the yea	ır? Y (	If no, explain in remarks)	
Are vegetation , soil , or hydrology	signific	antly disturbed?	Are "normal circ	umstances"
Are vegetation , soil , or hydrology	natural	ly problematic?		present? No
SUMMARY OF FINDINGS			(If needed, explain any a	answers in remarks.)
Hydrophytic vegetation present?				
Hydric soil present?	ls t	he sampled are	a within a wetland?	N
Indicators of wetland hydrology present?	f ye:	s, optional wetla	nd site ID: PEM1A	
Remarks: (Explain alternative procedures here or in a sep	arate report.)			
	Mowed a	rea.		
VEGETATION Use scientific names of plants.				
	solute Domin	an Indicator	Dominance Test Work	sheet
Tree Stratum (Plot size: 30 ) %	Cover t Speci		Number of Dominant Spe	cies
1			that are OBL, FACW, or F	AC:(A)
2			Total Number of Domin	
3			Species Across all Str	· · ·
			Percent of Dominant Spe that are OBL, FACW, or F	
	0 = Total C	Cover	that are OBE, I AOVV, OF I	AO. 100.00 % (A/B)
Sapling/Shrub stratur (Plot size: 15 )			Prevalence Index Wor	ksheet
1			Total % Cover of:	
2			OBL species 0	x1 = 0
3			FACW species 0	x 2 =0
4			FAC species 98	×3 = 294
<u> </u>	0 = Total C	over	FACU species 4 UPL species 0	$x = \frac{16}{x = 0}$
Herb stratum (Plot size: 5 )	- Total C	70101	Column totals 102	(A) 310 (B)
1 Poa pratensis	98 Y	FAC	Prevalence Index = B/A	•
2 Trifolium repens	2 N	FACU	Trovalence index 2/1	
3 Cirsium arvense	2 N	FACU	Hydrophytic Vegetation	on Indicators:
4			Rapid test for hydro	phytic vegetation
5			X Dominance test is >	
6			Prevalence index is	
7			Morphogical adapta	
9	<del></del>	<del>-</del> 9, <del></del>	supporting data in F separate sheet)	Remarks or on a
10			Problematic hydrop	hytic vegetation*
	102 = Total C	Cover	(explain)	,
Woody vine stratum (Plot size: 30 )			*Indicators of hydric soil an-	d wetland hydrology must be
1			present, unless dist	urbed or problematic
2			Hydrophytic	
	0 = Total 0	Cover	vegetation present?	Υ
Remarks: (Include photo numbers here or on a separate s	shoot)			
Tremains, (moldide prioto numbers here or on a separate s	sneet)			

Sampling Point:

2-Up

Depth	Matrix				dox Feat				- 1	_
(Inches)	Color (moist)	%	Color (r	noist)	%	Type*	Loc**	Textur	е	Remarks
0-6	10YR 2/1	100						Loam		
6-12	10YR 2/2	100						Loam		
vno: C = (	Concentration, D	- Donlot	ion PM -	Peduc	ad Matrix	MS - N	Asskad S	and Graine	**Locatio	n: PL = Pore Lining, M = Matr
	oil Indicators:	- Debiet	ion, ixivi –	Neduci	eu Main	K, IVIO – IK	naskeu o			ematic Hydric Soils:
-				Sar	adv Clav	od Matrix	(84)			_
	tisol (A1)		_			ed Matrix	((34)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)		_		ndy Redo					() (LRR K, L)
	ck Histic (A3)		_			trix (S6)				Masses (F12) (LRR K, L, R)
	drogen Sulfide (A		_		-	ky Miner	. ,			rk Surface (TF12)
	atified Layers (A5	)	_			ed Matri		Other	(explain in	remarks)
	m Muck (A10)					atrix (F3)				
	oleted Below Dark		e (A11) _			Surface				
	ck Dark Surface (	,	_			ark Surfa				ophytic vegetation and weltar
	ndy Mucky Minera			Red	dox Depr	ressions	(F8)	hydrolo		e present, unless disturbed o
5 c	m Mucky Peat or	Peat (S3	3)							problematic
strictive	Layer (if observ	ed):								
		,						Hydric s	oil presen	t? N
pe: F	III									
						2		•	on procon	
epth (inch						=	-			·——
epth (inchemarks:	es):12"					-				·———
epth (incherent incherent	es):12"	ors:						,		
epth (inchemarks:  YDROLG  etland Hy	es): 12" OGY		s required;	check	all that a	- - - (Vlqqu			•	icators (minimum of two requ
yDROLetland Hy	es): 12"  OGY  vdrology Indicatoricators (minimum		s required;	check			313)		ondary Ind	iicators (minimum of two requ Soil Cracks (B6)
pth (inchemarks:  PDROLU  etland Hy  mary Ind  Surface	OGY /drology Indicators (minimum Water (A1)		s required;	check	Aquatic	ipply) Fauna (E			ondary Ind Surface	icators (minimum of two requ Soil Cracks (B6) Patterns (B10)
YDROLO etland Hy mary Ind Surface	DGY vdrology Indicate icators (minimum Water (A1) ater Table (A2)		s required;	check	Aquatic True Aq	Fauna (E Juatic Plai		Sec	ondary Ind Surface	Soil Cracks (B6) Patterns (B10)
YDROLO etland Hy imary Ind Surface High Wa	DGY vdrology Indicate icators (minimum Water (A1) ater Table (A2)		s required;	check	Aquatic True Aq Hydroge	Fauna (E Juatic Plai en Sulfide	nts (B14) Odor (C	Sec	ondary Ind Surface Drainage Dry-Seas	Soil Cracks (B6)
YDROLO etland Hy mary Ind Surface High Wa Saturati Water M	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3)		s required;	check	Aquatic True Aq Hydroge	Fauna (E Juatic Plai en Sulfide	nts (B14) Odor (C	<u>Sec</u>	ondary Ind Surface Drainage Dry-Sea: Crayfish	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
Pth (inchermarks:  PROLUMENT AND TO THE TO T	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1)		s required;	check	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (E juatic Plai en Sulfide d Rhizosp	nts (B14) Odor (C	Sec	ondary Ind Surface Drainage Dry-Seat Crayfish Saturatic	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
Pth (incher marks:  PROLUMENT AND THE MARKS:  PROUBLE THE MARKS:	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2)		s required;	check	Aquatic True Aq Hydroge Oxidized (C3) Presence	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red	nts (B14) Odor (Coheres on	Sec	ondary Ind Surface Drainage Dry-Sea: Crayfish Saturatic Stunted	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C8)
Pth (inchimarks:  PROLUMENT AND TO THE PROPERTY OF THE PROPERT	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3)		s required;	check	Aquatic True Aq Hydroge Oxidized (C3) Presence	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red	nts (B14) Odor (Coheres on	Sec	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C8) Or Stressed Plants (D1)
YDROLO etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	of one is		check	Aquatic True Aq Hydroge Oxidizee (C3) Present (C6)	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red	nts (B14) Odor (Coheres on uced Iron uction in 1	Sec	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
YDROLO etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	of one is	y (B7)	check	Aquatic True Aq Hydroge Oxidizee (C3) Present Recent (C6) Thin Mu	Fauna (E juatic Plan en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) Odor (Coheres on uced Iron uction in 1	Sec	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
YDROLO etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Sparsel	DGY /drology Indicatoricators (minimum) Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	of one is	y (B7)	check	Aquatic True Aq Hydroge Oxidizer (C3) Present (C6) Thin Mu Gauge (Cantal Cantal	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di	nts (B14) Odor (Coheres on uced Iron uction in 1	Sec Living Roots (C4) illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
YDROLU etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Sparsel Water-S	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	of one is	y (B7)	check	Aquatic True Aq Hydroge Oxidizer (C3) Present (C6) Thin Mu Gauge (Cantal Cantal	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di	nts (B14) Odor (Coheres on uced Iron uction in 1 ce (C7) ata (D9)	Sec Living Roots (C4) illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
YDROLO etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Sparsel Water-Seld Obse	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	of one is	y (B7)	check	Aquatic True Aq Hydroge Oxidizer (C3) Present (C6) Thin Mu Gauge (Cantal Cantal	Fauna (E juatic Plan en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di Explain in	nts (B14) Odor (Coheres on uced Iron uction in 1 ce (C7) ata (D9)	Sec Living Roots (C4) illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
YDROLO etland Hy imary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Sparsel Water-S eld Obse	OGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) at or Crust (B4) posits (B5) at or Crust (B4) posits (B5) are Vegetated Concastained Leaves (B9) rvations: ter present?	of one is al Imager ave Surfa )	y (B7)		Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (	Fauna (E  Juatic Plan  En Sulfide  Red  Red  Iron Red  Iron Well Di  Explain in  Depth (  Depth (	nts (B14) Odor (Conheres on uced Iron uction in The (C7) ata (D9) Remarks inches):	Sec Living Roots (C4) illed Soils	ondary Ind Surface Drainage Dry-Sea: Crayfish Saturatic Stunted Geomory FAC-Nei	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2)
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YDROLO  emarks:  YDROLO  etland Hyrimary Ind  Surface  High Water M Sedime  Drift De Algal M: Iron Dep Inundati Sparsel Water-S  eld Obse urface wat vater table aturation p	OGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) flarks (B1) at or Crust (B4) posits (B5) at or Crust (B4) posits (B5) y Vegetated Concastained Leaves (B9) rvations: ter present? present?	al Imager ave Surfa ) Yes Yes	y (B7)	No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (E  Juatic Plan  En Sulfide  Red  Red  Iron Red  Iron Well Di  Explain in  Depth (  Depth (	nts (B14) Odor (Conheres on uced Iron uction in The (C7) ata (D9) Remarks inches):	Sec Living Roots (C4) illed Soils	ondary Ind Surface Drainage Dry-Sea: Crayfish Saturatic Stunted Geomory FAC-Nei	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROLU  YDROLU  Yetland Hyrimary Ind  Surface  High Wa  Saturati  Water M  Sedime  Drift De  Algal Ma  Iron Dep  Inundati  Sparsela  Water-S  Ield Obse  aturation procludes ca	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9 rvations: ter present? present? present? apillary fringe)	of one is  al Imager ave Surfa )  Yes Yes Yes	y (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge ( Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Coheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Sec  Living Roots  (C4)  illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Net	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
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PyDROLO Petland Hy rimary Ind Surface High Wa Saturati Water M Sedime Drift De Algal M: Iron Dep Inundati Sparsel Water-S ield Obse urface wat /ater table aturation p ncludes ca	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9 rvations: ter present? present? present? apillary fringe)	of one is  al Imager ave Surfa )  Yes Yes Yes	y (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge ( Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Coheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Sec  Living Roots  (C4)  illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Net	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2) Utral Test (D5)
YDROLU  YDROLU  Yetland Hyrimary Ind Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Sparsela Water-S  ield Obse urface wat Vater table aturation pencludes ca	DGY /drology Indicate icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9 rvations: ter present? present? present? apillary fringe)	of one is  al Imager ave Surfa )  Yes Yes Yes	y (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge ( Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Coheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Sec  Living Roots  (C4)  illed Soils	ondary Ind Surface Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Net	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
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Project/Site CSAH 9/I-494 Interchange Project	City/Co	City/County: Plymouth/He			Sampling Date:	9/25/18
Applicant/Owner: City of Plymouth		State:	MN		Sampling Point:	2-Wet
Investigator(s): RF		Sectio	n, Township	, Range:	15,	118,22
Landform (hillslope, terrace, etc.): Toeslope		Local re	lief (concave	e, convex	, none):	None
Slope (%): 0 Lat: 45.029414	L	.ong:	-93.45578	38	Datum:	WGS 84
Soil Map Unit Name Hamel, overwash-Hamel complex, 0 t	to 3 percer	nt slopes	NWI C	Classificati	ion:	
Are climatic/hydrologic conditions of the site typical for this	s time of th	ne year?	Y (If	no, expla	ain in remarks)	
Are vegetation , soil , or hydrology	s	- ignificantly	disturbed?		Are "normal circun	nstances"
Are vegetation , soil , or hydrology	n	aturally pro	blematic?		7 to Morman on our	present?
SUMMARY OF FINDINGS				(If need	ed, explain any an	swers in remarks.)
Hydrophytic vegetation present?						
Hydric soil present?		Is the sa	ampled area	within a	wetland?	Υ
Indicators of wetland hydrology present?		f yes, opt	ional wetlan	d site ID:	PEM1A	
Remarks: (Explain alternative procedures here or in a sep	arate renc	ort \				
rtemarks. (Explain alternative procedures here of itra sep	arate repo	/i t. )				
VECTATION Has a satisfic a success of plants						
VEGETATION Use scientific names of plants.	-1.6		1 12 1	Domina	ance Test Worksh	201
		Dominan Species	Indicator Staus		of Dominant Specie	
1	00701	Ороско	Otado		OBL, FACW, or FAC	
2			-		Number of Domina	`
3					cies Across all Strat	
4				Percent	of Dominant Specie	es
5				that are	OBL, FACW, or FAC	C: 100.00% (A/B)
	0 = T	otal Cover				
Sapling/Shrub stratum (Plot size: 15 )					ence Index Works	heet
2				OBL sp	Cover of:	1 = 0
3				FACW		1 = 0 200
4				FAC sp		3 = 51
5			6	FACU		4 = 0
19	0 = T	otal Cover		UPL sp	ecies 0 x	5 = 0
Herb stratum (Plot size: 5 )				Column	n totals 117 (A	A) 251 (B)
1 Phalaris arundinacea	95	Υ	FACW	Prevale	ence Index = B/A =	2.15
2 Poa pratensis	15	N	FAC			3 =====================================
3 Solidago gigantea	5	N	FACW		ohytic Vegetation	
5				<u> </u>	pid test for hydroph	
6					minance test is >50 evalence index is ≤	
7						
8		6			rphogical ad <b>aptatic</b> pporting data in Re	
9					parate sheet)	marko or on a
10				Pro	blematic hydrophy	tic vegetation*
	115 = T	otal Cover		(ex	plain)	
Woody vine stratum (Plot size: 30 )				*Indicat	tors of hydric soil and w	vetland hydrology must be
1 Solanum dulcamara			FAC_		present, unless disturb	ed or problematic
2					drophytic getation	
	2 = T	otal Cover			esent? Y	
Remarks: (Include photo numbers here or on a separate s	sheet)					
Themains. (include prioto numbers here of on a separate s	sileet)					

SOIL

Sampling Point:

2-Wet

Profile Desc	ription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the	absence	of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	25	Remarks
0-5	10YR 2/1	95	10YR 5/8	5	С	М	Mucky Loam		
5-18	10YR 2/1	60	10YR 7/1	30	D	М	Clay Loam		
			10YR 5/8	10	С	М	Clay Loam		
40.04	40VD 0/4	400	10111 3/0	10		IVI			
18-24	10YR 2/1	100					Clay Loam		
~									
*T. max C = C	Composituation D	- Danlati	an DM - Dadua	ad Madeira	MC = 1	Annier C		*1 :	Di - Dana Linia - M - Matria
		= Depleti	on, RM = Reduce	ed Matrix	i, IVIS = IV	nasked S			PL = Pore Lining, M = Matrix
_	il Indicators:		0		84-4	. (0.4)			natic Hydric Soils:
	isol (A1)			ndy Gleye		(54)			ox (A16) (LRR K, L, R)
-	ic Epipedon (A2)			ndy Redo					(LRR K, L)
	ck Histic (A3)	4)		pped Ma		1 (54)	_	-	lasses (F12) (LRR K, L, R)
	rogen Sulfide (A			my Mucl					Surface (TF12)
	tified Layers (A5	)		my Gley			Other (ex	kplain in re	emarks)
	n Muck (A10)	0 (		oleted Ma	, ,				
	leted Below Dark			dox Dark		, ,			
	ck Dark Surface (	•		oleted Da					phytic vegetation and weltand
	dy Mucky Minera			dox Depr	essions	(F8)	hydrology		present, unless disturbed or
5 cn	n Mucky Peat or	Peat (53	)					þ	roblematic
Restrictive	Layer (if observ	ed):							
							Hydric soil	present?	? Y
Type:									
Type: Depth (inche	es):								
Depth (inche	es):								
	es):				•				
Depth (inche	es):				•				
Depth (inche	es):				-				:
Depth (inche	es):				-				::
Depth (inche Remarks:	14								15
Depth (inche Remarks:	OGY								
Depth (inche Remarks: HYDROLC Wetland Hy	DGY drology Indicate								is
Depth (inche Remarks: HYDROLO Wetland Hy Primary India	OGY drology Indicate cators (minimum		required; check	all that a	pply)			dary Indic	ators (minimum of two required
Depth (inche Remarks: HYDROLO Wetland Hy Primary India Surface	OGY drology Indicate cators (minimum Water (A1)		required; check	Aquatic	Fauna (B		;	dary Indio	oil Cracks (B6)
Depth (inche Remarks: HYDROLO Wetland Hy Primary India Surface High Wa	OGY drology Indicate cators (minimum Water (A1) ter Table (A2)		required; check	Aquatic True Aq	Fauna (B uatic Plar	nts (B14)		dary Indic Surface So Drainage F	oil Cracks (B6) Patterns (B10)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3)		required; check	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C		dary Indic Surface So Drainage F Dry-Seasc	oil Cracks (B6) Patterns (B10) In Water Table (C2)
Depth (inche Remarks: HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)		required; check	Aquatic True Aq Hydroge Oxidized	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C	1) X	dary Indic Surface So Drainage F Dry-Seasc Crayfish B	oil Cracks (B6) Patterns (B10) In Water Table (C2) urrows (C8)
Depth (inche Remarks: HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)		required; check	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C heres on	1) X X Living Roots	dary Indic Surface So Drainage F Dry-Seasc Crayfish B Saturation	oil Cracks (B6) Patterns (B10) In Water Table (C2) urrows (C8) Visible on Aerial Imagery (C9)
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HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S Field Obser Surface wate Water table Saturation p (includes ca	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) to Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria vegetated Concatained Leaves (B9) vations: er present? present? present?	al Imagery ave Surfa ) Yes Yes Yes	y (B7) ce (B8)  X No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge d Other (E	Fauna (Buatic Plans Sulfide de Reduction Reduction Well Date Depth (in Depth	nts (B14) Odor (C oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	1)	dary Indic Surface So Drainage F Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neutr	cators of wetland
HYDROLO Wetland Hy Primary India Surface High Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatia Sparsely Water-Si Field Obser Surface wate Water table Saturation p (includes ca) Describe reco	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) to Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria vegetated Concatained Leaves (B9) vations: er present? present? present?	al Imagery ave Surfa ) Yes Yes Yes	y (B7) ce (B8)  X No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge d Other (E	Fauna (Buatic Plans Sulfide de Reduction Reduction Well Date Depth (in Depth	nts (B14) Odor (C oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	1)	dary Indic Surface So Drainage F Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neutr	cators of wetland

Project/Site CSAH 9/I-494 Interchange Project	City/Co	ounty: Pl	ymouth/Hen	nepin	Sampling Date:	9/25/18
Applicant/Owner: City of Plymouth		State:	MN		Sampling Point:	3-Up
Investigator(s): RF		Sectio	n, Township	, Range:	15	5,118,22
Landform (hillslope, terrace, etc.): Hillslope		Local re	lief (concave	e, convex,	none):	Linear
Slope (%): 30 Lat: 45.029414		Long:	-93.45578	38 I	 Datum:	WGS 84
Soil Map Unit Name Hamel, overwash-Hamel complex, 0 to	to 3 perce	ent slopes	AMI C	Classification	on:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	Y (If	f no, expla	in in remarks)	
Are vegetation , soil , or hydrology		significantly	disturbed?		Are "normal circu	ımstances"
Are vegetation , soil , or hydrology		naturally pro	blematic?			present? Yes
SUMMARY OF FINDINGS				(If neede	ed, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? N		Is the sa	mpled area	a within a	wetland?	N
Indicators of wetland hydrology present?		f yes, opti	ional wetlan	d site ID:	PEM1A	
Remarks: (Explain alternative procedures here or in a sepa	arate rer	oort )				
Tremaine. (Explain alternative presedures here si in a sept	arato rop	, 0 ,				
Constructe	ed slope	adjacent t	to parking	lot.		
VEGETATION Use scientific names of plants.						
	solute	Dominan	Indicator	Domina	nce Test Works	hoot
1		t Species	Staus		of Dominant Spec	
	80	Υ	FAC		OBL, FACW, or FA	
2				Total I	Number of Domina	ant
3				Spec	ies Across all Stra	ata: (B)
4					of Dominant Spec	
5	00	T. 1.10		that are C	DBL, FACW, or FA	AC: 75.00% (A/B)
Sapling/Shrub stratum (Plot size: 15 )	= 08	Total Cover	-	Provalo	nce Index Work	shoot
2	10	Υ	FAC		Cover of:	Sileet
2 Rhamnus cathartica	10	<u> </u>	FAC	OBL spe		x1= 0
3				FACW s		x 2 = 0
4				FAC spe	ecies 100	x 3 = 300
5				FACU s		x 4 =20
M DE-	20 =	Total Cover		UPL spe		x 5 = 0
Herb stratum (Plot size: 5				Column	-	(A) <u>320</u> (B)
1				Prevaler	nce Index = B/A =	3.05
3				Hydron	hytic Vegetation	Indicators
4					id test for hydrop	
5				· — ·	ninance test is >5	, ,
6				Prev	valence index is s	≤3.0*
7				— Mor	phogical adaptat	ions* (provide
8				sup	porting data in Re	
9					arate sheet)	
10		Total Osusa		100	blematic hydroph	ytic vegetation*
Woody vine stratum (Plot size: 30 )	0 =	Total Cover			olain)	
1 Parthenocissus quinquefolia	5	Υ	FACU		ors of hydric soil and present, unless distu	wetland hydrology must be
2	<u> </u>		17.00		Irophytic	read of problematic
	5 =	Total Cover			etation	
				pres	sent? Y	<u></u>
Remarks: (Include photo numbers here or on a separate s	sheet)					

SOIL Sampling Point: 3-Up 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) Loc\*\* % % Type\* 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:** Indicators for Problematic Hydric Soils: Histisol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K, L, R) Dark Surface (S7) (LRR K, L) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) (LRR K, L, R) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks) 2 cm Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) \*Indicators of hydrophytic vegetation and weltand Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed or 5 cm Mucky Peat or Peat (S3) problematic Restrictive Layer (if observed): Type: Hydric soil present? Ν Depth (inches): Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3)Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Geomorphic Position (D2) Iron Deposits (B5) (C6)FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water-Stained Leaves (B9) Other (Explain in Remarks) Field Observations: Surface water present? No Depth (inches): Water table present? No Depth (inches): Indicators of wetland Yes Saturation present? Yes No Depth (inches): hydrology present? Ν (includes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site CSAH 9/I-494 Interchange Project	City/C	City/County: Plymouth/Hen			Sampling Date:	9/25/18	
Applicant/Owner: City of Plymouth		State: MN			Sampling Point:	Paint: 3-Wet	
Investigator(s): RF		Secti	on, Township	o, Range:	15,	118,22	
Landform (hillslope, terrace, etc.): Hillslo	оре	Local r	elief (concav	e, convex	, none):	Concave	
Slope (%): 20 Lat: 45.029414		Long:	-93.45578	38	Datum:	WGS 84	
Soil Map Unit Name Udorthents (cut and fill land), 0 to	6 percent sl	opes —	NMI C	Classificat	ion:	None	
Are climatic/hydrologic conditions of the site typical for			Y (I	f no, expla	ain in remarks)		
100	ogy		/ disturbed?	•	Are "normal circum	netanone"	
***************************************		naturally pr			Are normal circuit	present? Yes	
SUMMARY OF FINDINGS		•		(If need	ed, explain any ans	swers in remarks.)	
Hydrophytic vegetation present?							
Hydric soil present? Y	₹:	Is the s	ampled area	a within a	wetland?	Υ	
Indicators of wetland hydrology present?	-		tional wetlan		_	-	
	-						
Remarks: (Explain alternative procedures here or in a	separate re	port.)					
VEGETATION Use scientific names of plant				Di	T4 \M		
Tree Stratum (Plot size: 30	Absolute % Cover	Dominan t Species	Indicator Staus		ance Test Worksh		
1 Rhamnus cathartica	85	Y	FAC		of Dominant Specie OBL, FACW, or FAC		
2 Populus deltoides	70	Y	FAC		Number of Dominar	· · · · · ·	
3					cies Across all Strata		
4					of Dominant Specie		
5				that are	OBL, FACW, or FAC	C:100.00%(A/B)	
0 1: (0) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	155=	Total Cove	r				
Sapling/Shrub stratum (Plot size: 15 )				202	ence Index Works Cover of:	neet	
2				OBL sp		1 = 0	
3						2 = 0	
4				FAC sp		3 = 726	
5				FACUS	species 0 x	4 = 0	
	0 =	Total Cove	r	UPL sp	ecies D x	5 = 0	
Herb stratum (Plot size: 5)				Column	totals <u>242</u> (A	(B) <u>726</u>	
1 Rhamnus cathartica	85	Y	FAC	Prevale	ence Index = B/A =	3.00	
2		-					
3					hytic Vegetation		
5					pid test for hydroph minance test is >50		
6					evalence index is ≤		
7				<del></del>			
8 9				sup	rphogical adaptatio pporting data in Rer parate sheet)		
10					oblematic hydrophy	tic vogetation*	
	85 =	Total Cove	r		plain)	iic vegetation	
Woody vine stratum (Plot size: 30 )	, ,		FAC	*Indicat		etland hydrology must be	
1 Solanum dulcamara	2		FAC	Hv	present, unless disturb drophytic	ed or problematic	
	2	Total Cove	F	veç	getation esent?		
Remarks: (Include photo numbers here or on a separa	ate sheet)			<u> </u>	-		
Tromanor (motado prioto namboro noto di ori a dopare	210 011001,						

3-Wet

0-3 3-9	Color (maint)			dox Feat	ures				
3-9	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
	10YR 2/1	100					Loam		
	10YR 2/2	98	10YR 6/1	2	D	М	Loam		
9-24	10YR 4/1	98	10YR 7/8	2	С	М	Sandy Loam		
				-	1				
					<b>.</b>				
					ļ				
Hist Hist Blac Hyd Stra 2 cn X Dep Thic	il Indicators: isol (A1) ic Epipedon (A2) ck Histic (A3) irogen Sulfide (A tified Layers (A5 n Muck (A10) oleted Below Dar ck Dark Surface ( dy Mucky Minera n Mucky Peat or	4) k Surface (A12) al (S1)	Sa Str Loa	ndy Redo ipped Ma amy Muc amy Gley pleted Ma dox Dark pleted Da	ed Matrix ox (S5) atrix (S6) ky Minera ved Matria atrix (F3) a Surface ark Surfa ressions	al (F1) x (F2) ) (F6) ace (F7)	Coast Dark : Iron-N Very S Other	Prairie Re Surface (S Manganese Shallow Da (explain ir	lematic Hydric Soils: edox (A16) (LRR K, L, R) 7) (LRR K, L) e Masses (F12) (LRR K, L, R) ark Surface (TF12) are remarks)  rophytic vegetation and weltance present, unless disturbed or problematic
	Layer (if observ					ı			
pe:	_a, c. ( cc	·					Hydric s	soil prese	nt? Y
pth (inche	es):				0		119 41.70	on proce	
emarks:					-00				
YDROLO etland Hy	drology Indicat		required; check	all that a	apply)		So	condanyla	digators (minimum of two requir
YDROLO etland Hy imary India	drology Indicat		required; check			313)	, <u>Se</u>		dicators (minimum of two requi
YDROLO etland Hy imary India Surface	drology Indicate cators (minimum Water (A1)		required; check	Aquatic	Fauna (E		<u>Se</u>	Surface	Soil Cracks (B6)
YDROLO etland Hy imary India	drology Indicate cators (minimum Water (A1) ter Table (A2)		required; check	Aquatic True Aq	Fauna (E Juatic Plai	nts (B14)	_	Surface Drainag	Soil Cracks (B6) e Patterns (B10)
YDROLO etland Hy imary India Surface High Wa Saturatio	drology Indicate cators (minimum Water (A1) ter Table (A2)		required; check	Aquatic True Aq Hydroge	Fauna (E juatic Plai en Sulfide	nts (B14) Odor (C	_	Surface Drainag Dry-Sea	Soil Cracks (B6)
YDROLO etland Hy imary India Surface High Wa Saturatic Water M	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3)		required; check	Aquatic True Aq Hydroge	Fauna (E juatic Plai en Sulfide	nts (B14) Odor (C	1)	Surface Drainag Dry-Sea Crayfish	Soil Cracks (B6) le Patterns (B10) ason Water Table (C2) n Burrows (C8)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen	drology Indicated at the cators (minimum) water (A1) ter Table (A2) on (A3) arks (B1) arks (B2) posits (B2) posits (B3)		required; check	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B juatic Plai en Sulfide d Rhizosp	nts (B14) Odor (C	1) Living Roots	Surface Drainag Dry-Sea Crayfish Saturati	Soil Cracks (B6) le Patterns (B10) ason Water Table (C2) n Burrows (C8)
YDROLO etland Hy imary Indie Surface High Wa Saturatic Water M Sedimer Drift Dep	drology Indicated cators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4)		required; check	Aquatic True Aq Hydroge Oxidized (C3) Present	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red	nts (B14) e Odor (Co oheres on uced Iron	1) Living Roots	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) te Patterns (B10) ason Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9) or Stressed Plants (D1) trphic Position (D2)
YDROLO etland Hy imary Indie Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicated cators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5)	of one is		Aquatic True Aq Hydroge Oxidizee (C3) Present (C6)	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) e Odor (Coheres on uced Iron uction in 1	1) Living Roots (C4)	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) le Patterns (B10) ason Water Table (C2) n Burrows (C8) ion Visible on Aerial Imagery (C9) or Stressed Plants (D1)
YDROLO etland Hy imary Indio Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) to Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeric	of one is	(B7)	Aquatic True Aq Hydroge Oxidizee (C3) Present (C6) Thin Mu	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) e Odor (Conheres on uced Iron uction in 1	1) Living Roots (C4)	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) the Patterns (B10) the Patterns (B10) the Son Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9) the or Stressed Plants (D1) the Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio	drology Indicated cators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aeria	of one is	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da	nts (B14) e Odor (Conheres on uced Iron uction in Toce (C7) ata (D9)	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) the Patterns (B10) the Patterns (B10) the Son Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9) the or Stressed Plants (D1) the Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si	drology Indicated actors (minimum water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerical Vegetated Concatained Leaves (B5)	of one is	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da	nts (B14) e Odor (Conheres on uced Iron uction in 1	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) the Patterns (B10) the Patterns (B10) the Son Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9) the or Stressed Plants (D1) the Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatia Sparsely Water-Si eld Obser	drology Indicated actors (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerical Vegetated Concatained Leaves (B5) vations:	of one is al Imager ave Surfa	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Di Explain in	nts (B14) e Odor (Conheres on uced Iron uction in Tata (D9) Remarks	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	Soil Cracks (B6) the Patterns (B10) the Patterns (B10) the Son Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9) the or Stressed Plants (D1) the Position (D2)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatia Sparsely Water-Si eld Obser	drology Indicated actors (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerical Vegetated Concatained Leaves (B5) vations:	al Imager ave Surfa	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge ( Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da Explain in	nts (B14) e Odor (Conheres on uced Iron uction in Toda (C7) ata (D9) Remarks (inches):	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfisl Saturati Stunted Geomo FAC-Ne	Soil Cracks (B6) ge Patterns (B10) geson Water Table (C2) gen Burrows (C8) gen Visible on Aerial Imagery (C9) gen or Stressed Plants (D1) graphic Position (D2) gentral Test (D5)
YDROLO etland Hy imary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si eld Obser urface water ater table	drology Indicated actors (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) actor Crust (B4) actor Crust (B4) actor Crust (B5) and Visible on Aerical Vegetated Concatained Leaves (B5) vations: present?	al Imager ave Surfa 9) Yes Yes	/ (B7) ce (B8)  No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well De Explain in  Depth ( Depth (	nts (B14) e Odor (Conheres on uced Iron uction in Tata (D9) Remarks (inches):	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfisl Saturati Stunted Geomo FAC-Ne	Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)
YDROLO  Tetland Hy rimary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si ield Obser urface water /ater table aturation p	drology Indicated at the cators (minimum water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aeria vegetated Concatained Leaves (B5) vations: er present? present?	al Imager ave Surfa	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge ( Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well De Explain in  Depth ( Depth (	nts (B14) e Odor (Conheres on uced Iron uction in Toda (C7) ata (D9) Remarks (inches):	1) Living Roots (C4) Filled Soils	Surface Drainag Dry-Sea Crayfisl Saturati Stunted Geomo FAC-Ne	Soil Cracks (B6) ge Patterns (B10) geson Water Table (C2) in Burrows (C8) geon Visible on Aerial Imagery (C9) geor Stressed Plants (D1) rphic Position (D2) geutral Test (D5)
YDROLO  Vetland Hy rimary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si veld Obser urface wate Vater table aturation p	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeric Vegetated Concatained Leaves (B5) vations: er present? present? pillary fringe)	al Imager ave Surfa 9) Yes Yes Yes	/ (B7) ce (B8)  No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu uck Surfac or Well De Explain in  Depth ( Depth (	nts (B14) control (Croheres on uced Iron uction in 1 at (D9) Remarks (inches): (inches):	Living Roots  (C4)  Filled Soils	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo FAC-Ne	Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)
YDROLO  Vetland Hy rimary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si veld Obser urface wate Vater table aturation p	drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeric Vegetated Concatained Leaves (B5) vations: er present? present? pillary fringe)	al Imager ave Surfa 9) Yes Yes Yes	/ (B7) ce (B8)  No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu uck Surfac or Well De Explain in  Depth ( Depth (	nts (B14) control (Croheres on uced Iron uction in 1 at (D9) Remarks (inches): (inches):	Living Roots  (C4)  Filled Soils	Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo FAC-Ne	Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)

Project/Site CSAH 9/I-494 Interchange Project	City/C	ounty: P	lymouth/Hen	nepin Sam	pling Date:	9/25/18
Applicant/Owner: City of Plymouth		State: MN S			oling Point:	WD 6-Up
Investigator(s): RF		Section	on, Township	o, Range:	15,1	18,22
Landform (hillslope, terrace, etc.): Hillslope		Local re	elief (concav	e, convex, non	e):	Linear
Slope (%): 25 Lat: 45.029414		Long:	-93.45578	38 Datu	m:	WGS 84
Soil Map Unit Name Hamel, overwash-Hamel complex, 0 t	to 3 perc		1WI C	classification:		None
Are climatic/hydrologic conditions of the site typical for this				no, explain in		-
Are vegetation , soil , or hydrology		significantly				otopopoli
Are vegetation , soil , or hydrology		naturally pr		Are	normal circum	present? Yes
SUMMARY OF FINDINGS		, р.		(If needed e		wers in remarks.)
Hydrophytic vegetation present?				(II Noodod, o	Apidiri diriy dirio	word in remarks.)
Hydric soil present?		le the e	ampled area	within a wetl	and?	N
Indicators of wetland hydrology present?			tional wetlan		and:	
			tional wettan	d site ib.		<del></del>
Remarks: (Explain alternative procedures here or in a sep	arate re	port.)				
Area is adjacent to I-494	4 to the	west and	a car deale	ership to the	east	
7 to a lo aujacom to 1 70				Tomp to the		
<b>VEGETATION</b> Use scientific names of plants.						
	solute	Dominan	Indicator	Dominance	Test Workshop	eet
	Cover	t Species	Staus		minant Species	
1					FACW, or FAC	`
2					ber of Dominan	
3					cross all Strata	` '
5					minant Species FACW, or FAC	
·	0 =	Total Cove		triat are OBL,	17011,01170	. 100.00 % (A/B)
Sapling/Shrub stratum (Plot size: 15 )		10101 00101		Prevalence	Index Worksh	neet
1				Total % Cov		
2				OBL species	0 x	1 = 0
3				FACW speci		2 = 120
4				FAC species	5 x 3	3 = 15
5				FACU specie		4 = 80
W (00	0 =	Total Cove	r	UPL species	· · · · · · · · · · · · · · · · · · ·	5 =25
Herb stratum (Plot size: 5)				Column total	s <u>90</u> (A	) <u>240</u> (B)
1 Phalaris arundinacea	45	Υ	_FACW_	Prevalence I	ndex = B/A =	2.67
2 Solidago gigantea	15	N	FACW			
3 Trifolium repens	10	N	FACU		Vegetation I	
4 Setaria faberi	8	N	FACU		st for hydrophy nce test is >50	ytic vegetation
5 Tanacetum vulgare 6 Poa pratensis	5	N N	— UPL FAC		ice test is >50 ice index is ≤3	
6 Poa pratensis 7 Cirsium arvense	2	N	FACU			
8			1700		gical adaptation ng data in Ren	
9				supporti		narks of off a
10					atic hydrophyt	ic vegetation*
	90 =	Total Cove		(explain)		io vogetation
Woody vine stratum (Plot size: 30 )				*Indicators of	hydric soil and we	etland hydrology must be
1					nt, unless disturbe	
2				Hydrop	_	
	0 =	Total Cove	r	vegetati		
×				present	? <u>Y</u>	÷
Remarks: (Include photo numbers here or on a separate s	sheet)			,		

SOIL

Sampling Point:

WD 6-Up

Depth	Matrix	2.	· ·	dox Feat					_
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	e	Remarks
0-12	10YR 5/3	90	10YR 4/6	10	С	М	Clay/Fill		
					-	-			
- 4									
	Concentration, D	= Depleti	on, RM = Reduc	ed Matrix	k, MS = N	Masked S			: PL = Pore Lining, M = Mat
-	il Indicators:								natic Hydric Soils:
-	tisol (A1)				ed Matrix	(S4)			ox (A16) ( <b>LRR K, L, R</b> )
-	tic Epipedon (A2)			ndy Redo				Surface (S7)	
	ck Histic (A3)	43			atrix (S6)				Masses (F12) (LRR K, L, R)
	drogen Sulfide (A				ky Miner				Surface (TF12)
	atified Layers (A5	)			ed Matri	. ,	— Other	(explain in re	emarks)
	m Muck (A10) pleted Below Dark	Curtoss			atrix (F3)				
	ck Dark Surface (				Surface ark Surfa		+1 1' -1		1 () ()
	ndy Mucky Minera	,			essions	, ,			phytic vegetation and welta
	m Mucky Peat or			rox nebi	62210112	(ГО)	riyaroid		present, unless disturbed or problematic
		`	<i>,</i>			7		۲	
	Layer (if observ	ed):							
ype: F	111						Hydric s	oil present'	? N
_					-	1	riyanio o	on present	-
epth (inch					-		yuno o	on present	
epth (inche emarks: YDROL( /etland Hy rimary Indi	DGY rdrology Indicate		required; check			313)		ondary Indic	cators (minimum of two requ
epth (inche emarks: YDROLO /etland Hy rimary India Surface	DGY		required; check	Aquatic	Fauna (E			ondary Indic	
epth (inche emarks: YDROLO /etland Hy rimary India Surface	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2)		required; check	Aquatic True Aq	Fauna (E uatic Plai		Sec	ondary Indic Surface So Drainage I	cators (minimum of two requoil Cracks (B6)
YDROLO  YDROLO  Yetland Hy rimary Indi Surface High Wa Saturati Water M	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1)		required; check	Aquatic True Aq Hydroge Oxidize	Fauna (B uatic Plan en Sulfide	nts (B14) Odor (C	Sec	ondary Indic Surface S Drainage I Dry-Seasc Crayfish B	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) surrows (C8)
YDROLO Vetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		required; check	Aquatic True Aq Hydroge Oxidize (C3)	Fauna (B juatic Plan en Sulfide d Rhizosp	nts (B14) Odor (Coheres on	Second 1) Living Roots	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) I Visible on Aerial Imagery (C
YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift De	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		required; check	Aquatic True Aq Hydroge Oxidize (C3) Presence	Fauna (B juatic Plan en Sulfide d Rhizosp ce of Red	nts (B14) Odor (Coheres on uced Iron	Sec. 1) Living Roots (C4)	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cr
YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift De	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		required; check	Aquatic True Aq Hydroge Oxidize (C3) Present	Fauna (B juatic Plan en Sulfide d Rhizosp ce of Red	nts (B14) Odor (Coheres on uced Iron	Second 1) Living Roots	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	of one is		Aquatic True Aq Hydroge Oxidize (C3) Present (C6)	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) e Odor (Control of the control of the con	Sec. 1) Living Roots (C4)	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cr
YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	of one is	(B7)	Aquatic True Aq Hydroge Oxidizee (C3) Present (C6) Thin Mu	Fauna (E quatic Plan en Sulfide d Rhizosp ce of Red Iron Redu	nts (B14) Odor (Control of the control of the contr	Sec. 1) Living Roots (C4)	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
YDROLO Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	of one is al Imagery ave Surfa	(B7)	Aquatic True Aq Hydroge Oxidize (C3) Present (C6) Thin Mu Gauge	Fauna (E luatic Plan en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da	nts (B14) Odor (Control of the control of the contr	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
emarks:  IYDROLU  IYDROLU  Ietland Hy rimary Indi Surface High Wa Saturati Water M Sedimed Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9)	of one is al Imagery ave Surfa	(B7)	Aquatic True Aq Hydroge Oxidize (C3) Present (C6) Thin Mu Gauge	Fauna (E luatic Plan en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da	nts (B14) Odor (Control of the control of the contr	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
YDROLO  YDROLO  Yetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9) rvations:	of one is al Imagery ave Surfa	(B7)	Aquatic True Aq Hydroge Oxidize (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (Coheres on uced Iron uction in Toe (C7) ata (D9) Remarks	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
PyDROLO  PyDROLO  Petland Hy  rimary Indi  Surface  High Wa  Saturati  Water M  Sedimel  Drift Del  Algal Ma  Iron Der  Inundati  Sparsely  Water-S  ield Obserurface wat	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9 rvations: er present?	of one is al Imagery ave Surfa	/ (B7)	Aquatic True Aq Hydroge Oxidize (C3) Present (C6) Thin Mu Gauge	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (Control of the control of the contr	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cressed Plants (D1)
emarks:  YDROL( /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Der Inundati Sparsely Water-S ield Obserurface wat /ater table	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9 rvations: er present? present?	al Imagery ave Surfa )	/ (B7)	Aquatic True Aq Hydroge Oxidize (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E luatic Plan en Sulfide d Rhizosp ce of Red Iron Redu lick Surfac or Well De Explain in Depth ( Depth (	nts (B14) Odor (Cobheres on uced Iron uction in Total (D9) Remarks inches):	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cracks of Stressed Plants (D1) nic Position (D2) ral Test (D5)
epth (inche emarks:  IYDROLO  Jetland Hy rimary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S ield Obse urface wat Jater table aturation p	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9 rvations: er present? present?	al Imagery ave Surfa ) Yes Yes	(B7) No No	Aquatic True Aq Hydroge Oxidizer (C3) Presenc Recent (C6) Thin Mu Gauge o Other (E	Fauna (E luatic Plan en Sulfide d Rhizosp ce of Red Iron Redu lick Surfac or Well De Explain in Depth ( Depth (	nts (B14) c Odor (Coheres on uced Iron uction in The (C7) ata (D9) Remarks inches):	Seconds  Living Roots  (C4)  Filled Soils	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Construction (D1) and Position (D2) ral Test (D5)
epth (inche emarks:  IYDROLO /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimen Drift De Algal Ma Iron Dep Inundati Sparsely Water-S ield Obse urface wat /ater table aturation p ncludes ca	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria y Vegetated Concatained Leaves (B9 rvations: er present? present?	al Imagery ave Surfa ) Yes Yes Yes	(B7) Ce (B8) No No No	Aquatic True Aq Hydroge Oxidizer (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red lron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Croheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Secondary Second	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cracksed Plants (D1) nic Position (D2) ral Test (D5)
epth (inche emarks:  IYDROLO /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimen Drift De Algal Ma Iron Dep Inundati Sparsely Water-S ield Obse urface wat /ater table aturation p ncludes ca	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9 rvations: er present? present? present? pillary fringe)	al Imagery ave Surfa ) Yes Yes Yes	(B7) Ce (B8) No No No	Aquatic True Aq Hydroge Oxidizer (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red lron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Croheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Secondary Second	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cracksed Plants (D1) nic Position (D2) ral Test (D5)
epth (inche emarks:  IYDROLO  /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimed Drift Del Algal Ma Iron Dep Inundati Sparsely Water-S  ield Obset urface wat /ater table aturation p ncludes ca	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9 rvations: er present? present? present? pillary fringe)	al Imagery ave Surfa ) Yes Yes Yes	(B7) Ce (B8) No No No	Aquatic True Aq Hydroge Oxidizer (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red lron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Croheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Secondary Second	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cracksed Plants (D1) nic Position (D2) ral Test (D5)
epth (inche emarks:  IYDROLO /etland Hy rimary Indi Surface High Wa Saturati Water M Sedimen Drift De Algal Ma Iron Dep Inundati Sparsely Water-S ield Obse urface wat /ater table aturation p ncludes ca	DGY rdrology Indicate cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aeria v Vegetated Concatained Leaves (B9 rvations: er present? present? present? pillary fringe)	al Imagery ave Surfa ) Yes Yes Yes	(B7) Ce (B8) No No No	Aquatic True Aq Hydroge Oxidizer (C3) Presenc Recent (C6) Thin Mu Gauge Other (E	Fauna (E juatic Plai en Sulfide d Rhizosp ce of Red lron Redu ick Surfac or Well Di Explain in  Depth ( Depth (	nts (B14) c Odor (Croheres on uced Iron uction in 1 ce (C7) ata (D9) Remarks inches): inches):	Secondary Second	ondary Indic Surface So Drainage I Dry-Seaso Crayfish B Saturation Stunted or Geomorph FAC-Neut	cators (minimum of two requoil Cracks (B6) Patterns (B10) on Water Table (C2) durrows (C8) I Visible on Aerial Imagery (Cracksed Plants (D1) nic Position (D2) ral Test (D5)

Project/Site CSAH 9/I-494 Interchange Project	City/	County: F	Plymouth/Her	nnepin	Sampling Date:	9/25/18
Applicant/Owner: City of Plymouth		State:	MN		Sampling Point:	WD 6-Wet
Investigator(s): RF		Sect	ion, Township	p, Range:	15,	118,22
Landform (hillslope, terrace, etc.): Toes	lope	Local i	relief (concav	e, convex	, none):	Concave
Slope (%): 20 Lat: 45.029414	1	Long:	-93.45578		Datum:	WGS 84
Soil Map Unit Name Udorthents (cut and fill land), 0 to	6 percent		JWIC	 Classificati	ion:	None
Are climatic/hydrologic conditions of the site typical fo	r this time o	f the year?	Y (I	If no, expla	ain in remarks)	
Are vegetation , soil , or hydro	logy	significantl	y disturbed?		Are "normal circur	mstances"
Are vegetation , soil , or hydro	logy	naturally p	roblematic?		,	present? Yes
SUMMARY OF FINDINGS	-			(If need	ed, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?	=======================================	Is the s	sampled area	a within a	wetland?	Υ
Indicators of wetland hydrology present?		f yes, or	otional wetlar	nd site ID:	None —	<del></del> -81
Remarks: (Explain alternative procedures here or in a	- soporato r	anort \				×
Tremains. (Explain alternative procedures here of in a	soparate re	sport.)				
Area is adjacenet to	I-494 to th	e west and	l a car deal	ership to	the east.	
VEGETATION Use scientific names of plan	to.	_				
VEGETATION Use scientific frames of plan	Absolute	Dominan	Indicator	Domina	ance Test Worksh	neet .
Tree Stratum (Plot size: 30 )	% Cover	t Species	Staus		of Dominant Speci	
1					OBL, FACW, or FA	
2				Total	Number of Domina	int
3				Spec	cies Across all Strat	a:(B)
4					of Dominant Specie	
5		= Total Cove		that are	OBL, FACW, or FA	C: 100.00% (A/B)
Sapling/Shrub stratum (Plot size: 15		- Total Cove	;1	Prevale	ençe Index Works	heet
1	,				Cover of:	meet
2				OBL sp		1 = 0
3	-			FACW	species 100 x	2 = 200
4				FAC sp		3 = 0
5				FACU s		4 = 0
Harb streture (Diet.)	0	= Total Cove	er	UPL spe		5 = 0
Herb stratum (Plot size: 5	)			Column		A) <u>200</u> (B)
1 Phalaris arundinacea 2	100	· — Y	FACW_	Prevale	nce Index = B/A =	2.00
3			-	Hydron	hytic Vegetation	Indicators
4					oid test for hydropl	
5					minance test is >5	
6				X Pre	valence index is ≤	3.0*
7				Mor	rphogical adaptation	ons* (provide
8				sup	porting data in Re	
9		<u> </u>			arate sheet)	
10	100	- T-4-1 O			blematic hydrophy	tic vegetation*
Woody vine stratum (Plot size: 30	100	= Total Cove	<b>2</b> F-		plain)	
1	,				ors of hydric soil and v present, unless disturl	vetland hydrology must be
2	-				drophytic	sod or problematio
	0	= Total Cove	er		getation	
				pre	sent? Y	
Remarks: (Include photo numbers here or on a separ	ate sheet)					

SOIL

Sampling Point:

WD 6-Wet

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm t	he absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	e	Remarks
0-12	10YR 2/1	98	10YR 4/6	2	С	М	Loam		
									A
				-					
*Type: C = C	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	/lasked S	and Grains.	**Location	: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators		matic Hydric Soils:
	isol (A1)		Sar	ndy Gleye	ed Matrix	(S4)			ox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo		( /		Surface (S7)	
	k Histic (A3)			pped Ma					Masses (F12) (LRR K, L, R)
	rogen Sulfide (A4	1)		my Mucl		al (F1)		-	Surface (TF12)
	tified Layers (A5)	-		my Gley	•			(explain in r	
	n Muck (A10)	,		oleted Ma				(explain in i	emarks)
	leted Below Dark	Surface							Ţ.
	ck Dark Surface (			oleted Da			w1 11 1	61	
									phytic vegetation and weltand
	dy Mucky Minera			dox Depr	essions	(۲8)	nydroid		present, unless disturbed or
5 cr	n Mucky Peat or	Peat (53	)					F	problematic
Restrictive	Layer (if observe	ed):				1			
Туре:							Hydric s	oil present	? Y
Depth (inche	es):				•				<del></del>
Remarks:					•		1		
HYDROLO	OGY								
Wetland Hy	drology Indicate	ors:	=						
Primary Indi	cators (minimum	of one is	required; check	all that a	(ylgg		Sec	ondary India	cators (minimum of two required)
	Water (A1)				Fauna (B	(13)			oil Cracks (B6)
	ter Table (A2)		_			nts (B14)			Pattems (B10)
Saturation						Odor (C	1) —		on Water Table (C2)
	arks (B1)						Living Roots —		Burrows (C8)
	it Deposits (B2)			(C3)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			visible on Aerial Imagery (C9)
_	oosits (B3)				e of Red	uced Iron	(C4)		r Stressed Plants (D1)
	it or Crust (B4)						· · · ·		hic Position (D2)
	osits (B5)			(C6)					tral Test (D5)
	on Visible on Aeria	al Imager	y (B7) —	- ' '	ck Surfac	ce (C7)		_	,
	Vegetated Conca				or Well Da				_
	tained Leaves (B9					Remarks	s)		
Field Obser				`					
Surface wat		Yes	No	X	Denth (	inches):			
Water table	•	Yes	No	${X}$	Depth (			Indi	icators of wetland
Saturation p		Yes	No No	$\frac{\hat{x}}{x}$	Depth (	,	-		drology present?
	pillary fringe)	103			- Dobui (	., 101100).		,y	
		200 00110	a manitarina wal	Lacrialr	hoton n	roudous i	nanastiona\ if a	ailablai	
Describe rec	corded data (strea	am gaug	e, monitoring wel	і, аенаі р	motos, p	revious i	nspections), ii a	avallable:	
Remarks:									_

#### **APPENDIX**

#### **APPENDIX C**

Wetland Photos



Photo 1 - Wetland 2 facing north



Photo 2 - Wet Ditch 4 facing south



Photo 4 - Wet Ditch 6 facing south



Photo 5 - Wetland 3 facing north



Photo 7a - Stormwater Pond 1 facing northwest



Photo 6 - Wet Ditch 5 facing northwest



Photo 7b - Stormwater Pond 1 facing southwest

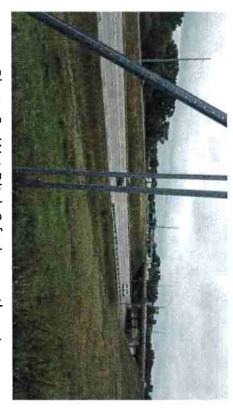


Photo 8 - Wet Ditch 2 facing southeast



Photo 10 - Stormwater Pond 2 facing northwest



Photo 9 - Wet Ditch 3 facing northeast

#### **APPENDIX**

#### APPENDIX D

Antecedent Precipitation Data

#### Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

home | current conditions | journal | past data | summaries | agriculture | other sites | about us



#### **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)

#### **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) /	1-494 Interchange Project

#### PART FIVE: Applicant Signature

	nature belo rity to unde			n this appli	cation is co	mplete and	d accurate.	I further a	ittest that I	possess the	
Signa	ture:		 			Date	2:				
I he	reby author						gent in the p port of this o			ication and	to
								•			
		183									
	e										

## 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):

(Corps) ana/or the wetland conservation Act Local Government onlt (LGO) provide the with the Johowing (check all that apply):
Wetland Type Confirmation
Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).
Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.
Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.
In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the Guidelines for Submitting Wetland Delineations in Minnesota (2013).  http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

#### Attachment B

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

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

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

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

#### **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

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Phone: 763-762-2844

E-mail Address: rfranta@wsbeng.com

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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

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#### PART FIVE: Applicant Signature

TARTITUL. Applicant Signature
Check here if you are requesting a <u>pre-application</u> 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 <b>WSB &amp; Associates (Roxy Franta)</b> 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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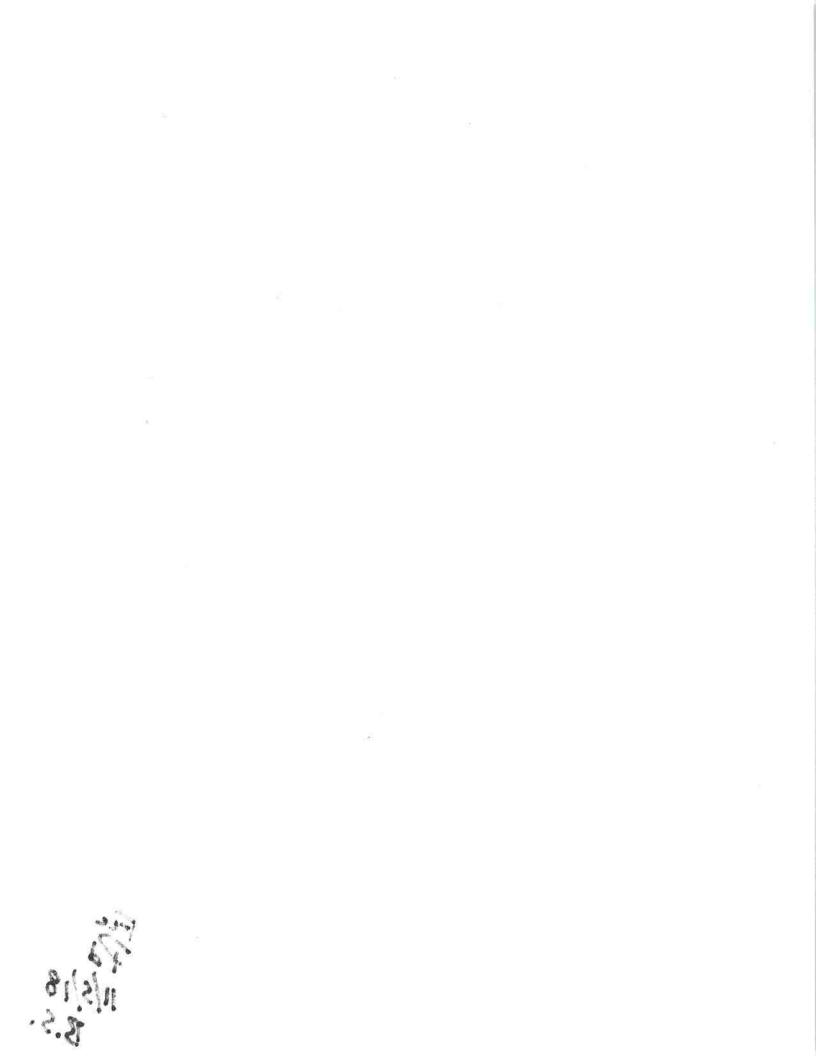
- Wet Ditch 1
- Wet Ditch 2
- Wet Ditch 3
- Wet Ditch 4
- Wet Ditch 5
- Wet Ditch 6
- Wet Ditch 7
- Stormwater Pond 1
- Stormwater Pond 2

### Minnesota Wetland Conservation Act **Notice of Application**

Local Government Unit (LGU)  City of Plymouth		Address 3400 Plymouth Blvd. Plymouth, MN 55447						
1. PROJECT INFORMATION								
Applicant Name Wayzata Public Schools	Project Name Sunset Hills Elemen	atary School	Date of Application 11/06/2018	Application Number N/A				
Type of Application (check all that ap	oply):							
	☐ No-Loss	Exemp	otion	Sequencing				
Replacement	Plan	☐ Banking	g Plan	'				
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 28 <sup>th</sup> , 2018.								
2. APPLICE Signing and mailing of this complete Subp. 3 provides notice that an application specified above. A copy of the applications of the specified above.	cation was made to the	riate recipients LGU under t	s in accordance v he Wetland Cons					
Name and Title of LGU Contact Pers Michael Thompson City of Plymouth	bu		t be received by mment period):	(minimum 15				
Address (if different than LGU) 3400 Plymouth Blvd, Plymouth, MN 55447		ate, time, and lovember 29, 2	ocation of decisi 2018	on:				
Phone Number and E-mail Address 763-509-5501 mthompson@plymouth.gov	Do S	Staff	for this applicati oard or Council	on:				

BWSR Forms 7-1-10

Page 1 of 2



#### 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:

ĺ	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: <a href="www.mvp.usace.army.mil/regulatory/default.asp?pageid=687">www.mvp.usace.army.mil/regulatory/default.asp?pageid=687</a> 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	1.0	
In addition to the application, list any other attachments:  Sunset Hills Elementary School Wetland Delineation Report		
·	ñ	
DW/SD Forms 7.1.10		Dags 2 - 52

Page 2 of 2 BWSR Forms 7-1-10

÷.			



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 1/4 of the SE 1/4 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

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# 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 95<sup>th</sup> 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 95<sup>th</sup> 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

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#### 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 <u>1987 U. S. Army Corps of Engineers Wetland Delineation Manual</u>, 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>U. S. Army Corps of Engineers Wetland Delineation Manual</u>, 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

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 <a href="http://datagateway.nrcs.usda.gov/">http://datagateway.nrcs.usda.gov/</a> (October 11, 2018).

Hennepin County Interactive Maps < https://gis.hennepin.us/naturalresources/map/default.aspx> (October 11, 2018).

U.S Fish and Wildlife Service National Wetlands Inventory http://www.fws.gov/wetlands/data/WebMapServices.html > (October 11, 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 11, 2018.

# FIGURE 1 Site Location Map

WETLAND DETERMINATION AND DELINEATION



PROJECT NUMBER: EM20 180974

DATE: 10/16/2018

Figure 1. Site Location

Sunset Hills Elementary School 13005 Sunset Trail Plymouth, MN 55441

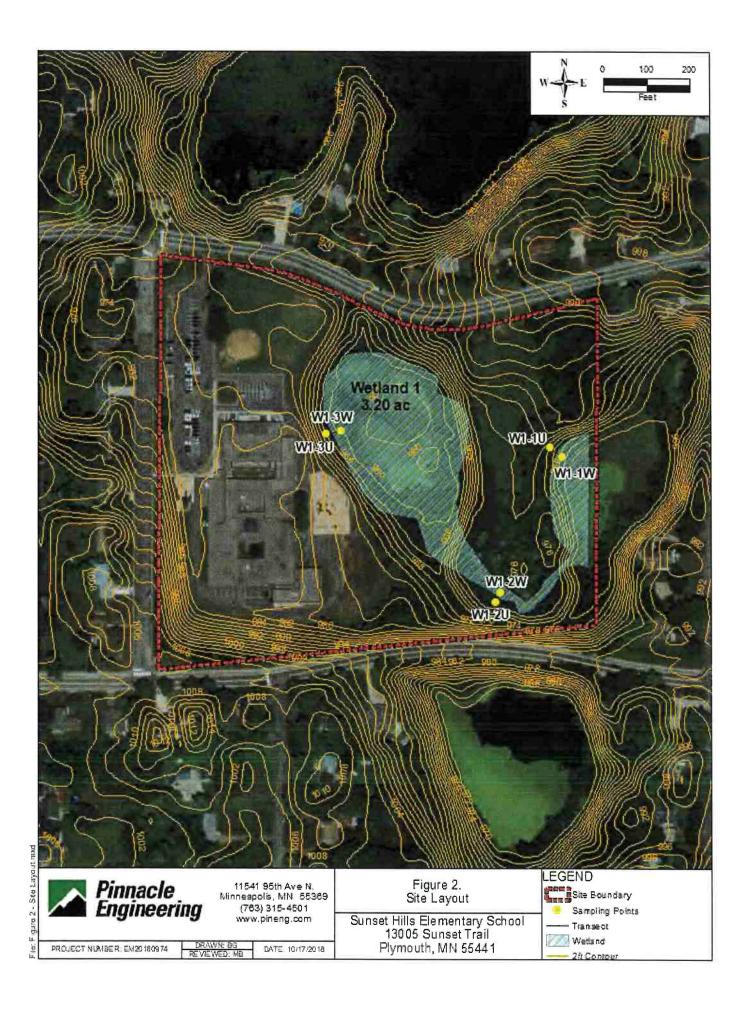




Site Location

## FIGURE 2 Site Layout

WETLAND DETERMINATION AND DELINEATION

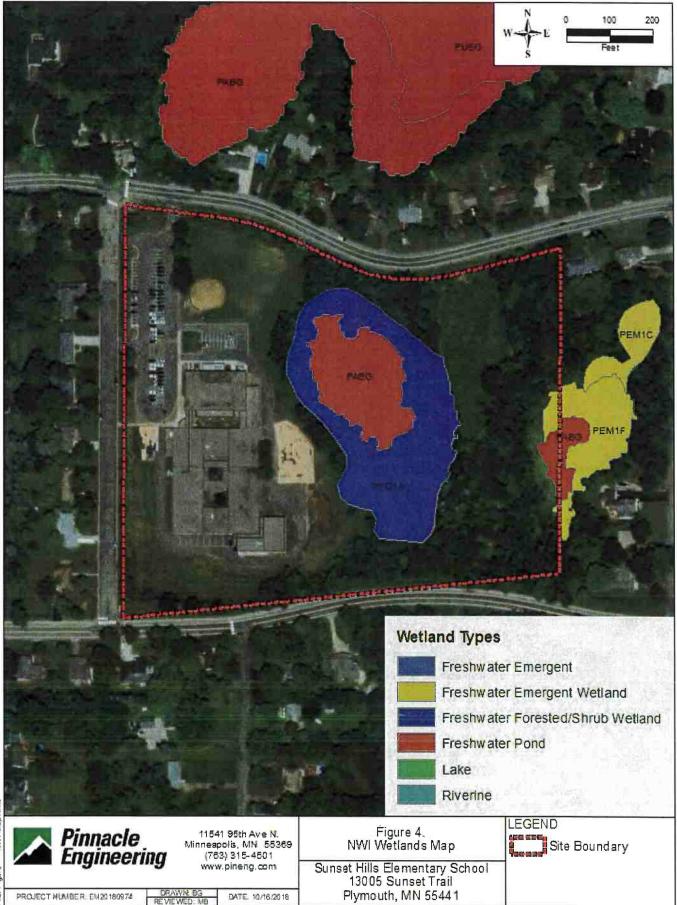


# FIGURE 3 Soil Survey

WETLAND DETERMINATION AND DELINEATION



# FIGURE 4 National Wetland Inventory



or: Figure 4 - NWI Man

# FIGURE 5 Public Waters Inventory



File: Figure 5 - PWI Mapumod

PROJECT NUMBER, EM20 180974

DATE: 10/16/2018

Figure 5. MnDNR PWI Map

Sunset Hills Elementary School 13005 Sunset Trail Plymouth, MN 55441

Site Boundary Public Waters PWI Watercourses

# FIGURE 6 Wetland Communities Sketch



Fact Figure 6 - Wet and Communities mad

## **APPENDIX A**

# WETLAND DETERMINATION DATA FORMS Midwest Region

Project/Site: Sunset Hills Elementary School	City/County: Plymout	h/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, Rar	nge: S34 T118N R22W	<i></i>
Landform (hillside, terrace, etc.): terrace	Local relief (c	oncave, convex, none):	concave
Slope (%):3 Lat: _44.979669	Long: -93.445081		Datum: WGS84
Soil Map Unit Name: Klossner soils, depressional, 0 to 1 percer			fication: PFO1A
Are climatic / hydrologic conditions on the site typical for this tin	ne of year? Yes X	No (If no, exp	olain in Remarks.)
Are Vegetation, Soil, or Hydrology significan		ircumstances" present?	
Are Vegetation, Soil, or Hydrologynaturally		olain any answers in Rer	
SUMMARY OF FINDINGS – Attach site map sho	wing sampling point lo	cations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Ar	ea	
Hydric Soil Present? Yes X No	within a Wetland?		No
Wetland Hydrology Present? Yes X No			
Remarks:			
VECETATION Also asignific resumes of plants	- D		
<b>VEGETATION</b> – Use scientific names of plants.  Absolu	te Dominant Indicator I		
Tree Stratum (Plot size: 30 ) % Cov		Dominance Test wor	rksheet:
1. Quercus palustris 10	Yes FACW	Number of Dominant	Species That
2. Ulmus americana 10	Yes FACW	Are OBL, FACW, or F	
3. Fraxinus pennsylvanica 10	Yes FACW	Total Number of Dom	inant Species
4		Across All Strata:	5(B)
5	<del></del>	Percent of Dominant	•
30 San Francisco (Charles and Charles and	=Total Cover	Are OBL, FACW, or F	FAC: 100.0% (A/B)
Sapling/Shrub Stratum (Plot size: 15 )		B	
]	— /——— /———/i	Prevalence Index wo	
3.	<del>- :</del> :	Total % Cover of OBL species	
4.		FACW species 9	
5.		FAC species (	
- X	=Total Cover	FACU species (	
Herb Stratum (Plot size: 5 )	_		) x 5 = 0
1. Impatiens capensis 20	Yes FACW	Column Totals: 9	
2. Phalaris arundinacea 40	Yes FACW	Prevalence Index	
3.			
4		Hydrophytic Vegetat	ion Indicators:
5		1 - Rapid Test for	Hydrophytic Vegetation
6		X 2 - Dominance Te	
7		X 3 - Prevalence Inc	
8			Adaptations <sup>1</sup> (Provide supporting
9.			ks or on a separate sheet)
10	-Tatal Cause		ophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 15 )	=Total Cover		oil and wetland hydrology must sturbed or problematic.
1		Hydrophytic	
2		Vegetation	
	=Total Cover	Present? Yes	X No
Remarks: (Include photo numbers here or on a separate shee	t.)		

nches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	F	Remarks
0-4	10YR 2/1	100					Loamy/Clayey		
4-18	10YR 5/1	95	10YR 4/6	5	<u></u>	<u>M</u>	Loamy/Clayey	Prominent re	edox concentration
dric Soil Histosol Histic Ep Black Hi Hydroge Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu	oncentration, D=Dep Indicators: (A1) bipedon (A2) stic (A3) n Sulfide (A4) d Layers (A5) lick (A10) d Below Dark Surface ark Surface (A12) ducky Mineral (S1) licky Peat or Peat (S3	e (A11)	=Reduced Matrix, M  Sandy Gle Sandy Red Stripped M Dark Surfa Loamy Mu Loamy Gle X Depleted M Redox Da Depleted I Redox De	eyed Mat dox (S5) Matrix (SI ace (S7) acky Min eyed Ma Matrix (F rk Surfac Dark Sur	eral (F1) trix (F2) :3) ce (F6)		Indicat ? Co Iron Re Ott	on: PL=Pore Lining ors for Problemat ast Prairie Redox ( n-Manganese Mass d Parent Material ( ry Shallow Dark Su arer (Explain in Rem ors of hydrophytic and hydrology mu ess disturbed or pr	tic Hydric Soils <sup>3</sup> : A16) ses (F12) (F21) urface (F22) narks)  vegetation and ust be present,
estrictive Type:	Layer (if observed):								
Type: Depth (in emarks: nis data for		dwest Reg							Yes X No, Version 7.0, 2015
Type: Depth (in emarks: his data for rrata. (http:	rm is revised from Mi	dwest Reg					NRCS Field Indicat		
Type: Depth (in emarks: his data for rrata. (http:	nches):  rm is revised from Mi ://www.nrcs.usda.gov	dwest Reg					NRCS Field Indicat		
Type: Depth (in emarks: his data for rrata. (http: YDROLC	rm is revised from Mi ://www.nrcs.usda.gov	dwest Reg	FSE_DOCUMENTS	6/nrcs14			NRCS Field Indicat	ors of Hydric Soils,	
Type: Depth (in emarks: his data for rrata. (http://dx.com/rrata.)  //DROLC/retland Hyrimary India // Saturatic// Water Mater	procession of control	dwest Reg	uired; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck	apply) ained Lea auna (B' atic Plan Sulfide Rhizospi of Redu on Redu c Surface Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on iced Iron iction in T e (C7) ita (D9)	) Living Ro (C4) illed Soils	Second	dary Indicators (mir face Soil Cracks ( ainage Pattems (B 7-Season Water Ta ayfish Burrows (C8	nimum of two requi (B6) 10) able (C2) Aerial Imagery (C9 Plants (D1) (D2)
Type: Depth (in emarks: his data for rata. (http:  TDROLC  Tetland Hy emary Indi C Surface High Wa C Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely	rm is revised from Miches):  OGY  Idrology Indicators: cators (minimum of of Mater (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial I y Vegetated Concave	dwest Reg	uired; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck	apply) ained Lea auna (B' atic Plan Sulfide Rhizospi of Redu on Redu c Surface Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on iced Iron iction in T e (C7) ita (D9)	) Living Ro (C4) illed Soils	Second	dary Indicators (mirrface Soil Cracks (ainage Patterns (Bayfish Burrows (C8 turation Visible on anted or Stressed Fomorphic Position	nimum of two requi (B6) 10) able (C2) Aerial Imagery (C9 Plants (D1) (D2)
Type: Depth (ii emarks: his data for rrata. (http:  YDROLC  Yetland Hy rimary Indi  Surface High Water M Sedimel Drift Dep Algal Ma Iron Dep Inundati Sparsely ield Observation Face Water Table aturation Fincludes ca	procession of control	magery (E	uired; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Ex	apply) ained Lea auna (Batic Plan Sulfide Rhizosph of Redu on Redu on Redu on Well Da plain in F	aves (B9) 13) ts (B14) Odor (C1 neres on iction in T e (C7) ta (D9) Remarks) (inches): (inches):	) Living Ro (C4) illed Soils )	Second Suppose Second Suppose	dary Indicators (mirrface Soil Cracks (ainage Patterns (Baryfish Burrows (C8 turation Visible on unted or Stressed Fomorphic Position C-Neutral Test (D5)	nimum of two requi (B6) 10) able (C2) Aerial Imagery (C9 Plants (D1) (D2)
Type: Depth (in emarks: his data for rrata. (http://procedure.)  Topology of the following	procession of control	magery (E	uired; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Ex	apply) ained Lea auna (Batic Plan Sulfide Rhizosph of Redu on Redu on Redu on Well Da plain in F	aves (B9) 13) ts (B14) Odor (C1 neres on iction in T e (C7) ta (D9) Remarks) (inches): (inches):	) Living Ro (C4) illed Soils )	Second Suppose Second Suppose	dary Indicators (mirrface Soil Cracks (ainage Patterns (Baryfish Burrows (C8 turation Visible on unted or Stressed Fomorphic Position C-Neutral Test (D5)	nimum of two requi (B6) 10) able (C2) B) Aerial Imagery (C9 Plants (D1) (D2)

Project/Site: Sunset Hills Elementary School	City/County: P	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, Townsh	nip, Range: S34 T118N R22W	
Landform (hillside, terrace, etc.): terrace	Local r	relief (concave, convex, none):	concave
Slope (%):3 Lat: 44.979669	Long: -93.445	5081	Datum: WGS84
Soil Map Unit Name: Klossner soils, depressional, 0 to 1 percent slo	ppes	NWI classif	ication: PFO1A
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes_	X No (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly di	isturbed? Are "No	ormal Circumstances" present?	YesX No
Are Vegetation, Soil, or Hydrology naturally probl		ded, explain any answers in Ren	
SUMMARY OF FINDINGS – Attach site map showing	g sampling poi	int locations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes No X	Is the Samp	nlad Araz	
Hydric Soil Present? Yes X No	within a We		No_X_
Wetland Hydrology Present? Yes No X			
Remarks:			
VEGETATION – Use scientific names of plants.			
Absolute	Dominant Indic	ator I	
Tree Stratum (Plot size: 30 ) % Cover	Species? Stat		ksheet:
1		Number of Dominant S	
2.		Are OBL, FACW, or F.	
4		Total Number of Domi Across All Strata:	
5.		Percent of Dominant S	(-)
	Total Cover	Are OBL, FACW, or F	
Sapling/Shrub Stratum (Plot size: 15 )			<del></del> -
1. Lonicera tatarica 10	Yes FAC		
2. 3.		Total % Cover of: OBL species 0	
4.		FACW species 0	
5.		FAC species 0	
Post Control of the C	Total Cover	FACU species 60	0 x 4 = 240
Herb Stratum (Plot size: 5 )		UPL species 0	
1. Glechoma hederacea         20           2. Cirsium vulgare         20	Yes FAC		
	Yes FAC	CU Prevalence Index =	= B/A =4.00
4.	*****	Hydrophytic Vegetati	ion Indicators:
5.			Hydrophytic Vegetation
6.		2 - Dominance Te	est is >50%
7		3 - Prevalence Inc	
8. 9.		4 - Morphological	Adaptations <sup>1</sup> (Provide supporting as or on a separate sheet)
10			s or on a separate sneet) ophytic Vegetation¹ (Explain)
	Total Cover	<del></del> ::	ophytic vegetation (Explain) oil and wetland hydrology must
Woody Vine Stratum (Plot size:15)		be present, unless dis	
1. Parthenocissus quinquefolia 10	Yes FAC		
2		Vegetation	
	Total Cover	Present? Yes_	No_X
Remarks: (Include photo numbers here or on a separate sheet.)			

Profile Desc Depth	ription: (Describe Matrix	10 110 110		x Featur	es				
inches)	Color (moist)	%	Color (moist)	_%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-12	10YR 2/1	100					Loamy/Clayey		
12-18	10YR 5/1	95	10YR 4/6	5	С	_M_	Loamy/Clayey_	Prominent	redox concentration
Hydric Soil I  Histosol ( Histic Ep Black His Hydroger Stratified 2 cm Mu X Depleted X Thick Da Sandy M 5 cm Mu	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)	e (A11) B)	=Reduced Matrix, N  Sandy Gle Sandy Redox Depleted N  Depleted N  Redox De	eyed Mat dox (S5) Matrix (S6 Mace (S7) Icky Min eyed Ma Matrix (F rk Surfar Dark Sur	rix (S4) 6) eral (F1) trix (F2) 3) ce (F6) face (F7)		Indicato Coas Iron- Red Very Othe	st Prairie Redox Manganese Ma Parent Material Shallow Dark S r (Explain in Re	atic Hydric Soils <sup>3</sup> : (A16) sses (F12) (F21) Surface (F22) emarks) c vegetation and nust be present,
						- 1			
Type: _ Depth (in Remarks:	nches):		gional Supplement	Version	2.0 to inc	lude the	Hydric Soil Presen		Yes X No_
Type: _ Depth (in Remarks: This data for	nches):	dwest Reg					NRCS Field Indicator		
Type: _ Depth (in Remarks: This data for	nches):  m is revised from Mi //www.nrcs.usda.gov	dwest Reg					NRCS Field Indicator		
Type:	m is revised from Mi //www.nrcs.usda.gov	dwest Reg //Internet/F	SE_DOCUMENTS	6/nrcs14			NRCS Field Indicator	s of Hydric Soil	s, Version 7.0, 2015
Type:	m is revised from Mi //www.nrcs.usda.gov	dwest Reg //Internet/F	ired; check all that	apply)	2p2_0512	293.docx	NRCS Field Indicator ) Seconda	rs of Hydric Soil	is, Version 7.0, 2015
Type:	m is revised from Mi //www.nrcs.usda.gov  GGY  drology Indicators: cators (minimum of c	dwest Reg //Internet/F	rired; check all that	apply)	2p2_0512	293.docx	NRCS Field Indicator  Seconda Suff	rs of Hydric Soil ary Indicators (mace Soil Cracks	ninimum of two requ
Type:	m is revised from Mi //www.nrcs_usda.gov  OGY  drology Indicators: cators (minimum of company) Water (A1) ter Table (A2)	dwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa	apply) apply Lea	2p2_0512 aves (B9)	293.docx	NRCS Field Indicator  Seconda Surfa	rs of Hydric Soil ary Indicators (mace Soil Cracks nage Patterns (i	ninimum of two reques (B6)
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Project/Site: Sunset Hills Elementary School	City/County: Plymouth	h/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, Ran	ge: S34 T118N R22W	
Landform (hillside, terrace, etc.): terrace	Local relief (co	oncave, convex, none): c	concave
Slope (%):3 Lat: 44.979669	Long: -93.445081		Datum: WGS84
Soil Map Unit Name: Udorthents (cut and fill land), 0 to 6 percent sl-	opes	NWI classifi	cation: PFO1A
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes X	No (If no, exp	lain in Remarks.)
Are Vegetation Soil , or Hydrology significantly of	listurbed? Are "Normal Ci	ircumstances" present?	
Are Vegetation, Soil, or Hydrologynaturally prob		olain any answers in Ren	
SUMMARY OF FINDINGS – Attach site map showin		cations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Are	ea	
Hydric Soil Present? Yes X No	within a Wetland?		No
Wetland Hydrology Present? Yes X No			
Remarks:			
VEGETATION – Use scientific names of plants.			
Absolute	Dominant Indicator		
Tree Stratum (Plot size: 30 ) % Cover	Species? Status	Dominance Test wor	ksheet:
1. Fraxinus pennsylvanica 20	Yes FACW	Number of Dominant S	
2		Are OBL, FACW, or F	AC: 2 (A)
3		Total Number of Domi	
5.		Across All Strata:	(B)
	Total Cover	Percent of Dominant S Are OBL, FACW, or Fa	
Sapling/Shrub Stratum (Plot size: 15 )		, ,, , , , , , , , , , , , , , , , , , ,	100.070 (100)
1. Rhamnus cathartica 40	Yes FAC	Prevalence Index wo	rksheet:
2		Total % Cover of:	Multiply by:
3.		OBL species 0	
4		FACW species 20	
5 40	=Total Cover	FAC species 40 FACU species 0	<del></del>
Herb Stratum (Plot size: 5 )	-Total Cover	FACU species 0 UPL species 0	
1.		Column Totals 60	
2.	·	Prevalence Index =	
3.			
4		Hydrophytic Vegetati	ion Indicators:
5			Hydrophytic Vegetation
6		X 2 - Dominance Te	
7.		X 3 - Prevalence Inc	
9.		4 - Morphological	Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10			ophytic Vegetation <sup>1</sup> (Explain)
	Total Cover		oil and wetland hydrology must
Woody Vine Stratum (Plot size: 15 )		be present, unless dis	
1	<u> </u>	Hydrophytic	
2		Vegetation	
	=Total Cover	Present? Yes_	No
Remarks: (Include photo numbers here or on a separate sheet.)	=======================================		

1 1	0-1 4 1 1	Ω/	Calca (and 1-1)	0/	T 1	0.02	Touture	Remarks
nches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	
4-12	10YR 4/2	95	10YR 4/6	5	<u> </u>	<u> </u>	Loamy/Clayey	Prominent redox concentration
12-18	10YR 4/1	95	10YR 4/6	_ <u>5</u> 	<u>-</u>	<u>M</u>	Sandy	Prominent redox concentration
	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	 √IS=Mas	sked Sand	Grains.		n: PL=Pore Lining, M=Matrix.
Histosol	Indicators:		_ Sandy Gle	ved Mat	trix (S4)			st Prairie Redox (A16)
7. 97	pipedon (A2)		Sandy Red					-Manganese Masses (F12)
Black Hi			Stripped M					Parent Material (F21)
_	n Sulfide (A4)		Dark Surfa				Ver	y Shallow Dark Surface (F22)
<del></del>	Layers (A5)		Loamy Mu	icky Min	eral (F1)		Oth	er (Explain in Remarks)
	ick (A10)		Loamy Gle	eyed Ma	trix (F2)			
_ C Depleted	Below Dark Surface	∍ (A11)	X Depleted	Matrix (F	3)			
Thick Da	ark Surface (A12)		Redox Da	rk Surfac	ce (F6)		<sup>3</sup> Indicate	ors of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted [	Dark Sur	rface (F7)			and hydrology must be present,
5 cm Mu	icky Peat or Peat (S	3)	? Redox De	pression	ns (F8)		unle	ess disturbed or problematic.
Type: Depth (in emarks: his data for		dwest Reg	gional Supplement \ -SE_DOCUMENTS	Version :	2.0 to incl 2p2_0512	lude the	Hydric Soil Preser	rs of Hydric Soils, Version 7.0, 201
Type: Depth (in emarks: his data for rrata. (http:	rm is revised from Mi	dwest Reg	gional Supplement S	Version . 3/nrcs14	2.0 to incl 2p2_0512	lude the	NRCS Field Indicato	-
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Type: Depth (il emarks: his data for rrata. (http:  YDROLO /etland Hy rimary Indi	m is revised from Mi ///www.nrcs.usda.gov OGY drology Indicators: cators (minimum of c	dwest Reg	FSE_DOCUMENTS	apply)	2p2_0512	293.docx	NRCS Field Indicato	-
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Project/Site: Sunset Hills Elementary School		City/Cou	nty: Plymout	h/Hennepin	Sampling Date:	9/27/2018
Applicant/Owner: ISD 284				State: MN	Sampling Point:	W1-2U
Investigator(s): Scott Thelen, Breeka Li Goodlander		Section, T	ownship, Rar	nge: S34 T118N R22W		
Landform (hillside, terrace, etc.): terrace			Local relief (c	oncave, 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 sl				ication: PFO1A	*****
Are climatic / hydrologic conditions on the site typical fo	r this time o	f year?	Yes X	No (If no, exp	lain in Remarks.)	
Are Vegetation, Soil, or Hydrologysi	ignificantly c	disturbed? A	re "Normal C	ircumstances" present?		
Are Vegetation, Soil, or Hydrologyn	aturally prok	olematic? (	If needed, exp	olain any answers in Ren	narks.)	
SUMMARY OF FINDINGS – Attach site ma	p showir	ng samplin	g point lo	cations, transects,	important feat	ures, etc.
Hydrophytic Vegetation Present? Yes X No		Is the	Sampled Ar	ea		
	X		a Wetland?		No X	
	<u>X</u>			\ <del></del>		
Remarks:		-				
VECETATION . Use a simplification of the						
VEGETATION – Use scientific names of plan	Absolute	Dominant	Indicator I			
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wor	ksheet:	
Fraxinus pennsylvanica	10	Yes	FACW	Number of Dominant S		
2. Ulmus americana	10	Yes	FACW	Are OBL, FACW, or F	•	4 (A)
3. Acer rubrum	10	Yes	FAC	Total Number of Domi	nant Species	
4				Across All Strata:		5(B)
5		<del></del>		Percent of Dominant S	•	
Sapling/Shrub Stratum (Plot size: 15 )		=Total Cover		Are OBL, FACW, or F	AC: 80	.0%(A/B)
1. Rhamnus cathartica	10	Yes	FAC	Prevalence Index wo	rkahaati.	
2. Lonicera tatarica	20	Yes	FACU	Total % Cover of:		hv:
3.				OBL species 0		0
4.				FACW species 20		40
5.				FAC species 20	x 3 =	30
**************************************	30 =	=Total Cover		FACU species 20	0 x 4 =	30
Herb Stratum (Plot size: 5				UPL species 0	x 5 =	0
1.				Column Totals 60		80 (B)
2.				Prevalence Index =	= B/A = 3.00	
3.				11 1 1 2 17 4 2		
4.				Hydrophytic Vegetat		
5 6.		-		A	Hydrophytic Vegeta	ation
7		-		X 2 - Dominance Te		0
0					Adaptations <sup>1</sup> (Provi	de supporting
9.				data in Remark	s or on a separate	sheet)
10					ophytic Vegetation <sup>1</sup>	
		=Total Cover		Indicators of hydric se		
Woody Vine Stratum (Plot size: 15 )				be present, unless dis		
1				Hydrophytic	a ·	
2				Vegetation		
		=Total Cover		Present? Yes_	XNo	_
Remarks: (Include photo numbers here or on a separa	ate sheet.)					

iches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-9	10YR 3/1	100					Loamy/Clayey	
9-20	10YR 4/2	100					Loamy/Clayey	
				_	_			
	***			-	_			
/pe: C=Co	ncentration, D=Dep	letion, RM	=Reduced Matrix, N	√S=Mas	ked Sand	Grains.		PL=Pore Lining, M=Matrix.
	ndicators:							s for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)		Sandy Gle					t Prairie Redox (A16)
Histic Ep	ipedon (A2)		Sandy Red					Manganese Masses (F12)
Black His			Stripped M		6)			Parent Material (F21)
	n Sulfide (A4)		Dark Surfa					Shallow Dark Surface (F22)
-	Layers (A5)		Loamy Mu				— Other	(Explain in Remarks)
2 cm Mu		(0.4.4)	Loamy Gle					
	Below Dark Surface	) (ATT)	— Depleted Nedox Da		-		<sup>3</sup> Indicator	s of hydrophytic vegetation and
	rk Surface (A12) ucky Mineral (S1)		Depleted I					nd hydrology must be present,
	cky Peat or Peat (S	3)	Redox De			'		s disturbed or problematic.
						1		
	_ayer (if observed):							
strictive L Type: _ Depth (in							Hydric Soil Present	? Yes No
Type: _ Depth (in marks: is data for	ches):	idwest Reg					NRCS Field Indicators	S of Hydric Soils, Version 7.0, 201
Type: _ Depth (in marks: is data for	ches):	idwest Reg					NRCS Field Indicators	
Type: _ Depth (in marks: is data for ata. (http://	m is revised from M'//www.nrcs.usda.gov	idwest Reg					NRCS Field Indicators	
Type:	m is revised from M //www.nrcs.usda.gov	idwest Reg //Internet/F	SE_DOCUMENTS	6/nrcs14			NRCS Field Indicators	s of Hydric Soils, Version 7.0, 201
Type:	m is revised from Mi//www.nrcs.usda.gov	idwest Reg //Internet/F	SE_DOCUMENTS	apply)	2p2_0512	293.docx)	NRCS Field Indicators	s of Hydric Soils, Version 7.0, 201
Type: Depth (in marks: s data for ata. (http://www.pertage)  DROLO etland Hydrary India Surface V	m is revised from M'//www.nrcs.usda.gov	idwest Reg //Internet/F	ired; check all that Water-Sta	apply)	2p2_0512	293.docx)	NRCS Field Indicators Secondar	ry Indicators (minimum of two require Soil Cracks (B6)
Type: Depth (in marks: s data for ata. (http://pressure.com/depth//depth//pressure.com/depth//dept	m is revised from M //www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of own Water (A1) ter Table (A2)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa	apply) sined Lea	2p2_0512	293.docx)	NRCS Field Indicators  Secondai  Surfa Drain	ory Indicators (minimum of two regulace Soil Cracks (B6) lage Patterns (B10)
Type: Depth (in marks: s data for ata. (http:// DROLO etland Hyd mary India Surface \( \) High Wa Saturatio	m is revised from M //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of of Water (A1) ter Table (A2) in (A3)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa	apply) sined Lea auna (B1	2p2_0512 aves (B9) 13) ts (B14)	293.docx)	NRCS Field Indicators  Secondal Surfa Drain Dry-S	ry Indicators (minimum of two require Soil Cracks (B6)
Type: Depth (in marks: s data for ata. (http:// DROLO etland Hyd mary Indic Surface V High Wa Saturatio Water M	m is revised from M //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of of Mater (A1) ter Table (A2) on (A3) arks (B1)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa True Aqua	apply) ined Lea auna (B1 atic Plant	aves (B9) 13) ts (B14) Odor (C1	)	NRCS Field Indicators  Secondar  Surfa  Dry-S  Crayf	ry Indicators (minimum of two reginage Patterns (B10) Season Water Table (C2)
Depth (in marks: s data formata. (http://www.mary.lndic.) Surface Value High Wa Saturation Water M Sedimen	m is revised from M //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of of Water (A1) ter Table (A2) in (A3)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa	apply) ined Lea auna (B1 Sulfide G	aves (B9) 13) ts (B14) Odor (C1 neres on	293.docx) ) Living Ro	Secondar Surfa Drain Dry-S Crayt ots (C3) SRCS Field Indicators	ry Indicators (minimum of two requires Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
DROLO  tland Hyo mary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep	m is revised from Mi//www.nrcs.usda.gov  GGY  drology Indicators: cators (minimum of of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 atic Plant Sulfide ( Rhizosph of Redu	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron	) Living Ro (C4)	Secondar Surfa Drain Crayf ots (C3) Satur Stunt	ry Indicators (minimum of two requires Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C
DROLO  Stland Hydracy Indicate Mater M Sediment Drift Dep Algal Ma	m is revised from Milywww.nrcs.usda.gov  GY  drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3)	idwest Reg //Internet/F	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Redu on Reduc	aves (B9) 13) ts (B14) Odor (C1 neres on lead Iron oction in Ti	) Living Ro (C4)	Secondar Surfa Drain Dry-S Crayf ots (C3) Satur Stunt	ry Indicators (minimum of two regulate Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (Cated or Stressed Plants (D1)
DROLO  tland Hydrace Mary India Surface Maturatio Water M Sedimen Drift Dep Algal Ma Iron Dep	m is revised from M'/www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of of Mater (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	idwest Reg //Internet/F	ired: check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	apply) apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Redu on Reduck Surface Surface	aves (B9) 13) ts (B14) Odor (C1 neres on lection in Ties (C7)	) Living Ro (C4)	Secondar Surfa Drain Dry-S Crayf ots (C3) Satur Stunt	ry Indicators (minimum of two requires Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (Cated or Stressed Plants (D1) morphic Position (D2)
DROLO  tland Hydrace Mary India Surface Mater M Sedimen Drift Dep Algal Ma Iron Dep Inundation	m is revised from M'/www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of of water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	idwest Reg	ired: check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or	apply) apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Redu on Redu c Surface Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on lection in Tiele (C7) ta (D9)	) Living Ro (C4)	Secondar Surfa Drain Dry-S Crayf ots (C3) Satur Stunt	ry Indicators (minimum of two requires Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (Cated or Stressed Plants (D1) morphic Position (D2)
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Project/Site: Sunset Hills Elementary School		City/Cou	nty: Plymout	h/Hennepin	Sampling Date:	9/27/2018
Applicant/Owner: ISD 284				State: MN	Sampling Point:	W1-3W
Investigator(s): Scott Thelen, Breeka Li Goodlander		Section, T	ownship, Ran	ge: S34 T118N R2	 22W	
Landform (hillside, terrace, etc.): terrace			_ocal relief (co	oncave, convex, none	e): concave	
Slope (%):3 Lat: _44.979669		Long: -	93.445081		Datum: WGS84	
Soil Map Unit Name: Water				NWI cla	ssification: PFO1A	
Are climatic / hydrologic conditions on the site typical fo	r this time o	of year?	Yes_X_	No (If no,	explain in Remarks.)	
Are Vegetation, Soil, or Hydrologysi	gnificantly o	disturbed? A	re "Normal C	ircumstances" prese	nt? Yes X N	lo
Are Vegetation, Soil, or Hydrologyn	aturally prob	olematic? (	If needed, exp	olain any answers in l	Remarks.)	
SUMMARY OF FINDINGS – Attach site ma	p showir	ng samplin	g point loc	cations, transec	ts, important fea	tures, etc.
Hydrophytic Vegetation Present?         Yes			Sampled Are a Wetland?		<u> </u>	
Remarks: Wetland sampling point approximately 1ft lower than u	pland samp	ling point.				
VEGETATION – Use scientific names of plar	nts.					
	Absolute	Dominant	Indicator			
Tree Stratum (Plot size: 30 1)	% Cover 10	Species?	Status	Dominance Test		
Fraxinus pennsylvanica	10	Yes Yes	FACW FACW	Number of Domina Are OBL, FACW, of		6 (A)
3.				Total Number of D	-	(//)
4.				Across All Strata:		6 (B)
5				Percent of Domina		
Sapling/Shrub Stratum (Plot size: 15 )	20	=Total Cover		Are OBL, FACW, o	or FAC:10	00.0% (A/B)
1. Cornus alba	10	Yes	FACW	Prevalence Index	worksheet	
2. Rhamnus cathartica	10	Yes	FAC	Total % Cove		y by:
3.				OBL species	0 x 1 =	0
4.				FACW species	60 x 2 =	120
5	20	-Tatal Cause		FAC species	10 x 3 =	30
Herb Stratum (Plot size: 5 )		=Total Cover		FACU species UPL species	0 x 4 =	0 0
1. Phalaris arundinacea	20	Yes	FACW	Column Totals:		150 (B)
2.				Prevalence Inde	`	
3.						
4					etation Indicators:	
5.					for Hydrophytic Vege	tation
6. 7.				X 2 - Dominance		
8.					ical Adaptations (Prov	vide supporting
9.				data in Rem	narks or on a separate	sheet)
10				Problematic H	ydrophytic Vegetation	1 (Explain)
Woody Vine Stratum (Plot size: 15 )		=Total Cover			ic soil and wetland hyd	
1. Vitis riparia	10	Yes	_FACW_	Hydrophytic		
2				Vegetation		
Demode (to but to be to		=Total Cover		Present? Y	es_XNo	=0
Remarks: (Include photo numbers here or on a separa	ite sheet.)					

epth	Matrix		Redo	C /		1 _ 2	T	Domarka
nches)	Color (moist)		Color (moist)	<u></u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 3/1	95	10YR 4/6		<u> </u>	_M_	Loamy/Clayey	Prominent redox concentrations
4-12	10YR 4/2	100			-		Loamy/Clayey	
						_		
		: <del></del>		-		: <del></del> -		
Type: C=Co	encentration, D=Dep	letion, RM	=Reduced Matrix. N	 ∕S=Mas	ked Sand	Grains.	2 Location	n: PL=Pore Lining, M=Matrix.
lydric Soil I							Indicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)		Sandy Gle	yed Mat	trix (S4)			st Prairie Redox (A16)
Histic Ep	ipedon (A2)		Sandy Red	dox (S5)				Manganese Masses (F12)
Black His	stic (A3)		Stripped M					Parent Material (F21)
Hydroger	n Sulfide (A4)		Dark Surfa					Shallow Dark Surface (F22)
_	Layers (A5)		Loamy Mu	-			— Othe	er (Explain in Remarks)
2 cm Mu			Loamy Gle	-				
	Below Dark Surface	e (A11)	Depleted N				3tadioata	rs of hydrophytic vegetation and
_	rk Surface (A12)		X Redox Da					and hydrology must be present,
_	ucky Mineral (S1) cky Peat or Peat (S3	))	Depleted [ ? Redox De			ı		ss disturbed or problematic.
				p. 000.0.	()			· ·
	.ayer (if observed):							
Type: Depth (in Remarks: This data form	ches):	dwest Reg	gional Supplement	Version S/nrcs14	2.0 to inc 2p2_0512	lude the	Hydric Soil Preser  NRCS Field Indicato )	rs of Hydric Soils, Version 7.0, 2015
Type: Depth (in Remarks: This data form	ches):m is revised from Mi	dwest Reg	gional Supplement \ -SE_DOCUMENTS	Version 5/nrcs14	2.0 to inc 2p2_0512	lude the 293.docx	NRCS Field Indicato	
Type: Depth (in Remarks: This data form	nches):  m is revised from Mi //www.nrcs.usda.gov	dwest Reg	gional Supplement \ -SE_DOCUMENTS	Version 6/nrcs14	2.0 to inc 2p2_0512	lude the 293.docx	NRCS Field Indicato	
Type:	m is revised from Mi //www.nrcs.usda.gov	dwest Reg	-SE_DOCUMENTS	6/nrcs14	2.0 to inc 2p2_0512	lude the 293.docx	NRCS Field Indicato )	rs of Hydric Soils, Version 7.0, 2015
Type:	m is revised from Mi //www.nrcs.usda.gov	dwest Reg	SE_DOCUMENTS	apply)	2p2_0512	293.docx	NRCS Field Indicato )  Second:	rs of Hydric Soils, Version 7.0, 2015
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Type: Depth (in Remarks: This data fore Frrata. (http://  YDROLO Vetland Hyd Primary India X Surface \ High Wa Saturatio	m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: eators (minimum of company) Water (A1) ter Table (A2) on (A3)	dwest Reg	uired; check all that Water-Sta Aquatic Fa	apply) ined Lea auna (B	2p2_0512 aves (B9) 13) ts (B14)	293.docx	NRCS Field Indicato )  Second: Surl Drai Dry.	rs of Hydric Soils, Version 7.0, 2015  ary Indicators (minimum of two require face Soil Cracks (B6)  nage Patterns (B10)  Season Water Table (C2)
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Project/Site: Sunset Hills Elementary School		City/Cour	nty: Plymout	h/Hennepin	Sampling Date: 9/27/2018	
Applicant/Owner: ISD 284				State: MN	Sampling Point: W1-3U	
Investigator(s): Scott Thelen, Breeka Li Goodlander		Section, To	ownship, Rar	nge: S34 T118N R22W		
Landform (hillside, terrace, etc.): terrace		L	ocal relief (co	oncave, convex, none): c	concave	
Slope (%):3 Lat: 44.979669		Long: -9	3.445081		Datum: WGS84	
Soil Map Unit Name: Water				NWI classifi	ication: PFO1A	
Are climatic / hydrologic conditions on the site typical f	for this time o	f year?	Yes X	No (If no, exp	lain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly of	disturbed? A	re "Normal C		Yes X No	
Are Vegetation, Soil, or Hydrology				olain any answers in Ren		
SUMMARY OF FINDINGS – Attach site m					•	
Hydrophytic Vegetation Present? Yes N	o_X_	Is the	Sampled Are	ea		
	o X		a Wetland?		NoX	
	o X			<del></del>	<del></del> -	
Remarks:						
NECETATION III AND						
VEGETATION – Use scientific names of pla	- N. C.		7 5 6			_
Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:	
1				Number of Dominant S		
2.	X			Are OBL, FACW, or F.		
3				Total Number of Domi	inant Species	
4.	3			Across All Strata:	2 (B)	
5.	V	Total Cayor		Percent of Dominant S		. ,
Sapling/Shrub Stratum (Plot size: 15	3	=Total Cover		Are OBL, FACW, or F	AC: <u>50.0%</u> (A/B	;)
1.	,		ŀ	Prevalence Index wo	rksheet.	$\dashv$
2.				Total % Cover of:		
3.				OBL species 0		
4.				FACW species 0	x 2 = 0	
5				FAC species 32		
701-1-2		=Total Cover		FACU species 20		
Herb Stratum (Plot size: 5 )   1. Symphyotrichum lanceolatum	2	NI-	F40	UPL species 0		
2. Glechoma hederacea	20	No Yes	FACU FACU	Column Totals 52  Prevalence Index =		
3. Poa pratensis	30	Yes	FAC	Frevalence index -	= B/A =3.38	
4.				Hydrophytic Vegetati	ion Indicators:	_
5					Hydrophytic Vegetation	
6.				2 - Dominance Te		
7.	-			3 - Prevalence Inc	dex is ≤3.0 <sup>1</sup>	
8					Adaptations (Provide supporting	ng
9		-			s or on a separate sheet)	
10				G <sub>9</sub> = 5	ophytic Vegetation <sup>1</sup> (Explain)	
Woody Vine Stratum (Plot size: 15	)=	=Total Cover		Indicators of hydric so be present, unless dis	oil and wetland hydrology must turbed or problematic.	
L				Hydrophytic		
2				Vegetation		
		=Total Cover		Present? Yes_	No _X_	
Remarks: (Include photo numbers here or on a sepa	rate sheet.)				Ti .	

Profile Dec	cription: (Describe	to the day	oth needed to door	ument th	ne indica	tor or c	onfirm the	absence o		npling Point: W1-3U
Depth	Matrix	to the dep		x Feature		1101 01 0		abscrice .	or maioatoro.	7
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc2	Textu	ure		Remarks
0-8	10YR 3/1	100					Loamy/0	Clayey		
8-12	10YR 4/1	95	10YR 4/6	5			Loamy/0		Prominer	nt redox concentrations
0-12	1011(4)1	33	1011(4)0				Louiny	, .,		
		:								
	4									
				-				2		
	oncentration, D=Dep	oletion, RM	=Reduced Matrix, N	MS=Masl	ked Sand	d Grains				ning, M=Matrix. matic Hydric Soils <sup>3</sup> :
Hydric Soil			0	und Mate	div (CA)				t Prairie Redo	
— Histosol			— Sandy Gle		rix (54)				Manganese M	
	pipedon (A2)		— Sandy Red Stripped M		21				Parent Materia	
_	istic (A3)		Dark Surfa		")					Surface (F22)
	en Sulfide (A4) d Layers (A5)		Loamy Mu		eral (F1)				r (Explain in R	
	uck (A10)		Loamy Gle					_	<b>V</b>	,
_	d Below Dark Surfac	e (A11)	Depleted I							
	ark Surface (A12)	,	Redox Da					3Indicator	s of hydrophy	tic vegetation and
	Aucky Mineral (S1)		Depleted [			)		wetla	nd hydrology	must be present,
	ucky Peat or Peat (S	3)	Redox De	pression	s (F8)			unles	s disturbed o	r problematic.
Restrictive	Layer (if observed)	:								
						- 1				
Type:						1				
Depth (i	nches):		<del></del>				Hydric So	il Presen	t?	Yes No_>
Depth (i Remarks: This data fo		idwest Reç v/Internet/l	gional Supplement S	Version 2	2.0 to inc 2p2_051;	lude the	NRCS Field			Yes No X
Depth (i Remarks: This data fo	rm is revised from M	idwest Reç v/Internet/l	gional Supplement S	Version 2 6/nrcs142	2.0 to inc 2p2_0512	lude the 293.doc	NRCS Field			
Depth (i Remarks: This data fo Errata. (http	rm is revised from M ://www.nrcs.usda.go	idwest Reç v/Internet/I	gional Supplement S	Version 2 6/nrcs142	2.0 to inc 2p2_0512	lude the 293.doc	NRCS Field			
Depth (i Remarks: This data fo Errata. (http	rm is revised from M://www.nrcs.usda.go	v/Internet/l	SE_DOCUMENTS	S/nrcs142	2.0 to inc 2p2_0512	elude the	NRCS Field	l Indicator	s of Hydric Sc	oils, Version 7.0, 2015
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators icators (minimum of	v/Internet/l	SE_DOCUMENTS	apply)	2p2_0512	293.doc>	NRCS Field	Indicator	s of Hydric Sc	nils, Version 7.0, 2015
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi Surface	rm is revised from M://www.nrcs.usda.go  DGY  /drology Indicators.icators (minimum of Water (A1)	v/Internet/l	rired; check all that	apply)	2p2_0512	293.doc>	NRCS Field	Indicator  Seconda Surfa	s of Hydric Sc ry Indicators ( ace Soil Crack	minimum of two require
Depth (i Remarks: This data fo Errata. (http  HYDROL( Wetland Hy Primary Ind Surface High Wa	rm is revised from M://www.nrcs.usda.go  DGY  ydrology Indicators icators (minimum of Water (A1) ater Table (A2)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa	apply) ained Lea	2p2_051; aves (B9)	293.doc>	NRCS Field	Seconda Surfa	s of Hydric Sc ry Indicators ( ace Soil Crack nage Patterns	minimum of two require (s (B6) (B10)
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Ind Surface High Wa Saturati	rm is revised from M://www.nrcs.usda.go  DGY /drology Indicators icators (minimum of Water (A1) ater Table (A2) on (A3)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa	apply) apply Lea auna (B1 atic Plant	aves (B9) 3) s (B14)	293.doc>	NRCS Field	Seconda Surfa Drair	s of Hydric Sc ry Indicators ( ace Soil Crack nage Patterns Season Water	minimum of two requires (B6) (B10) Table (C2)
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi Surface High Water Mater	rm is revised from M://www.nrcs.usda.go  DGY /drology Indicators: icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa True Aqua	apply) ained Lea auna (B1 atic Plant	2p2_0512  aves (B9) 3) s (B14) Odor (C1	293.doc>	NRCS Field	Seconda Surfa Drair Dry-S Cray	ry Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows (	minimum of two requires (B6) (B10) Table (C2)
Depth (i Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Ind Surface High Water M Sedime	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators: icators (minimum of Mater (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ained Lea auna (B1 sulfide ( Rhizosph	aves (B9) 3) s (B14) Odor (C1	293.doc	NRCS Field	Seconda Surfa Drair Dry-3 Cray Satu	ry Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible	minimum of two require (s (B6) (B10) Table (C2) (C8) on Aerial Imagery (C9)
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators: icators (minimum of water (A1) ater Table (A2) on (A3) //arks (B1) nt Deposits (B2) posits (B3)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa	apply) ained Lea auna (B1 Sulfide ( Rhizosph of Reduc	aves (B9) 3) s (B14) Odor (C1 eres on ced Iron	) Living R (C4)	NRCS Field  ()  oots (C3)	Seconda Surfa Drair Dry-3 Cray Satu Stun	ry Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible	minimum of two require (s (B6) (B10) Table (C2) (C8) on Aerial Imagery (C9) and Plants (D1)
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators icators (minimum of Water (A1) ater Table (A2) on (A3) //arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	v/Internet/l	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc	aves (B9) 3) s (B14) Odor (C1 beres on ced Iron ction in T	) Living R (C4)	NRCS Field  ()  oots (C3)	Seconda Surfa Drair Dry-3 Cray Satu Stun Geor	ny Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible of	minimum of two require (s (B6) (B10) (C8) (C8) (C9) (April 19 (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Indi Surface High Water N Sedime Drift De Algal M. Iron De	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators: icators (minimum of water (A1) ater Table (A2) on (A3) //arks (B1) nt Deposits (B2) posits (B3)	v/Internet/f	ired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc « Surface	aves (B9) 3) s (B14) Odor (C1 leres on ced Iron ction in T	) Living R (C4)	NRCS Field  ()  oots (C3)	Seconda Surfa Drair Dry-3 Cray Satu Stun Geor	ny Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible of ted or Stresse morphic Positi	minimum of two require (s (B6) (B10) (C8) (C8) (C9) (April 19 (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9
Depth (i Remarks: This data fo Errata. (http  HYDROL( Wetland Hy Primary Ind Surface High Water M Sedime Drift De Algal M Iron De Inundat	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators icators (minimum of Water (A1) ater Table (A2) on (A3) //arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	v/Internet/f	ired: check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc c Surface Well Dat	aves (B9) 3) s (B14) Odor (C1 heres on ced Iron stion in T e (C7) ta (D9)	) Living R (C4) illed Soil	NRCS Field  ()  oots (C3)	Seconda Surfa Drair Dry-3 Cray Satu Stun Geor	ny Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible of ted or Stresse morphic Positi	minimum of two require (s (B6) (B10) (C8) (C8) (C9) (April 19 (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9
Depth (i Remarks: This data fo Errata. (http  HYDROLO Wetland Hy Primary Ind Surface High Water M Sedime Drift De Algal M Iron De Inundat	rm is revised from M ://www.nrcs.usda.go  DGY /drology Indicators: icators (minimum of Mater (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concav	v/Internet/f	ired: check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc c Surface Well Dat	aves (B9) 3) s (B14) Odor (C1 heres on ced Iron btion in T e (C7) ta (D9)	) Living R (C4) illed Soil	NRCS Field  ()  oots (C3)	Seconda Surfa Drair Dry-3 Cray Satu Stun Geor	ny Indicators ( ace Soil Crack nage Patterns Season Water fish Burrows ( ration Visible of ted or Stresse morphic Positi	minimum of two require (s (B6) (B10) (C8) (C8) (C9) (April 19 (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9
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Remarks:

# APPENDIX B WETLAND BOUNDARY APPLICATIONS

## **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.armv.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.

## PART FOUR: Aquatic Resource Impact<sup>1</sup> 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.)	drain or	Impact	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area4	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>
			11.5 -11.5				

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)".

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 <u>pre-application</u> 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.

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).

<sup>&</sup>lt;sup>3</sup>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".

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

<sup>&</sup>lt;sup>1</sup> 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



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**

RMATION tary School	Date of Application 11/06/2018	Application Number N/A				
	Application 11/06/2018	Number				
	, .					
Exemp	otion	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 28 <sup>th</sup> , 2018.						

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	
Michael Thompson	business-day comment period):	
City of Plymouth	November 28, 2018	
Address (if different than LGU)	Date, time, and location of decision:	
3400 Plymouth Blvd,	November 29, 2018	
Plymouth, MN 55447	***************************************	
Phone Number and E-mail Address	Decision-maker for this application:	
763-509-5501	⊠ Staff	
mthompson@plymouth.gov	Governing Board or Council	

Signature:

BWSR Forms 7-1-10

Page 1 of 2

#### 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.
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: <a href="www.mvp.usace.army.mil/regulatory/default.asp?pageid=687">www.mvp.usace.army.mil/regulatory/default.asp?pageid=687</a> 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	2.
BWSR Forms 7-1-10	Page 2 of 2



11541 95<sup>th</sup> 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 95<sup>th</sup> 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

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## **FIGURES**

FIGURE 1:

Site Location Map

FIGURE 2:

Site Layout Map

FIGURE 3:

Soil Survey Map

FIGURE 4:

National Wetland Inventory Map

FIGURE 5:

Public Waters Inventory Map

FIGURE 6:

Wetland Communities Sketch

## **APPENDICES**

APPENDIX A:

Data Forms

APPENDIX B:

Wetland Boundary Application

APPENDIX C:

Wetland Photographs

### 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 Ioam, 1 to 3 %slopes (L25A); Tomall Ioam, 0 to 2 % slopes (L46A); Tadkee-Tadkee, depressional, complex, 0 to 2 %slopes (L64A); and Urban Iand-Udipsamments (cut and fill Iand) complex, 0 to 2 % slopes (U4A). Of the identified soil types, Tomall Ioam 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>U. S. Army Corps of Engineers Wetland Delineation Manual</u>, 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		and Size c/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

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

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# FIGURE 1 Site Location Map





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

Oakwood Elementary School 17340 Co Rd 6 Plymouth, MN 55447

LEGEND



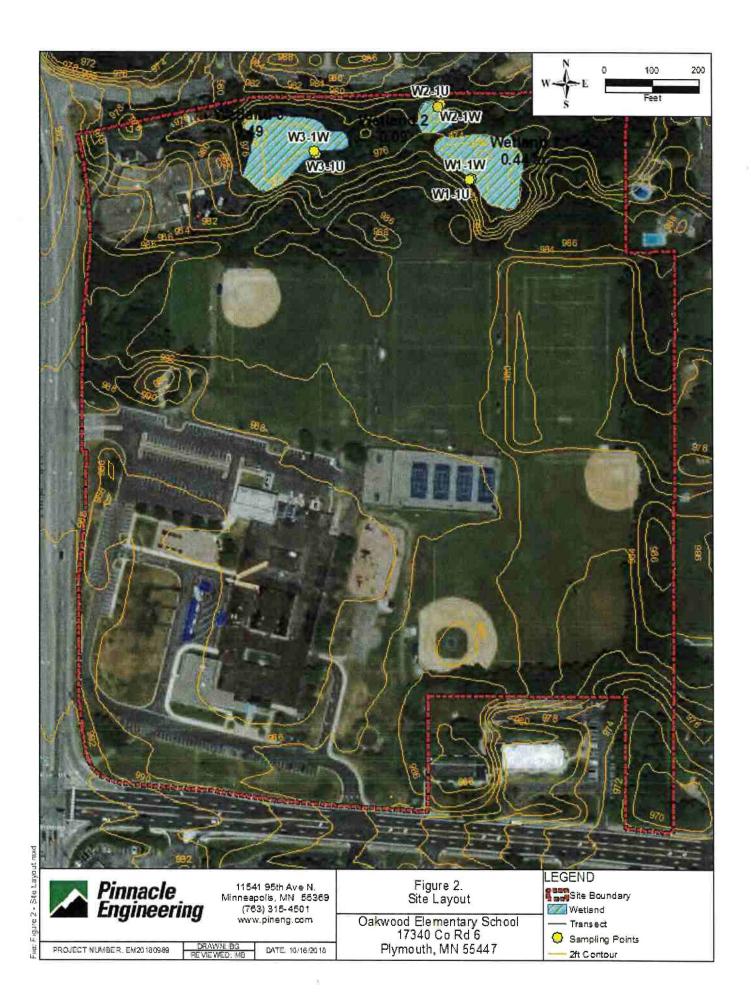
Site Boundary



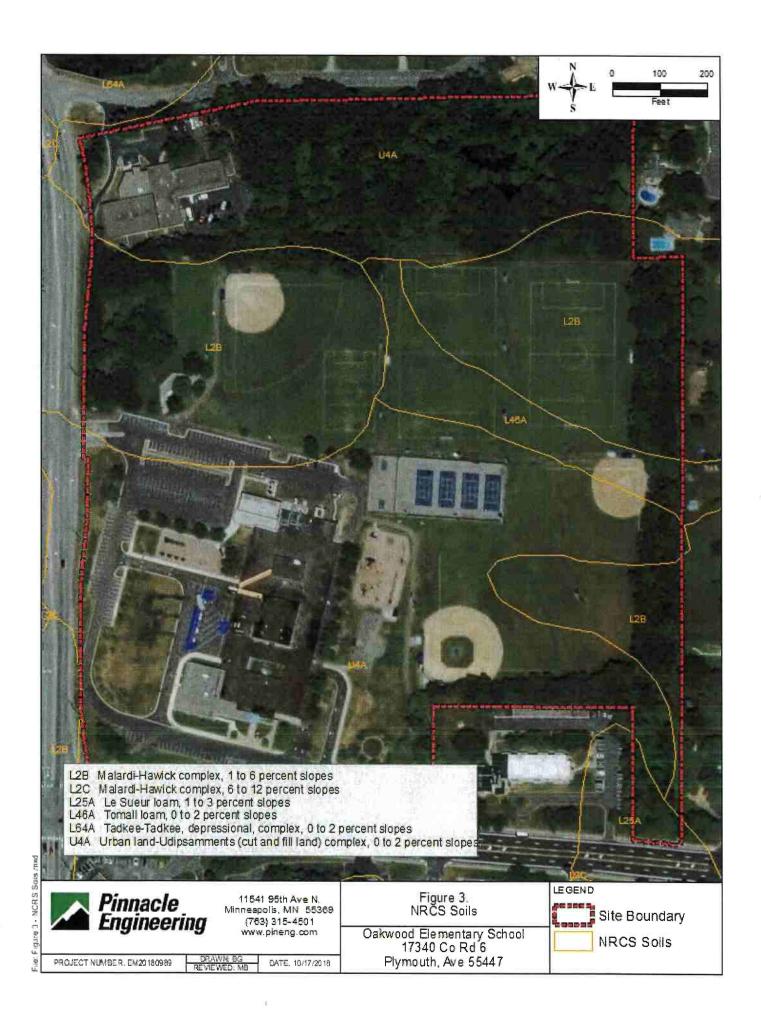
Site Location

Fig. Figure 1 - Ste Lacatan 10.5 mid

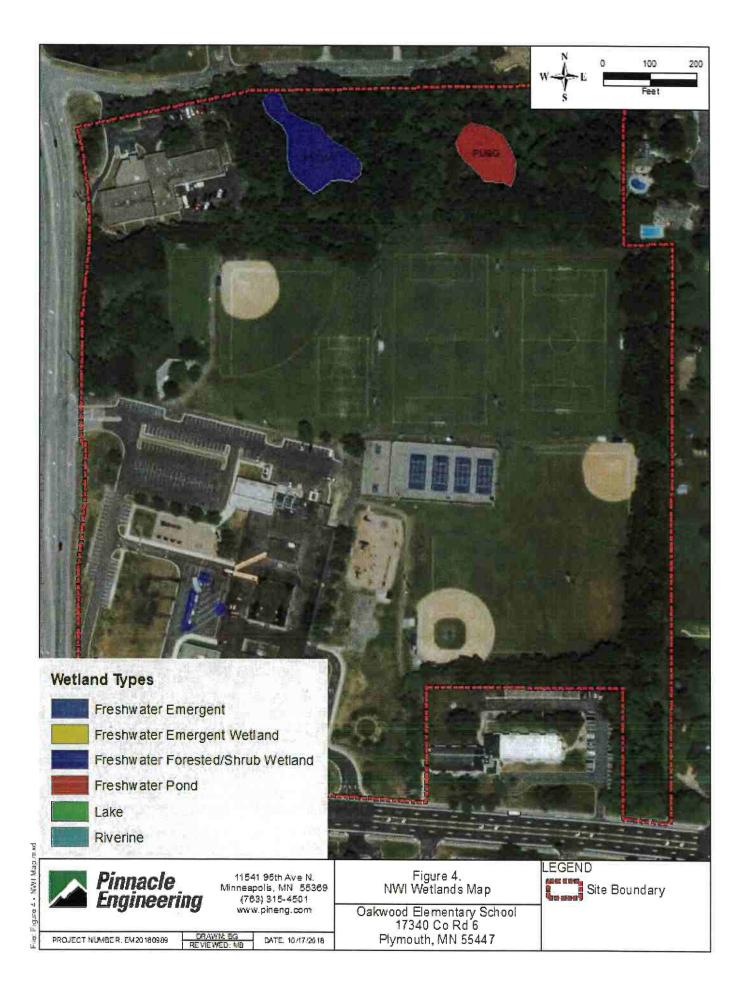
# FIGURE 2 Site Layout



# FIGURE 3 Soil Survey



# FIGURE 4 National Wetland Inventory



# FIGURE 5 Public Waters Inventory



File: F gare 5 - P'Wi Mag, mad

Pinnacle Engineering

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PROJECT NUMBER, EM20 180989

DATE: 10/16/2018

Figure 5. MnDNR PWI Map

Oakwood Elementary School 17340 Co Rd 6 Plymouth, MN 55447

Site Boundary



Public Waters



PWI Watercourses

# FIGURE 6 Wetland Communities Sketch



# **APPENDIX A**

# WETLAND DETERMINATION DATA FORMS Midwest Region

Project/Site: Oakwood Elementary School		City/Cou	inty: Plymout	th/Hennepin	Sampling Date:	10/9/2018
Applicant/Owner: ISD 284				State: MN	Sampling Point:	W1-1W
Investigator(s): Scott Thelen		Section, T		nge: S29 T118N R22V	V	2
Landform (hillside, terrace, etc.): terrace			Local relief (c	concave, convex, none):	concave	
Slope (%): 3 Lat: 44.996814					Datum: WGS84	
Soil Map Unit Name: Urband land-Udipsamments					fication: PUBG	
Are climatic / hydrologic conditions on the site typical f	or this time c	f vear?	Yes X		-	
Are Vegetation, Soil, or Hydrology				Circumstances" present?		1
Are Vegetation, Soil, or Hydrology				plain any answers in Rer		
SUMMARY OF FINDINGS – Attach site m						ures, etc.
	o		e Sampled Ar n a Wetland?		No	
Remarks: Adjacent to manicured lawns and playfields.						
VEGETATION - Use scientific names of pla	ants.					
65	Absolute	Dominant	Indicator			
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wo	rksheet:	
Ulmus rubra     Acer saccharinum	10	Yes Yes	FAC	Number of Dominant		0 (4)
3. Acer negundo	10	Yes	FACW FAC	Are OBL, FACW, or F	•	6 (A)
4.		103		Total Number of Dom Across All Strata:	•	6 (B)
5.				Percent of Dominant	-	<u> </u>
Sapling/Shrub Stratum (Plot size: 15	30	=Total Cover		Are OBL, FACW, or F		0.0%_(A/B)
1. Cornus alba	10	Yes	_FACW_	Prevalence Index wo	orksheet:	
2. Rhamnus cathartica	10	Yes	FAC	Total % Cover of	f: Multiply	by:
3				OBL species 0		0
4				FACW species 6		120
5	20	=Total Cover		FAC species 3		90
Herb Stratum (Plot size: 5 )		- rotal Cover		FACU species 0 UPL species 0		0
Phalaris arundinacea	40	Yes	FACW	Column Totals: 90		210 (B)
2.			0.	Prevalence Index		
3.						
4				Hydrophytic Vegetat	ion Indicators:	
5	( <del></del>			1 - Rapid Test for	Hydrophytic Vegeta	ation
6.				X 2 - Dominance Te		
7.				X 3 - Prevalence Inc		
9.		-			Adaptations <sup>1</sup> (Provi	
10						
10	40	=Total Cover		70	ophytic Vegetation <sup>1</sup>	
Woody Vine Stratum (Plot size: 15		rotal Cover		<sup>1</sup> Indicators of hydric s be present, unless dis		
1	x			Hydrophytic	tarea or problema	
2				Vegetation		
		=Total Cover			X No	_
Remarks: (Include photo numbers here or on a separ	ate sheet.)			=======================================		1

nches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	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			Loamy/Clayey	Prominent redox concentration
/	10YR 2/1	95	10YR 4/6	5	<u>c</u>	M	Loamy/Clayey	Prominent redox concentration
12-15	10111/2/1		1011(4)0	<u>_</u>				
	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	 IS=Mas	ked Sand	Grains.		n: PL=Pore Lining, M=Matrix.  ors for Problematic Hydric Soils <sup>3</sup> :
dric Soil I			Ct- Cla	us al Nilos	-i (C.1)			st Prairie Redox (A16)
_Histosol (	·		Sandy Gle Sandy Red					-Manganese Masses (F12)
Black His	ipedon (A2)		Stripped M					Parent Material (F21)
-	n Sulfide (A4)		Dark Surfa		-,			/ Shallow Dark Surface (F22)
- 94	Layers (A5)		Loamy Mu	- ' - '	eral (F1)			er (Explain in Remarks)
2 cm Muc	, , ,		Loamy Gle				2 <del></del>	
-	Below Dark Surface	(A11)	X Depleted N	-				
-	rk Surface (A12)		Redox Dar					ors of hydrophytic vegetation and
Sandy Mu	ucky Mineral (S1)		Depleted [			)		and hydrology must be present,
5 cm Muc	cky Peat or Peat (S3	3)	Redox De	pression	s (F8)		unle	ess disturbed or problematic.
Type: Depth (in-							Hydric Soil Preser	
Type: Depth (in- emarks: his data forr	ches):	dwest Reg	gional Supplement \ FSE_DOCUMENTS	/ersion : /nrcs14:	2.0 to inc 2p2_0512	lude the I 293.docx)	NRCS Field Indicato	nt? Yes X No_ rs of Hydric Soils, Version 7.0, 2015
Type: Depth (in- emarks: his data forr rrata. (http:/	ches):  m is revised from Mi //www.nrcs.usda.gov	dwest Reg	gional Supplement \ SE_DOCUMENTS	/ersion: /nrcs14:	2.0 to inc 2p2_0512	lude the I 293.docx)	NRCS Field Indicato	
Type: Depth (in- emarks: his data forr rrata. (http:/	ches):  m is revised from Mi //www.nrcs.usda.gov	dwest Reg	gional Supplement \ SE_DOCUMENTS	/ersion : /nrcs14:	2.0 to inc 2p2_0512	lude the I 293.docx)	NRCS Field Indicato	rs of Hydric Soils, Version 7.0, 2015
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov	dwest Reg	rSE_DOCUMENTS	/nrcs14:	2p2_0512	293.docx)	NRCS Field Indicato	rs of Hydric Soils, Version 7.0, 2015
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: eators (minimum of co	dwest Reg	uired; check all thatWater-Sta	Inrcs14:	2p2_0512	293.docx)	NRCS Field Indicato	rs of Hydric Soils, Version 7.0, 2015  ary Indicators (minimum of two requiface Soil Cracks (B6)
Type:	m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of co Water (A1) ter Table (A2)	dwest Reg	uired; check all that  Water-Sta  Aquatic Fa	apply) ined Lea	2p2_0512 aves (B9)	293.docx)	NRCS Field Indicato	rs of Hydric Soils, Version 7.0, 2015  ary Indicators (minimum of two requiface Soil Cracks (B6)  inage Patterns (B10)
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of continuous of continu	dwest Reg	uired; check all that Water-Sta Aquatic Fa	apply) ined Lea	2p2_0512 aves (B9) 13) ts (B14)	293.docx)	NRCS Field Indicato  Second.  Suri Dra Dry	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) Season Water Table (C2)
Type:	m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: eators (minimum of content (A1) ter Table (A2) on (A3) arks (B1)	dwest Reg	uired; check all that Water-Sta Aquatic Fa True Aqua	apply) ined Leadura (B4 tic Plan Sulfide	aves (B9) 13) ts (B14) Odor (C1	293.docx)	NRCS Field Indicato  Second.  Suri  Dra  Dry  Cra	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8)
Type: Depth (incernarks: his data formata. (http://  //DROLO etland Hycerimary Indicates // Saturation Water Mater	ches):  m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of co Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)	dwest Reg	uired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B' tic Plan Sulfide	aves (B9) 13) ts (B14) Odor (C1 neres on	293.docx)	Second. Surian Dra Dry Cra oots (C3)  NRCS Field Indicato	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8)
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of co Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3)	dwest Reg	uired; check all that Water-Sta Aquatic Fa True Aqua	apply) ined Lea auna (B1 tic Plan Sulfide Rhizosph of Redu	aves (B9) 13) ts (B14) Odor (C1) neres on	) Living Ro (C4)	Seconda Suri Dra Dry Cra ots (C3) X Satu	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of co Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)	dwest Reg	uired; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (Battic Plant Sulfide Rhizosph of Redu n Redu	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T	) Living Ro (C4)	Seconda Suri Dra Dry Cra sots (C3) X Satu Sturi	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9 inted or Stressed Plants (D1)
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Type:	m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of co Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial I vegetated Concave vations:	dwest Reg	uired; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  37)  Gauge or	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu s Surface Well Da blain in F	aves (B9) 13) ts (B14) Odor (C1 neres on ction in T e (C7) ta (D9) Remarks)	) Living Ro (C4) illed Soils	Seconda Suri Dra Dry Cra sots (C3) X Satu Sturi	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9 inted or Stressed Plants (D1) comorphic Position (D2)
Type:	m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of control of con	magery (Ee Surface	uired; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized Fa  Presence  Recent Iro  Thin Muck  37)  Gauge or  (B8)  No  No	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu Surface Well Da blain in F	aves (B9) 13) ts (B14) Odor (C1 neres on ction in T e (C7) ta (D9) Remarks) inches): inches):	) Living Ro (C4) illed Soils	Seconda Suri Dra Dry Cra ots (C3) X Satu Sturi S (C6) X Geo X FAC	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9 inted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
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Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of control Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial I Vegetated Concave vations: er Present? Present? Ye poillary fringe)	magery (Ees X es X	uired; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  37) Gauge or  (B8) Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu c Surface Well Da blain in F Depth ( Depth (	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks) inches): inches):	) Living Ro (C4) illed Soils	Second. Surrium Dra Dry Cra Sturium St	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9 inted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
Type:	ches):  m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of co Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial I vegetated Concave vations: er Present? Present? Ye resent?	magery (Ees X es X	uired; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  37) Gauge or  (B8) Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu c Surface Well Da blain in F Depth ( Depth (	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks) inches): inches):	) Living Ro (C4) illed Soils	Second. Surrium Dra Dry Cra Sturium St	ary Indicators (minimum of two requiface Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9 inted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)

Project/Site: Oakwood Elementary School		City/Cou	inty: Plymou	th/Hennepin	Sampling Date:	10/9/2018
Applicant/Owner: ISD 284				State: MN	Sampling Point:	W1-1U
Investigator(s): Scott Thelen		Section, 1	Гownship, Ra	nge: S29 T118N R22V		
Landform (hillside, terrace, etc.): terrace				concave, convex, none):		
Slope (%): 3 Lat: 44.996814				, , , , , , , , , , , , , , , , , , , ,	Datum: WGS84	
Soil Map Unit Name: Urban land-Udipsamments					fication: PUBG	
Are climatic / hydrologic conditions on the site typical fo	r this time o	of year?	Yes X			
Are Vegetation , Soil , or Hydrology si				Circumstances" present?		
Are Vegetation, Soil, or Hydrologyn				plain any answers in Re	2	-
SUMMARY OF FINDINGS – Attach site ma					•	ures, etc.
Hydrophytic Vegetation Present? Yes X No		le the	Sampled A	roa		
	X		n a Wetlandî		No X	
	X	"""	. a violana	. 103	110 <u>X</u>	
Remarks:						
Adjacent to manicured lawns and playfields. Upland sa	mpling poir	nt aprroximatle	ey 8 inches hi	gher in elevation than w	etland sampling poir	ıt.
VEGETATION III						
VEGETATION – Use scientific names of plan	nts. Absolute	Dominant	To diameter			
Tree Stratum (Plot size: 30 )	% Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:	
1. Ulmus rubra	10	Yes	FAC	Number of Dominant		
2. Fraxinus pennsylvanica	5	Yes	FACW	Are OBL, FACW, or f		7 (A)
3. Acer saccharinum	5	Yes	_FACW_	Total Number of Dom	inant Species	
4. Acer negundo	5	Yes	FAC	Across All Strata:		7 (B)
5		T. 1.0	s <del></del>	Percent of Dominant		
Sapling/Shrub Stratum (Plot size: 15 )	25	=Total Cover		Are OBL, FACW, or I	-AC:	0.0% (A/B)
1. Rhamnus cathartica	20	Yes	FAC	Prevalence Index w	aufrahaat.	
2.				Total % Cover o		hv:
3.			: <del></del> 1	÷		0
4.						40
5				FAC species 4	5 x3= 1	35
	20	=Total Cover		FACU species (	x 4 =	0
Herb Stratum (Plot size:5)				UPL species	x 5 =	0
1. Galium boreale	10	Yes	FAC			75 (B)
2.				Prevalence Index	= B/A = 2.69	
3				11 1 1 2 2 2		
TE				Hydrophytic Vegeta		
6				X 2 - Dominance To	Hydrophytic Vegeta	ation
7.				3 - Prevalence In		
8.		•			Adaptations <sup>1</sup> (Provi	da supportina
9.			S=		s or on a separate	
10				Problematic Hydr	ophytic Vegetation <sup>1</sup>	(Explain)
	10	=Total Cover		Indicators of hydric s		
Woody Vine Stratum (Plot size:15)				be present, unless dis	sturbed or problema	tic.
1. Vitis riparia	10	Yes	FACW_	Hydrophytic		
2		T-1-1-0		Vegetation	T.	
		=Total Cover		Present? Yes	XNo	<b>-</b> ()
Remarks: (Include photo numbers here or on a separa	te sheet.)					

	0/	Redox	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
nches) Color (moist)	<u>%</u> -	Color (moist)	<del>- 70</del>	туре	LOC		Terrane
0-6 10YR 3/1	100		-			Loamy/Clayey	-
6-13 10YR 4/1	100					Loamy/Clayey	
13-18 10YR 4/1		10YR 4/6	<u>5</u> —	<u></u>		Loamy/Clayey	Prominent redox concentrations
					_		
ype: C=Concentration, D=Deple	tion, RM=	Reduced Matrix, N	1S=Mas	ked Sand	d Grains.		rs for Problematic Hydric Soils <sup>3</sup> :
ydric Soil Indicators:		0 1 0		-i (C4)			st Prairie Redox (A16)
Histosol (A1)		Sandy Gle		rix (54)			Manganese Masses (F12)
_ Histic Epipedon (A2) Black Histic (A3)		— Sandy Red Stripped M		3)			Parent Material (F21)
Hydrogen Sulfide (A4)		— Stripped W		J)		_	Shallow Dark Surface (F22)
Stratified Layers (A5)		Loamy Mu	` '	eral (F1)			er (Explain in Remarks)
2 cm Muck (A10)		Loamy Gle					,
Depleted Below Dark Surface	(A11)	Depleted N					
Thick Dark Surface (A12)	( /	Redox Dar				<sup>3</sup> Indicato	rs of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted D	ark Sur	face (F7)	)	wetla	and hydrology must be present,
5 cm Mucky Peat or Peat (S3)	į	Redox Dep	oression	s (F8)		unle	ss disturbed or problematic.
estrictive Layer (if observed):							
Туре:							
Depth (inches):  demarks:  his data form is revised from Mid-	west Regi	ional Supplement \ SE_DOCUMENTS	/ersion : /nrcs14;	2.0 to inc 2p2_0512	lude the I	Hydric Soil Presen	rs of Hydric Soils, Version 7.0, 2015
Depth (inches): emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/l	west Reg Internet/F	ional Supplement \ SE_DOCUMENTS	/ersion : /nrcs14:	2.0 to inc 2p2_0512	lude the I	NRCS Field Indicator	
Depth (inches):	Internet/F	SE_DOCUMENTS	/nrcs14	2.0 to inc 2p2_0512	lude the I 293.docx)	NRCS Field Indicator	
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/lyprology  YDROLOGY  Vetland Hydrology Indicators:	Internet/F	SE_DOCUMENTS	/nrcs14:	2p2_0512	293.docx)	NRCS Field Indicator  Seconda	rs of Hydric Soils, Version 7.0, 2015 ary Indicators (minimum of two requirace Soil Cracks (B6)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/lyprology  YDROLOGY  /etland Hydrology Indicators: rimary Indicators (minimum of or	Internet/F	SE_DOCUMENTS	/nrcs14: apply) ined Lea	2p2_0512	293.docx)	NRCS Field Indicator  Seconda Surf	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10)
Depth (inches):  emarks: nis data form is revised from Mid- rrata. (http://www.nrcs.usda.gov/l  YDROLOGY  /etland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1)	Internet/F	red; check all that Water-Sta Aquatic Fa	apply) ined Lea auna (B1	2p2_0512 aves (B9) 13) ts (B14)	293.docx)	NRCS Field Indicator  Seconda  Surf Drai  Dry-	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
Depth (inches):  emarks: his data form is revised from Mid- rrata. (http://www.nrcs.usda.gov/l  YDROLOGY  /etland Hydrology Indicators: rimary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Internet/F	red; check all that Water-Sta Aquatic Fa True Aqua	apply) ined Lea auna (B3 tic Plan Sulfide	aves (B9) 13) ts (B14) Odor (C1	293.docx)	NRCS Field Indicator  Seconda Surf Drai Dry-	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/letland Hydrology Indicators: rimary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Internet/F	red; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 tic Plan Sulfide	2p2_0512 aves (B9) 13) ts (B14) Odor (C1 neres on	293.docx) ) Living Ro	Seconda Surf Drai Dry- Cray ots (C3) Salada	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/letland Hydrology Indicators: rimary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Internet/F	red; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 tite Plant Sulfide ( Rhizosph of Redu	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron	293.docx) ) Living Ro (C4)	Seconda Surf Drai Dry- Cray ots (C3) Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/leftand Hydrology Indicators: rimary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Internet/F	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Reduc	aves (B9) (B14) Odor (C1) neres on ced Iron ction in T	293.docx) ) Living Ro (C4)	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rifish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Depth (inches): emarks: nis data form is revised from Midrata. (http://www.nrcs.usda.gov/letland Hydrology Indicators: rimary Indicators (minimum of or 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)	Internet/F	red; check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Reduc Surface	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron otion in T e (C7)	293.docx) ) Living Ro (C4)	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Depth (inches): emarks: nis data form is revised from Midrata. (http://www.nrcs.usda.gov/letland Hydrology Indicators: rimary Indicators (minimum of or 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 Im	ne is requi	red; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  7)  Gauge or	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu Surface Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9)	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Depth (inches):  emarks: his data form is revised from Mid- rrata. (http://www.nrcs.usda.gov/l  YDROLOGY  /etland Hydrology Indicators: rimary Indicators (minimum of on 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 Im Sparsely Vegetated Concave:	ne is requi	red; check all that  Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  7)  Gauge or	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu Surface Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9)	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rifish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/leftand Hydrology Indicators: rimary Indicators (minimum of on 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 Im Sparsely Vegetated Concave: ield Observations:	nagery (B' Surface (I	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Gauge or Other (Exp	apply) ined Lea auna (B1 titic Plan Sulfide Rhizosph of Redu n Redu c Surface Well Da	aves (B9) I3) Is (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks)	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rifish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
marks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/levaland Hydrology Indicators: rimary Indicators (minimum of or 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 Im Sparsely Vegetated Concave in Surface Water Present?	nagery (B' Surface (I	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck T) Gauge or Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu c Surface Well Da blain in F	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9)	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Irration Visible on Aerial Imagery (C9) Inted or Stressed Plants (D1) Imorphic Position (D2) Indicators (Minimum of two requirations (C9) Interview (C9) I
Depth (inches):  lemarks: his data form is revised from Midurrata. (http://www.nrcs.usda.gov/lemarks.usda.go	nagery (B' Surface (I	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Gauge or Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Redu c Surface Well Da blain in F	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks)	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) c-Neutral Test (D5)
Depth (inches):  emarks: his data form is revised from Midrata. (http://www.nrcs.usda.gov/leftand Hydrology Indicators: rimary Indicators (minimum of or 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 Im Sparsely Vegetated Concave is includes Water Present? Vestaturation Present? Vestaturation Present? Vestaturation Present? Vestaturation Present? Vestaturation Present? Vestaturation Present?	nagery (B' Surface (I	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Reduc Surface Well Da blain in F Depth ( Depth (	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks) inches): inches):	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur (C6) X FAC	ary Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Irration Visible on Aerial Imagery (C9) Inted or Stressed Plants (D1) morphic Position (D2) E-Neutral Test (D5)
Depth (inches):  lemarks: his data form is revised from Mid- rrata. (http://www.nrcs.usda.gov/l  YDROLOGY  Vetland Hydrology Indicators: Primary Indicators (minimum of or 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 Im Sparsely Vegetated Concave is Surface Water Present?  Ves	nagery (B' Surface (I	red; check all that  Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or Other (Exp	apply) ined Lea auna (Ba tic Plan Sulfide Rhizosph of Redu n Reduc Surface Well Da blain in F Depth ( Depth (	aves (B9) 13) ts (B14) Odor (C1 neres on ced Iron ction in T e (C7) ta (D9) Remarks) inches): inches):	) Living Ro (C4) illed Soils	Seconda Surf Drai Dry- Cray ots (C3) Satu Stur (C6) X FAC	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Irration Visible on Aerial Imagery (C9) Inted or Stressed Plants (D1) Imorphic Position (D2) Indicators (Minimum of two requirations (C9) Interview (C9) I

Project/Site: Oakwood Elementary School	City/Cou	inty: Plymouth	n/Hennepin	Sampling Date:	10/9/2018	
Applicant/Owner: ISD 284			State: MN	Sampling Point:	W2-1W	
Investigator(s): Scott Thelen	Section, 1	Гownship, Ran	ge: S29 T118N R22W	1		
Landform (hillside, terrace, etc.): terrace		Local relief (co	oncave, convex, none): o	concave		
Slope (%):3 Lat: _44.996814	Long: -	93.499994		Datum: WGS84		
Soil Map Unit Name: Urban land-Udipsamments			NWI classifi			
Are climatic / hydrologic conditions on the site typical for this	time of year?	Yes X	No(If no, exp	lain in Remarks.)		
Are Vegetation , or Hydrology signific	cantly disturbed?	Are "Normal Ci	rcumstances" present?		J	
Are Vegetation, Soil, or Hydrology natura			lain any answers in Ren			
SUMMARY OF FINDINGS – Attach site map sl	nowing samplin	g point loc	ations, transects,	important feat	ures, etc	÷.
Hydrophytic Vegetation Present? Yes X No	Is the	Sampled Are	aa			
Hydric Soil Present? Yes X No		n a Wetland?	Yes X	No		
Wetland Hydrology Present? Yes X No			( <del></del>			
Remarks:						
VEGETATION – Use scientific names of plants.						
	olute Dominant	Indicator				
	Cover Species?	Status	Dominance Test wor	ksheet:		
	10 Yes	FAC	Number of Dominant S			
2. 3.			Are OBL, FACW, or F.		4 (A)	
1			Total Number of Domi Across All Strata:	•	4 (B)	
5.	— · — —	=	Percent of Dominant S		4(B)	
	10 =Total Cover	-	Are OBL, FACW, or F.	•	0.0% (A/E	3)
Sapling/Shrub Stratum (Plot size: 15 )						
	40 Yes	FAC	Prevalence Index wo			
3.		-	Total % Cover of: OBL species 5		77.5	
4.		-	OBL species 5 FACW species 0		0	
5.		***************************************	FAC species 60		80	
	10 =Total Cover		FACU species 0	x 4 =	0	
Herb Stratum (Plot size: 5 )			UPL species 0	x 5 =	0	
	10 Yes	FAC PAC	Column Totals: 65		85 (B)	
3.	5 Yes	OBL_	Prevalence Index =	= B/A = 2.85		
4	<del></del>	<del></del>	Hydrophytic Vegetati	ion Indicators:		_
5.		2		Hydrophytic Vegeta	ation	
6			X 2 - Dominance Te			
7.			X 3 - Prevalence Inc			
9.	<del>-</del>		4 - Morphological	Adaptations <sup>1</sup> (Provi	de supporti	ng
10.				s or on a separate s		
	15 =Total Cover		Indicators of hydric so			
Woody Vine Stratum (Plot size: 15 )			be present, unless dis			٠.
1			Hydrophytic	· -		
2		-	Vegetation			
	=Total Cover		Present? Yes_	No	2	
Remarks: (Include photo numbers here or on a separate sh	neet.)					

iches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	1	Remarks
0-4	10YR 2/1	100				-	Loamy/Clayey	,	
4-12	10YR 3/1	95	10YR 4/6	5		M	Loamy/Clayey	Prominent r	edox concentrations
				_				· (	
rdric Soil Histosol Histic Ep Black Hi Hydroge Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu	pipedon (A2)	• (A11)	=Reduced Matrix, M  Sandy Gle Sandy Red Stripped M Dark Surfa Loamy Mu Loamy Gle Depleted I X Redox Da Depleted I ? Redox De	yed Mat dox (S5) Matrix (S0) ace (S7) Icky Min eyed Ma Matrix (F rk Surfac Dark Surfac	eral (F1) trix (F2) (F3) (F6) (Face (F7)		Indicat ? Co Iro Re Ve Ott	on: PL=Pore Linin ors for Problema ast Prairie Redox on-Manganese Mas d Parent Material ory Shallow Dark Soner (Explain in Rer cors of hydrophytic tland hydrology maless disturbed or p	etic Hydric Soils <sup>3</sup> :  (A16)  Sees (F12)  (F21)  urface (F22)  marks)  c vegetation and  ust be present,
strictive	Layer (if observed):					10			
Type: Depth (in emarks: nis data for	Layer (if observed): nches): rm is revised from Mi :://www.nrcs.usda.gov	dwest Reg	gional Supplement	Version 6/nrcs14	2.0 to inc 2p2_0512	slude the I 293.docx)	Hydric Soil Prese		Yes X No
Type: Depth (i emarks: nis data for rrata. (http	rm is revised from Mi :://www.nrcs.usda.gov	dwest Reg	gional Supplement	Version S/nrcs14	2.0 to inc 2p2_0512	elude the I 293.docx)	NRCS Field Indicat		
Type: Depth (i emarks: his data for rrata. (http	rm is revised from Mi ://www.nrcs.usda.gov	dwest Reg //Internet/F	SE_DOCUMENTS	S/nrcs14	2.0 to inc 2p2_0512	elude the I 293.docx)	NRCS Field Indicat	ors of Hydric Soils	s, Version 7.0, 2015
Type: Depth (ii emarks: his data for rrata. (http  YDROLO  /etland Hy rimary Indi X Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Inundati	rm is revised from Mi ://www.nrcs.usda.gov  OGY  rdrology Indicators: cators (minimum of company of	dwest Reg	ired: check all that Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro Thin Muck 7) Gauge or	apply) ined Lea auna (B' atic Plan Sulfide Rhizosph of Redu on Redu c Surfac Well Da	aves (B9) 13) ts (B14) Odor (C1 neres on iced Iron iction in T e (C7) ita (D9)	) Living Ro (C4) illed Soils	Second	dary Indicators (mi rface Soil Cracks ainage Patterns (B y-Season Water T ayfish Burrows (C8	inimum of two requirements (B6) Salo) Sable (C2) A Aerial Imagery (C9) Plants (D1) In (D2)

Project/Site: Oakwood Elementary School		City/Cou	nty: Plymou	th/Hennepin	Sampling Date:	10/9/2018
Applicant/Owner: ISD 284				State: MN	Sampling Point:	W2-1U
Investigator(s): Scott Thelen		Section, 1	Γownship, Ra	ange: S29 T118N R22V	V	0
Landform (hillside, terrace, etc.): terrace			Local relief (d	concave, convex, none):	concave	
Slope (%): 3 Lat: 44.996814		Long: -	93.499994	3.0	Datum: WGS84	
Soil Map Unit Name: Urban-land Udipsamments				NWI classi	fication:	
Are climatic / hydrologic conditions on the site typical	for this time o	of year?	Yes X			
Are Vegetation, Soil, or Hydrology				Circumstances" present?		2
Are Vegetation, Soil, or Hydrology_				xplain any answers in Re		1
SUMMARY OF FINDINGS – Attach site m	=					tures, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	Sampled A	rea		
	10 X		n a Wetland		No_X	
Wetland Hydrology Present? Yes	10 X			<del></del>		
Remarks: Adjacent to manicured lawns and playfields.						
VEGETATION – Use scientific names of pl			11 11			
Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:	
1. Ulmus rubra	10	Yes	FAC	Number of Dominant		
2. Fraxinus pennsylvanica	10	Yes	FACW	Are OBL, FACW, or F	•	4 (A)
3. Acer saccharinum	10	Yes	FACW	Total Number of Dom	ninant Species	
4.				Across All Strata:		5 (B)
5		Tatal Cause		Percent of Dominant		
Sapling/Shrub Stratum (Plot size: 15	30	=Total Cover		Are OBL, FACW, or F	-AC: 80	0.0% (A/B)
1. Rhamnus cathartica	10	Yes	FAC	Prevalence Index w	orksheet:	
2.				Total % Cover o		/ bv:
3.					x 1 =	0
4.				FACW species 2	20 x 2 =	40
5				FAC species 2	20 x 3 =	60
	10:	=Total Cover			0 x 4 =	40
Herb Stratum (Plot size: 5				-	0 x 5 =	0
1	-			-		140 (B)
				Prevalence Index	= B/A = 2.80	)
4.		-		Hydrophytic Vegeta	tion Indicators:	
5.				8 6 9	r Hydrophytic Veget	tation
6.				X 2 - Dominance To		
7.				3 - Prevalence In	dex is ≤3.0 <sup>1</sup>	
8					I Adaptations <sup>1</sup> (Prov	
9					ks or on a separate	
10				Problematic Hydi	rophytic Vegetation	(Explain)
Woody Vine Stratum (Plot size: 15	)	=Total Cover		Indicators of hydric s be present, unless dis		
Parthenocissus quinquefolia	10	Yes	FACU	Hydrophytic	p. doio/110	
2.				Vegetation		
X	10	=Total Cover			_X_ No	_
Remarks: (Include photo numbers here or on a sepa	arate sheet.)			•		

Depth	Matrix			x Featur		2				
inches)	Color (moist)	_%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	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 conce	entrations
Histosol Histic Ep Black Hi Hydroge Stratified 2 cm Mu Depleted Thick Da	pipedon (A2)	e (A11)	Sandy Gle Sandy Ree Stripped M Dark Surfa Loamy Mu Loamy Gle Depleted I Redox De	eyed Mat dox (S5) Matrix (S6 ace (S7) ucky Min- eyed Ma Matrix (F rk Surfac Dark Sur	trix (\$4) 66) eral (F1) trix (F2) (3) ce (F6) rface (F7		Indicato Coa: Iron- Red Very Othe	n: PL=Pore Lini rs for Problem st Prairie Redox Manganese Ma Parent Materia Shallow Dark Ser (Explain in Re rs of hydrophyti and hydrology n ss disturbed or	natic Hydric x (A16) asses (F12) il (F21) Surface (F22 emarks) tic vegetation must be pres	Soils <sup>3</sup> :  and ent,
	Layer (if observed):									
Type: Depth (in Remarks: This data for	nches):	idwest Reg	gional Supplement	Version : 3/nrcs14:	2.0 to inc 2p2_051	clude the 293.docx	Hydric Soil Presen NRCS Field Indicato )		Yes	<b>No_</b>
Type: Depth (ir Remarks: This data for	rm is revised from Mi	idwest Reg	gional Supplement SE_DOCUMENTS	Version 3/nrcs14	2.0 to inc 2p2_051	clude the 293.docx	NRCS Field Indicato		-	===
Type: Depth (in Remarks: This data for Errata. (http:	rm is revised from Mi ://www.nrcs.usda.gov	idwest Reg v/Internet/F	FSE_DOCUMENTS	6/nrcs14.	2.0 to inc 2p2_051	clude the 293.docx	NRCS Field Indicato )	rs of Hydric Soi	ils, Version 7	.0, 2015
Type: Depth (in Remarks: This data for Errata. (http:	nches):  rm is revised from Mi ://www.nrcs.usda.gov	idwest Reg v/Internet/F	FSE_DOCUMENTS	apply)	2p2_051	293.docx	NRCS Field Indicato )  Seconda	rs of Hydric Soi	ils, Version 7	.0, 2015
Type: Depth (in Remarks: This data for Errata. (http:  YDROLC  Vetland Hy Primary Indi Surface	rm is revised from Mi //www.nrcs.usda.gov  OGY rdrology Indicators: cators (minimum of c	idwest Reg v/Internet/F	FSE_DOCUMENTS  uired; check all that  Water-Sta	apply)	2p2_051	293.docx	NRCS Field Indicato )  SecondaSurf	rs of Hydric Soi ary Indicators (n ace Soil Cracks	minimum of t	.0, 2015
Type: Depth (in Remarks: This data for Errata. (http:  YDROLC Wetland Hy Primary Indi Surface	mches):  m is revised from Mi ://www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of c	idwest Reg v/Internet/F	uired; check all that Water-Sta	apply) ained Lea	2p2_051. aves (B9)	293.docx	NRCS Field Indicato )  Seconda Surf	rs of Hydric Soi ary Indicators (n ace Soil Cracks nage Patterns (	minimum of to s (B6)	.0, 2015
Type: Depth (in Remarks: This data for Errata. (http:  YDROLC Wetland Hy Primary Indi Surface	mr is revised from Mi ://www.nrcs.usda.gov DGY rdrology Indicators: cators (minimum of of Water (A1)	idwest Reg v/Internet/F	uired; check all that Water-Sta Aquatic Fa	apply) ained Lea auna (B1 atic Plan	aves (B9)	293.docx	NRCS Field Indicato )  Seconda Surf Drai Dry-	rs of Hydric Soi ary Indicators (n ace Soil Cracks nage Patterns ( Season Water	minimum of to s (B6) (B10) Table (C2)	.0, 2015
Type: Depth (in Remarks: This data for Errata. (http:  YDROLC Wetland Hy Primary Indi Surface High Wa Saturation	rm is revised from Mi ://www.nrcs.usda.gov DGY rdrology Indicators: cators (minimum of of Water (A1)	idwest Reg v/Internet/F	uired; check all that Water-Sta Aquatic Fa True Aqua	apply) ained Lea auna (B' atic Plan Sulfide	2p2_051.  aves (B9) 13) ts (B14) Odor (C1	293.docx	NRCS Field Indicato )  Seconda Surf Drai Dry-	rs of Hydric Soi ary Indicators (n ace Soil Cracks nage Patterns ( Season Water rfish Burrows (C	minimum of to s (B6) (B10) Table (C2)	.0, 2015 wo requi
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Project/Site: Oakwood Elementary School	City/County: Plymout	h/Hennepin Sampling Date:	10/9/2018
Applicant/Owner: ISD 284		State: MN Sampling Point:	W3-1W
Investigator(s): Scott Thelen	Section, Township, Rai	nge: S29 T118N R22W	
Landform (hillside, terrace, etc.): terrace	Local relief (c	oncave, convex, none): concave	
Slope (%):3 Lat: 44.996814	Long: <u>-93.499994</u>	Datum: WGS84	
Soil Map Unit Name: Urban land-Udipsamments		NWI classification: PFO1A	
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes X	No (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrologysignificantly	disturbed? Are "Normal C	ircumstances" present? Yes X No	
Are Vegetation, Soil, or Hydrologynaturally prol	olematic? (If needed, ex	olain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	ng sampling point lo	cations, transects, important featu	ıres, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Ar	ea	
Hydric Soil Present? Yes X No	within a Wetland?		
Wetland Hydrology Present? Yes X No			
Remarks:	===-		
VEGETATION			
VEGETATION – Use scientific names of plants.  Absolute	Dominant Indicator I		
Tree Stratum (Plot size: 30 ) % Cover	Species? Status	Dominance Test worksheet:	
1. Populus deltoides 20	Yes FAC	Number of Dominant Species That	
2.		Are OBL, FACW, or FAC:	2(A)
3		Total Number of Dominant Species	
5.		Across All Strata:	2(B)
	=Total Cover	Percent of Dominant Species That	00/ /4/5)
Sapling/Shrub Stratum (Plot size: 15 )	- Total Cover	Are OBL, FACW, or FAC:	.0%_(A/B)
1. Rhamnus cathartica 40	Yes FAC	Prevalence Index worksheet:	
2. Cornus racemosa 5	No FAC	Total % Cover of: Multiply I	oy:
3.			5
4		FACW species 0 x 2 = (	)
5			95
l	=Total Cover		0
Herb Stratum (Plot size: 5	×		)
2.		``	95(B)
3.		Prevalence Index = B/A = 3.00	
4.	<del></del> -	Hydrophytic Vegetation Indicators:	
5.		1 - Rapid Test for Hydrophytic Vegeta	tion
6		X 2 - Dominance Test is >50%	
7		X 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8		4 - Morphological Adaptations (Providence	
9.	<del></del>	data in Remarks or on a separate s	-
10	<del></del>	Problematic Hydrophytic Vegetation <sup>1</sup> (	
Woody Vine Stratum (Plot size: 15 )	=Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrobe present, unless disturbed or problemati	
1		Hydrophytic	
2		Vegetation	
	=Total Cover	Present? Yes X No	0
Remarks: (Include photo numbers here or on a separate sheet.)			

SOIL								Sampling Point: W	′3-1W
Profile Desc	ription: (Describe	to the dep	th needed to doc	ument t	he indica	ator or c	onfirm the absence o	f indicators.)	
Depth	Matrix			x Featu					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	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	С		Loamy/Clayey	Prominent redox concentra	itions
0-10									
	0	· — >		-	-				
	\ <del></del>			-	-				
				-	-	· —	2,	Si D. 1111 M.Maria	
	oncentration, D=Dep	letion, RM=	Reduced Matrix,	MS=Mas	sked San	d Grains		PL=Pore Lining, M=Matrix. s for Problematic Hydric Soil	e <sup>3</sup> .
Hydric Soil I			C	und Ma	tely (C.1)			t Prairie Redox (A16)	э.
— Histosol			Sandy Gle					Manganese Masses (F12)	
	ipedon (A2)		— Sandy Re Stripped N					Parent Material (F21)	
- Black His	n Sulfide (A4)		Dark Surf					Shallow Dark Surface (F22)	
	Layers (A5)		Loamy M					(Explain in Remarks)	
2 cm Mu			Loamy GI	_				,	
	i Below Dark Surface	e (A11)	X Depleted	-					
	ark Surface (A12)	( , , , , )	Redox Da				<sup>3</sup> Indicator	s of hydrophytic vegetation and	i
	lucky Mineral (S1)		— Depleted	Dark Su	rface (F7	)	wetla	nd hydrology must be present,	
	cky Peat or Peat (S	3)	Redox De	pression	ns (F8)		unles	s disturbed or problematic.	
Restrictive I	Layer (if observed):								
Type:	aujot (ii obootiou).								
Depth (ir	nches):					- 1	Hydric Soil Present	:? Yes_X_ N	lo
Remarks:									
This data for	m is revised from M	idwest Reg	ional Supplement	Version	2.0 to inc	clude the	NRCS Field Indicators	s of Hydric Soils, Version 7.0, 2	:015
Errata. (http:	//www.nrcs.usda.go	v/Internet/F	SE_DOCUMENTS	S/nrcs14	l2p2_051	293.doc	x)		
HYDROLC	)GY								
Wetland Hy	drology Indicators:								
Primary Indi	cators (minimum of	one is requ	ired; check all that	apply)				ry Indicators (minimum of two r	equired)
X Surface	Water (A1)		Water-Sta			)		ace Soil Cracks (B6)	
High Wa	ater Table (A2)		Aquatic F					age Patterns (B10)	
Saturation			True Aqu					Season Water Table (C2)	
	larks (B1)		— Hydroger					fish Burrows (C8) ration Visible on Aerial Imagery	, (CQ)
<del></del>	nt Deposits (B2)							ted or Stressed Plants (D1)	(00)
	posits (B3)		Presence					norphic Position (D2)	
	at or Crust (B4)		— Recent Ir Thin Muc			illed 30i		-Neutral Test (D5)	
	oosits (B5) on Visible on Aerial	Imagony (R						11041141 1001 (20)	
	Vegetated Concav		-			1			
Field Obser		o ouriano (					, i		
		es_X_	No	Depth	(inches):	6			
Water Table		es ——	No		(inches):		E:		
Saturation F		es —	No		(inches):		Wetland Hydrolo	gy Present? Yes X	<u></u> ه
	pillary fringe)		( <del></del>				i i		
	ecorded Data (stream	n gauge, m	onitoring well, aer	al photo	s, previo	us inspe	ctions), if available:		
Remarks:			and the same of the same	Laur	tion of	اد ادعواف	aina in to watland area		
Standing wa	ater in middle of wet!	and area, c	cuivert at northwes	tern pon	uon ot we	uana ara	ains in to wetland area.		

Project/Site: Oakwood Elementary School	City/County: Plymout	:h/Hennepin	Sampling Date: 10/9/2018
Applicant/Owner: ISD 284		State: MN	Sampling Point: W3-1U
Investigator(s): Scott Thelen	Section, Township, Rar	nge: S29 T118N R22W	
Landform (hillside, terrace, etc.): terrace	Local relief (c	oncave, convex, none): c	concave
Slope (%): 3 Lat: 44.996814	Long: -93.499994		Datum: WGS84
Soil Map Unit Name: Urban land-Udipsamments		NWI classifi	cation: PFO1A
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes X	No (If no, expl	lain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly		Circumstances" present?	
Are Vegetation, Soil, or Hydrology naturally pro		plain any answers in Rem	
SUMMARY OF FINDINGS – Attach site map show		cations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Ar	·ea	
Hydric Soil Present? Yes No X	within a Wetland?		No X
Wetland Hydrology Present? Yes No X			
Remarks:			
VEGETATION – Use scientific names of plants.	Daniel III		
Absolute Tree Stratum (Plot size: 30 ) % Cover		Dominance Test worl	ksheet:
1. Juniperus virginiana 15	Yes FACU	Number of Dominant S	
2. Fraxinus pennsylvanica 5	Yes FACW	Are OBL, FACW, or FA	
3		Total Number of Domii	nant Species
4	* : <del></del>	Across All Strata:	4 (B)
5.	T.(10	Percent of Dominant S	
Sapling/Shrub Stratum (Plot size: 15 )	_=Total Cover	Are OBL, FACW, or FA	AC: <u>75.0%</u> (A/B)
1. Rhamnus cathartica	Yes FAC	Prevalence Index wo	rksheet:
2.		Total % Cover of:	
3.		OBL species 0	<del></del>
4		FACW species 15	5 x 2 = 30
5.		FAC species 10	
	=Total Cover	FACU species 15	
Herb Stratum (Plot size: 5 )		UPL species 0	
2.	· · · · · · · · · · · · · · · · · · ·	Column Totals: 40 Prevalence Index =	
3.		Trevalence index =	- b/A =
4.	* ; <del></del> :	Hydrophytic Vegetati	ion Indicators:
5.		1 - Rapid Test for	Hydrophytic Vegetation
6		X 2 - Dominance Te	st is >50%
7		3 - Prevalence Ind	
8	- 1 <del></del> (	4 - Morphological	Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
9.	- :		ophytic Vegetation <sup>1</sup> (Explain)
10	=Total Cover	A 500	oil and wetland hydrology must
Woody Vine Stratum (Plot size: 15 )	- Notal Cover	be present, unless dist	
1. Vitis riparia	Yes FACW	Hydrophytic	¥
2.		Vegetation	
10	=Total Cover	Present? Yes_	No
Remarks: (Include photo numbers here or on a separate sheet.)			
			(A

nohee)	Color (moist)	0/	Color (moiet)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
nches)		<u>%</u>	Color (moist)		туре	LOC		Remarks		
0-4	10YR 3/1	100	10) (7) 110			+	Loamy/Clayey	Distinct raday concept	rationa	
4-15	10YR 5/3		10YR 4/6	_ <u>5</u> 	<u>-</u>	<u>M</u>	Loamy/Clayey	Distinct redox concent	Tations	
	oncentration, D=Dep		I=Reduced Matrix				<sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.		
ydric Soil I		edon, raw	-reduced Matrix, N	no-ivias	ica Garie	Oranis.		ors for Problematic Hydric S		
Histosol			Sandy Gle	Sandy Gleyed Matrix (S4)			Coast Prairie Redox (A16)			
_	ipedon (A2)		Sandy Red				Iron-Manganese Masses (F12)			
Black His	stic (A3)		Stripped M	latrix (S	6)		Red Parent Material (F21)			
Hydroger	n Sulfide (A4)		Dark Surfa	Dark Surface (S7)				Very Shallow Dark Surface (F22)		
Stratified	Layers (A5)		Loamy Mu	-			Other (Explain in Remarks)			
2 cm Mu			Loamy Gle	yed Ma	trix (F2)					
_	Below Dark Surface	(A11)	Depleted N				3			
_	rk Surface (A12)		Redox Dar					ors of hydrophytic vegetation a		
_	ucky Mineral (S1)		Depleted [			l	wetland hydrology must be present,			
5 cm Mu	cky Peat or Peat (S3	? Redox Depressions (F8)				unie	unless disturbed or problematic.			
	_ayer (if observed):									
estrictive L Type: _ Depth (in							Hydric Soil Prese	nt? Yes	No_	
Type: Depth (in temarks: his data for	nches):	dwest Reg	jional Supplement \	/ersion :	2.0 to inc	lude the l	NRCS Field Indicate	nt? Yes		
Type: _ Depth (in emarks: his data for rrata. (http://	m is revised from Mi //www.nrcs.usda.gov	dwest Reg	gional Supplement \ -SE_DOCUMENTS	√ersion : √nrcs14:	2.0 to inc 2p2_0512	lude the l 293.docx)	NRCS Field Indicate			
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Type:	m is revised from Mi //www.nrcs.usda.gov	dwest Reg	FSE_DOCUMENTS	apply)	2p2_0512	293.docx)	NRCS Field Indicate	ors of Hydric Soils, Version 7.0	), 2015	
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Type:	m is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) Water (A1) ter Table (A2)	dwest Reg	uired; check all that Water-Sta Aquatic Fa	apply) ined Lea	2p2_0512 aves (B9)	293.docx)	NRCS Field Indicate Second Sur	ary Indicators (minimum of two	), 2015	
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# APPENDIX B WETLAND BOUNDARY APPLICATIONS

## **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.

# PART FOUR: Aquatic Resource Impact<sup>1</sup> 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.)	drain, or remove	Impact	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area <sup>4</sup>	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>
				1,00			

<sup>&</sup>lt;sup>a</sup>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)".

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 <u>pre-application</u> 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 authority to undertake the work described herein.	ete and a	curate. I further attest that I possess the			
Signature:	Date:	October 18, 2018			
I hereby authorize Pinnacle Engineering, Inc. to act on my behalf as my agen upon request, supplemental information in support of this application.	t in the p	rocessing of this application and to furnish,			

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).

<sup>&</sup>lt;sup>3</sup>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".

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3<sup>rd</sup> Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

<sup>&</sup>lt;sup>1</sup> 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



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 northwest.



View of Wetland 3 looking west.

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