Type and Boundary Application

Headwaters Parkway

Forest Lake, Minnesota

July 11, 2019

Submitted by:
Bolton & Menk, Inc.
1960 Premier Drive
Mankato, MN 56001
P: 507-625-4171
F: 507-625-4177

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Appendix

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:	Dan Undem | Interim City Administrator
Mailing Address:	1408 Lake Street South | Forest Lake, MN 55025
Phone:	651-209-9727
E-mail Address:	

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

Agent Name:	Bolton & Menk, Inc. | Brandon Bohks
Mailing Address:	12224 Nicollet Drive | Burnsville, MN | 55337
Phone:	952-890-0509 ext 3244
E-mail Address:	brandonbo@bolton-menk.com

PART TWO: Site Location Information

County:	**Washington County**	**City/Township: Forest Lake**	
Parcel ID and/or Addres	**PID:** 2903221230002		
Legal Description (Section, Township, Ran	**29, 32, 21**		
Lat/Long (decimal degrees)			
Attach a map showing the location of the site in relation to local streets, roads, highways.			
Approximate size of site (acres) or if a linear project, length (feet):	**117.42 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.

2005 Headwaters wetland delineation and subsequent permitting. WCA reference # 05-079, no ACE project number was found, although the ACE was involved in the permit process.

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.

PART FOUR: Aquatic Resource Impact[1] Summary

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

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

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

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

N/A

PART FIVE: Applicant Signature

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

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

Signature: _____ Date: 7-11-19

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

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

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

Notice of Decision
Minnesota Wetland Conservation Act

DEC 1 2005

Mailing Date:	11/28/05
LGU:	Rice Creek Watershed District (RCWD) 4325 Pheasant Ridge Drive NE, Suite 611 Blaine, MN 55449
Project Name:	Headwaters
RCWD Ref. #:	05-079
Location:	Forest Lake, Washington County Sec. 20 & 29, T32N R21W
Name of Applicant:	Fenway Investments, Inc.
Wetland Decision Type:	Wetland Replacement Plan Application
Date of Decision:	11/22/05
Description of Decision:	The RCWD Board of Managers conditionally-approved an application for a private/public partnership project involving construction of residential housing, a community center, municipal and County facilities, commercial development, parks, and recreational facilities on 302 acres of land in the City of Forest Lake (see attached plan sheets). The project involves 4.79 acres of wetland fill and 1.56 acres of wetland excavation. The total replacement package includes 10.47 acres of new wetland creation and an equal amount of public value credit generated by the creation of water quality treatment ponds. No wetland banking is proposed, and the applicant has met 2:1 WCA replacement requirements for all wetland impacts including all wetland fill and excavation. Of the 10.47 acres of NWC, the applicant proposes 6.75 acres of Type 2 wetland (1 foot above to 1 foot below NWL) and 3.72 acres of Type 3 wetland (1-3 feet below NWL). Additional mitigation measures incorporated into the replacement plan include the following: • Native seeding and protecting via permanent easement upland buffer areas adjacent to created wetlands (no PVC claimed) • Wildlife travel corridors (dry arched culverts measuring 13.5 high by 22 inches wide) connecting replacement wetland TM-3 with TM-4 and TM-4 with TM-5. • Installation of 3 surface water education signage in the area of replacement wetlands TM-4 and TM-5.

You are hereby notified that the above-referenced decision was made by the Local Government Unit on the date stated above. The decision becomes final if not appealed to the Board of Water & Soil Resources within 30 days of the mailing date.

Ken Powell, Permit Coord.

11/28/05
Date

C: MN Board of Water and Soil Resources, ATTN: **Les Lemm**
Metro HQ, MN/Department of Natural Resources, ATTN: **Wayne Barstad**
U.S. Army Corps of Engineers, ATTN: **Dan Seemon**
Washington Conservation District ATTN: **Jyneen Thatcher**
Applicant, Fenway Investments ATTN: **Mike Waldo**
Consultant, Westwood Professional Services ATTN: **Geneviene Bolling**
Agent, Larkin et al, Ltd. ATTN: **Linda Fisher**
City of Forest Lake
RCWD File/Engineer/Inspector

Wetland Delineation Report

Headwaters Parkway

Forest Lake, Minnesota

July 11, 2019

Submitted by:
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Exhibits

Appendix

I. INTRODUCTION

The City of Forest Lake requested a wetland delineation on parcel ID: (2903221230002) for developmental purposes. A portion of the parcel was delineated in the past but the five-year window has elapsed. Additional wetland permitting was completed and was associated with the construction of Headwaters Parkway.

The study area is located along the western side of the Forest Lake City limits. This area is characterized by small urban developments surrounded by agriculture, remnant forest, and aquatic resources.

The project is found in Section 29 in Township 32 North of Range 21 West.

II. WETLAND DELINEATION METHODOLOGY

The wetland boundaries were delineated and staked in the field on June 13, 17, and 19 of 2019 using methods described in the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)". Wetlands identified were classified using "Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979)", "Wetlands of the United States (United States Fish and Wildlife Service Circular No. 39, 1971 edition)" and "Wetland Plants and Plant Communities of Minnesota and Wisconsin" (Eggers and Reed Third Edition). Subsequently, the three mandatory technical criteria for wetland determinations are as follows:

Hydrophytic Vegetation. A hydrophytic plant community is present when the dominant plant species present can endure prolonged inundation and/or soil saturation during the growing season. A plant's Wetland Indicator Status is determined using the 2016 National Wetland Plant List for Minnesota, published by the Army Corp of Engineers.

Hydric Soils. A hydric soil is defined as a soil that is formed under conditions of saturation, flooding or ponding long enough during the growing season (the portion of the year when there is above ground growth and development of vascular plants and/or soil temperature at 12 inches below the soil surface is above 41 degrees Fahrenheit or higher) to develop anaerobic conditions in the upper part.

Wetland Hydrology. An area has wetland hydrology if it experiences 14 or more consecutive days of flooding, ponding or a water table within 12 inches of the surface during the growing season at a minimum frequency of five out of ten years. This is determined by using both primary and secondary Wetland Hydrology indicators.

III. BACKGROUND INFORMATION

Prior to conducting a field investigation of this site, Exhibits A through E were used to complete a preliminary evaluation. The data gathered during the preliminary investigation was used as described below:

Exhibit A is a location map of the study area.

Exhibits B is an aerial photo with topographic information overlaid on it. This provides information regarding topography of the site, helping to identify areas that may have wetland characteristics.

Exhibit C is the National Wetlands Inventory of the site and surrounding properties. This information is used to complete a preliminary investigation of the wetlands that may or may not exist on the site.

Exhibit D is used to identify waters that are regulated by the DNR. This exhibit shows where there are DNR public waters relative to the site.

Exhibit E is the Washington County Soil Survey and is used to identify hydric soils that may lie within the study area.

Exhibit F is the site map showing the delineated aquatic resources.

Exhibit G includes the wetland delineation data sheets.

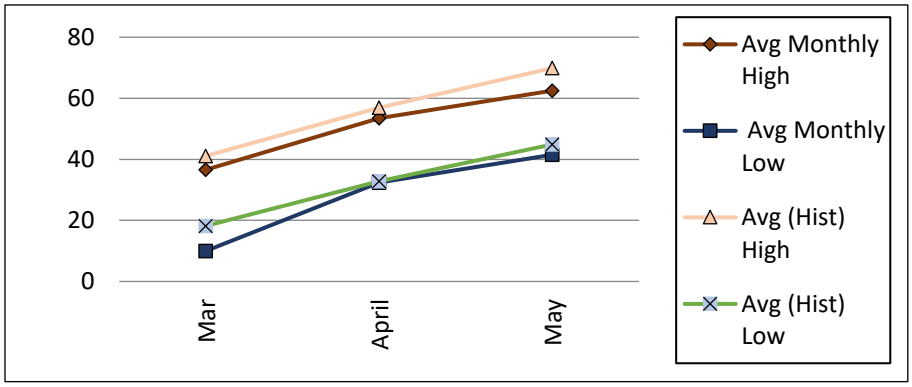
Exhibits F and G were prepared from the information gathered at the site.

Exhibit H is the Off-Site Hydrology Assessment.

IV. CLIMATE DATA

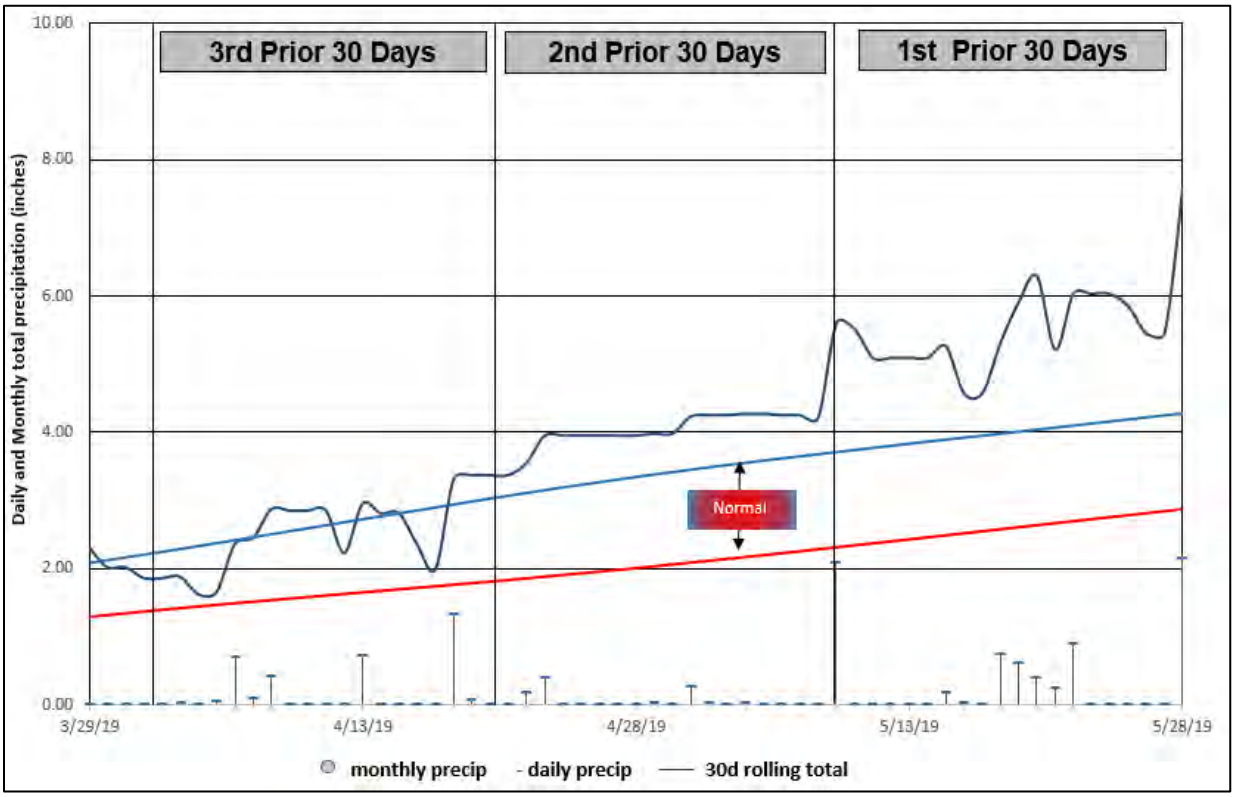
The monthly temperature table below shows the average high and low temperatures for the three months prior to the field delineation, along with the historical averages for these months. The average monthly highs were well below the historic averages for the past three months, while the average monthly lows have also been below the historic averages over the past three months.

MONTHLY TEMPERATURE RANGE



Antecedent precipitation was evaluated using a combination of the NRCS Method and the Rolling Totals Method. The analysis found that precipitation totals have been above normal for the months of April and May.

ANTECEDENT PRECIPITATION CONDITIONS



This climatic data was gathered using the Climatology Working Group Website, http://climate.umn.edu/ and the National Weather Service Forecast Office, http://w2.weather.gov/climate/. The information for the investigation was retrieved from the WETS Station: Washington-Forest Lake-Forest Lake (County–Township-City).

V. FINDINGS

On June 13, 17, and 19 of 2019, a field investigation was performed to evaluate and verify the existence and boundary of any aquatic resources located within the proposed study corridor. Along with a field investigation, an off-site delineation was conducted to identify locations within agricultural field that may possess wetland signatures. Twenty-four years of aerial imagery was reviewed, of which 8 to 11 years were considered to have normal precipitation. Fourteen sites were identified as having potential wetland signatures.

The following describes the percentage of wet hits encountered at each site: (S1) 77%, (S2) 77%, (S3) 88%, (S4) 11%, (S5) 11%, (S6) 0%, (S7) 33%, (S8) 77%, (S9) 66%, (S10) 55%, (S11) 55%, (S12) 55%, (S13a) 77%, (S13b) 66%, (S13c) 44%, (S14) 77, (S15) 77%, (S16) 77%, (S17) 55%, (S18) 88%, (S19) 77%, (S20) 55%, (S21) 77%, and (S22) 77%). According to the off-site hydrology decision matrix, 18 sites required a field visit, all of which were field verified and determined to be wetland.

The field investigation identified that a total of 27 wetlands were found to exist within the study corridor. The following describes the aquatic resources identified, together with a brief description of wetland types and observations made during the field investigation.

Wetland 1 (W1):
NWI Cowardin: PEM1A
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2/3
Field Observation Eggers and Reed: Fresh (wet) Meadow/Shallow Marsh
Soil Mapping Unit(s): Webster loam/Dundas fine sandy loam

Wetland 1 was formally farmed but is now functioning as a fresh (wet) meadow complex. As of 2017, wetland 1 was actively farmed, therefore am offsite hydrology assessment was conducted on the site prior to completing the field delineation.

The field investigation found that wetland (W1) has met all three wetland indicators and should be considered a palustrine emergent persistent saturated wetland (PEM1B) and a palustrine emergent persistent seasonally flooded wetland (PEM1C). Four transects and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

Wetland 1c

Wetland 1e

At the wetland pit locations, the plant communities are dominated by: fox sedge, spike rush, red clover, salix species, and quacking aspen. At the upland pit locations, the plant communities are dominated by: red clover, pig weed, annual fleabane, common plantain, quacking aspen, Kentucky bluegrass, Canada goldenrod, giant goldenrod, and corn. Only the wetland pit plant communities were considered hydrophytic.

Soils at wetland pit location (W1-A) were dug to a depth of 18-inches and met hydric soil indicators A12 – Thick Dark Surface and F6 – Redox Dark Surface. Soils at wetland pit locations (W1-E and W1-G) were dug to approximately 20-inches and met hydric soil indicator A11 – Depleted Below Dark Surface. Soils at wetland pit location (W1-C) were dug to a depth of 9-inches and met hydric soil indicator F3 – Depleted Matrix. Soils at upland pit locations (W1-B, W1-F, and W1-H) were dug to approximately 20-inches and met hydric soil indicator A12. Soils at upland pit location W1-D were dug to a depth of 14-inches and failed to meet any of the hydric soil indicators.

Soils at all wetland pit locations were saturated within 12-inches of the soil surface, with high water tables present at wetland pit locations (W1-C and W1-G). Soils at all wetland pit locations also met secondary hydrology indicators D2 – Geomorphic Position and D5 – FAC Neutral Test. Soils at all upland pit locations failed to meet any wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks and saturated soil boundaries.

Wetland 2 (W2):
NWI Cowardin: PUBF/PEM1A
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2/3
Field Observation Eggers and Reed: Fresh (wet) Meadow/Shallow Marsh
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 2

Wetland 2 is approximately 2-acres in size and appears to have been created to function as a retention basin. Wetland 2 may have also been created for the purpose of self-mitigation related to pass wetland impacts.

The field investigation found that wetland (W2) has met all three wetland indicators and should be considered a PEM1B and PEM1C wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit location, the plant community is dominated by quacking aspen, salix, field horsetail, and reed canary grass. At the upland pit location, the plant community is dominated by red clover, pig weed, annual fleabane, and common plantain. Only the wetland plant community is considered hydrophytic.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 14-inches and met hydric soil indicator A12.

Soils at the wetland pit location were saturated at a depth of 4-inches, with the water table present within 7-inches of the soil surface. Soils at the wetland pit location also met secondary hydrology indicators D2 and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks, red canary grass boundaries, and saturated soil boundaries.

Wetland 3 (W3):
NWI Cowardin: PEM1Af
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 3 is a small farmed wetland located in the northwest corner of the property. Wetland 3 is associated with site two from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W3) has met all three wetland indicators and should be considered a palustrine emergent persistent temporarily flooded wetland (PEM1A). One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 28-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 33-inches and met hydric soil indicator A12.

Soils at the wetland pit location met primary wetland hydrology indicator B7 – Inundation Visible on Aerial Imagery. Soils at the wetland pit location also met secondary hydrology indicators C9 – Saturation Visible on Aerial Imagery and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 3

Wetland 4 (W4):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 4 is a small farmed wetland located in the northwest corner of the property. Wetland 4 was not identified in the off-site hydrology assessment, although meeting all three wetland parameters in the field.

The field investigation found that wetland (W4) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 26-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 30-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary wetland hydrology indicators B6 – Surface Soil Cracking and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 4

Wetland 5 (W5):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Webster loam

Wetland 5

Wetland 5 is a small farmed wetland located in the northwest corner of the property. Wetland 5 is associated with site three from the off-site hydrology assessment, which had eight wet hits in nine normal years, or 88%.

The field investigation found that wetland (W5) has met all three wetland indicators and should be considered a PEM1A. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place due to wet soil conditions. Due to the persistent wet soil conditions water plantain was present at the wetland pit location, therefore vegetation is considered hydrophytic. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 15-inches and met hydric soil indicator F6. Soils at the upland pit location were dug to a depth of 28-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 6 (W6):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Blomford loamy fine sand

Wetland 6

Wetland 6 is a small farmed wetland located in the southwest corner of the property. Wetland 6 is associated with site eight from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 88%.

The field investigation found that wetland (W6) has met all three wetland indicators and should be considered a PEM1A. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 16-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 20-inches and failed to meet any of the hydric soil indicators.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 7 (W7):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 7a

Wetland 7 is medium to large wetland complex located along the southern extent of the study area. A portion of wetland 7 is associated with site nine from the off-site hydrology assessment, which had six wet hits in nine normal years, or 66%. The other portion of wetland 7 is found within remnant forest.

The field investigation found that wetland (W7) has met all three wetland indicators and should be considered a PEM1A and a palustrine forested deciduous temporarily flooded wetland (PFO1A). Four transects and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit locations, the plant communities are dominated by: water plantain, green ash, and box elder. At the upland pit locations, the plant communities are dominated by: annual fleabane, box elder, pig weed, timothy, green ash, Virginia creeper, and common elderberry. All wetland pit plant communities and upland pit plant communities (W7-F and W7-H) were considered hydrophytic.

Soils at all wetland pit locations were dug to depths between 15-inches and 20-inches and met hydric soil indicator A11. Soils at upland pit location (W7-D) were dug to a depth of 12-inches and met hydric soil indicator A11. Soils at upland pit locations (W7-B, W7-F, and W7-H) were dug to depths between 20-inches and 25-inches and met hydric soil indicator A12.

Wetland 7c

Soils at all wetland pit locations were saturated within 12-inches of the soil surface, with the presence of high water tables. Primary hydrology indicators B1 – Water Marks, B8 – Sparsely Vegetated Concave Surface, B9 – Water Stained Leaves were observed at wetland pit locations (W7-E and W7-G). Secondary hydrology indicator C9 was documented at wetland pit locations (W7-A and W7-C). Soils at all wetland pit locations also met secondary hydrology indicators D2 and D5. Soils at all upland pit locations failed to meet any wetland hydrology indicators.

The determining factor for this delineation was the lack of wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks and soil saturation boundaries.

Wetland 8 (W8):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 8

Wetland 8 is a small farmed wetland located in the southcentral portion of the study area. Wetland 8 is associated with site 10 from the off-site hydrology assessment, which had five wet hits in nine normal years, or 55%.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place due to wet soil conditions. Due to the persistent wet soil conditions water plantain and spike rush were present at the wetland pit location, therefore vegetation is considered hydrophytic. The upland pit location is found in an active agricultural field and was recently planted with corn.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 15-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 12-inches and met hydric soil indicator A11.

Soils at the wetland pit location met secondary hydrology indicators B6, D2, and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 9 (W9):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Webster loam

Wetland 9

Wetland 9 is a small farmed wetland located in the southcentral portion of the study area. Wetland 9 is associated with site 11 from the off-site hydrology assessment, which had five wet hits in nine normal years, or 55%.

The field investigation found that wetland (W9) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. Planting has recently taken place at the wetland pit location. Due to the presence of hydric soils and wetland hydrology, hydrophytic vegetation is assumed to be present. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 30-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 40-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators C9 and D2. Soils at the upland

pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 10 (W10):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 10 is a small farmed wetland located in the southcentral portion of the study area. Wetland 10 is associated with site 12 from the off-site hydrology assessment, which had five wet hits in nine normal years, or 55%.

The field investigation found that wetland (W10) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 14-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 16-inches and met hydric soil indicator F6.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 11 (W11):
NWI Cowardin: PEM1A
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1/2
Field Observation Eggers and Reed: Seasonally Flooded Basin/Fresh (wet) Meadow
Soil Mapping Unit(s): Dundas fine sandy loam/Webster loam

Wetland 11 is medium to large wetland complex located along the northern extent of the study area. A portion of wetland 11 is associated with site 14 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%. The other portion of wetland 11 is considered fresh (wet) meadow.

The field investigation found that wetland (W11) has met all three wetland indicators and should be considered a PEM1A and PEM1B wetland. Two transects and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

Wetland 11a

At wetland pit location (W11-A), the plant communities are dominated by giant goldenrod and reed canary grass. Wetland pit location (W11-C) is found in an active agricultural field. Planting has recently taken place at the wetland pit location. Due to the presence of hydric soils and wetland hydrology, hydrophytic vegetation is assumed to be present. At the

upland pit location (W11-B), the plant communities are dominated by Canada goldenrod and Kentucky bluegrass. Upland pit location (W11-D) is found in an active agricultural field and was recently planted with corn. Only the wetland pit plant communities are considered hydrophytic.

Soils at wetland pit location (W11-A) were dug to depth of 12-inches and met hydric soil indicator F3. Soils at wetland pit location (W11-C) were dug to a depth of 19-inches and met hydric soil indictor A11. Soils at upland pit location (W11-B) were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at upland pit location (W11-D) were dug to a depth of 25-inches and met hydric soil indicator A12.

Soils at all wetland pit location (W11-A) were saturated at a depth of 6-inches, with a high water table present. Soils at wetland pit location (W11-C) met secondary hydrology indicators C9 and D2. Soils at all upland pit locations failed to meet any wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks and soil saturation boundaries.

Wetland 12 (W12):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2
Field Observation Eggers and Reed: Fresh (wet) Meadow
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 12 is a small depression located along the northern extent of the study area. The wetland appears to be an isolated depression, functioning as shallow water habitat.

The field investigation found that wetland (W12) has met all three wetland indicators and should be considered a PEM1B wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit location, the plant community is dominated reed canary grass. At the upland pit location, the plant community is dominated by reed canary grass and Kentucky bluegrass. Only the wetland plant community is considered hydrophytic.

Wetland 12

Soils at the wetland pit location were dug to a depth of 30-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 40-inches and met hydric soil indicator A12.

Soils at the wetland pit location were not saturated. Soils at the wetland pit location did meet secondary hydrology indicators D2 and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit location. The boundary was determined by following the topographic breaks and reed canary grass boundaries.

Wetland 13 (W13):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 13 is a small to medium farmed wetland located in the central portion of the study area.

Wetland 13 is associated with site 15 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W13) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. Planting has recently taken place at the wetland pit location. Due to the presence of hydric soils and wetland hydrology, hydrophytic vegetation is assumed to be present. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 37-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 45-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators C9 and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

Wetland 13

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 14 (W14):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam/Bluffton loam

Wetland 14 is a small to medium farmed wetland located in the southcentral portion of the study area. Wetland 14 is associated with site 16 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W14) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 15-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 25-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

Wetland 14

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 15 (W15):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 15

Wetland 15 is a small farmed wetland located in the northcentral portion of the study area. Wetland 15 is associated with site 19 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W15) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. Planting has recently taken place at the wetland pit location. Due to the presence of hydric soils and wetland hydrology, hydrophytic vegetation is assumed to be present. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at the upland pit location were dug to a depth of 12-inches and met hydric soil indicator F6.

Soils at the wetland pit location met secondary hydrology indicators C9 and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 16 (W16):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Nessel fine sandy loam

Wetland 16

Wetland 16 is a small farmed wetland located in the southeasternl portion of the study area. Wetland 16 is associated with site 18 from the off-site hydrology assessment, which had eight wet hits in nine normal years, or 88%.

The field investigation found that wetland (W16) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at the upland pit location were dug to a depth of 15-inches and failed to meet any hydric soil indicators.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of all three wetland indicators at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 17 (W17):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Nessel fine sandy loam

Wetland 17

Wetland 17 is a small farmed wetland located in the southeastern portion of the study area. Wetland 17 is associated with site 18 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W17) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicators A11 and F6. Soils at the upland pit location were dug to a depth of 15-inches and failed to meet any hydric soil indicators.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of all three wetland indicators at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 18 (W18):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Nessel fine sandy loam

Wetland 18

Wetland 18 is a small farmed wetland located along the eastern extent of the study area. Wetland 18 is associated with site 18 from the off-site hydrology assessment, which had five wet hits in nine normal years, or 55%.

The field investigation found that wetland (W18) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to a depth of 17-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 21-inches and met any hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 19 (W19):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 19 is a small to medium farmed wetland located in the southeastern portion of the study area. Wetland 19 is associated with site 17 from the off-site hydrology assessment, which had five wet hits in nine normal years, or 55%.

The field investigation found that wetland (W19) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Wetland 19

Soils at the wetland pit location were dug to a depth of 14-inches and met hydric soil indicators A11 and F6. Soils at the upland pit location were dug to a depth of 22-inches and met hydric soil indicator A12.

Soils at the wetland pit location met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 20 (W20):
NWI Cowardin: PEM1C
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam/Bluffton loam

Wetland 20 is a small to medium farmed wetland located in the southeastern corner of the study area. Wetland 20 is associated with site 22 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%. Wetland 20 looks to drain east into an existing type 2 wetland.

Wetland 20a

The field investigation found that wetland (W20) has met all three wetland indicators and should be considered a PEM1A wetland. Two transects and several

sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit locations are found in an active agricultural field. At this time, planting has not taken place at the wetland pit locations due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit locations were dug to depths between 14-inches and 17-inches and met hydric soil indicator A11. Soils at the upland pit location were dug to a depth of 26-inches and met hydric soil indicator A12.

Soils at both wetland pit locations met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 20c

<u>Wetland 21 (W21):</u>
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2/3
Field Observation Eggers and Reed: Fresh (wet) Meadow/Shallow Marsh
Soil Mapping Unit(s): Webster loam

Wetland 21 is a large wetland complex located in the northeastern corner of the study area. It's composed entirely of shallow water habitat and does extend beyond the study area to the south.

The field investigation found that wetland (W21) has met all three wetland indicators and should be considered a PEM1B and PEM1C wetland. Two transects and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit locations, the plant communities are dominated reed canary grass. At the upland pit locations, the plant communities are dominated by reed canary grass, smooth brome, eastern cottonwood, and Kentucky bluegrass. Only the wetland plant communities are considered hydrophytic.

Soils at wetland pit location (W21-A) were dug to a depth of 12-inches and met hydric soil indicator A3 – Black Histic. Soils at wetland pit location (W21-C) were dug to a depth of 12-inches and met hydric soil indicator F6. Soils at upland pit location (W21-B) were dug to a depth of 17-inches and met hydric soil indicator A11. Soils at upland pit location (W21-D) were dug to a depth of 12-inches and met hydric soil indicator F6.

Soils at wetland pit location (W21-A) were saturated at the surface, with surface water present a depth of 0.5-inches. Soils at tboth wetland pit locations also met secondary hydrology indicators D2 and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks and reed canary grass boundaries.

Wetland 21

Wetland 22 (W22):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2/3
Field Observation Eggers and Reed: Fresh (wet) Meadow/Shallow Marsh
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 22

Wetland 22 is a long depression located along the northern extent of the study area. The wetland may have been created to function as a retention/detention pond after the construction of Headwaters Parkway.

The field investigation found that wetland (W22) has met all three wetland indicators and should be considered a PEM1B and PEM1C wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit location, the plant community is dominated by eastern cottonwood and Kentucky bluegrass. At the upland pit location, the plant community is dominated by Kentucky bluegrass and Canada goldenrod. Only the wetland plant community is considered hydrophytic.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at the upland pit location were dug to a depth of 12-inches and failed to meet any hydric soil indicator A12.

Soils at the wetland pit location were not saturated. Soils at the wetland pit location did meet wetland hydrology indicators B9 and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of all three wetland indicators at the upland pit location. The boundary was determined by following the topographic breaks.

Wetland 23 (W23a) (23b):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2
Field Observation Eggers and Reed: Fresh (wet) Meadow
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 23

Wetland 23 is a road side ditch along the southern extent of Headwaters Parkway. The road ditch has intermittent wet and upland patches, and was delineated as such.

The field investigation found that wetland (W2) has met all three wetland indicators and should be considered a PEM1B wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit location, the plant community is dominated by reed canary grass. At the upland pit location, the plant community is dominated by Kentucky bluegrass and Canada goldenrod. Only the wetland plant community is considered hydrophytic.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at the upland pit location were dug to a depth of 12-inches and failed to meet any hydric soil indicators.

Soils at the wetland pit location were not saturated. Soils at the wetland pit location did meet wetland hydrology indicators B9, D2, and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of all three wetland indicators at the upland pit location. The boundary was determined by following the topographic breaks and reed canary grass boundaries.

Wetland 24 (W24):
NWI Cowardin: PEM1Af
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam/Bluffton loam

Wetland 24

Wetland 24 is a small farmed wetland located along the western extent of the study area. Wetland 24 is associated with site 1 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W24) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has not taken place at the wetland pit location due to wet soil conditions. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to depth 20-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 27-inches and met hydric soil indicator A12.

Soils at both wetland pit locations met secondary hydrology indicators B6, C9, and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit locations. The boundary was determined by following the topographic breaks.

Wetland 25 (W25):
NWI Cowardin: PEM1Af
PWI (Hydro) ID: None
Field Observation Circular 39: Type 1
Field Observation Eggers and Reed: Seasonally Flooded Basin
Soil Mapping Unit(s): Dundas fine sandy loam/Bluffton loam

Wetland 25

Wetland 25 is a small farmed wetland located along the western extent of the study area. Wetland 25 is associated with site 1 from the off-site hydrology assessment, which had seven wet hits in nine normal years, or 77%.

The field investigation found that wetland (W25) has met all three wetland indicators and should be considered a PEM1A wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

The wetland pit location is found in an active agricultural field. At this time, planting has recently taken place at the wetland pit location. Therefore, hydrophytic vegetation is assumed, due to the presence of hydric soils and wetland

hydrology. The upland pit location is found in an active agricultural field and was recently planted with corn.

Soils at the wetland pit location were dug to depth 26-inches and met hydric soil indicator A12. Soils at the upland pit location were dug to a depth of 33-inches and met hydric soil indicator A12.

Soils at both wetland pit locations met secondary hydrology indicators C9 and D2. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of hydrophytic vegetation and wetland hydrology at the upland pit location. The boundary was determined by following the topographic breaks.

Wetland 26 (W26):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Type 2
Field Observation Eggers and Reed: Fresh (wet) Meadow
Soil Mapping Unit(s): Dundas fine sandy loam

Wetland 26 is a small depression located along the northern extent of the study area. The wetland appears to be isolated and may be considered incidental but has not been verified.

The field investigation found that wetland (W26) has met all three wetland indicators and should be considered a PEM1B wetland. One transect and several sample points were taken to determine the wetland boundary. Soils, hydrology and topography aided in determining the wetland boundary.

At the wetland pit location, the plant community is dominated by eastern cottonwood, green ash, reed canary grass, Kentucky bluegrass, and giant goldenrod. At the upland pit location, the plant community is dominated by Kentucky bluegrass and Canada goldenrod. Only the wetland plant community is considered hydrophytic.

Soils at the wetland pit location were dug to a depth of 12-inches and met hydric soil indicator F3. Soils at the upland pit location were dug to a depth of 16-inches and failed to meet any hydric soil indicators.

Soils at the wetland pit location were not saturated. Soils at the wetland pit location did meet wetland hydrology indicators D2 and D5. Soils at the upland pit location failed to meet any of the wetland hydrology indicators.

The determining factor for this delineation was the lack of all three wetland indicators at the upland pit location. The boundary was determined by following the topographic breaks.

Sample Point (SP-1):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Webster loam

Sample point 1 (SP-1) was taken in a small farmed depression and is associated with site 4 from the off-site hydrology review. The sample pit location is found in an active agricultural field, recently planted with corn. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-1) were dug to a depth of 22-inches and met hydric soil indicator A12. Soils at (SP-1) only met secondary hydrology indicator D2. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-2):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Webster loam

Sample point 2 (SP-2) was taken in a small farmed depression and is associated with site 5 from the off-site hydrology review. The sample pit location is found in an active agricultural field, recently planted with corn. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-2) were dug to a depth of 21-inches and met hydric soil indicator A12. Soils at (SP-2) only met secondary hydrology indicator D2. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-3):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Webster loam

Sample point 3 (SP-3) was taken in a small farmed depression and is associated with site 6 from the off-site hydrology review. The sample pit location is found in an active agricultural field, recently planted with corn. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-3) were dug to a depth of 24-inches and met hydric soil indicator A12. Soils at (SP-3) only met secondary hydrology indicator D2. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-4):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 4 (SP-4) was taken in a concave depression associated with wetland 2. Vegetation at the sample pit location was dominated by Kentucky bluegrass and Canada goldenrod. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-4) were dug to a depth of 15-inches and failed to meet any hydric soil indicators. Soils at (SP-4) failed to meet any wetland hydrology indicators. The determining factor for this investigation was the lack of all three wetland indicators at the sample pit location.

Sample Point (SP-5):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 5 (SP-5) was taken to prove the existence of and upland island found within wetland 1. Vegetation at the sample pit location was dominated by red clover. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-5) were dug to a depth of 25-inches and met hydric soil indicator A12. Soils at (SP-5) failed to meet any wetland hydrology indicators. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-6):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 6 (SP-6) was taken in a small farmed depression and is associated with site 8 from the off-site hydrology review. Vegetation at the sample pit location is dominated by red clover. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-6) were dug to a depth of 25-inches and met hydric soil indicator A12. Soils at (SP-6) only met secondary hydrology indicator D2. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-7):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 7 (SP-7) was taken to locate the extents of wetland 7. Vegetation at the sample pit location is dominated pig weed and Canada goldenrod. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-7) were dug to a depth of 17-inches and met hydric soil indicator A11. Soils at (SP-7) failed to meet any wetland hydrology indicators. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-8):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 8 (SP-8) was taken to display the disconnect between wetlands 14 and wetland 7. Vegetation at the sample pit location is dominated box elder, common buckthorn, common elderberry, Virginia creeper, and burdock . Therefore, hydrophytic vegetation is considered absent. Soils at (SP-8) were dug to a depth of 13-inches and met hydric soil indicator F6. Soils at (SP-8) failed to meet any wetland hydrology indicators. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-9):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Dundas fine sandy loam

Sample point 9 (SP-9) was taken to display the upland between W23a and W23b. Vegetation at the sample pit location is dominated red clover and Kentucky bluegrass. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-9) were dug to a depth of 8-inches when aa restrictive layer was observed. Hydric soils are assumed to be absent due to the lack of hydrophytic vegetation and wetland hydrology. Soils at (SP-9) only met secondary hydrology indicator D2.

The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

Sample Point (SP-10):
NWI Cowardin: None
PWI (Hydro) ID: None
Field Observation Circular 39: Upland
Field Observation Eggers and Reed: Upland
Soil Mapping Unit(s): Webster loam

Sample point 10 (SP-10) was taken in a small farmed depression and is associated with site 7 from the off-site hydrology review. The sample pit location is found in an active agricultural field, recently planted with corn. Therefore, hydrophytic vegetation is considered absent. Soils at (SP-10) were dug to a depth of 28-inches and met hydric soil indicator A12. Soils at (SP-3) only met secondary hydrology indicator D2. The determining factor for this investigation was the lack of hydrophytic vegetation and wetland hydrology at the sample pit location.

VI. CONCLUSION

This delineation was performed on June 13, 17, and 19 of 2019. The boundaries of the wetlands were staked in the field with three foot "Wetland Delineation" pin flags. The location of the pin flags were surveyed by Bolton & Menk, Inc. using a Trimble Geo-XH GPS Data Collector and tied to the Washington County coordinate system. The delineated limits are believed to be the upper limits of where all three of the required wetland criteria were present.

Bolton & Menk, Inc., was asked to determine the boundaries of those jurisdictional wetlands that exist upon this property as defined by the Wetland Conservation Act.

Based upon all available information, the existing conditions that currently prevail, and the on-site investigation, evidence supports the presence of 27 wetlands within the boundaries of the study corridor.

WETLAND SUMMARY

Id #	Wetland Type^	Size*
W1	Type 2/3	**3.94 ac**
W2	Type 2/3	**1.83 ac**
W3	Type 1	**0.25 ac**
W4	Type 1	**0.06 ac**
W5	Type 1	**0.14 ac**
W6	Type 1	**0.09 ac**
W7	Type 1	**2.29 ac**
W8	Type 1	**0.29 ac**
W9	Type 1	**0.11 ac**
W10	Type 1	**0.09 ac**
W11	Type 1/2	**0.53 ac**
W12	Type 2	**0.15 ac**
W13	Type 1	**0.36 ac**

Id #	Wetland Type^	Size*
W14	Type 1	**0.88 ac**
W15	Type 1	**0.11 ac**
W16	Type 1	**0.08 ac**
W17	Type 1	**0.16 ac**
W18	Type 1	**0.14 ac**
W19	Type 1	**0.62 ac**
W20	Type 1	**0.85 ac**
W21	Type 2/3	**3.53 ac**
W22	Type 2/3	**0.36 ac**
W23a	Type 2	**0.04 ac**
W23b	Type 2	**0.01 ac**
W24	Type 1	**0.29 ac**
W25	Type 1	**0.25 ac**
W26	Type 2	**0.07 ac**

**size measured within study area.*
^wetland type within study area

Sincerely,
BOLTON & MENK, INC.

Brandon Bohks
Certified Wetland Delineator in Training, No. 5231

APPENDIX

Forest Lake
AS GOOD AS IT SOUNDS

Headwaters Parkway

July, 2013

Exhibit A: Location Map

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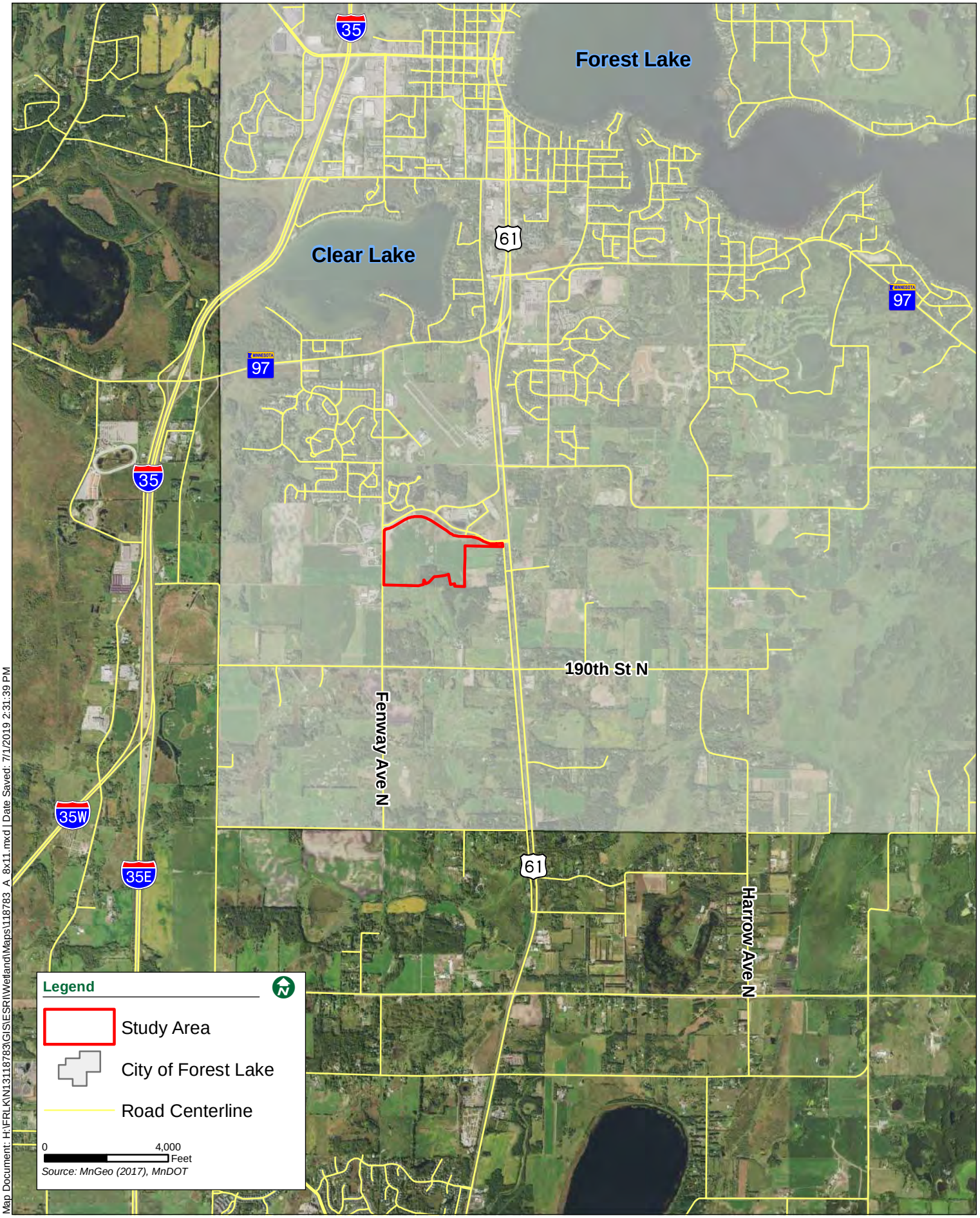

Map Document: H:\FRLK\N1311878\3\GIS\ESRI\Wetland\Maps\118783_A_8x11.mxd | Date Saved: 7/1/2019 2:31:39 PM

Forest Lake
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Headwaters Parkway

July, 2013

Exhibit B: 2-Foot LiDAR Contours

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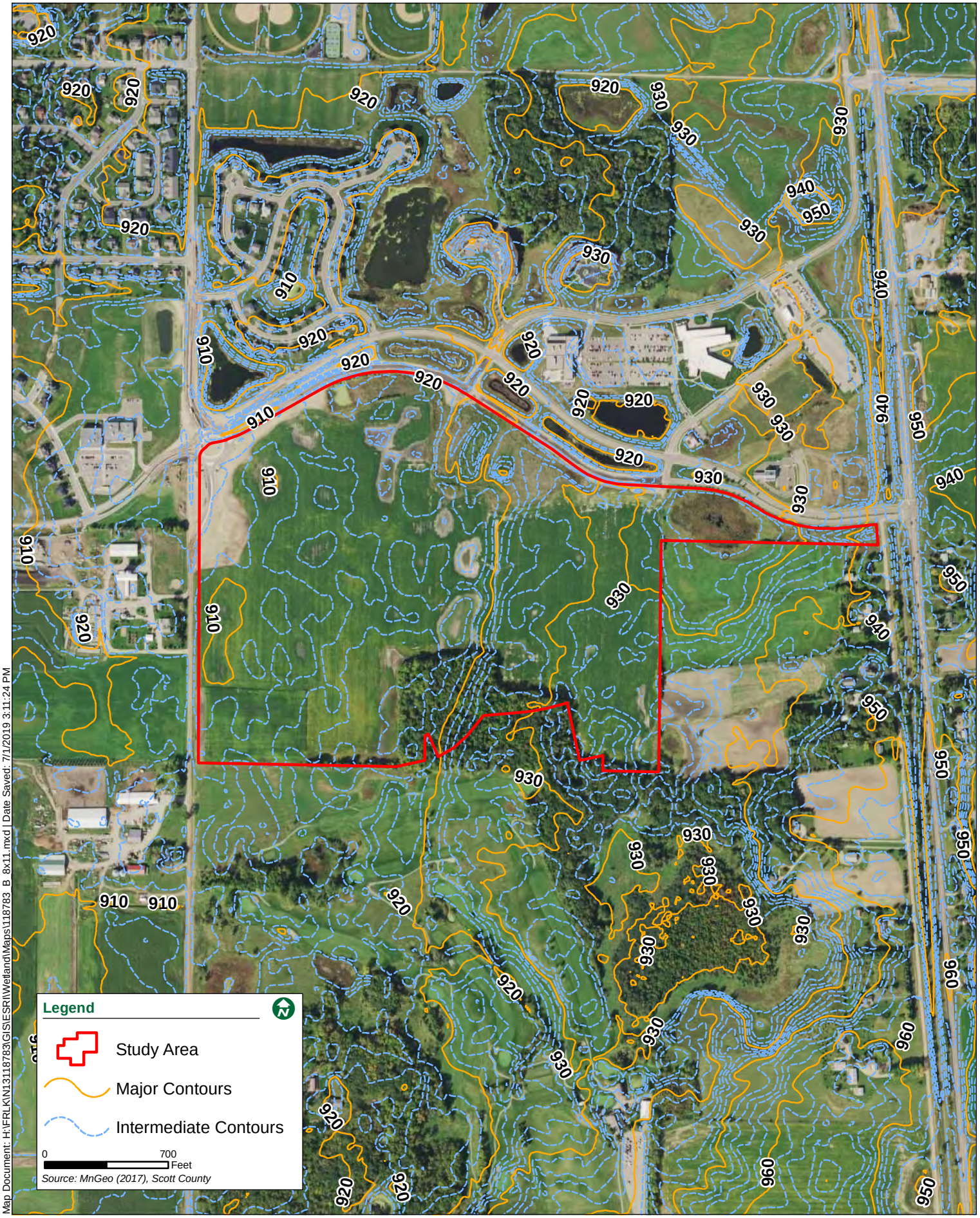

Forest Lake
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Headwaters Parkway

July, 2013

Exhibit C: National Wetland Inventory

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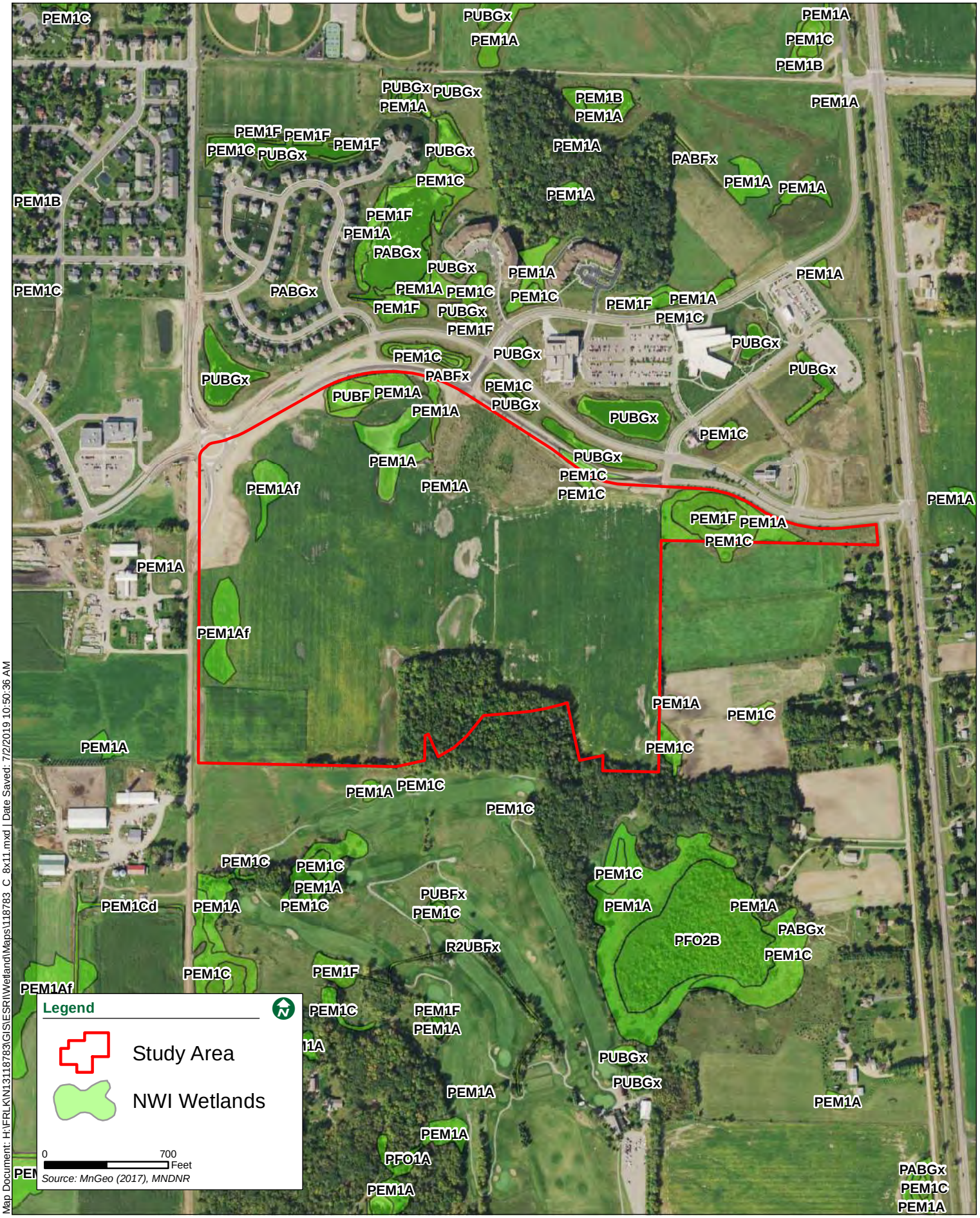

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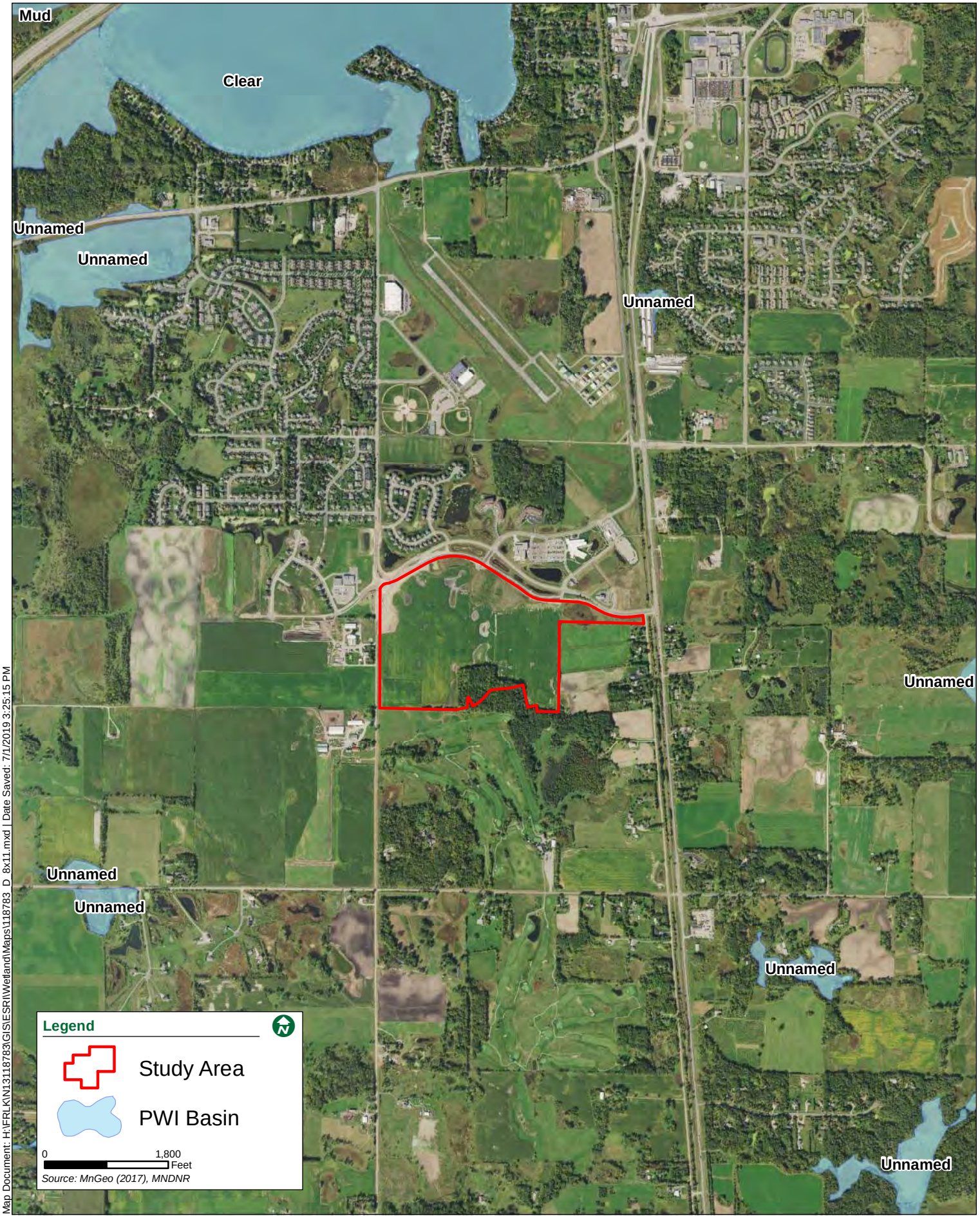

Forest Lake
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Headwaters Parkway

July, 2013

Exhibit E: Washington County Soil Survey

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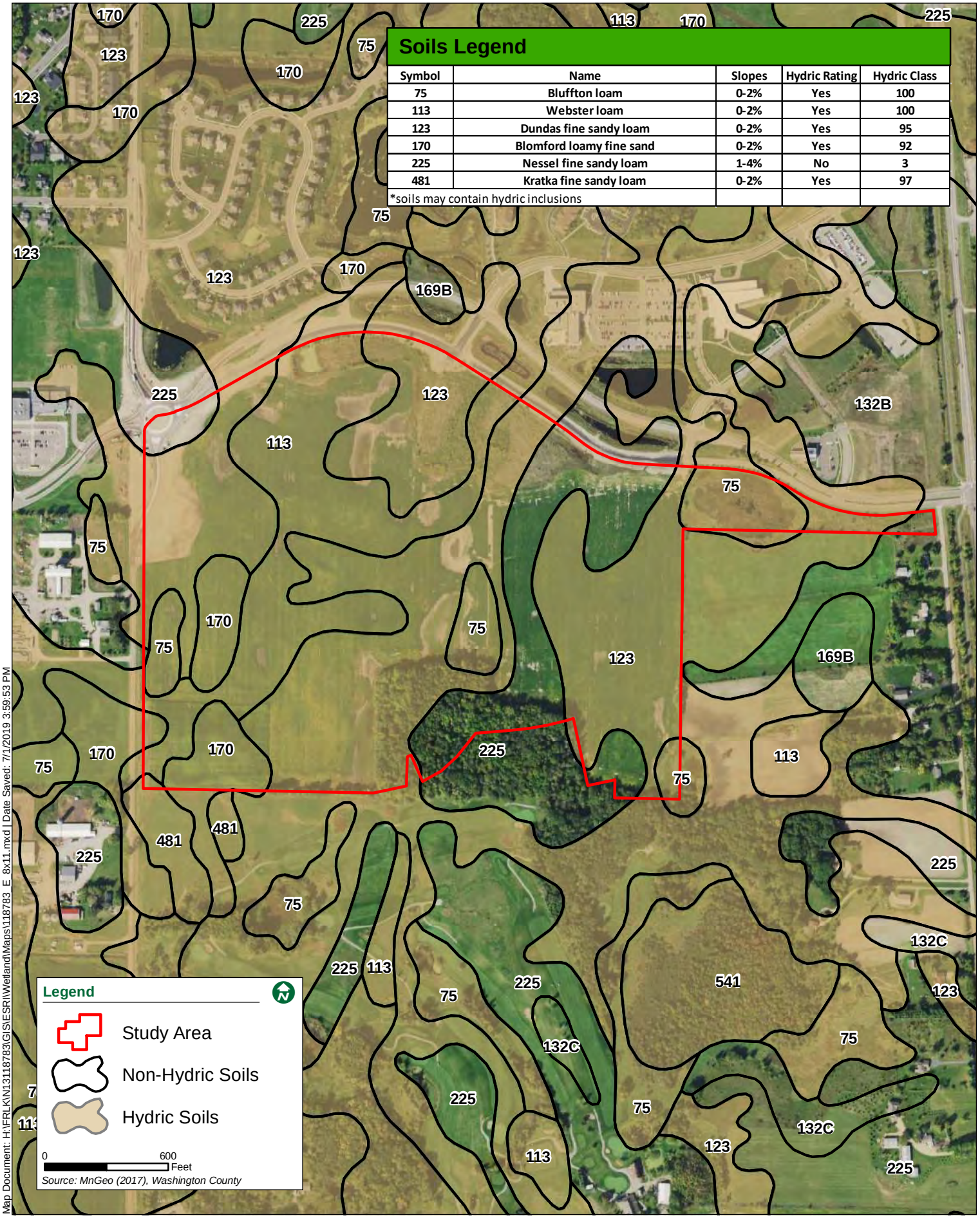

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Forest Lake
AS GOOD AS IT SOUNDS

Headwaters Parkway

July, 2019

Exhibit F1: Delineated Aquatic Resources (Overview)

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Map Document: H:\FRLK\N13118783\GIS\ESRIWetland\Maps\118783_F1_11x17.mxd | Date Saved: 9/19/2019 10:22:35 AM

Forest Lake
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Headwaters Parkway

July, 2019

Exhibit F2a: Delineated Aquatic Resources

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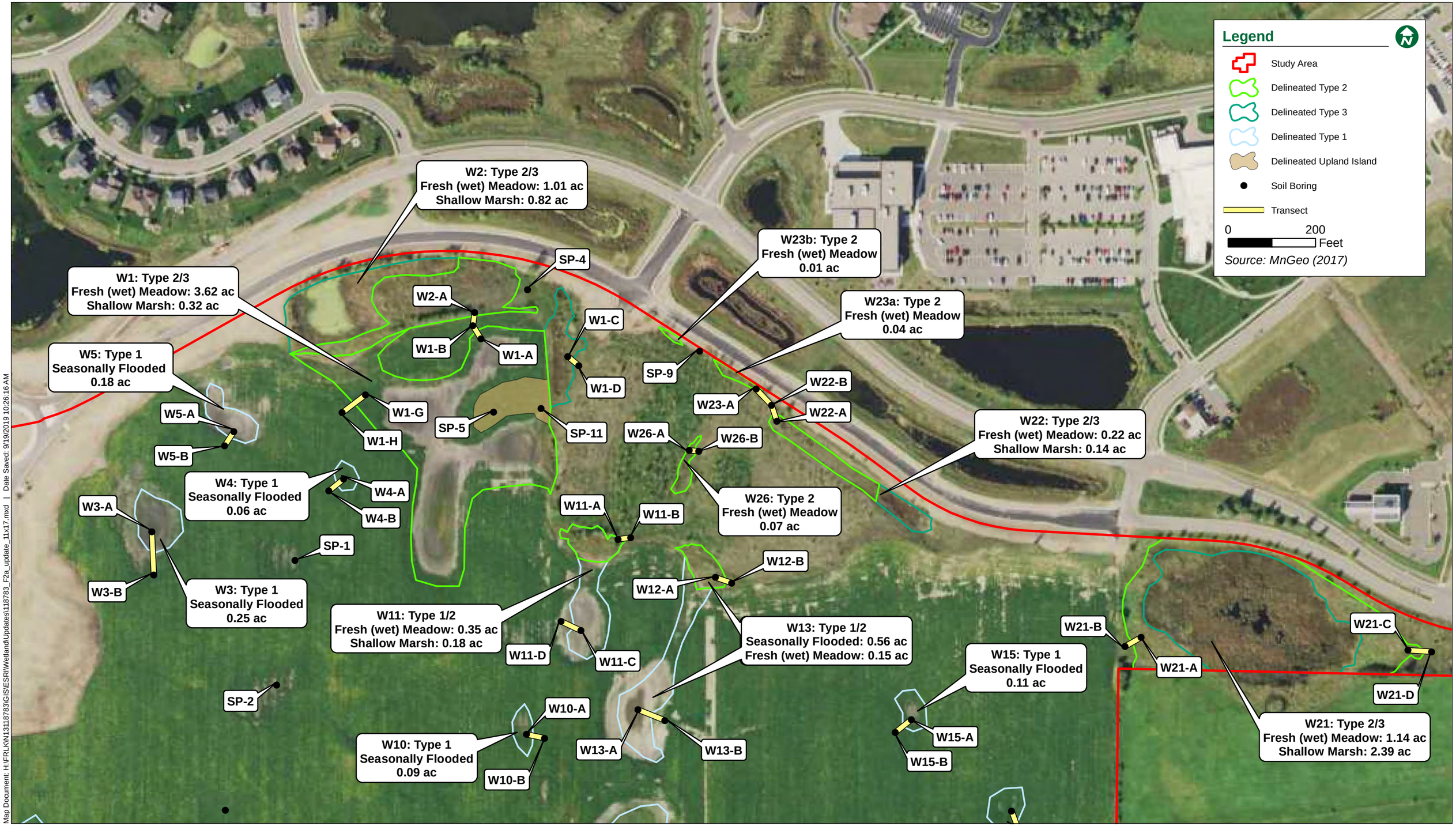

Forest Lake
AS GOOD AS IT SOUNDS

Headwaters Parkway

July, 2019

Exhibit F2b: Delineated Aquatic Resources

BOLTON & MENK
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W24: Type 1 Seasonally Flooded 0.29 ac
SP-3
W14: Type 1 Seasonally Flooded 0.88 ac
W16: Type 1 Seasonally Flooded 0.08 ac
W18: Type 1 Seasonally Flooded 0.14 ac
W24-A
W24-B
W9: Type 1 Seasonally Flooded 0.11 ac
W9-A
W9-B
W14-A
W14-B
W16-A
W16-B
W18-A
W18-B
SP-10
W19-B
W25-B
W8-A
W8: Type 1 Seasonally Flooded 0.29 ac
W19-A
W17-B
W17-A
W17: Type 1 Seasonally Flooded 0.16 ac
W25-A
W7-G
SP-8
W7-D
W7-H
W19: Type 1 Seasonally Flooded 0.62 ac
W25: Type 1 Seasonally Flooded 0.25 ac
W7-C
W20-C
W7: Type 1/7 Seasonally Flooded Ag: 0.93 ac Wooded Swamp: 1.36 ac
W7-A
W20-B
W7-E
W6: Type 1 Seasonally Flooded 0.09 ac
W7-B
W7-F
SP-6
W6-B
W20-A
SP-7
W6-A
W12: Type 1 Seasonally Flooded 0.05 ac
W20: Type 1/2 Seasonally Flooded: 0.79 ac Fresh (wet) Meadow: 0.06 ac

Legend

- Study Area
- Delineated Type 1
- Delineated Type 2
- Delineated Type 3
- Delineated Type 7
- Drainage Feature
- Soil Boring
- Transect

0 200 Feet

Source: MnGeo (2017)

Map Document: H:\FRLK\N131\118783\GIS\ESRI\Wetland\Updates\118783_F2b_update_11x17.mxd | Date Saved: 9/19/2019 10:31:56 AM

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Carex vulpinoidea**	**40**	**Yes**	**OBL**
2 **Eleocharis species**	**25**	**Yes**	**FACW**
3 **Schoenoplectus tabernaemontani**	**25**	**Yes**	**OBL**
4 **Schoenoplectus species**	**10**	**No**	**FACW**
5 **Erigeron annuus**	**10**	**No**	**FACU**
6 **Trifolium pretense**	**8**	**No**	**FACU**
7			
8			
9			
10			
	118	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	23.6	59
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **3** (A)

Total number of dominant species across all strata: **3** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**65**	x 1 =	**65**
FACW Species:	**35**	x 2 =	**70**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**18**	x 4 =	**72**
UPL Species:	**0**	x 5 =	**0**
Totals:	**118** (A)		**207** (B)

Prevalence Index (B/A): **1.75**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	**10YR 2/1**	**100**					**Clay Loam**	
6-12	**10YR 2/1**	**75**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	
12-18+	**10YR 5/1**	**60**	**7.5YR 4/6**	**40**			**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 18-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**No**	Depth (inches):	**14**
Saturation Present?	**Yes**	Depth (inches):	**10**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**
Hydric soils present?	**Yes**
Wetland hydrology present?	**No**
Is the sampled area within a wetland?	**No**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Trifolium pretense**	**35**	**Yes**	**FACU**
2 **Amranthus retroflexus**	**30**	**Yes**	**FACU**
3 **Erigeron annuus**	**25**	**Yes**	**FACU**
4 **Plantago major**	**25**	**Yes**	**FACU**
5 **Melilotus officinalis**	**10**	**No**	**FACU**
6			
7			
8			
9			
10			
	125	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	25	62.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **4** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**125**	x 4 =	**500**
UPL Species:	**0**	x 5 =	**0**
Totals:	**125** (A)		**500** (B)

Prevalence Index (B/A): **4.00**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Clay Loam**	
14-20+	**10YR 41**	**70**	**7.5YR 4/6**	**30**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 14-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-C**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Salix species**	**20**	**Yes**	**FAC**
2 **Populus tremuloides**	**8**	**Yes**	**FAC**
3			
4			
5			
	28	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Eleocharis species**	**45**	**Yes**	**FACW**
2 **Carex species**	**35**	**Yes**	**FACW**
3 **Phalaris arundinacea**	**15**	**No**	**FACW**
4 **Solidago gigantea**	**5**	**No**	**FACW**
5 **Typha species**	**2**	**No**	**OBL**
6			
7			
8			
9			
10			
	102	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	5.6	14
Herb Stratum	20.4	51
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **4** (A)

Total number of dominant species across all strata: **4** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**2**	x 1 =	**2**
FACW Species:	**100**	x 2 =	**200**
FAC Species:	**28**	x 3 =	**84**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**130** (A)		**286** (B)

Prevalence Index (B/A): **2.20**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-C**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-9+	**Gley 2 5/10G**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 9-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**4**
Saturation Present?	**Yes**	Depth (inches):	**Surface**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-D**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Terrace** Local Relief (concave, convex, none): **Linear** Slope (%): **1-3**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Populus tremuloides**	**10**	**Yes**	**FAC**
2			
3			
4			
5			
	10	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Poa pratensis**	**30**	**Yes**	**FACU**
2 **Solidago canadensis**	**30**	**Yes**	**FACU**
3 **Solidago gigantea**	**20**	**Yes**	**FACW**
4 **Trifolium repens**	**5**	**No**	**FACU**
5			
6			
7			
8			
9			
10			
	85	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	2	5
Herb Stratum	17	42.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **4** (B)

Percent of dominant species that are OBL, FACW or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**20**	x 2 =	**40**
FAC Species:	**10**	x 3 =	**30**
FACU species:	**65**	x 4 =	**260**
UPL Species:	**0**	x 5 =	**0**
Totals:	**95** (A)		**330** (B)

Prevalence Index (B/A): **3.47**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-D**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	**10YR 2/2**	**100**					**Clay Loam**	
4-14+	**10YR 4/3**	**100**					**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to a depth of 14-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-E**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Carex vulpinoidea**	**70**	**Yes**	**OBL**
2 **Trifolium pretense**	**35**	**Yes**	**FACU**
3 **Erigeron annuus**	**10**	**No**	**FACU**
4 **Eleocharis species**	**8**	**No**	**FACW**
5			
6			
7			
8			
9			
10			
	123 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	24.6	61.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**70**	x 1 =	**70**
FACW Species:	**8**	x 2 =	**16**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**45**	x 4 =	**180**
UPL Species:	**0**	x 5 =	**0**
Totals:	**123** (A)		**266** (B)

Prevalence Index (B/A): **2.16**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-E**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	**10YR 2/1**	**100**					**Clay Loam**	
10-19	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 19-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**No**	Depth (inches):	**16**
Saturation Present?	**Yes**	Depth (inches):	**12**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-F**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Terrace** Local Relief (concave, convex, none): **Linear** Slope (%): **4-7**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Trifolium pretense**	**40**	**Yes**	**FACU**
2 **Erigeron annuus**	**35**	**Yes**	**FACU**
3 **Amaranthus retroflexus**	**15**	**No**	**FACU**
4 **Melilotus officinalis**	**10**	**No**	**FACU**
5 **Carex vulpinoidea**	**8**	**No**	**OBL**
6 **Ambrosia trifida**	**5**	**No**	**FAC**
7			
8			
9			
10			
	113	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22.6	56.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**8**	x 1 =	**8**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**5**	x 3 =	**15**
FACU species:	**100**	x 4 =	**400**
UPL Species:	**0**	x 5 =	**0**
Totals:	**113** (A)		**423** (B)

Prevalence Index (B/A): **3.74**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-F**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	**10YR 2/1**	**100**					**Clay Loam**	
16-22+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 22-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-G**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **PEM1A**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Carex vulpinoidea**	**90**	**Yes**	**OBL**
2 **Schoenoplectus tabernaemontani**	**8**	**No**	**OBL**
3 **Populus tremuloides**	**7**	**No**	**FAC**
4 **Salix exigua**	**4**	**No**	**FACW**
5			
6			
7			
8			
9			
10			
	109	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	21.8	54.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**98**	x 1 =	**98**
FACW Species:	**4**	x 2 =	**8**
FAC Species:	**7**	x 3 =	**21**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**109** (A)		**127** (B)

Prevalence Index (B/A): **1.17**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-G**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/1**	**100**					**Clay Loam**	
7-15+	**10YR 5/1**	**70**	**7.5YR 4/6**	**30**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**9**
Saturation Present?	**Yes**	Depth (inches):	**4**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W1-H**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W1-H**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-17	**10YR 2/1**	**100**					**Clay Loam**	
17-24+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 24-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W2-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Populus tremuloides**	**20**	**Yes**	**FAC**
2			
3			
4			
5			
	20 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Salix species**	**20**	**Yes**	**FAC**
2 **Populus tremuloides**	**10**	**Yes**	**FAC**
3			
4			
5			
	30 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Equisetum arvense**	**55**	**Yes**	**FAC**
2 **Phalaris arundinacea**	**30**	**Yes**	**FACW**
3 **Salix species**	**15**	**No**	**FAC**
4			
5			
6			
7			
8			
9			
10			
	100 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	4	10
Sapling/Shrub Stratum	6	15
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **5** (A)

Total number of dominant species across all strata: **5** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**30**	x 2 =	**60**
FAC Species:	**120**	x 3 =	**360**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**150** (A)		**420** (B)

Prevalence Index (B/A): **2.80**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W2-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	**10YR 2/1**	**100**					**Sandy Clay Loam**	
4-12+	**10YR 5/1**	**95**	**7.5YR 4/6**	**5**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**No**	Depth (inches):	**7**
Saturation Present?	**Yes**	Depth (inches):	**4**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W3-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **PEM1Af**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W3-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	**10YR 2/1**	**100**					**Clay Loam**	
18-28	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	
18-35+	**10YR 6/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 35-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- **X** Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W3-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **2-4**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

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

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

Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W3-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-25	**10YR 2/1**	**100**					**Clay Loam**	
25-33+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 33-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W4-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not wet planted, due to wet soil conditions.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W4-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**100**					**Clay Loam**	
15-21	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	
21-26+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 26-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W4-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W4-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-23	**10YR 2/1**	**100**					**Clay Loam**	
23-30+	**10YR 5/1**	**95**	**7.5YR 4/6**	**5**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 30-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W5-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not yet planted, due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Alisma triviale**	**10**	**Yes**	**OBL**
2			
3			
4			
5			
6			
7			
8			
9			
10			
	10 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	2	5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**10**	x 1 =	**10**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**10** (A)		**10** (B)

Prevalence Index (B/A): **1.00**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W5-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- **X** Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W5-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W5-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-22	**10YR 2/1**	**100**					**Silty Clay Loam**	
23-28+	**10YR 5/1**	**95**	**7.5YR 4/6**	**5**	**MS**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 28-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W6-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Blomford loamy fine sand** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not yet planted, due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W6-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-9	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	
9-16+	**10YR 4/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Silty Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 16-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W6-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **6-10**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Blomford loamy fine sand** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W6-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**100**					**Silty Clay Loam**	
15-20+	**10YR 3/2**	**100**						

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to a depth of 20-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not yet planted, due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Alisma triviale**	**60**	**Yes**	**OBL**
2 **Phalaris arundinacea**	**10**	**No**	**FACW**
3 **Carex species**	**5**	**No**	**FACW**
4			
5			
6			
7			
8			
9			
10			
	75	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	15	37.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**60**	x 1 =	**60**
FACW Species:	**15**	x 2 =	**30**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**75** (A)		**90** (B)

Prevalence Index (B/A): **1.20**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-5	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	
5-15+	**10YR 5/1**	**60**	**7.5YR 4/6**	**40**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**7**
Saturation Present?	**Yes**	Depth (inches):	**3**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Erigeron annuus**	**45**	**Yes**	**FACU**
2 **Amaranthus retroflexus**	**12**	**No**	**FACU**
3			
4			
5			
6			
7			
8			
9			
10			
	57	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	11.4	28.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**57**	x 4 =	**228**
UPL Species:	**0**	x 5 =	**0**
Totals:	**57** (A)		**228** (B)

Prevalence Index (B/A): **4.00**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field not yet planted.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	**10YR 2/1**	**100**					**Sandy Clay Loam**	
16-23+	**10YR 4/1**	**90**	**10YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 23-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-C**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not yet planted, due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Alisma triviale**	**55**	**Yes**	**OBL**
2 **Carex species**	**12**	**No**	**FACW**
3 **Typha species**	**8**	**No**	**OBL**
4 **Salix exigua**	**5**	**No**	**FACW**
5 **Schoenoplectus tabernaemontani**	**5**	**No**	**OBL**
6			
7			
8			
9			
10			
	85 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

Remarks:

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	17	42.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**68**	x 1 =	**68**
FACW Species:	**17**	x 2 =	**34**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**85** (A)		**102** (B)

Prevalence Index (B/A): **1.20**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-C**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	**10YR 2/1**	**100**					**Clay Loam**	
8-18+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 18-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**8**
Saturation Present?	**Yes**	Depth (inches):	**5**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-D**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-8**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Acer negundo**	**25**	**Yes**	**FAC**
2 **Amaranthus retroflexus**	**10**	**Yes**	**FACU**
3 **Phleum pratense**	**10**	**Yes**	**FACU**
4			
5			
6			
7			
8			
9			
10			
	45	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	9	22.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **3** (B)

Percent of dominant species that are OBL, FACW or FAC: **33%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**25**	x 3 =	**75**
FACU species:	**20**	x 4 =	**80**
UPL Species:	**0**	x 5 =	**0**
Totals:	**45** (A)		**155** (B)

Prevalence Index (B/A): **3.44**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field not yet planted.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-D**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	**10YR 2/1**	**100**					**Sandy Clay Loam**	
4-12+	**10YR 4/1**	**90**	**10YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-E**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Fraxinus pennsylvanica**	**30**	**Yes**	**FACW**
2 **Acer negundo**	**20**	**Yes**	**FAC**
3			
4			
5			
	50	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	10	25
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**30**	x 2 =	**60**
FAC Species:	**20**	x 3 =	**60**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**50** (A)		**120** (B)

Prevalence Index (B/A): **2.40**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Unvegatated concave surface**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-E**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**100**					**Clay Loam**	
15-21+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 21-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**9**
Saturation Present?	**Yes**	Depth (inches):	**6**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-F**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Acer negundo**	**60**	**Yes**	**FAC**
2 **Fraxinus pennsylvanica**	**45**	**Yes**	**FACW**
3			
4			
5			
	105	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Acer negundo**	**15**	**Yes**	**FAC**
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Parthenocissus quinquefolia**	**15**	**Yes**	**FACU**
2 **Sambucus canadensis**	**8**	**Yes**	**FACU**
3			
4			
5			
6			
7			
8			
9			
10			
	23	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	21	52.5
Sapling/Shrub Stratum	3	7.5
Herb Stratum	4.6	11.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **3** (A)

Total number of dominant species across all strata: **5** (B)

Percent of dominant species that are OBL, FACW or FAC: **60%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**45**	x 2 =	**90**
FAC Species:	**75**	x 3 =	**225**
FACU species:	**23**	x 4 =	**92**
UPL Species:	**0**	x 5 =	**0**
Totals:	**143** (A)		**407** (B)

Prevalence Index (B/A): **2.85**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field not yet planted.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-F**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**100**					**Sandy Clay Loam**	
15-22+	**10YR 4/1**	**80**	**10YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 22-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**No**	Depth (inches):	**19**
Saturation Present?	**No**	Depth (inches):	**15**

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-G**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation ____, soils ____, or hydrology ____ significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation ____, soils ____, or hydrology ____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Fraxinus pennsylvanica**	**45**	**Yes**	**FACW**
2 **Acer negundo**	**25**	**Yes**	**FAC**
3			
4			
5			
	70	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Acer negundo**	**15**	**Yes**	**FAC**
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	14	35
Sapling/Shrub Stratum	3	7.5
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **3** (A)

Total number of dominant species across all strata: **3** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**45**	x 2 =	**90**
FAC Species:	**40**	x 3 =	**120**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**85** (A)		**210** (B)

Prevalence Index (B/A): **2.47**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- ____ Morphological adaptations* (Provide supporting data in remarks)
- ____ Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Unvegatated concave surface**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-G**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-9	**10YR 2/1**	**100**					**Clay Loam**	
9-17+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 17-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**5**
Saturation Present?	**Yes**	Depth (inches):	**3**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W7-H**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Acer negundo**	**75**	**Yes**	**FAC**
2 **Fraxinus pennsylvanica**	**35**	**Yes**	**FACW**
3			
4			
5			
	110	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Acer negundo**	**20**	**Yes**	**FAC**
2			
3			
4			
5			
	20	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Acer negundo**	**30**	**Yes**	**FAC**
2 **Parthenocissus quinquefolia**	**12**	**Yes**	**FACU**
3			
4			
5			
6			
7			
8			
9			
10			
	42	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	22	55
Sapling/Shrub Stratum	4	10
Herb Stratum	8.4	21
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **3** (A)

Total number of dominant species across all strata: **5** (B)

Percent of dominant species that are OBL, FACW or FAC: **60%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**35**	x 2 =	**70**
FAC Species:	**125**	x 3 =	**375**
FACU species:	**12**	x 4 =	**48**
UPL Species:	**0**	x 5 =	**0**
Totals:	**172** (A)		**493** (B)

Prevalence Index (B/A): **2.87**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field not yet planted.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W7-H**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Sandy Clay Loam**	
14-26+	**10YR 5/1**	**70**	**10YR 4/6**	**30**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 26-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? **No** Depth (inches): **22**

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W8-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field not yet planted, due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Alisma triviale**	**70**	**Yes**	**OBL**
2 **Eleocharis species**	**35**	**Yes**	**FACW**
3			
4			
5			
6			
7			
8			
9			
10			
	105 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	21	52.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**70**	x 1 =	**70**
FACW Species:	**35**	x 2 =	**70**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**105** (A)		**140** (B)

Prevalence Index (B/A): **1.33**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W8-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-3	**10YR 2/1**	**100**					**Sandy Clay Loam**	
3-15+	**10YR 4/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? **Yes** Depth (inches): **11**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W9-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W9-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-22	**10YR 2/1**	**100**					**Sandy Clay Loam**	
22-30+	**10YR 4/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 30-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W9-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **5-8**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W9-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-30	**10YR 2/1**	**100**					**Silty Clay Loam**	
30-40+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to a depth of 40-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W10-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted due to wet soil conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W10-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/1**	**100**					**Silty Clay**	
7-14+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 14-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W10-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W10-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	**10YR 2/1**	**100**					**Sandy Clay**	
8-16+	**10YR 2/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 16-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W11-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Solidago gigantea**	**45**	**Yes**	**FACW**
2 **Phalaris arundinacea**	**35**	**Yes**	**FACW**
3 **Equisetum arvense**	**20**	**No**	**FAC**
4 **Poa pratensis**	**15**	**No**	**FACU**
5 **Typha species**	**10**	**No**	**OBL**
6			
7			
8			
9			
10			
	125	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	25	62.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**10**	x 1 =	**10**
FACW Species:	**80**	x 2 =	**160**
FAC Species:	**20**	x 3 =	**60**
FACU species:	**15**	x 4 =	**60**
UPL Species:	**0**	x 5 =	**0**
Totals:	**125** (A)		**290** (B)

Prevalence Index (B/A): **2.32**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W11-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 5/1**	**100**					**Silty Clay**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**Yes**	Depth (inches):	**9**
Saturation Present?	**Yes**	Depth (inches):	**6**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W11-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression/Ditch** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Solidago canadensis**	**45**	**Yes**	**FACU**
2 **Poa pratensis**	**30**	**Yes**	**FACU**
3 **Phalaris arundinacea**	**20**	**No**	**FACW**
4 **Solidago gigantea**	**20**	**No**	**FACW**
5 **Asclepias syriaca**	**10**	**No**	**FACU**
6 **Trifolium pretense**	**5**	**No**	**FACU**
7 **Erigeron annuus**	**5**	**No**	**FACU**
8			
9			
10			
	135	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	27	67.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**40**	x 2 =	**80**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**95**	x 4 =	**380**
UPL Species:	**0**	x 5 =	**0**
Totals:	**135** (A)		**460** (B)

Prevalence Index (B/A): **3.41**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W11-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W11-C**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webste loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W11-C**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-11	**10YR 2/1**	**100**					**Clay Loam**	
11-19+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 19-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W11-D**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W11-D**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-17	**10YR 2/1**	**100**					**Clay Loam**	
17-25+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 25-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W12-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **PEM1A**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation ____, soils ____, or hydrology ____ significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation ____, soils ____, or hydrology ____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**85**	**Yes**	**FACW**
2 **Solidago gigantea**	**10**	**No**	**FACW**
3 **Urtica dioica**	**8**	**No**	**FACW**
4			
5			
6			
7			
8			
9			
10			
	103	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20.6	51.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**103**	x 2 =	**206**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**103** (A)		**206** (B)

Prevalence Index (B/A): **2.00**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- ____ Morphological adaptations* (Provide supporting data in remarks)
- ____ Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W12-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-22	**10YR 2/1**	**100**					**Clay Loam**	
22-30+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 30-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ _____

Saturation Present? _____ _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W12-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-7**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**40**	**Yes**	**FACW**
2 **Poa pratensis**	**30**	**Yes**	**FACU**
3 **Solidago canadensis**	**20**	**No**	**FACU**
4 **Bromus inermis**	**10**	**No**	**FACU**
5 **Solidago gigantea**	**5**	**No**	**FACW**
6			
7			
8			
9			
10			
	105	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	21	52.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**45**	x 2 =	**90**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**60**	x 4 =	**240**
UPL Species:	**0**	x 5 =	**0**
Totals:	**105** (A)		**330** (B)

Prevalence Index (B/A): **3.14**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W12-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-30	**10YR 2/1**	**100**					**Clay Loam**	
30-40+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 40-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W13-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W13-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-29	**10YR 2/1**	**100**					**Sandy Clay Loam**	
29-37+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 37-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- **X** Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W13-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-7**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W13-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-45+	**10YR 2/1**	**100**					**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 45-inches, with no change in soil layers. According to the Washington County soil survey, hydric soil have been classified at the soil pit location. Therefore, hydric soils are assumed to be present.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W14-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted due to wet soil conditions.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W14-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/1**	**100**					**Clay Loam**	
7-15+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?		Depth (inches):	
Water Table Present?	**No**	Depth (inches):	**14**
Saturation Present?	**Yes**	Depth (inches):	**11**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W14-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **6-9**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W14-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	**10YR 2/1**	**100**					**Clay Loam**	
18-25+	**10YR 4/1**	**95**	**7.5YR 4/6**	**5**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 25-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W15-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W15-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W15-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

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

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

Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W15-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	**10YR 2/1**	**100**					**Clay Loam**	
4-12+	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W16-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Nessel fine sandy laom** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W16-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 4/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W16-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Nessel fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W16-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/1**	**100**					**Clay Loam**	
7-15+	**10YR 3/4**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W17-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy laom** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W17-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-5	**10YR 2/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Clay Loam**	
5-12+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W17-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W17-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/2**	**100**					**Sandy Clay Loam**	
7-15+	**10YR 3/4**	**100**					**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W18-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy laom** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W18-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	**10YR 2/1**	**100**			**C**	**M**	**Clay Loam**	
10-17+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 17-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W18-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W18-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Sandy Clay Loam**	
14-21+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 21-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W19-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy laom** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W19-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Clay Loam**	
7-14+	**10YR 5/1**	**60**	**7.5YR 4/6**	**40**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 14-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W19-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-6**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W19-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	**10YR 2/1**	**100**					**Sandy Clay Loam**	
16-22+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 22-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W20-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W20-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-5	**10YR 2/1**	**100**					**Clay Loam**	
5-12+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 14-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W20-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **7-9**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W20-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	**10YR 2/1**	**100**					**Clay Loam**	
16-26+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 26-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W20-C**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, not yet planted with due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W20-C**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-11	**10YR 2/1**	**100**					**Sandy Clay Loam**	
11-17+	**10YR 5/1**	**100**					**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 17-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W21-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **PEM1A**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**65**	**Yes**	**FACW**
2			
3			
4			
5			
6			
7			
8			
9			
10			
	65 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	13	32.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**65**	x 2 =	**130**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**65** (A)		**130** (B)

Prevalence Index (B/A): **2.00**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W21-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 2/1**	**100**					**Muck**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- X Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	**Yes**	Depth (inches):	**0.5**
Water Table Present?	**Yes**	Depth (inches):	**Surface**
Saturation Present?	**Yes**	Depth (inches):	**Surface**

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W21-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **7-9**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**
Hydric soils present?	**Yes**
Wetland hydrology present?	**No**
Is the sampled area within a wetland?	**No**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Bromus inermis**	**65**	**Yes**	**FACU**
2 **Phalaris arundinacea**	**25**	**Yes**	**FACW**
3 **Solidago canadensis**	**15**	**No**	**FACU**
4 **Solidago gigantea**	**5**	**No**	**FACW**
5			
6			
7			
8			
9			
10			
	110	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22	55
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**30**	x 2 =	**60**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**80**	x 4 =	**320**
UPL Species:	**0**	x 5 =	**0**
Totals:	**110** (A)		**380** (B)

Prevalence Index (B/A): **3.45**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W21-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-9	**10YR 2/1**	**100**					**Clay Loam**	
9-17+	**10YR 5/1**	**60**	**7.5YR 4/6**	**40**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 17-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W21-C**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**100**	**Yes**	**FACW**
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**100**	x 2 =	**200**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**100** (A)		**200** (B)

Prevalence Index (B/A): **2.00**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W21-C**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12+	**10YR 2/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- **X** FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W21-D**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **7-9**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**
Hydric soils present?	**Yes**
Wetland hydrology present?	**No**
Is the sampled area within a wetland?	**No**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Populus deltoides**	**15**	**Yes**	**FAC**
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Poa pratensis**	**60**	**Yes**	**FACU**
2 **Phalaris arundinacea**	**20**	**No**	**FACW**
3 **Bromus inermis**	**15**	**No**	**FACU**
4 **Cirsium arvense**	**12**	**No**	**FACW**
5 **Solidago canadensis**	**5**	**No**	**FACU**
6			
7			
8			
9			
10			
	112	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	3	7.5
Herb Stratum	22.4	56
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**32**	x 2 =	**64**
FAC Species:	**15**	x 3 =	**45**
FACU species:	**80**	x 4 =	**320**
UPL Species:	**0**	x 5 =	**0**
Totals:	**127** (A)		**429** (B)

Prevalence Index (B/A): **3.38**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W21-D**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	**10YR 2/2**	**100**					**Sandy Loam**	
4-12+	**10YR 2/2**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W22-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Populus deltoides**	**35**	**Yes**	**FAC**
2			
3			
4			
5			
	35 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Populus deltoides**	**20**	**Yes**	**FAC**
2			
3			
4			
5			
	20 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Poa pratensis**	**45**	**Yes**	**FACU**
2 **Hordeum jubatum**	**19**	**No**	**FAC**
3 **Populus deltoides**	**10**	**No**	**FAC**
4 **Asclepias incarnata**	**10**	**No**	**OBL**
5 **Solidago gigantea**	**10**	**No**	**FACW**
6 **Trifolium pretense**	**5**	**No**	**FACU**
7			
8			
9			
10			
	104 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	7	17.5
Sapling/Shrub Stratum	4	10
Herb Stratum	20.8	52
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **3** (B)

Percent of dominant species that are OBL, FACW or FAC: **67%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**10**	x 1 =	**10**
FACW Species:	**10**	x 2 =	**20**
FAC Species:	**84**	x 3 =	**252**
FACU species:	**55**	x 4 =	**220**
UPL Species:	**0**	x 5 =	**0**
Totals:	**159** (A)		**502** (B)

Prevalence Index (B/A): **3.16**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W22-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	**10YR 4/2**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W22-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Terrace** Local Relief (concave, convex, none): **Linear** Slope (%): **1-3**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**
Hydric soils present?	**No**
Wetland hydrology present?	**No**
Is the sampled area within a wetland?	**No**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Populus deltoides**	**15**	**Yes**	**FAC**
2			
3			
4			
5			
	15 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Poa pratensis**	**40**	**Yes**	**FACU**
2 **Solidago canadensis**	**40**	**Yes**	**FACU**
3 **Asclepias syriaca**	**9**	**No**	**FACU**
4 **Solidago gigantea**	**5**	**No**	**FACW**
5			
6			
7			
8			
9			
10			
	94 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	3	7.5
Sapling/Shrub Stratum	0	0
Herb Stratum	18.8	47
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **3** (B)

Percent of dominant species that are OBL, FACW or FAC: **33%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**5**	x 2 =	**10**
FAC Species:	**15**	x 3 =	**45**
FACU species:	**89**	x 4 =	**356**
UPL Species:	**0**	x 5 =	**0**
Totals:	**109** (A)		**411** (B)

Prevalence Index (B/A): **3.77**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W22-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	**10YR 3/3**	**100**					**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W23-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Road Ditch** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **PEM1C**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**35**	**Yes**	**FACW**
2 **Alisma triviale**	**8**	**No**	**OBL**
3 **Eleocharis species**	**7**	**No**	**FACW**
4			
5			
6			
7			
8			
9			
10			
	50	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	10	25
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **1** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**8**	x 1 =	**8**
FACW Species:	**42**	x 2 =	**84**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**50** (A)		**92** (B)

Prevalence Index (B/A): **1.84**

Hydrophytic Vegetation Indicators

- **X** Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W23-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	**10YR 4/2**	**858**	**7.5YR 4/6**	**15**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W24-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **PEM1Af**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field, planting has not taken place due to wet conditions**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W24-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Clay Loam**	
14-20+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 20-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W24-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W24-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-20	**10YR 2/1**	**100**					**Clay Loam**	
20-27+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 27-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W25-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Basin/Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Bluffton loam** NWI Classification: **PEM1Af**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**	**Is the sampled area within a wetland?** **Yes**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**Yes**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the presence of hydric soils and wetland hydrology. Hydrophytic vegetation is assumed to be present.**

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W25-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-19	**10YR 2/1**	**100**					**Clay Loam**	
19-26+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 26-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W25-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

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

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

Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W25-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-26	**10YR 2/1**	**100**					**Clay Loam**	
26-33+	**10YR 5/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 33-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W26-A**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation ____, soils ____, or hydrology ____ significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation ____, soils ____, or hydrology ____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**Yes**
Hydric soils present?	**Yes**
Wetland hydrology present?	**Yes**
Is the sampled area within a wetland?	**Yes**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Populus deltoides**	**15**	**Yes**	**FAC**
2 **Fraxinus pennsylvanica**	**5**	**Yes**	**FACW**
3			
4			
5			
	20	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Phalaris arundinacea**	**45**	**Yes**	**FACW**
2 **Poa pratensis**	**25**	**Yes**	**FACU**
3 **Solidago gigantea**	**20**	**Yes**	**FACW**
4 **Asclepias incarnata**	**5**	**No**	**OBL**
5			
6			
7			
8			
9			
10			
	95	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	4	10
Herb Stratum	19	47.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **4** (A)

Total number of dominant species across all strata: **5** (B)

Percent of dominant species that are OBL, FACW or FAC: **80%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**5**	x 1 =	**5**
FACW Species:	**70**	x 2 =	**140**
FAC Species:	**15**	x 3 =	**45**
FACU species:	**25**	x 4 =	**100**
UPL Species:	**0**	x 5 =	**0**
Totals:	**115** (A)		**290** (B)

Prevalence Index (B/A): **2.52**

Hydrophytic Vegetation Indicators

- ____ Rapid test for hydrophytic vegetation
- **X** Dominance test >50%
- **X** Prevalence index is ≤3.0*
- ____ Morphological adaptations* (Provide supporting data in remarks)
- ____ Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **Yes**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W26-A**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	**10YR 4/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M**	**Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 12-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **Yes**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **W26-B**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **3-5**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation ____, soils ____, or hydrology ____ significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation ____, soils ____, or hydrology ____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**
Hydric soils present?	**No**
Wetland hydrology present?	**No**
Is the sampled area within a wetland?	**No**

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Solidago canadensis**	**55**	**Yes**	**FACU**
2 **Poa pratensis**	**35**	**Yes**	**FACU**
3 **Solidago gigantea**	**10**	**No**	**FACW**
4			
5			
6			
7			
8			
9			
10			
	100	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**10**	x 2 =	**20**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**90**	x 4 =	**360**
UPL Species:	**0**	x 5 =	**0**
Totals:	**100** (A)		**380** (B)

Prevalence Index (B/A): **3.80**

Hydrophytic Vegetation Indicators

____ Rapid test for hydrophytic vegetation

____ Dominance test >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (Provide supporting data in remarks)

____ Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **W26-B**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	**10YR 2/2**	**100**					**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 16-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-1**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the lack of wetland hydrology at the sample site, hydrophytic vegetation is assumed to be absent.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-1**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Clay Loam**	
14-22+	**10YR 5/1**	**60**	**7.5YR 4/6**	**40**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 22-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-2**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the lack of wetland hydrology at the sample site, hydrophytic vegetation is assumed to be absent.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-2**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	**10YR 2/1**	**100**					**Sandy Clay Loam**	
10-15	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	
15-21+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 21-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-3**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the lack of wetland hydrology at the sample site, hydrophytic vegetation is assumed to be absent.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-3**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	**10YR 2/1**	**100**					**Sandy Clay**	
15-18	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay**	
18-24+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 24-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-4**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Terrace** Local Relief (concave, convex, none): **Linear** Slope (%): **1-3**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Poa pratensis**	**40**	**Yes**	**FACU**
2 **Solidago canadensis**	**30**	**Yes**	**FACU**
3 **Solidago gigantea**	**15**	**No**	**FACW**
4 **Asclepias syriaca**	**15**	**No**	**FACU**
5			
6			
7			
8			
9			
10			
	100	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**15**	x 2 =	**30**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**85**	x 4 =	**340**
UPL Species:	**0**	x 5 =	**0**
Totals:	**100** (A)		**370** (B)

Prevalence Index (B/A): **3.70**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-4**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	**10YR 2/2**	**100**					**Sandy Loam**	
8-15+	**10YR 3/3**	**100**					**Sand**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 15-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/13/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-5**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **5-8**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Trifolium pretense**	**75**	**Yes**	**FACU**
2 **Erigeron annuus**	**20**	**No**	**FACU**
3 **Amaranthus retroflexus**	**12**	**No**	**FACU**
4 **Carex vulpinoidea**	**5**	**No**	**OBL**
5			
6			
7			
8			
9			
10			
	112	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22.4	56
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**5**	x 1 =	**5**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**107**	x 4 =	**428**
UPL Species:	**0**	x 5 =	**0**
Totals:	**112** (A)		**433** (B)

Prevalence Index (B/A): **3.87**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-5**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	**10YR 2/1**	**100**					**Sandy Clay Loam**	
18-25+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 25-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-6**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **5-8**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Trifolium pretense**	**75**	**Yes**	**FACU**
2 **Erigeron annuus**	**20**	**No**	**FACU**
3 **Amaranthus retroflexus**	**12**	**No**	**FACU**
4 **Carex vulpinoidea**	**5**	**No**	**OBL**
5			
6			
7			
8			
9			
10			
	112	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22.4	56
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **1** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**5**	x 1 =	**5**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**107**	x 4 =	**428**
UPL Species:	**0**	x 5 =	**0**
Totals:	**112** (A)		**433** (B)

Prevalence Index (B/A): **3.87**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-6**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	**10YR 2/1**	**100**					**Sandy Clay Loam**	
18-25+	**10YR 5/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 25-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-7**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Backslope** Local Relief (concave, convex, none): **Convex** Slope (%): **4-7**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Amaranthus retrofluxus**	**30**	**Yes**	**FACU**
2 **Solidago canadensis**	**20**	**Yes**	**FACU**
3 **Solidago gigantea**	**10**	**No**	**FACW**
4 **Erigeron annuus**	**7**	**No**	**FACU**
5			
6			
7			
8			
9			
10			
	67	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	13.4	33.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**10**	x 2 =	**20**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**57**	x 4 =	**228**
UPL Species:	**0**	x 5 =	**0**
Totals:	**67** (A)		**248** (B)

Prevalence Index (B/A): **3.70**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-7**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-11	**10YR 2/1**	**100**					**Clay Loam**	
11-17+	**10YR 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 17-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/17/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-8**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Terrace** Local Relief (concave, convex, none): **Convex** Slope (%): **1-3**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	
Hydric soils present?	**Yes**	**Is the sampled area within a wetland?** **No**
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1 **Acer negundo**	**60**	**Yes**	**FAC**
2 **Populus deltoides**	**20**	**No**	**FAC**
3 **Fraxinus pennsylvanica**	**20**	**No**	**FACW**
4 **Salix bebbiana**	**15**	**No**	**FACW**
5			
	115	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1 **Rhamnus cathartica**	**60**	**Yes**	**FAC**
2 **Sambucus canadensis**	**15**	**Yes**	**FACU**
3			
4			
5			
	75	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Parthenocissus quinquefolia**	**20**	**Yes**	**FACU**
2 **Arctium minus**	**15**	**Yes**	**FACU**
3 **Sambucus canadensis**	**10**	**No**	**FACU**
4 **Rhamnus cathartica**	**10**	**No**	**FAC**
5			
6			
7			
8			
9			
10			
	55	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	23	57.5
Sapling/Shrub Stratum	15	37.5
Herb Stratum	11	27.5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **2** (A)

Total number of dominant species across all strata: **5** (B)

Percent of dominant species that are OBL, FACW or FAC: **40%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**35**	x 2 =	**70**
FAC Species:	**150**	x 3 =	**450**
FACU species:	**60**	x 4 =	**240**
UPL Species:	**0**	x 5 =	**0**
Totals:	**245** (A)		**760** (B)

Prevalence Index (B/A): **3.10**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-8**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-13+	**10YR 2/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- **X** Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to 13-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-9**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Road Ditch** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Dundas fine sandy loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation , soils , or hydrology significantly disturbed? Are normal circumstances present? **Yes**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**No**	
Wetland hydrology present?	**No**	

Remarks:

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum: (Plot size: 5 feet)			
1 **Trifolium pretense**	**35**	**Yes**	**FACU**
2 **Poa pratensis**	**30**	**Yes**	**FACU**
3 **Hordeum jubatum**	**15**	**No**	**FAC**
4 **Lotus corniculatu**	**10**	**No**	**FACU**
5 **Phleum pretense**	**10**	**No**	**FACU**
6			
7			
8			
9			
10			
	100	=Total Cover	
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0	=Total Cover	

50/20 Threshold	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: **2** (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**15**	x 3 =	**45**
FACU species:	**85**	x 4 =	**340**
UPL Species:	**0**	x 5 =	**0**
Totals:	**100** (A)		**385** (B)

Prevalence Index (B/A): **3.85**

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks:

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-9**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	**10YR 2/2**	**100**					**Sandy Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: **Unknown**

Depth (inches): **8**

Hydric Soils Present: **No**

Remarks: **Soil pit was dug to 8-inches, when a restrictive layer was observed.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ___ Depth (inches): ___

Water Table Present? ___ Depth (inches): ___

Saturation Present? ___ Depth (inches): ___

Indicators of Wetland Hydrology Present? **No**

Remarks:

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM
(Northcentral and Northeast Region - LRR K)

Project/Site: **Headwaters Parkway** City/County: **Washington** Sampling Date: **6/19/2019**

Applicant/Owner: **City of Forest Lake** State: **MN** Sample Point: **SP-10**

Investigator(s): **Brandon Bohks** Section, Township, Range: **29, 32, 21**

Landforms (hillside, terrace, etc.): **Depression** Local Relief (concave, convex, none): **Concave** Slope (%): **0-2**

Subregion: **LRR K** Latitude: Longitude: Datum:

Soil Map Unit Name: **Webster loam** NWI Classification: **None**

Are climatic/hydrologic conditions of the site typical for this time of year? **Yes** (If no, explain in remarks)

Are vegetation **X**, soils , or hydrology significantly disturbed? Are normal circumstances present? **No**

Are vegetation , soils , or hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	**No**	**Is the sampled area within a wetland?** **No**
Hydric soils present?	**Yes**	
Wetland hydrology present?	**No**	

Remarks: **Sample point was taken in a agriculture field recently planted with corn.**

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species	Indicator Status
1			
2			
3			
4			
5			
	0 =Total Cover		
Sapling/Shrub stratum (Plot size: 15 feet)			
1			
2			
3			
4			
5			
	0 =Total Cover		
Herb stratum: (Plot size: 5 feet)			
1 **Zea mays**			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0 =Total Cover		
Woody vine stratum: (Plot size: 15 feet)			
1			
2			
	0 =Total Cover		

50/20 Threshold	**20%**	**50%**
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: **0** (A)

Total number of dominant species across all strata: (B)

Percent of dominant species that are OBL, FACW or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % cover of:

OBL Species:	**0**	x 1 =	**0**
FACW Species:	**0**	x 2 =	**0**
FAC Species:	**0**	x 3 =	**0**
FACU species:	**0**	x 4 =	**0**
UPL Species:	**0**	x 5 =	**0**
Totals:	**0** (A)		**0** (B)

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

- Rapid test for hydrophytic vegetation
- Dominance test >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (Provide supporting data in remarks)
- Problematic hydrophytic vegetation* (Explain in remarks)

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

Remarks: **Due to the lack of wetland hydrology at the sample site, hydrophytic vegetation is assumed to be absent.**

Hydrophytic vegetation present? **No**

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EXHIBIT G:
WETLAND DETERMINATION DATA FORM

(Northcentral and Northeast Region - LRR K)

Sample Point: **SP-10**

SOILS

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	**10YR 2/1**	**100**					**Sandy Clay**	
14-21	**10YR 2/1**	**95**	**7.5YR 4/6**	**5**	**C**	**M**	**Sandy Clay**	
21-28+	**10YR 5/1**	**80**	**7.5YR 4/6**	**20**	**C**	**M**	**Sandy Clay Loam**	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- **X** Thick Dark Surface (A12)
- ___ Sandy Mucky Material (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*:

- ___ 2 cm Muck (A10)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalve Below Dark Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (T42)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils Present: **Yes**

Remarks: **Soil pit was dug to a depth of 28-inches.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence or Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Crack (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? _____ Depth (inches): _____

Water Table Present? _____ Depth (inches): _____

Saturation Present? _____ Depth (inches): _____

Indicators of Wetland Hydrology Present? **No**

Remarks: **Only 33% wet hits, not considered Saturation Visible on Aerial Imagery**

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HYDROLOGY ASSESSMENT USING AERIAL IMAGERY
RECORDING FORM

Project/Site:	Headwaters				Date:	7/2/19
Applicant/Owner:	City of Forest Lake				City/Twp:	Forest Lake
Slide Reviewer:	Brandon Bohks				County:	Washington
WETS Station ID:	Washington-FL-FL	S - 29	T – 32	R – 21	State:	MN

Year	Climate Condition	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11	Site 12	Site 13a	Site 13b	Site 13c	Site 14	Site 15	Site 16	Site 17	Site 18	Site 19	Site 20	Site 21	Site 22	Site 23	Site 24	Site 25
1984	N	NV	NV	WS	NV	NV	NV	NV	WS	WS	WS	WS	NV	WS	WS	NV	CS	CS	WS	WS	WS	NV	CS	WS	WS			
1985	D	NV	NV	WS	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	WS	WS	WS	NV	NV	NV	WS			
1986	W	DO	DO	DO	NV	NV	NV	CS	CS	WS	NV	NV	CS	WS	NV	NV	WS	DO	DO	WS	DO	DO	CS	DO	DO			
1987	D	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	WS			
1988	D	NV	NV	CS	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			
1989	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			
1990	W	SW	SW	SW	DO	DO	DO	SW	DO	DO	CS	CS	CS	DO	CS	CS	DO	CS	SW	NV	NV	NV	NV	NV	NV			
1991	W	DO	SW	SW	DO	CS	WS	SW	DO	DO	CS	SW	CS	SW	CS	NV	SW	DO	SW	NV	NV	NV	NV	NV	CS			
1992	D	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			
1993	W	SW	SW	SW	DO	DO	DO	DO	CS	CS	CS	SW	CS	CS	CS	CS	CS	SW	SW	CS	CS	CS	NV	NV	CS			
1994	D	NV	DO	DO	NV	NV	NV	NV	CS	CS	NV	NV	CS	NV	CS	CS	CS	NV	NV	CS	NV	CS	NV	NV	CS			
1995	N	DO	SW	DO	NV	NV	NV	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	SW	CS	CS	CS	CS	CS	CS			
1996	N	CS	DO	CS	NV	NV	NV	NV	CS	CS	NV	NV	NV	NV	NV	NV	NV	DO	DO	NV	CS	CS	NV	CS	CS			
1997	N	CS	CS	CS	NV	NV	NV	NV	CS	CS	CS	CS	CS	CS	CS	NV	CS	DO	DO	CS	CS	CS	CS	CS	CS			
1998	N	CS	CS	CS	NV	NV	NV	NV	NV	NV	CS	CS	CS	CS	NV	NV	CS	DO	DO	CS	CS	CS	CS	CS	DO			
1999	W	CS	CS	CS	NV	NV	NV	NV	CS	CS	CS	NV	CS	CS	NV	NV	NV	CS	DO	CS	CS	CS	CS	CS	DO			
2003	W	SW	DO	DO	DO	DO	DO	DO	CS	CS	CS	DO	DO	CS	DO	DO	CS	DO	DO	CS	DO	DO	DO	DO	CS			
2008	N	CS	DO	SW	CS	CS	NV	CS	CS	DO	DO	DO	CS	SW	SW	WS	DO	DO	DO	CS	CS	CS	DO	CS	DO			
2009	D	NV	CS	CS	CS	CS	CS	CS	NV	NV	CS	CS	CS	CS	CS	CS	CS	CS	CS	NV	NV	NV	NV	NV	NV			
2010	N	CS	CS	WS	NV	NV	NV	NV	CS	NV	NV	NV	NV	AP	AP	AP	CS	NV	NV	CS	CS	CS	NV	CS	CS			
2013	W	DO	DO	DO	DO	DO	DO	DO	DO	CS	DO	DO	DO	DO	DO	DO	DO	DO	DO	AP	DO	DO	DO	CS	DO			
2015	N	CS	DO	DO	NV	NV	NV	WS	CS	WS	NV	NV	CS	WS	WS	WS	CS	DO	DO	NV	CS	CS	NV	NV	NV			
2016	W	CS	DO	DO	SS	SS	SS	SS	CS	DO	CS	NV	DO	DO	DO	SS	DO	DO	DO	CS	DO	DO	SS	NV	SS			
2017	W	DO	SW	DO	DO	DO	NV	DO	CS	CS	DO	CS	CS	DO	DO	NV	DO	DO	DO	CS	DO	DO	NV	CS	CS			
D-Dry N-Normal W-Wet																												
CS–Crop Stress DO–Drown Out NC-Not Cropped SW-Standing Water WS-Wetland Signatures AP-Altered Pattern NV-Normal Vegetation SS-Saturation Signature																												
	Hydric Soil	Yes	Yes	Yes	Yes	NV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
	NWI	Yes	Yes	No	No	NV	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes			
	Normal Years	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9			
	Wet Hits	7	7	8	1	1	0	3	7	6	5	5	5	7	6	4	7	7	7	5	8	7	5	7	7			
	% Wet	77	77	88	11	11	0	33	77	66	55	55	55	77	66	44	77	77	77	55	88	77	55	77	77			
	Field Visit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
	Determination	Wetland	Wetland	Wetland	No	No	No		Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	No	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland			

Remarks:

Headwaters Parkway

City of Forest Lake

Exhibit H1: Off-Site Hydrology Assessment (1984 - 1987)

August, 2018

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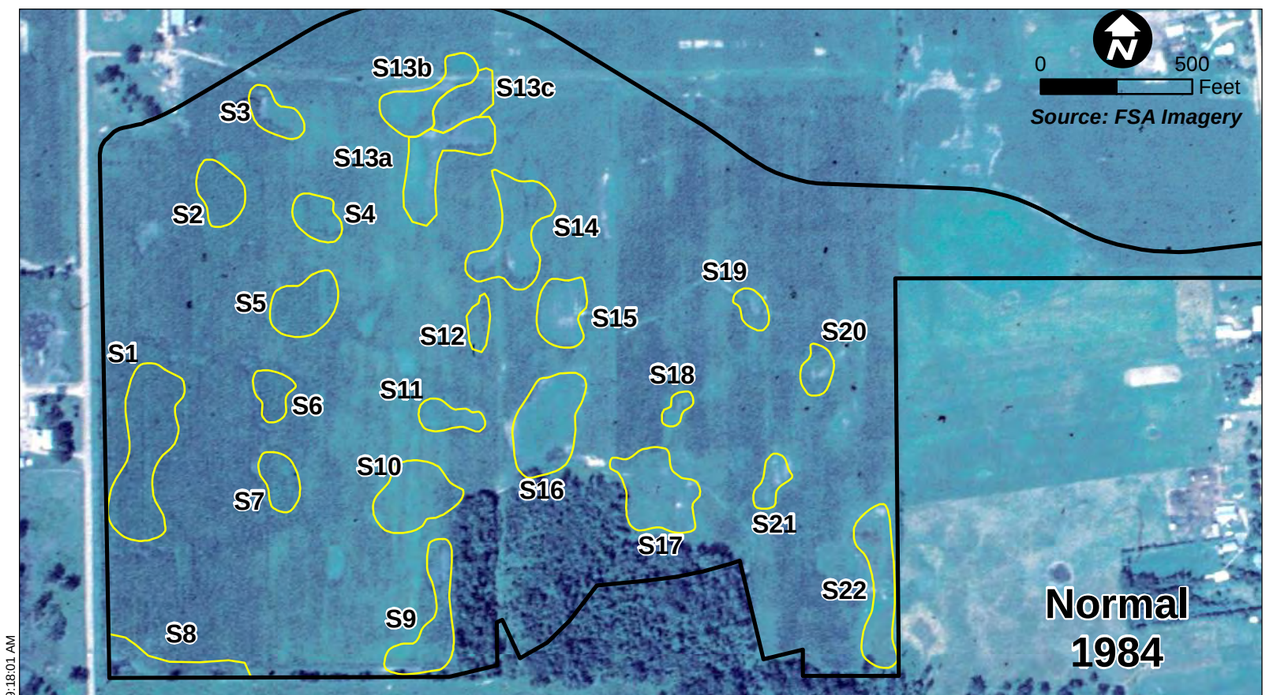

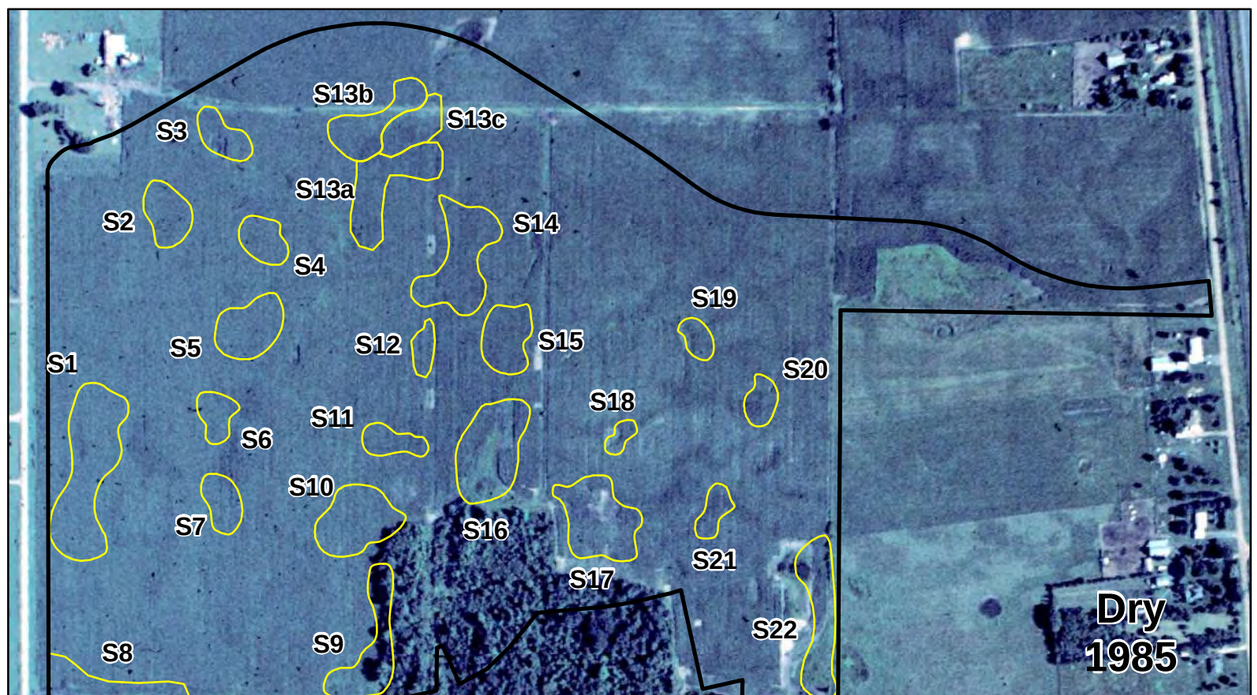

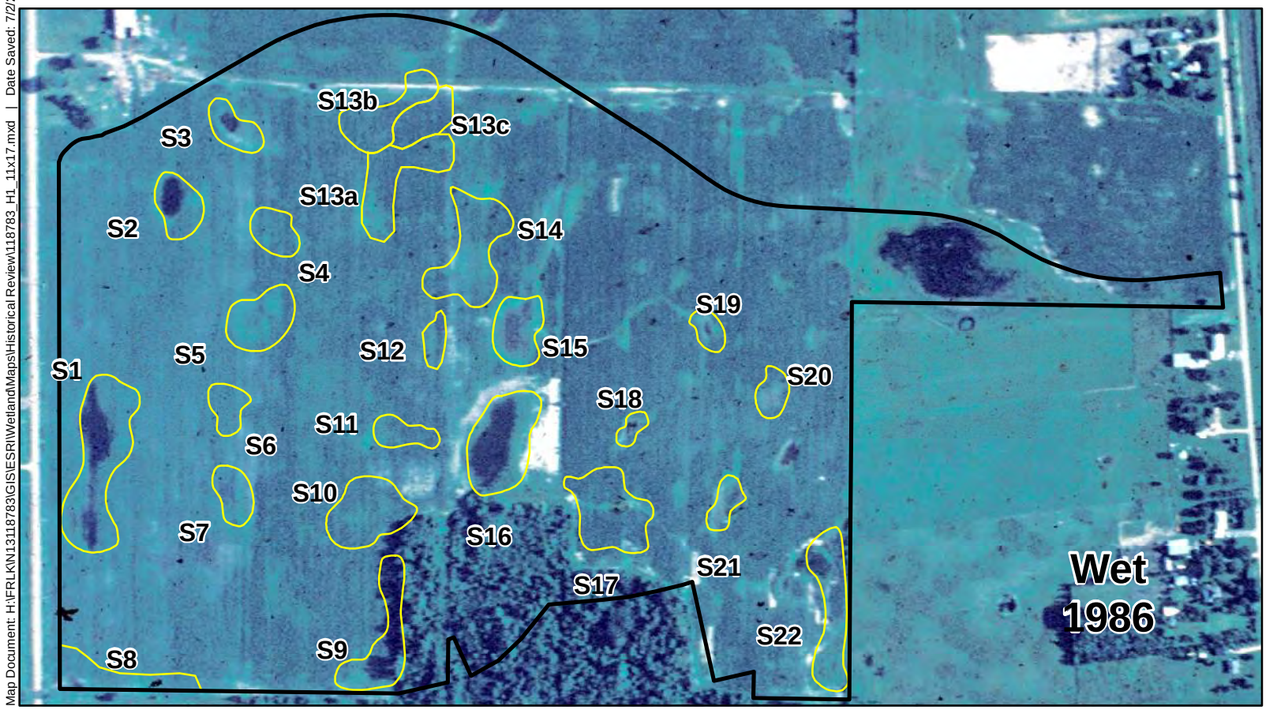

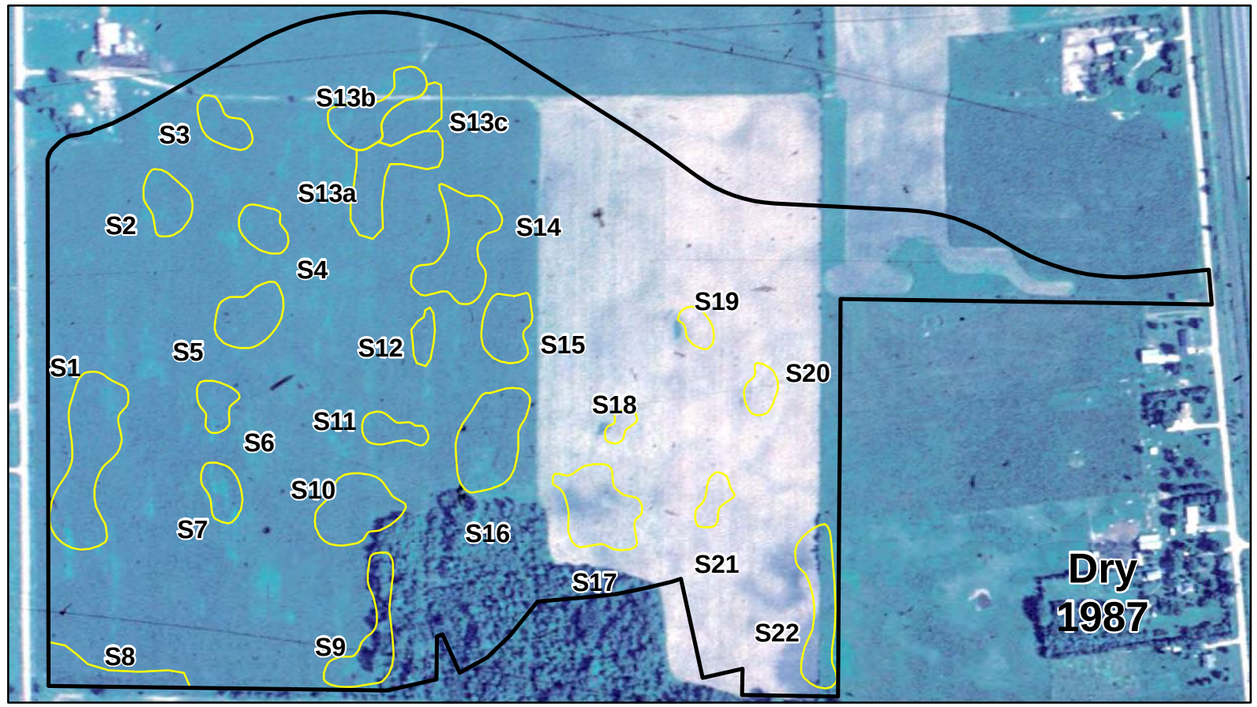

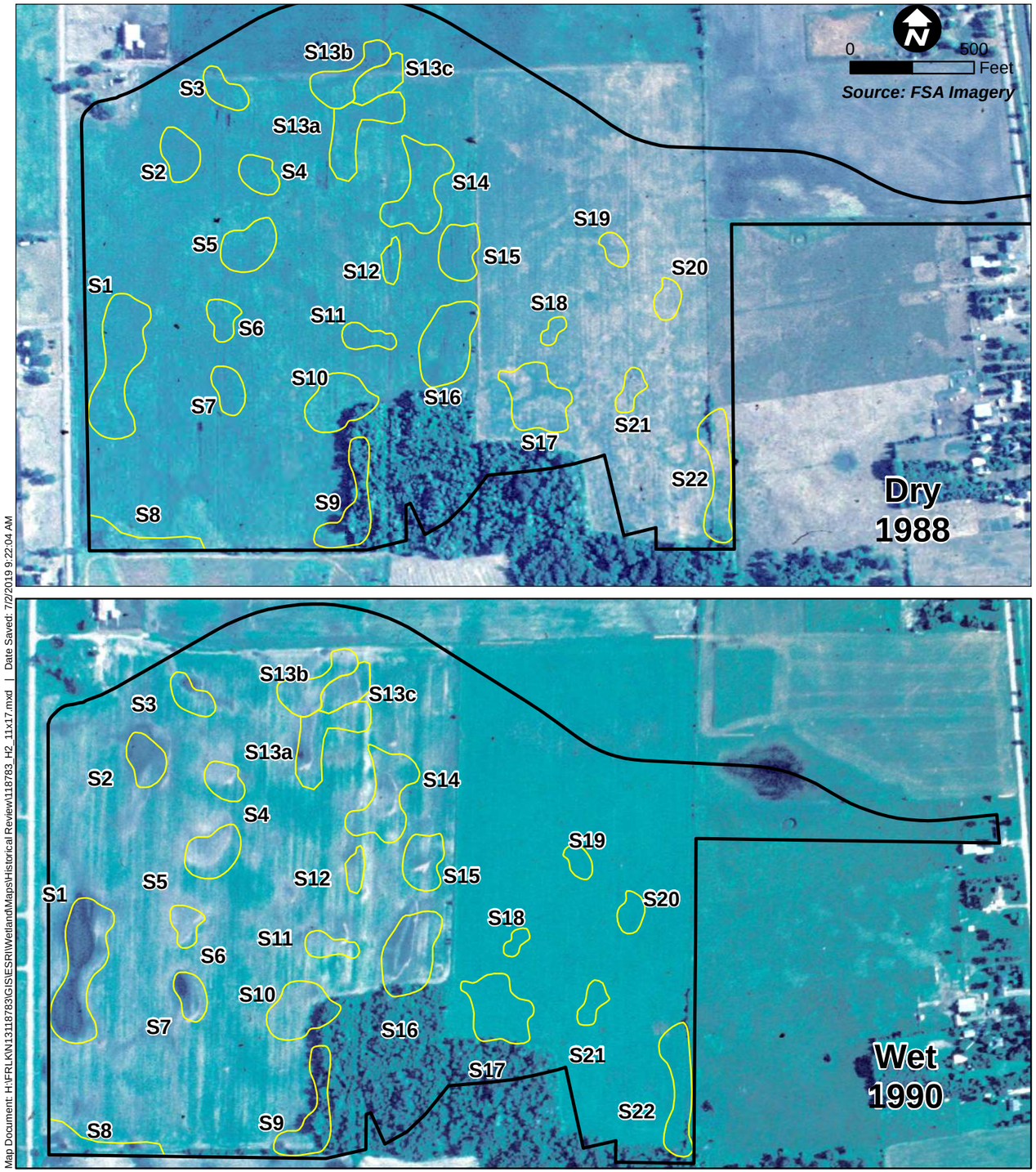

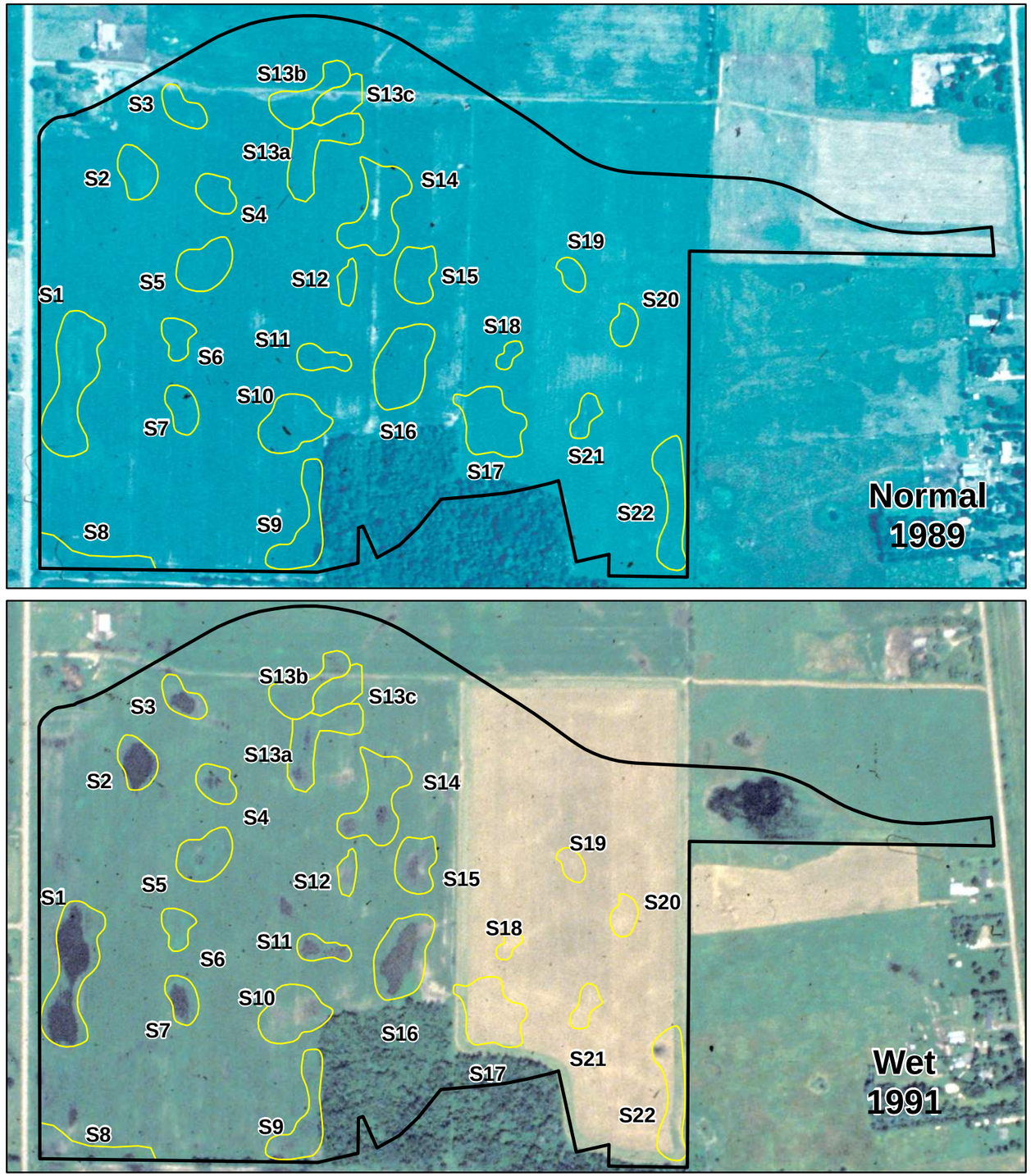

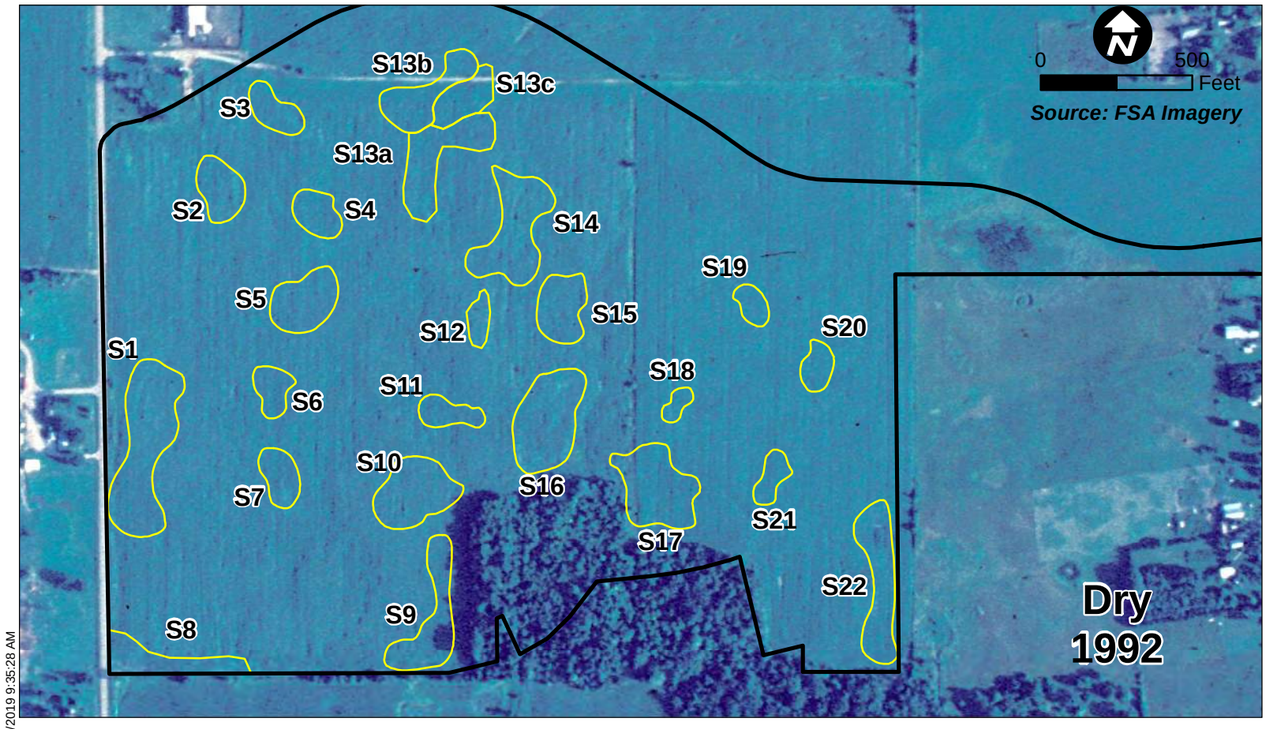

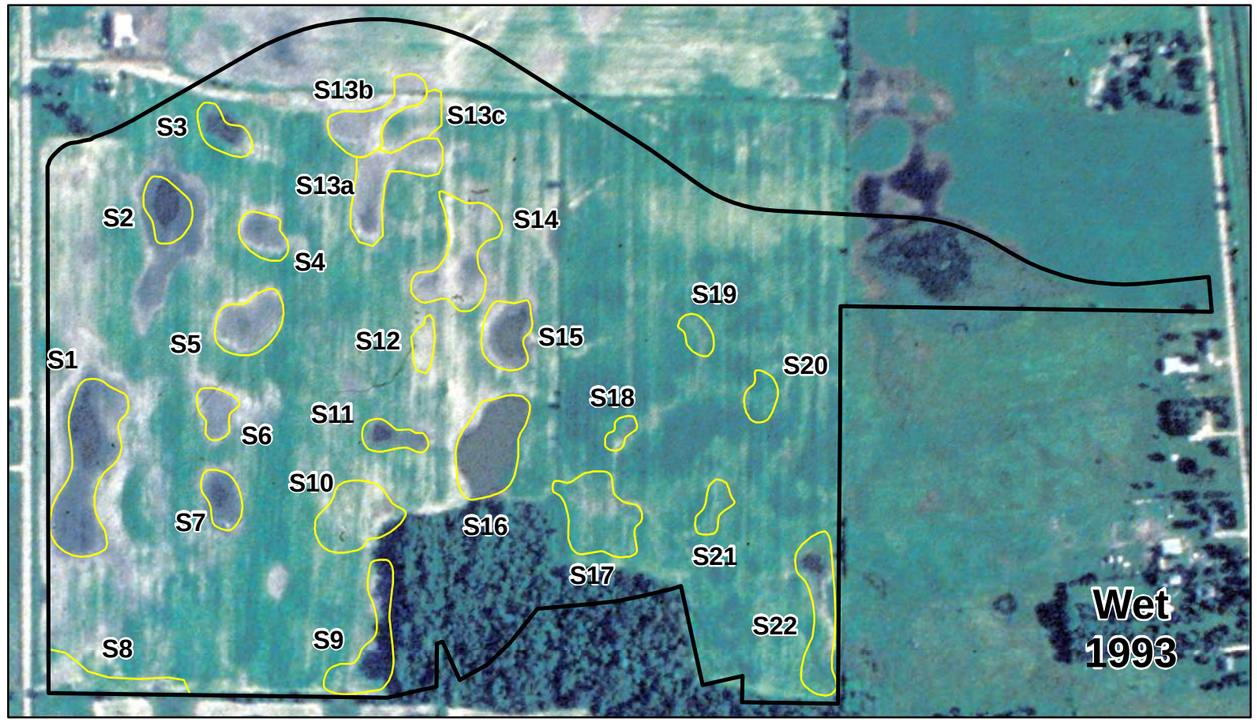

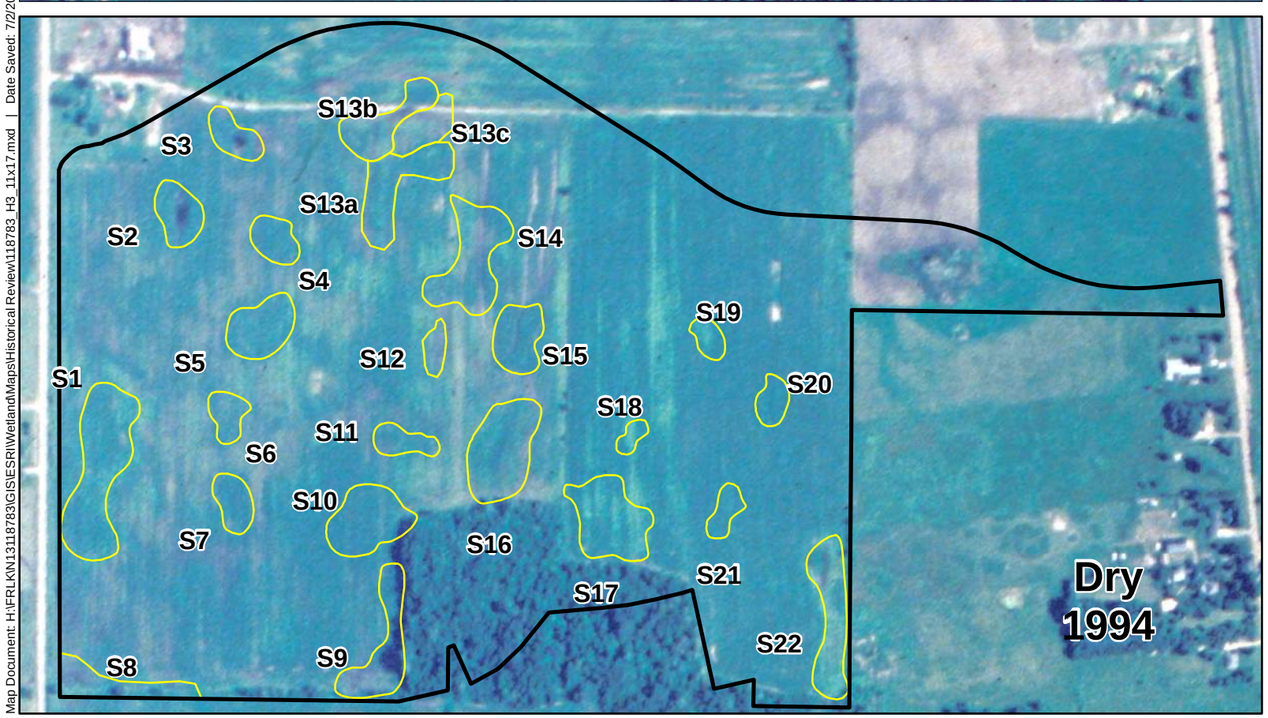

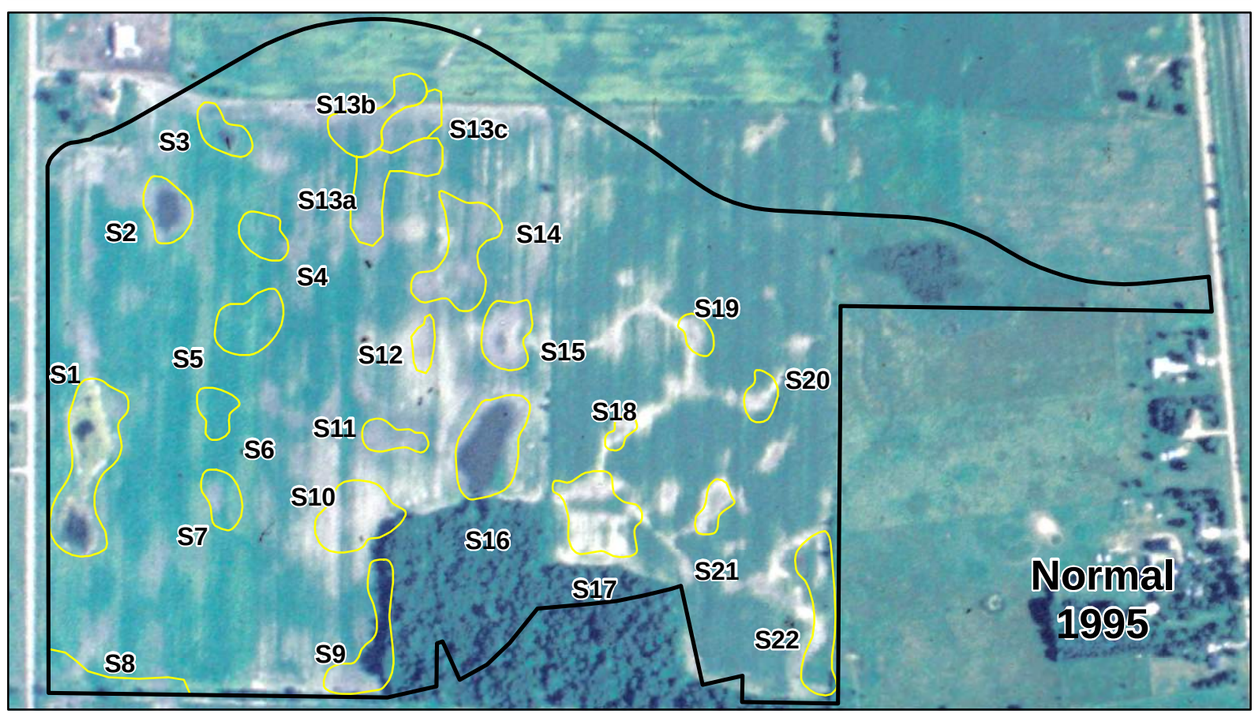

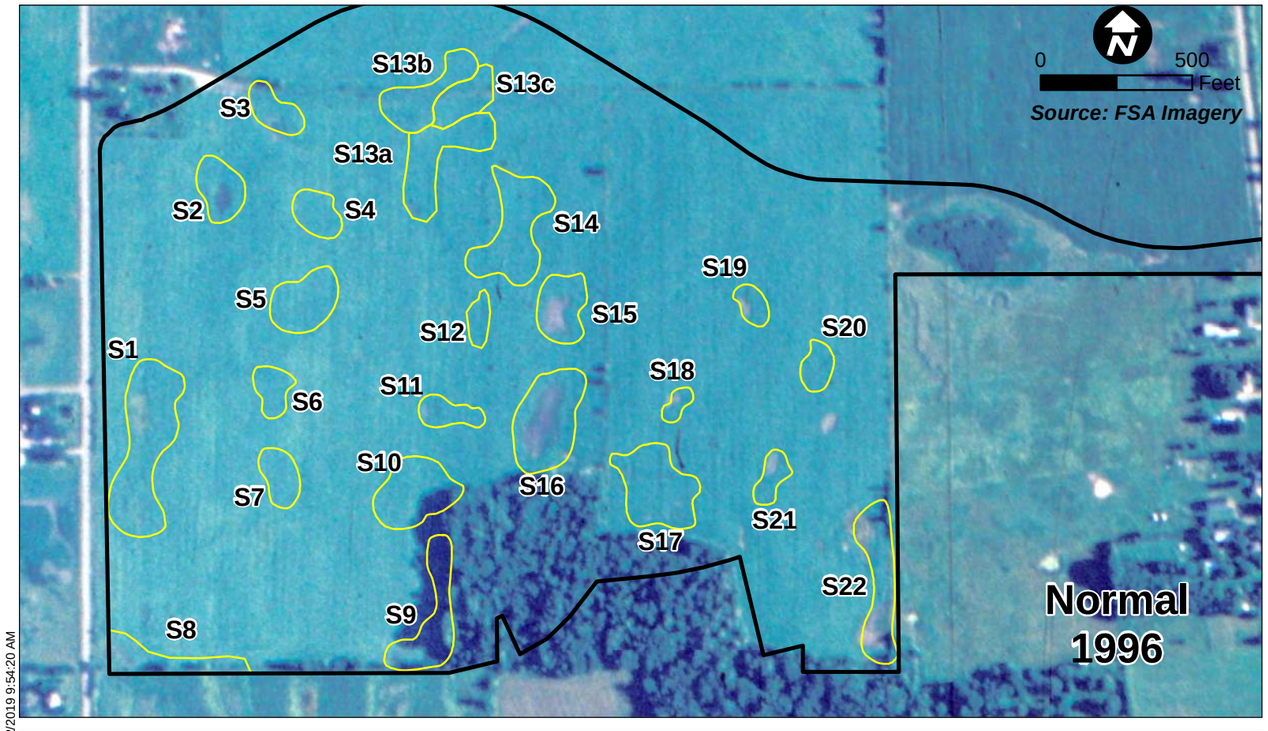

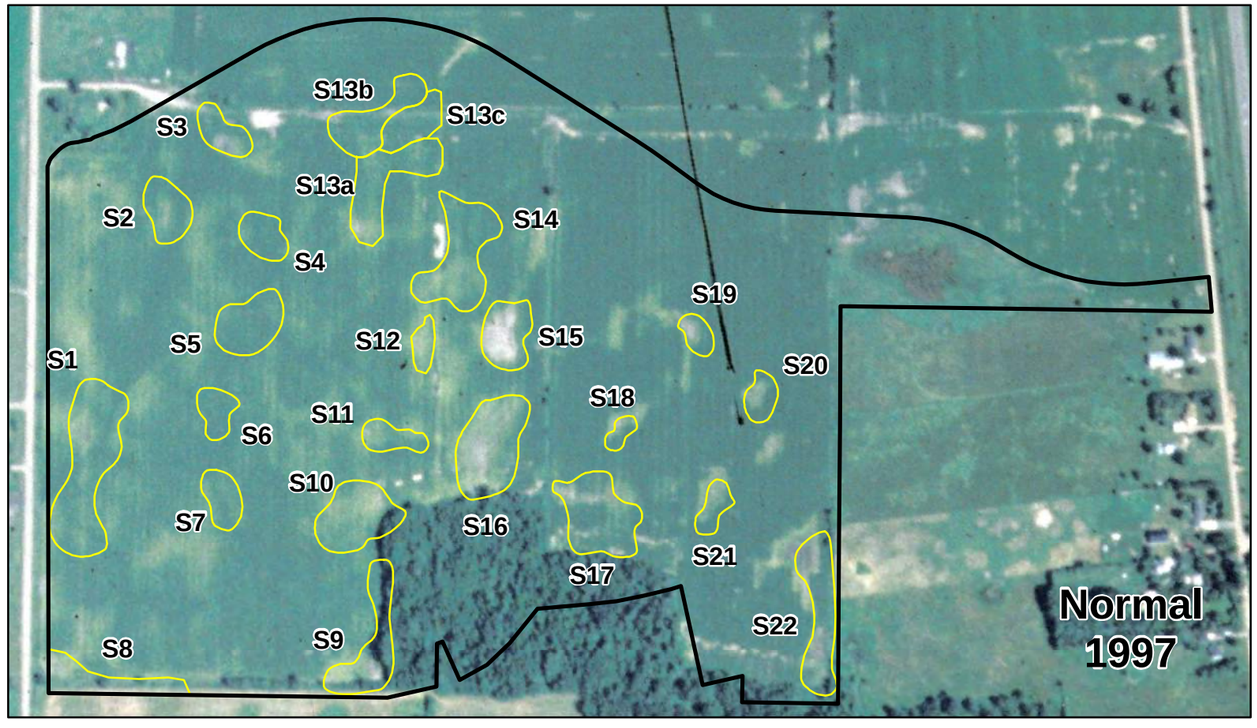

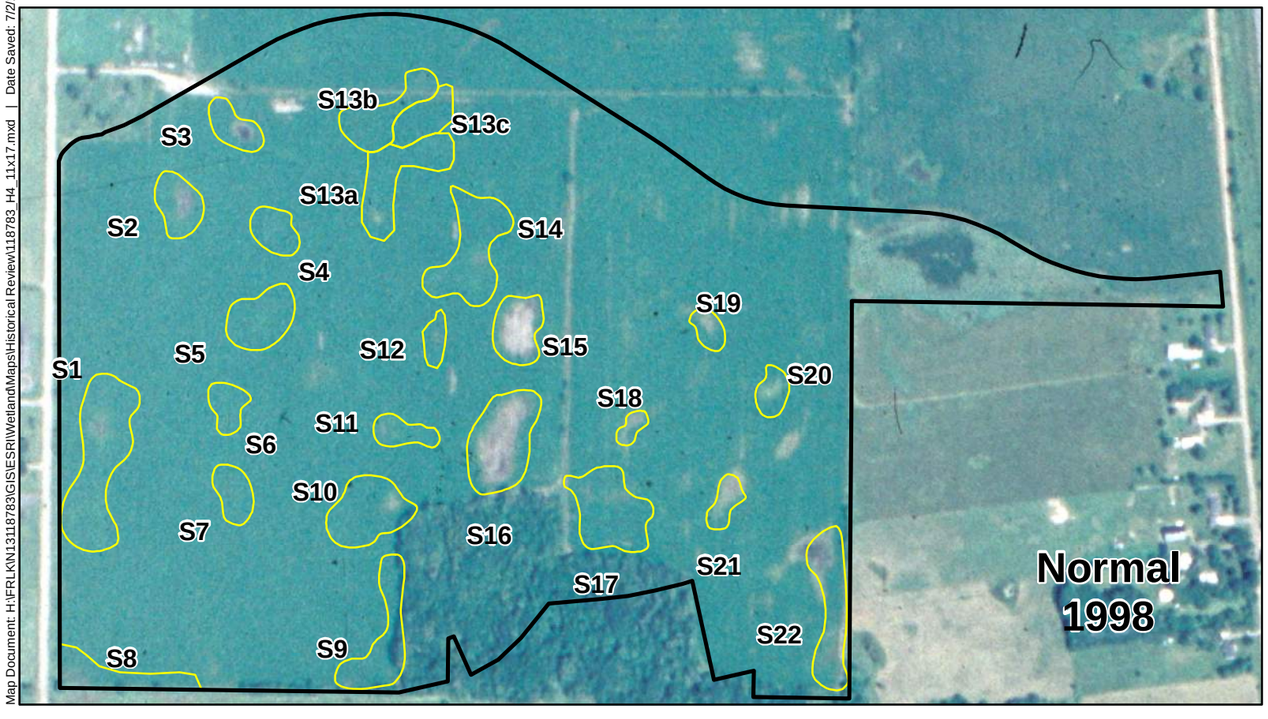

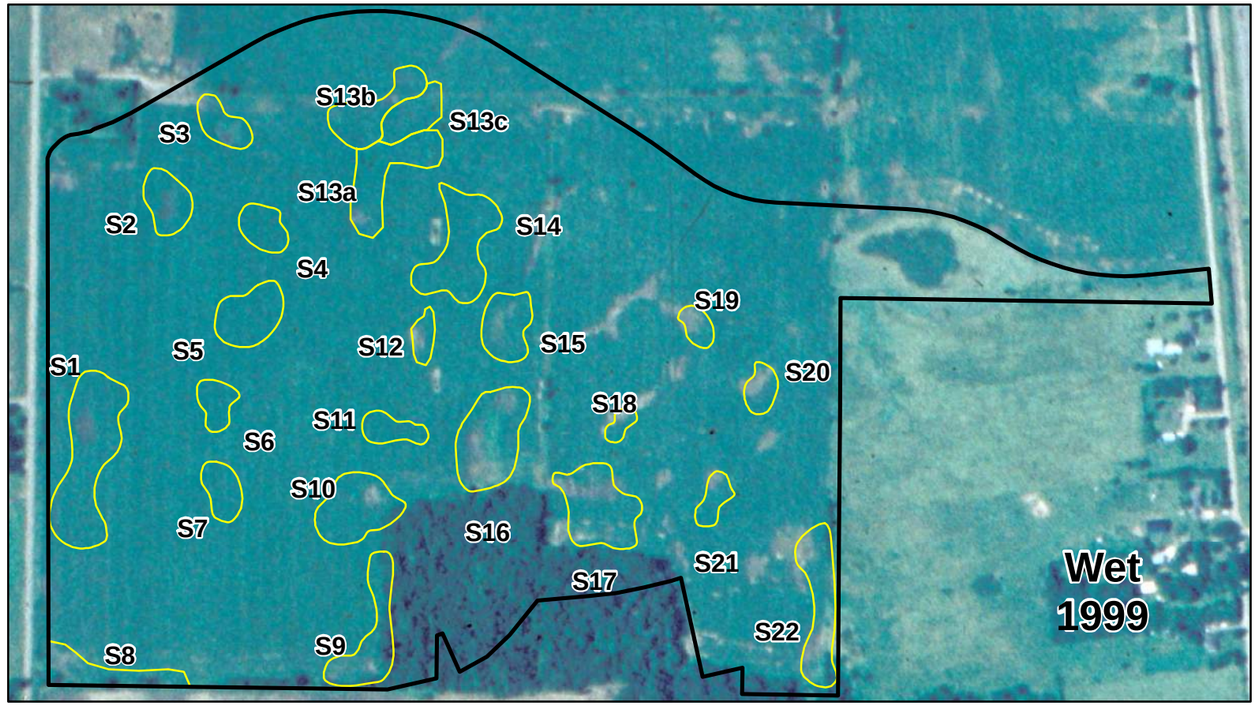

Headwaters Parkway

City of Forest Lake

Exhibit H5: Off-Site Hydrology Assessment (2003 - 2010)

August, 2018

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