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# Wetland Delineation Report Lester Golf Course

Duluth, MN

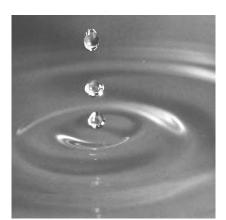
#### Submitted to:

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#### Submitted by:

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7/18/2022 Project 2202578



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#### RP:KK

 $https://geiconsultant.sharepoint.com/sites/GreatLakesNaturalResourceGroup/Shared\ Documents/Projects/2202578\_Lester\ Golf/Delineation\ Report/Lester\_Report\_Final.docx$ 

## 1. Introduction

## 1.1 Site Description

GEI Consultants, Inc. (GEI) completed a wetland delineation for the Lester Golf Course project (Site). The Site is located at the southern portion of the former Lester Park Golf Course on Lester River Road in Section 4 of Township 50N, Range 13W in Duluth, Minnesota (Figure 1). The delineation area covers approximately 38 acres as shown in Figure 2. The primary land cover is former golf course fairways, putting greens, trails, undeveloped woodland and wetland.

The purpose of the wetland delineation was to identify wetland and other aquatic resource boundaries and classify the wetland plant community types. The delineation will be used to aid in project planning and to identify potential wetland and aquatic resource impacts.

## 2. Delineation Methodology

#### 2.1 Wetlands

Wetlands present within the Site were identified and delineated using the procedures described in the *United States (U.S.) Army Corps of Engineers (USACE) Wetlands Delineation Manual* (Environmental Laboratory, Waterways Experiment Station, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (U.S. Army Engineer Research and Development Center, 2011). These methods utilize the standard multi-parameter approach (vegetation, hydrology, and soils) for wetland identification as outlined in the *Corps of Engineers Wetland Determination Data Forms*. In general, an area is considered a wetland if hydrophytic vegetation, wetland hydrology, and hydric soils are present. Delineated wetlands were classified in accordance with the classification systems set forth in *Wetlands of the United States* (Shaw and Fredine. 1971), *Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), and *Wetland Plants and Plant Communities of Minnesota and Wisconsin* (Eggers and Reed, 2014).

### 2.2 Other Aquatic Resources

The wetland delineation and report include other aquatic resources affected by regulated activities in waters of both the U.S. and Minnesota. The delineation area was specifically surveyed for wetlands (as defined under Section 404 of the Clean Water Act) and other aquatic resources such as seasonal ponds, seeps, springs, ditches, and streams (intermittent, ephemeral, and perennial). Other aquatic resources within the delineation area will be identified and delineated as described in the *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota* (USACE, St. Paul District Regulatory, 2015). Observations and mapping of potential connections and flow paths between other aquatic resources and wetlands can provide information for determining regulatory jurisdiction.

## 2.3 Desktop Review

A desktop analysis was completed for the analysis area prior to the on-site data collection and field delineation by reviewing a variety of available information to identify potential wetlands and aquatic resources. Resources reviewed include:

- USACE Antecedent Precipitation Tool (USACE 2022)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2022)
- USGS Topographic Maps (USGS 2022)

- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) (USFWS 2022)
- NWI for Minnesota Update (DNR 2018)
- DNR PWI (DNR 2020)
- Aerial Imagery
- DNR Hydrography Dataset (DNR 2022)
- Minnesota DNR MNTOPO Elevation Viewer and LiDAR Data (DNR 2022)

#### 2.4 On-site Wetland Delineation

GEI's on-site wetland delineation followed the USACE procedure for identifying wetland boundaries by completing the appropriate number of sampling points, investigating the required wetland criteria, and identifying the boundary between wetland and upland areas. A soil sampling auger or tiling shovel was used to complete soil sampling points and check the soils and hydrology at periodic intervals throughout the delineated boundary to confirm accuracy and/or adjust the boundary accordingly. All wetland boundaries within the property were flagged with *Wetland Delineation* flagging tape and geolocated using a sub-foot accuracy global positioning system (GPS) and incorporated into a geographic information system (GIS) using ArcGIS 10.8 GIS software. The Site GPS data is being used to aid in Site planning.

In addition to wetlands, waterbodies (lakes or ponds), waterways (streams, rivers, and ditches), and other aquatic resources (seeps and springs) present within the area of investigation were assessed and mapped during fieldwork. The estimated ordinary high water mark of waterbodies, waterways, and ditches were identified and geolocated with GPS as polylines or polygons. Seeps and springs were identified and mapped as points. Observations of the other aquatic resource characteristics were recorded.

The on-site data collection focused on completing sampling points within identified sampling units. Sampling units were distinguished by differences in landscape position, vegetation, soils, hydrology and/or disturbance relevant to the aquatic resource. GEI typically uses plant communities as the primary sampling units. Plant community units typically reflect spatial variations in geomorphology, hydrology, soils, and other factors that are important to the formation and maintenance of wetlands. Plant community units were identified during the desktop review and were adjusted based on observed field conditions. Sampling point locations within the plant community units were selected to be representative of the plant community. At least one sampling point and NCNE Supplement Data Form were completed in each plant community. Sampling points were labeled with a project specific identifier, an alphabetical wetland identifier, followed by the sampling point number, then an upland or wetland designation (e.g. X-A1W is associated with project X, Wetland A, and is the first wetland sampling point).

#### 2.4.1 Normal Circumstances and Antecedent Precipitation

The on-site data collection activities occurred within the growing season as defined in the USACE Regional Supplement. GEI was on-site to complete the wetland delineation on July 05, 2022. Normal circumstances were present during the time of the site visit. Antecedent precipitation data was obtained using the USACE Antecedent Precipitation Tool (APT) to determine if climatic/hydrologic conditions were considered dry, normal, or wet for the analysis area at the time of fieldwork. The APT reported normal antecedent precipitation for the preceding 90 days with approximately 0.7 inches below normal since June 8<sup>th</sup> (Appendix A).

#### 2.4.2 Vegetation

The vegetation occurring at representative sampling point locations was assessed to determine the dominant species in the tree, woody vine, sapling/shrub, and herbaceous vegetation strata. Vegetation plot sizes were a 30-foot radius for tree and woody vine strata, a 15-foot radius for sapling/shrub stratum, and a 5-foot radius for herbaceous stratum. Depending on the community size encountered at each sampling point, the plot size for the tree/vine/shrub/herb strata was adjusted to restrict the sampled vegetation to the plant community being assessed. The percentage of absolute areal cover was visually estimated for each species within each plot and recorded on the NCNE Supplement Data Forms. Wetland indicator status was applied to each species from *The National Wetland Plant List: 2020 Wetland Rating* (USACE, 2020). The 50/20 rule was applied to determine dominant species within each stratum. The Rapid Test for Hydrophytic Vegetation, Dominance Test, and Prevalence Index was then be calculated, and a determination of the presence of hydrophytic vegetation was made.

## 2.4.3 Hydrology

Each sampling point was investigated for primary and secondary hydrology indicators listed on the NCNE Supplement Data Forms and as described in the USACE Wetlands Delineation Manual and Regional Supplement. Observations of surface water depth, depth to saturation and depth to water table were recorded. Observations of hydrology indicators were recorded on the NCNE Supplement Data Forms.

#### 2.4.4 Soils

The presence or absence of hydric soils was assessed through use of a shovel or soil auger to observe and document the soil profile to a depth of at least 24 inches unless a restrictive layer is encountered, or a hydric soil indicator and hydrology was identified at a lesser depth. Soil profile descriptions of the hue, value, and chroma for each soil horizon were completed at each sampling point using Munsell soil color charts. The USDA NRCS soil texture, special features (e.g., redox concentrations, depletions, muck, sulfidic odor) along with horizon depths, were recorded for each soil horizon. Accepted field indicators (*NRCS 2018, Field Indicators of Hydric Soils in the United States, Version 8.2*) were referenced to determine if the hydric soils technical

criteria were met. Soil conditions and hydric soil indicators were recorded on the NCNE Supplement Data Forms for each sampling point.

## 3. Results

#### 3.1 Wetlands

Six wetlands, Wetlands A - E, were identified within the delineation area covering a total area of approximately 1-acre.

**Wetland A** is a small Type 1 – Seasonally Saturated Basin is the southcentral part of the Site. Wetland A receives precipitation runoff from the surrounding uplands and eventually drains to the south. **Wetland B** is a relatively large Type 6 – Alder Thicket in the northcentral part of the Site. Wetland B receives precipitation runoff from the surrounding uplands and may receive water from a seep at the north end. A drainage ditch runs along the east side of Wetland B. **Wetland C** is a Type 2 Sedge Meadow within one of the former golf course fairways in the southeast part of the Site. Wetland C receives hydrology from precipitation and an ephemeral drainage the cuts across the Site. **Wetland D** is primarily a Type 7 - Hardwood Swamp with some Type 2 – Sedge Meadow where the wetland extends into a former fairway. Wetland D is located in the southcentral part of the Site and receives hydrology from precipitation and from an ephemeral drainage that enters Wetland D from the northwest. Wetland E is a Type 7 -Hardwood Swamp located in the northeast part of the Site in the forest between fairways. Wetland E is a sloped wetland that receives hydrology from precipitation and a seep on the northwest end. Wetland F is a small Type 6 – Alder Thicket in the northeast part of the Site. Where water accumulates at the base of a slope. Hydrology is provided by precipitation and an ephemeral drainage that begins northeast of Wetland F and continues offsite to the southeast.

## 3.2 Other Aquatic Resources

## 3.2.1 Ephemeral Drainage

Several Ephemeral drainages cut across the site from the northwest to the southeast. None of these drainages contained flowing water at the time of the delineation. Some contained only saturated soils while others contained some stagnant surface water. Portions of the ephemeral drainages were piped underground through concrete pipe and corrugated drain tile. None of the ephemeral drainages were identified on the PWI.

#### 3.2.2 Wet Ditch

Two wet ditches were identified within the delineation area along golf cart trails and the former fairways. Wet ditch was classified as a linear basin or depressional area that met all three wetland criteria but was confined to the bed and bank of a manmade ditch. Evidence of spoil piles along the ditches was observed.

## 3.3 Supporting Documentation

See Figure 2 for details on the wetland boundary and sampling point locations, Figure 3 for the NWI and PWI classifications, and Figure 4 for the wetland plant communities. Photographs of select Site features are included in Appendix B. Specifics of observed vegetation, hydrology, and soil characteristics of the Site wetlands are included on the NCNE Supplement Data Forms in Appendix C. The soil survey map units and hydric soil classifications are included in Appendix D.

## 4. Reporting and Regulatory Concurrence

Based on GEI's best professional judgement, the delineated wetlands meet the criteria outlined in the USACE Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. This Wetland Delineation Report will be submitted to the Local Government Unit (LGU) Technical Evaluation Panel (TEP) and USACE, along with a Minnesota Joint Application Form requesting delineation concurrence.

The wetlands and other aquatic resources identified in this report may be subject to federal regulation under the jurisdiction of the USACE, state regulation under the Minnesota Wetland Conservation Act (WCA), and local jurisdiction under the local county, town, or city. Please note that, as with all wetland delineations, the regulatory agencies have final jurisdiction regarding the location of wetland boundaries and determination of jurisdictional status.

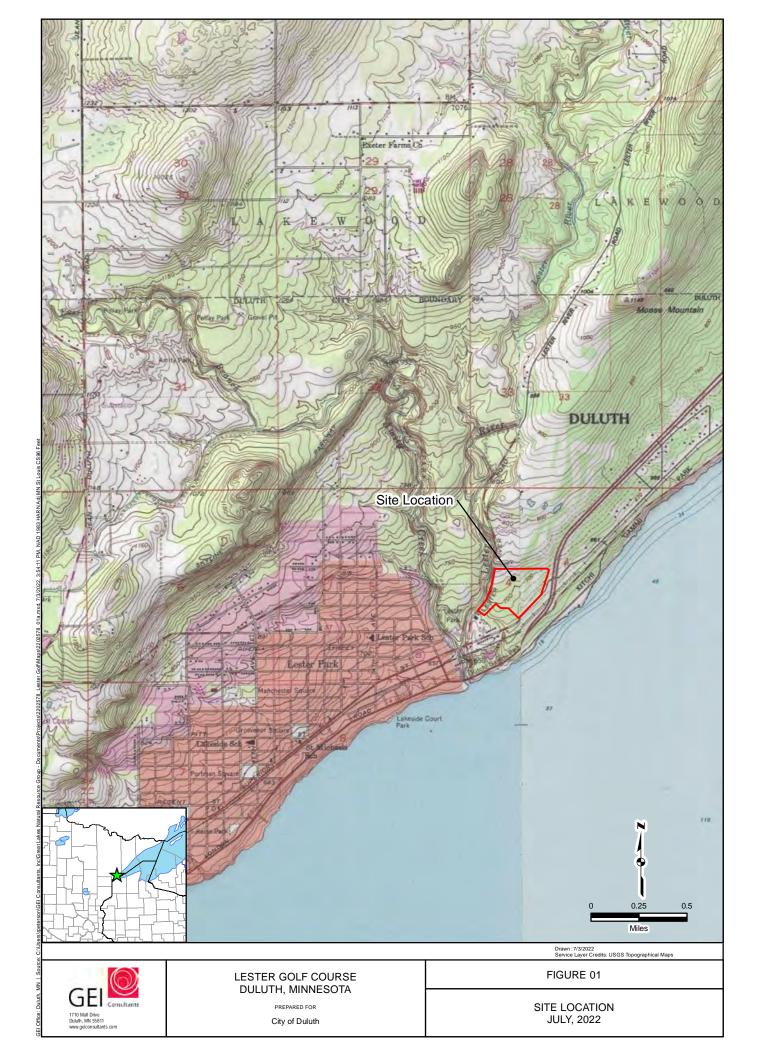
## 5. References

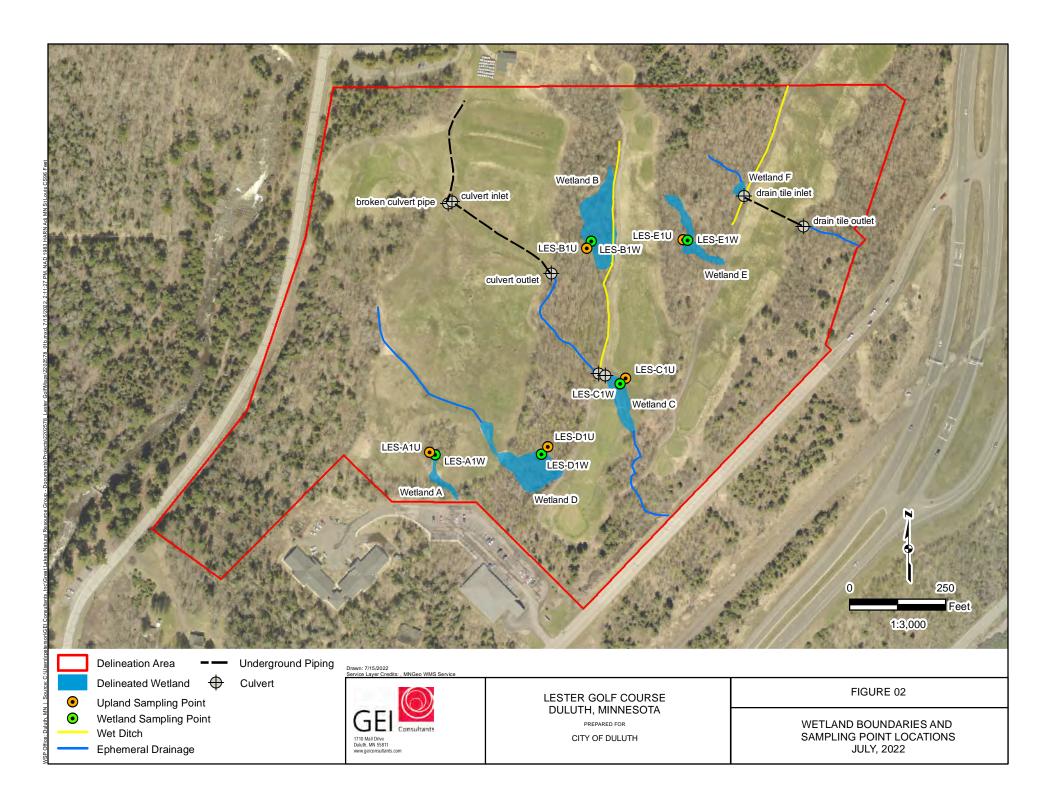
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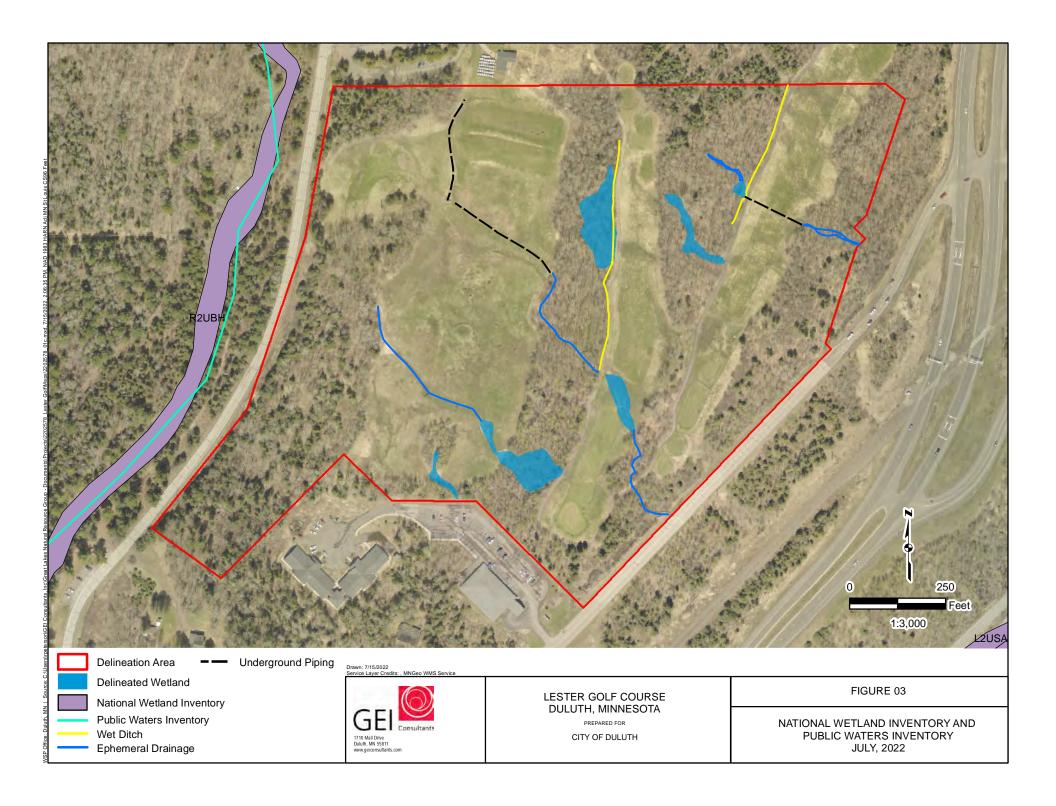
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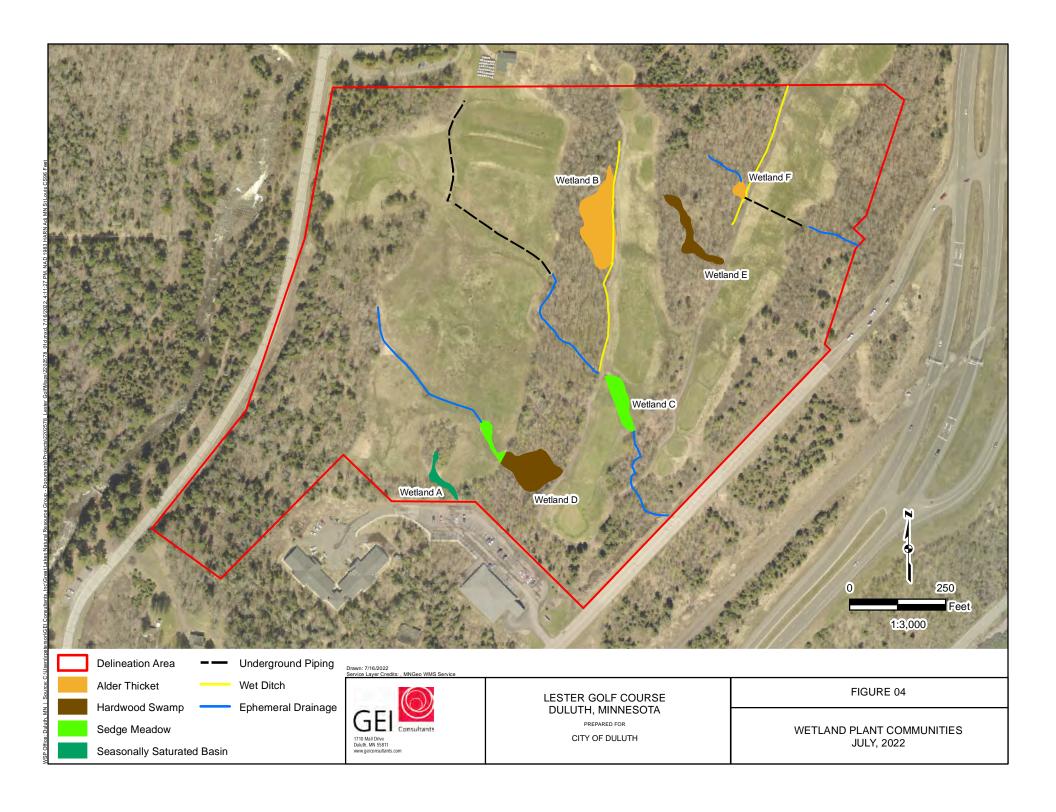
## **Figures**

- Figure 1 Site Location
- Figure 2 Wetland Boundary and Sampling Point Locations
- Figure 3 National Wetland Inventory and Public Waters Inventory
- Figure 4 Wetland Plant Communities





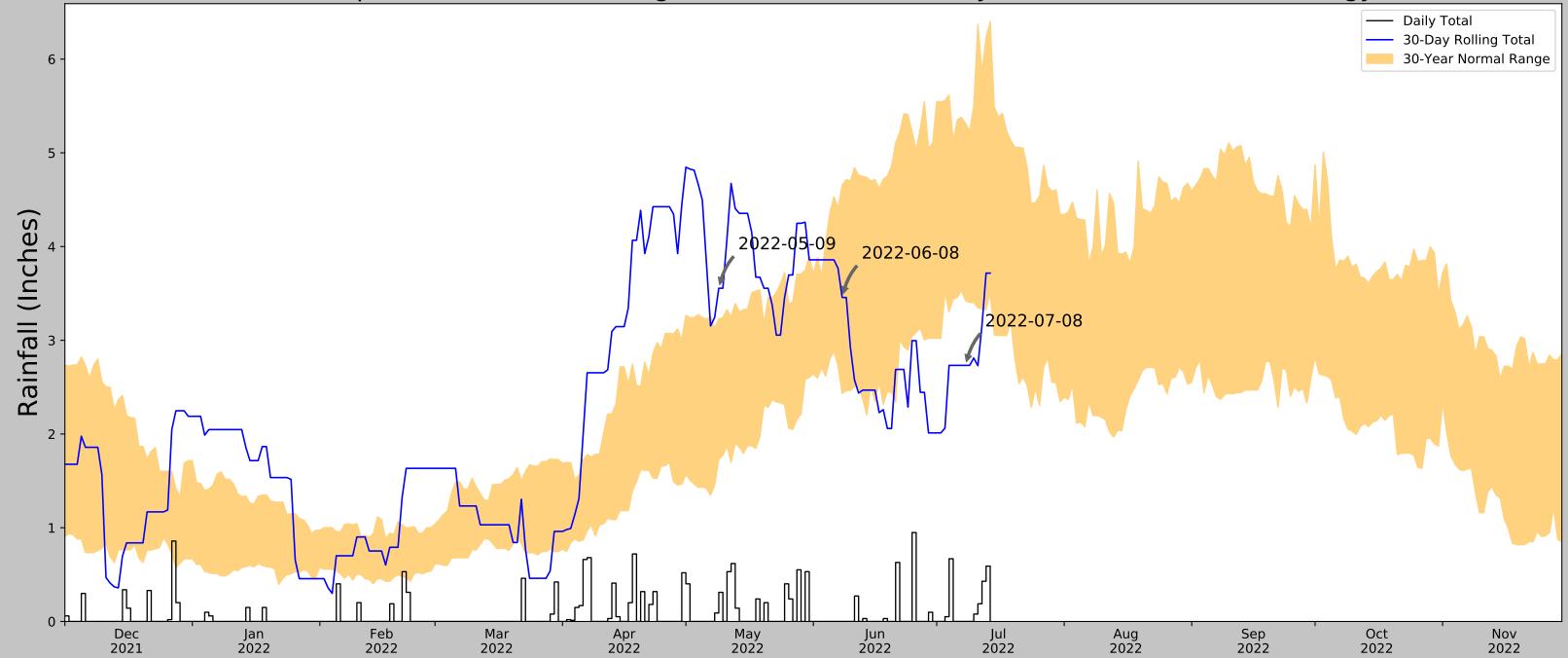




## Appendix A

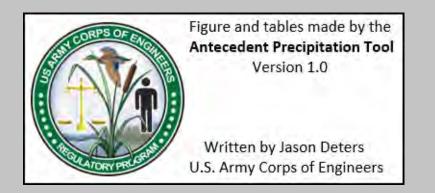
**Antecedent Precipitation Tool** 

## Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.834966, -92.017159
Observation Date	2022-07-08
Elevation (ft)	655.66
Drought Index (PDSI)	Moderate wetness (2022-06)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-07-08	3.423228	5.31378	2.732284	Dry	1	3	3
2022-06-08	2.432677	4.655118	3.456693	Normal	2	2	4
2022-05-09	1.728347	3.227953	3.555118	Wet	3	1	3
Result							Normal Conditions - 10



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
SUPERIOR	46.7269, -92.0719	606.955	7.903	48.705	3.941	11012	87
DULUTH HARBOR STN	46.7681, -92.0903	609.908	2.977	2.953	1.348	6	0
DULUTH 1.2 SE	46.77, -92.0883	607.94	3.077	0.985	1.388	29	2
SUPERIOR 3.7 WNW	46.7087, -92.1368	641.076	3.322	34.121	1.608	0	1
DULUTH 3.2 NE	46.8131, -92.0556	647.966	6.006	41.011	2.949	56	0
DULUTH 3.0 NE	46.8153, -92.0637	824.147	6.12	217.192	4.083	12	0
DULUTH 7.9 SW	46.705, -92.2267	1136.155	7.488	529.2	7.332	1	0
PATTISON RANGER STAION	46.5372, -92.1186	1100.066	13.293	493.111	12.537	196	0
CARLTON 5.6 NE	46.7078, -92.3279	1189.961	12.198	583.006	12.601	1	0
DULUTH	46.8369, -92.2097	1428.15	10.014	821.195	12.73	40	0

## Appendix B

**Site Photographs** 



Photo 1:Sampling Point A1U. Hardwood Forest.



Photo 2:Sampling Point A1W. Seasonally Saturated Basin.





Photo 3:Sampling Point B1U. Hardwood Forest.



Photo 4:Sampling Point B1W. Alder Thicket.





Photo 5:Sampling Point C1U. Open Grassland.



Photo 6:Sampling Point C1W. Sedge Meadow.





Photo 7:Sampling Point D1U. Hardwood Forest.



Photo 8:Sampling Point D1W. Hardwood Swamp.



## **Appendix C**

**USACE Wetland Determination Data Forms** 

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lester Golf	City/County: St. Louis County Sampling Date: 2022-07-06
	State: Minnesota Sampling Point: LES-A1U
Investigator(s): GEI - Rob Peterson	
	Local relief (concave, convex, none): Convex Slope (%): 8-15
	150 Long: <u>-92.001957</u> Datum: <u>WGS84</u>
	slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time o	·
	ntly disturbed? Are "Normal Circumstances" present? Yes _ ✓ No
Are Vegetation, Soil, or Hydrology naturally	
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes <u>✓</u> No	Is the Sampled Area
Hydric Soil Present? Yes No _✓	4 -   N -4  0
Wetland Hydrology Present? Yes No✓	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedures here or in a separate re Hardwood forest upslope from vernal pool	eport.)
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that app	
Surface Water (A1) Water-Stain	
High Water Table (A2) Aquatic Fau	
Saturation (A3) Marl Deposi	ts (B15) Dry-Season Water Table (C2)
	ulfide Odor (C1) Crayfish Burrows (C8)
	nizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
	Reduced Iron (C4) Stunted or Stressed Plants (D1)
	Reduction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck S	
Inundation Visible on Aerial Imagery (B7) Other (Expla Sparsely Vegetated Concave Surface (B8)	ain in Remarks) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations:	(Ac notific 168 (Bb)
Surface Water Present? Yes No _ ✓ Depth (incl	nes):
Water Table Present? Yes No _✓ Depth (inch	
Saturation Present? Yes No _✓ Depth (inch	
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial pl	potos, provious inspections), if available:
Describe Necorded Data (stream gauge, monitoring well, aerial pr	iotos, previous inspections), ii available.
Remarks: No indicators of wetland hydrology were obs	erved.

T. 01.1. (BL) : 20	Absolute		t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 )		Species?		Number of Dominant Species
1 Populus tremuloides			FAC	That Are OBL, FACW, or FAC:3 (A)
2. <u>Fraxinus nigra</u>			FACU	Total Number of Dominant Species Across All Strata: 5 (B)
3. <u>Betula papyrifera</u>			<u>FACU</u>	(-)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 60.00 (A/B)
5				That Ale OBE, I AGW, OF I AG.
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
. <u>.</u>	45	= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 )				FACW species 9.00 x 2 = 18.00
1. <u>Cornus racemosa</u>		<u>Y</u>	FAC	FAC species <u>63.00</u> x 3 = <u>189.00</u> FACU species <u>37.00</u> x 4 = <u>148.00</u>
2. Rhamnus cathartica				UPL species 50.00 x 5 = 250.00
3. <u>Populus tremuloides</u>			_FAC_	Column Totals: <u>159.00</u> (A) <u>605.00</u> (B)
4. Prunus virginiana	_ 3	N	<u>FACU</u>	
5. <u>Betula papyrifera</u>	1	N	<u>FACU</u>	Prevalence Index = B/A = 3.81
6. Fraxinus nigra	1_	N	<u>FACW</u>	Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	18	= Total Co	ver	2 - Dominance Test is >50%
Herb Stratum (Plot size:)				3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
1. Eurybia macrophylla	50	<u>Y</u>	<u>UPL</u>	data in Remarks or on a separate sheet)
2. <u>Hieracium greenii</u>	_20_	Y	<u>FACU</u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. <u>Equisetum arvense</u>	5	N	FAC	The first country of the state
4. Athyrium angustum		N	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. Rubus pubescens	5	N	<u>FACW</u>	Definitions of Vegetation Strata:
6. Tanacetum vulgare	5	N	<u>FACU</u>	
7. <u>Rosa woodsii</u>	3	N	<u>FACU</u>	<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8. <u>Gymnocarpium dryopteris</u>		N	FACU	Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10			-	Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12.				Woody vines – All woody vines greater than 3.28 ft in
	96	= Total Co	ver	height.
Woody Vine Stratum (Plot size:)				
1				
2.				
3.				Hydrophytic
4				Vegetation
		= Total Co		Present? Yes No
Remarks: (Include photo numbers here or on a separate s		10101 00		

Sampling Point: LES-A1 H

Matrix			Redox	c Features						
Color (moist)	%	Color (mo	ist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rer	marks	
7.5YR 3/3	100						FSL			
7.5YR 4/3	90_	7.5YR 4	4/6_	_10_	<u> </u>	_M_	FSL			
	· ——									
	letion, RM	I=Reduced Ma	trix, MS	=Masked	Sand Gr	ains.				
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149)			<ul> <li>Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</li> <li>Thin Dark Surface (S9) (LRR R, MLRA 149B)</li> <li>Loamy Mucky Mineral (F1) (LRR K, L)</li> <li>Loamy Gleyed Matrix (F2)</li> <li>Depleted Matrix (F3)</li> <li>Redox Dark Surface (F6)</li> <li>Depleted Dark Surface (F7)</li> <li>Redox Depressions (F8)</li> </ul>				<ul> <li>2 cm Muck (A10) (LRR K, L, MLRA 149B)</li> <li>Coast Prairie Redox (A16) (LRR K, L, R)</li> <li>5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</li> <li>Dark Surface (S7) (LRR K, L)</li> <li>Polyvalue Below Surface (S8) (LRR K, L)</li> <li>Thin Dark Surface (S9) (LRR K, L)</li> <li>Iron-Manganese Masses (F12) (LRR K, L, R)</li> <li>Piedmont Floodplain Soils (F19) (MLRA 149B)</li> <li>Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</li> <li>Red Parent Material (F21)</li> <li>Very Shallow Dark Surface (TF12)</li> <li>Other (Explain in Remarks)</li> </ul>			
		etland hydrolo	gy mus	t be prese	nt, unless	s disturbed	or problematic.			
Layer (if observed):										
							<u>.</u>			
ches):							Hydric Soil Pres	sent? Yes_	No <u> </u>	
	7.5YR 4/3  oncentration, D=Dep Indicators: (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) (LRR R, M f hydrophytic vegeta Layer (if observed):	7.5YR 4/3 90  7.	7.5YR 4/3 90 90 90 90 90 90 90 90 90 90 90 90 90	7.5YR 4/3 90 7.5YR 4/6	7.5YR 4/3 90 7.5YR 4/6 10  oncentration, D=Depletion, RM=Reduced Matrix, MS=Masked Indicators:  (A1)	7.5YR 4/3 90 7.5YR 4/6 10 C    Total Concentration   Concentra	7.5YR 4/3 90 7.5YR 4/6 10 C M  oncentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Indicators:  (A1)	oncentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.    Coation: Planticators:   Indicators for	oncentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.    At the content of the co	

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lester Golf		City/C	County: St. L	ouis Cour	nty Sa	ampling Date: <u>/</u>	2022-07-06	
		State: Minnesota Sampling Point: LES-A1						
·		Section, Township, Range: Sec. 04. T50N, R13W						
- : :		Local relief (concave, convex, none): Concave Slope (%): 0-2						
Subregion (LRR or MLRA): LRR K, I	•			•				
Soil Map Unit Name: Cuttre-Eutr							<u> </u>	
Are climatic / hydrologic conditions on	• '		•					
Are Vegetation, Soil, o		-					/ No	
<u> </u>					•	·	<u> </u>	
Are Vegetation, Soil, o				•	ain any answers i	•		
SUMMARY OF FINDINGS – A	Attach site m	ap showing sam	npling poin	t locations	, transects, ir	nportant fe	atures, etc.	
Hydrophytic Vegetation Present?	Yes <b>✓</b>	_ No	Is the Samp	led Area				
Hydric Soil Present?		No	within a We	tland?	Yes <u> </u>	No		
Wetland Hydrology Present?		_ No	If yes, option	nal Wetland Sit	e ID:			
Remarks: (Explain alternative proced			1					
Hardwood swamp. Verna	li pooi uraii	is to the south	easi.					
I								
HYDROLOGY								
Wetland Hydrology Indicators:					condary Indicators	•	two required)	
Primary Indicators (minimum of one i	s required; check	call that apply)			Surface Soil Cra	acks (B6)		
Surface Water (A1)		Water-Stained Leaves			Drainage Patter			
<u>✓</u> High Water Table (A2)		Aquatic Fauna (B13)			Moss Trim Lines (B16)			
✓ Saturation (A3)		Marl Deposits (B15)			Dry-Season Wa			
Water Marks (B1)		Hydrogen Sulfide Odd			Crayfish Burrow			
Sediment Deposits (B2)		Oxidized Rhizosphere	_					
Drift Deposits (B3)		Presence of Reduced			Stunted or Stres		)	
Algal Mat or Crust (B4) Iron Deposits (B5)		Recent Iron Reduction			Geomorphic Pos			
Iron Deposits (B5) Inundation Visible on Aerial Imag		_ Thin Muck Surface (C7) _ Other (Explain in Remarks)			<ul><li>Shallow Aquitard (D3)</li><li>Microtopographic Relief (D4)</li></ul>			
<ul> <li>Inundation Visible on Aeriai Imag</li> <li>Sparsely Vegetated Concave Su</li> </ul>		Other (Explain in Neil	narks)		FAC-Neutral Te			
Field Observations:	mace (DO)				FAC-INCULIAL 10	si (Do)		
	No <b>✓</b>	Depth (inches):						
		Depth (inches): 11						
		Depth (inches): 0		Wetland Hydr	rology Present?	Yes ✓	No	
(includes capillary fringe)				-				
Describe Recorded Data (stream gau	uge, monitoring w	<i>i</i> ell, aerial photos, prev	evious inspection	ons), if availab	le:			
Remarks:								
Nemarks.								

Sapling/Shrub Stratum (Plot size: 15 )

Herb Stratum (Plot size: 5

1 Carex lacustris

3. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_

5. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ 6. \_\_\_\_\_\_ \_\_\_ \_\_\_\_

3. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_\_

2. <u>Carex canescens</u> 10 N OBL

4. \_\_\_\_\_\_\_

5. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_

8. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_

10. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

2. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

1 Populus tremuloides 10 Y FAC

<u>Tree Stratum</u> (Plot size: \_\_\_\_\_\_)

Absolute Dominant Indicator

% Cover Species? Status

\_\_\_\_\_ = Total Cover

\_\_\_\_10\_\_ = Total Cover

60 = Total Cover

\_ = Total Cover

Hydrophytic Vegetation

Present?

Sampling Point: LES-A1						
Dominance Test worksheet:						
Number of Dominant Species That Are OBL, FACW, or FAC: (A)						
Total Number of Dominant Species Across All Strata: (B)						
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)						
Prevalence Index worksheet:						
Total % Cover of: Multiply by:						
OBL species <u>60.00</u> x 1 = <u>60.00</u>						
FACW species <u>0.00</u> x 2 = <u>0.00</u>						
FAC species 10.00 x 3 = 30.00						
FACU species <u>0.00</u> x 4 = <u>0.00</u>						
UPL species <u>0.00</u> x 5 = <u>0.00</u>						
Column Totals: <u>70.00</u> (A) <u>90.00</u> (B)						
Prevalence Index = B/A = 1.29						
Hydrophytic Vegetation Indicators:						
• • • •						
1 - Rapid Test for Hydrophytic Vegetation						
2 - Dominance Test is >50%						
2 - Dominance Test is >50%     3 - Prevalence Index is ≤3.0¹     4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)						
2 - Dominance Test is >50%     3 - Prevalence Index is ≤3.0¹     4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)						
2 - Dominance Test is >50%     3 - Prevalence Index is ≤3.0¹     4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)     Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.						

Remarks:	(Include photo number	s here or on a	separate	sheet.)
40 perd	ent bare ground	Ł	•	,

Woody Vine Stratum (Plot size: \_\_\_\_\_\_)

Yes \_\_\_\_ No \_\_\_\_

Sampling Point: LES-A1

SOIL

Depth	cription: (Describe t Matrix		th needed to document the indicator or confirm  Redox Features	the absence of	indicators.)
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
<u>0-16</u>	N 2.5/0	100		<u> MPT</u> _	
16-20	7.5YR 2.5/1	100		C	
				<u> </u>	
				<u> </u>	
¹Type: C=C	oncentration, D=Depl	etion, RM:	=Reduced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: P	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:			Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Below Surface (S8) (LRR R,		k (A10) (LRR K, L, MLRA 149B)
	pipedon (A2) istic (A3)		MLRA 149B) Thin Dark Surface (S9) (LRR R, MLRA 149B)		iirie Redox (A16) ( <b>LRR K, L, R</b> ) ky Peat or Peat (S3) ( <b>LRR K, L, R</b> )
	en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, L)		ace (S7) ( <b>LRR K, L</b> )
Stratified	d Layers (A5)		Loamy Gleyed Matrix (F2)	Polyvalue	Below Surface (S8) (LRR K, L)
	d Below Dark Surface	e (A11)	Depleted Matrix (F3)		Surface (S9) (LRR K, L)
	ark Surface (A12) Jucky Mineral (S1)		<ul><li>Redox Dark Surface (F6)</li><li>Depleted Dark Surface (F7)</li></ul>		ganese Masses (F12) ( <b>LRR K, L, R</b> ) Floodplain Soils (F19) ( <b>MLRA 149B</b> )
	Gleyed Matrix (S4)		Redox Depressions (F8)		odic (TA6) (MLRA 144A, 145, 149B)
Sandy F	Redox (S5)		_ , , ,	Red Pare	nt Material (F21)
	d Matrix (S6)				low Dark Surface (TF12)
Dark Su	ırface (S7) ( <b>LRR R, M</b>	ILRA 149E	3)	Other (Ex	plain in Remarks)
<sup>3</sup> Indicators o	of hydrophytic vegetati	ion and we	etland hydrology must be present, unless disturbed	or problematic.	
	Layer (if observed):				
Туре:					
Depth (in	ches):		<u> </u>	Hydric Soil Pro	esent? Yes <u></u> No
Remarks:					

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lester Golf	City/County: St. I	_ouis County Sa	ampling Date: 2022-07-08
		State: Minnesota	
Investigator(s): GEI - Rob Peterson			, ,
Landform (hillslope, terrace, etc.): Backslope			Slone (%): 3-7
Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8			
Soil Map Unit Name: <u>Urban land-Amnicon-Rock outcr</u>		•	
Are climatic / hydrologic conditions on the site typical for this t			
Are Vegetation, Soil, or Hydrology sig		re "Normal Circumstances" pres	sent? Yes <u>✓</u> No
Are Vegetation, Soil, or Hydrology nat	urally problematic? (I	f needed, explain any answers in	n Remarks.)
SUMMARY OF FINDINGS - Attach site map si	nowing sampling poir	nt locations, transects, in	mportant features, etc.
Hydrophytic Vegetation Present? Yes No	✓ Is the Samp	oled Area	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No			No <u>✓</u>
Wetland Hydrology Present? Yes No		nal Wetland Site ID:	
Remarks: (Explain alternative procedures here or in a sepa			
Hardwood forest			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators	s (minimum of two required)
Primary Indicators (minimum of one is required; check all that	at apply)	Surface Soil Cra	acks (B6)
Surface Water (A1) Water	-Stained Leaves (B9)	Drainage Patteri	ns (B10)
High Water Table (A2) Aquat	ic Fauna (B13)	Moss Trim Lines	s (B16)
	Deposits (B15)	Dry-Season Wa	
	gen Sulfide Odor (C1)	Crayfish Burrow	
	ed Rhizospheres on Living R		le on Aerial Imagery (C9)
	nce of Reduced Iron (C4)	Stunted or Stres	
	nt Iron Reduction in Tilled Soi		
	/luck Surface (C7) (Explain in Remarks)	Shallow Aquitaro Microtopographi	
Sparsely Vegetated Concave Surface (B8)	(Explain in Remarks)	FAC-Neutral Tes	
Field Observations:		17.0 Neutral 16.	31 (50)
Surface Water Present? Yes No _ ✓ Deptl	n (inches):		
Water Table Present? Yes No _✓ Depti			
Saturation Present? Yes No ✓ Depti		Wetland Hydrology Present?	Yes No/_
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, ae	rial photos, provious inspecti	inna) if available:	
Describe Recorded Data (stream gauge, monitoring well, as	riai priotos, previous irispecti	ons), ii avallable.	
Remarks:	abaan rad		
No indicators of wetland hydrology were	observed.		

Tree Stratum (Plot size: 30 )	Absolute % Cover		t Indicator Status	Dominance Test worksheet:
1. Populus tremuloides			FAC	Number of Dominant Species
Fraxinus pennsylvanica				That Are OBL, FACW, or FAC:2 (A)
, -				Total Number of Dominant Species Across All Strata:  4 (B)
3				(=,
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)
5				, , , , , , , , , , , , , , , , , , , ,
6.				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
45	/U	= Total Co	over	OBL species 0.00 x1 = 0.00
Sapling/Shrub Stratum (Plot size: 15 )				FACW species <u>15.00</u> x 2 = <u>30.00</u> FAC species <u>88.00</u> x 3 = <u>264.00</u>
1. Rhamnus cathartica				FACU species 12.00 x 4 = 48.00
2. Corylus americana			<u>FACU</u>	UPL species 60.00 x 5 = 300.00
3. <u>Lonicera tatarica</u>	2	N	<u>FACU</u>	Column Totals: <u>175.00</u> (A) <u>642.00</u> (B)
4				
5				Prevalence Index = B/A = 3.67
6		-		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	22	= Total Co	over	2 - Dominance Test is >50%
Herb Stratum (Plot size:)				3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
1. Eurybia macrophylla	_60	Y	UPL	data in Remarks or on a separate sheet)
2 Athyrium angustum	10	N	<u>FAC</u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. <u>Trientalis borealis</u>		N	FAC	
4. Rubus pubescens			FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. Equisetum arvense				Definitions of Vegetation Strata:
6				_
7				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8	_			Sapling/shrub – Woody plants less than 3 in. DBH
9		-		and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.		'		Woody vines – All woody vines greater than 3.28 ft in
	83	= Total Co	over	height.
Woody Vine Stratum (Plot size: 30 )				
1				
2.				
3				Hydrophytic Vegetation
4				Present? Yes No/
Remarks: (Include photo numbers here or on a separate		= Total Co	over	
Tremane. (molade priote nambers here of on a separate	311001.)			

Sampling Point: LES-B1

SOIL

Profile Des	cription: (Describe Matrix	to the de <sub>l</sub>	oth needed		nent the i x Feature:		or confirm	the absence of	f indicato	rs.)	
(inches)	Color (moist)	%	Color (n		<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-5	7.5YR 3/2	100						SICL			
5-13	7.5YR 3/3	100						SICL			
13-22	7.5YR 4/2	95	<u>7.5YR</u>	4/6	5	С	М	CL			
	-	<del></del>									
	-										
						-					
	-										
	-										_
	-										
1Type: C=C	Concentration, D=Dep	letion RM	=Reduced N	Natriy MS		Sand Gr		<sup>2</sup> l ocation:	PI =Pore I	_ining, M=Ma	atri×
Hydric Soil		ietion, rav	-reduced it	iatrix, ivic	)-Wasket	Oand On	airis.	Indicators fo			
Histoso	I (A1)					(S8) ( <b>LRF</b>	RR,			LRR K, L, M	
	pipedon (A2)			RA 149B)		DD D M	DA 440D)			ox (A16) ( <b>LRI</b>	
	listic (A3) en Sulfide (A4)					-KK K, WII 1) (LRR K	LRA 149B) L)			(LRR K, L)	(LRR K, L, R)
	d Layers (A5)				Matrix (F2		, -,			urface (S8) (	LRR K, L)
	d Below Dark Surfac	e (A11)		ed Matrix						(S9) (LRR K	
	ark Surface (A12)				face (F6) Surface (F						(LRR K, L, R)
	Mucky Mineral (S1) Gleyed Matrix (S4)			Depress		7)					) (MLRA 149B) 4A, 145, 149B)
	Redox (S5)				(, )				ent Materi		<b>,</b> ,
	d Matrix (S6)									Surface (TF	12)
Dark Su	urface (S7) ( <b>LRR R, N</b>	/ILRA 149	<b>B</b> )					Other (E	xplain in F	Remarks)	
<sup>3</sup> Indicators o	of hydrophytic vegetat	tion and w	etland hydro	logy mus	t be prese	ent, unless	s disturbed	or problematic.			
	Layer (if observed):		•		· ·						
Type:											
Depth (in	nches):							Hydric Soil P	resent?	Yes	_ No <u> </u>
Remarks:								l			

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lester Golf		City/C	County: St. Lo	ouis Count	ty San	npling Date: <u>2</u>	2022-07-08	
Applicant/Owner: City Of Duluth					ate: <u>Minnesota</u> S			
Investigator(s): GEI - Rob Peter					4 T050N R	013W		
Landform (hillslope, terrace, etc.): Der				_			e (%): <b>0-2</b>	
Subregion (LRR or MLRA): LRR K, N								
Soil Map Unit Name: Cuttre comp							<u> </u>	
Are climatic / hydrologic conditions on the	•	•						
Are Vegetation, Soil, or		-					' No	
Are Vegetation, Soil, or							110	
-			•		•	·		
SUMMARY OF FINDINGS – A	ttach site ma	ap showing sam	npling point	locations,	transects, im	portant fea	itures, etc.	
Hydrophytic Vegetation Present?	No	Is the Sample						
Hydric Soil Present?	Yes <u></u> ✓		within a Wetla	and?	Yes <u>✓</u>	No		
Wetland Hydrology Present?		No If yes, optional Wetland Site ID:						
Remarks: (Explain alternative procedu								
Alder thicket down slope f	rom naruw	ood lorest						
HYDROLOGY								
Wetland Hydrology Indicators:					ondary Indicators		wo required)	
Primary Indicators (minimum of one is	• • • • • • • • • • • • • • • • • • • •		Surface Soil Cracks (B6)					
Surface Water (A1)	Water-Stained Leave		Drainage Patterns (B10)					
✓ High Water Table (A2)  — Aquatic Fauna (B13)  — N. I. B. Constitution (A2)				Moss Trim Lines (B16)				
Saturation (A3) Water Marks (B1)		Marl Deposits (B15) Hydrogen Sulfide Od	lor (C1)	Dry-Season Water Table (C2) (C1) Crayfish Burrows (C8)				
Sediment Deposits (B2)	· · · · · · · · · · · · · · · · · · ·	Oxidized Rhizospher			Saturation Visible		gery (C9)	
Drift Deposits (B3)		Presence of Reduced	_		Stunted or Stress			
Algal Mat or Crust (B4)		Recent Iron Reductio			Geomorphic Posi			
Iron Deposits (B5)	7	Thin Muck Surface (0	C7)	\$	Shallow Aquitard	(D3)		
Inundation Visible on Aerial Image	∍ry (B7) (	Other (Explain in Rer	marks)	'	Microtopographic	Relief (D4)		
Sparsely Vegetated Concave Sur	face (B8)			<u></u>	FAC-Neutral Test	t (D5)		
Field Observations:								
		Depth (inches):						
	Depth (inches): 11			Mand Hadada and Bura and O. Manda da Ma				
Saturation Present? Yes ✓ No Depth (inches): 0 (includes capillary fringe)				Wetland Hydrology Present? Yes ✓ No				
Describe Recorded Data (stream gaug	je, monitoring we	ell, aerial photos, pre	evious inspection	ns), if available	:			
Remarks:								

Sapling/Shrub Stratum (Plot size: 15 )

Herb Stratum (Plot size: 5

1. Fraxinus nigra 20 Y FACW

2. Populus balsamifera \_\_\_\_\_\_\_ 20 \_\_\_Y FACW

5. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ 6. \_\_\_\_\_ \_\_\_ \_\_\_

1. Alnus incana 30 Y FACW

1. Impatiens capensis 40 Y FACW

3. <u>Solidago gigantea</u> 10 N FACW

4. <u>Geum aleppicum</u> 5 N FAC

5. Rubus pubescens 5 N FACW

6. \_\_\_\_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_\_

9. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_ 10. \_\_\_\_\_ \_\_\_ \_\_\_\_

2 Poa palustris 30 Y

7. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

3. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_

4. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_ 

<u>Tree Stratum</u> (Plot size: \_\_\_\_\_\_)

Absolute Dominant Indicator

% Cover Species? Status

\_\_\_30\_\_ = Total Cover

90 = Total Cover

\_\_ = Total Cover

FACW

Sampling Point: <u>LES-B1</u> ₩							
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: 100.00 (A/B)							
Prevalence Index worksheet:  Total % Cover of: Multiply by:							
OBL species $0.00$ $x 1 =$ $0.00$ FACW species $155.00$ $x 2 =$ $310.00$ FAC species $5.00$ $x 3 =$ $15.00$ FACU species $0.00$ $x 4 =$ $0.00$ UPL species $0.00$ $x 5 =$ $0.00$ Column Totals: $160.00$ (A) $325.00$ (B)							
Prevalence Index = B/A = 2.03							
Hydrophytic Vegetation Indicators:  ✓ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is ≤3.0¹ — 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Vegetation Strata:  Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vines – All woody vines greater than 3.28 ft in height.							
Hydrophytic Vegetation Present? Yes <u>✓</u> No							

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

Woody Vine Stratum (Plot size: \_\_\_\_\_\_)

Sampling Point: LES-B1

inches)	Matrix			<u>k Features</u>		. 2		
	Color (moist)		Color (moist)	<u></u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-13</u>	N 2.5/0	100					_MMI_	Loamy
13-18	7.5YR 4/2	95	7.5YR 4/6	<u>5</u>	_C_	_M_ 	CL	
							21 11	
	oncentration, D=Depl Indicators:	etion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.		n: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils <sup>3</sup> :
Black Hi Hydroge Stratified Depleted Thick Da Sandy M Sandy R Stripped	pipedon (A2) stic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4) Redox (S5) I Matrix (S6) rface (S7) (LRR R, M		MLRA 149B)  Thin Dark Surfa Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Sur Depleted Dark Sur Redox Depressi	ce (S9) ( <b>L</b> lineral (F1 Matrix (F2) (F3) face (F6) Surface (F	) (LRR K		5 cm I Dark \$ Polyva Thin E Iron-M Piedm Mesic Red P Very \$	Prairie Redox (A16) (LRR K, L, R) Mucky Peat or Peat (S3) (LRR K, L, R) Surface (S7) (LRR K, L) alue Below Surface (S8) (LRR K, L) Dark Surface (S9) (LRR K, L) danganese Masses (F12) (LRR K, L, R) nont Floodplain Soils (F19) (MLRA 1498 Spodic (TA6) (MLRA 144A, 145, 1498 Parent Material (F21) Shallow Dark Surface (TF12) (Explain in Remarks)
			etland hydrology mus	t be prese	nt, unless	disturbed of	or problemati	c.
	Layer (if observed):							
estrictive l								
Restrictive I								
	ches):						Hydric Soil	I Present? Yes <u>✓</u> No

Project/Site: Lester Golf	City/Cour	nty: St. Louis Co	ountv Sar	mpling Date: <u>2022-07-08</u>
			•	Sampling Point: <u>LES-C1U</u>
Investigator(s): GEI - Rob Peterson	Section, 7	Township, Range: <b>S</b> (	ec 04 T050N R	013W
Landform (hillslope, terrace, etc.): Backslope				
Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 2				
Soil Map Unit Name: <u>Urban land-Cuttre-Rock ou</u>				
		·		
Are climatic / hydrologic conditions on the site typical for				
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology	_ naturally problematic?	? (If needed, e	xplain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site ma	p showing sampli	ing point locatio	ns, transects, im	portant features, etc.
Hydrophytic Vegetation Present? Yes	No ✓ Is	the Sampled Area		
Hydric Soil Present? Yes		ithin a Wetland?	Yes	No <u>✓</u>
Wetland Hydrology Present? Yes		yes, optional Wetland	Site ID:	
Open grassland (former golf course fa	airway) upsiope	of riparian we	tland and epne	meral drainage.
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is required; check a	all that apply)		Surface Soil Crac	
	Vater-Stained Leaves (B		Drainage Pattern	
	quatic Fauna (B13)		Moss Trim Lines	
	Marl Deposits (B15)	0.0	Dry-Season Wate	
	lydrogen Sulfide Odor (C		Crayfish Burrows	
	Oxidized Rhizospheres of Presence of Reduced Iron		<ul><li>Saturation Visible</li><li>Stunted or Stress</li></ul>	e on Aerial Imagery (C9)
	Recent Iron Reduction in		Geomorphic Posi	
	hin Muck Surface (C7)	111100 00.10 (0.1)	Shallow Aquitard	
	Other (Explain in Remark	ks)	Microtopographic	
Sparsely Vegetated Concave Surface (B8)		,	FAC-Neutral Tes	
Field Observations:				
Surface Water Present? Yes No <u>✓</u> [				
Water Table Present? Yes No <u>✓</u> [				
Saturation Present? Yes No [ (includes capillary fringe)	Depth (inches):	Wetland H	ydrology Present?	Yes No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring we	II, aerial photos, previou	us inspections), if avai	ilable:	
Remarks:				
No indicators of wetland hydrology we	ere observed.			

Sapling/Shrub Stratum (Plot size: \_\_\_\_\_\_)

Herb Stratum (Plot size: 5

1 Poa pratensis

2. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

3. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_

5. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_\_\_ 6. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_

2. \_\_\_\_\_ \_ \_\_\_ \_ \_\_\_ \_ \_\_\_

3. \_\_\_\_\_\_ \_\_\_ \_\_\_\_

6. \_\_\_\_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_\_

7. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_\_

2. <u>Tanacetum vulgare</u> <u>5</u> <u>N</u> <u>FACU</u> 3. <u>Taraxacum officinale 5 N FACU</u>

4. Solidago canadensis 3 N FACU

5. <u>Sedum ternatum</u> 3 N FACU

6. Sonchus arvensis 3 N FACU

8. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_

9. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_\_\_ 10. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_

7. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

<u>Tree Stratum</u> (Plot size: \_\_\_\_\_\_)

Absolute Dominant Indicator

% Cover Species? Status

\_\_\_\_\_ = Total Cover

\_\_\_\_\_ = Total Cover

99 = Total Cover

= Total Cover

\_\_\_\_\_\_<u>80</u> Y FACU

\_\_\_\_

Sampling Point: <u>LES-C1U</u>
Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC:(A)
Total Number of Dominant Species Across All Strata:1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)
Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0.00         x 1 = 0.00           FACW species         0.00         x 2 = 0.00           FAC species         0.00         x 3 = 0.00           FACU species         99.00         x 4 = 396.00           UPL species         0.00         x 5 = 0.00           Column Totals:         99.00         (A) 396.00         (B)
Prevalence Index = B/A = 4.0  Hydrophytic Vegetation Indicators:
<ul> <li>1 - Rapid Test for Hydrophytic Vegetation</li> <li>2 - Dominance Test is &gt;50%</li> <li>3 - Prevalence Index is ≤3.0¹</li> <li>4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</li> <li>Problematic Hydrophytic Vegetation¹ (Explain)</li> </ul>
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Definitions of Vegetation Strata:
<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
Hydrophytic Vegetation Present? Yes No <u>✓</u>

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

Woody Vine Stratum (Plot size: \_\_\_\_\_\_)

SOIL Sampling Point: <u>LES-C1U</u>

	cription: (Describe	to the de	oth needed				or confirm	the absence	e of indicators.)				
Depth (inches)	Matrix Color (moist)	%	Color (n		x Features	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks				
0-9	7.5YR 3/2	100	•					CL	With gravel fill				
9-17	7.5YR 3/2	95	7.5YR	4/4	5		M	CL	With gravel fill				
17-24	7.5YR 4/2		7.5YR		10		M		- viui giavei iii				
17-24	<u> 7.5111 4/2</u>	_ <u> </u>	<u> </u>	4/0			<u>IVI</u>						
					. ——								
					. ——								
<sup>1</sup> Type: C=C	oncentration, D=Dep	oletion, RM	=Reduced N	∕latrix, MS	S=Masked	Sand Gr	ains.	<sup>2</sup> Location	n: PL=Pore Lining, M=Matrix.				
Hydric Soil	Indicators:								s for Problematic Hydric Soils³:				
Histosol	` '		-	ilue Belov <b>RA 149B</b> )	v Surface	(S8) ( <b>LR</b> I	R R,		Muck (A10) ( <b>LRR K, L, MLRA 149B</b> ) : Prairie Redox (A16) ( <b>LRR K, L, R</b> )				
	pipedon (A2) istic (A3)			,		.RR R, M	LRA 149B)		Mucky Peat or Peat (S3) (LRR K, L, R)				
Hydroge	en Sulfide (A4)		Loamy	Mucky N	/lineral (F	I) (LRR K		Dark	Dark Surface (S7) (LRR K, L)				
	d Layers (A5) d Below Dark Surfac	co (Λ11)		<sup>,</sup> Gleyed <b>I</b> ed Matrix	Matrix (F2	)		Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)					
	ark Surface (A12)	c (ATT)			rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)					
-	/lucky Mineral (S1)		Depleted Dark Surface (F7)					Piedmont Floodplain Soils (F19) (MLRA 149B)					
	Gleyed Matrix (S4) Redox (S5)		Redox	Depress	ions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)					
-	Matrix (S6)							Red Parent Material (F21) Very Shallow Dark Surface (TF12)					
	rface (S7) ( <b>LRR R</b> , I	MLRA 149	В)						(Explain in Remarks)				
3Indicators o	f hydrophytic vegeta	ation and w	etland hydro	loav mus	t ha nrase	ant unles	e dieturhed	or problemati	ic				
	Layer (if observed)		eliana nyara	nogy mus	it be prese	int, unico	s disturbed	Probleman					
Type:													
Depth (in	ches):							Hydric Soi	I Present? Yes No _✓				
Remarks:													

Project/Site: Lester Golf	City/County: St. Louis County Sampling Date: 2022-07-08						
Applicant/Owner: City Of Duluth	<del>-</del>						
•	Section, Township, Range: <u>sec 04 T050N R013W</u>						
	Local relief (concave, convex, none): Concave Slope (%): 0-2						
Subregion (LRR or MLRA): LRR K, MLRA 92 La							
Soil Map Unit Name: Urban land-Amnicon-Roo							
Are climatic / hydrologic conditions on the site typical	•	· · · · · · · · · · · · · · · · · · ·					
Are Vegetation, Soil, or Hydrology	-						
			· · · · · · · · · · · · · · · · · · ·				
Are Vegetation, Soil, or Hydrology							
SUMMARY OF FINDINGS – Attach site	map showing sampl	ling point locations, tra	nsects, important features, etc.				
Hydrophytic Vegetation Present? Yes ✓	110	s the Sampled Area					
	No	vithin a Wetland? Ye	es <u>/</u> No				
Wetland Hydrology Present? Yes <u>✓</u>	No If	yes, optional Wetland Site ID:					
Remarks: (Explain alternative procedures here or in	n a separate report.)						
Riparian wetland along ephemeral	drainage						
HYDROLOGY							
Wetland Hydrology Indicators:		Seconda	ary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; che	eck all that apply)	Surf	face Soil Cracks (B6)				
Surface Water (A1)	_ Water-Stained Leaves (E		inage Patterns (B10)				
	Aquatic Fauna (B13)		Moss Trim Lines (B16)				
Saturation (A3)	_ Marl Deposits (B15)	Dry-	Dry-Season Water Table (C2)				
Water Marks (B1)	_ Hydrogen Sulfide Odor (	Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)					
		Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3)	_ Presence of Reduced Iro	on (C4) Stur	nted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in	n Tilled Soils (C6) Geo	omorphic Position (D2)				
Iron Deposits (B5)	_ Thin Muck Surface (C7)	Sha	illow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	_ Other (Explain in Remar	Other (Explain in Remarks)  Microtopographic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)		FAC	C-Neutral Test (D5)				
Field Observations:							
	Depth (inches):						
	Depth (inches): 3						
Saturation Present? Yes ✓ No (includes capillary fringe)	Depth (inches): 0	Wetland Hydrology	y Present? Yes No				
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previo	us inspections), if available:					
	) 11011, across p, p.	ao mepodia,,					
Remarks:							

Tree Stratum (Plot size:30)	Absolute % Cover		t Indicator	Dominance Test worksheet:
				Number of Dominant Species
1				That Are OBL, FACW, or FAC:2 (A)
2				Total Number of Dominant Species Across All Strata: 2 (B)
3				( ,
<ul><li>4</li><li>5</li></ul>				Percent of Dominant Species That Are OBL, FACW, or FAC:
6				Prevalence Index worksheet:
7		= Total Co		
Sapling/Shrub Stratum (Plot size: 15 )		– Total Co	ivei	FACW species 60.00 x 2 = 120.00
				FAC species x3 =
1				FACU species 0.00 x 4 = 0.00
2				UPL species0.00 x 5 =0.00
3				Column Totals: <u>100.00</u> (A) <u>160.00</u> (B)
4 5.				Prevalence Index = B/A = 1.6
				Hydrophytic Vegetation Indicators:
6				✓ 1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
Herb Stratum (Plot size:5)		= Total Co	ivei	3 - Prevalence Index is ≤3.0¹
1. Impatiens capensis	45	<b>v</b>	FACW	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. Scirpus atrovirens			OBL	Problematic Hydrophytic Vegetation¹ (Explain)
3. Carex stipata		N	OBL	
•		N	FACW	¹Indicators of hydric soil and wetland hydrology must
<ul><li>4. <u>Carex projecta</u></li><li>5. <u>Phalaris arundinacea</u></li></ul>	_		FACW	be present, unless disturbed or problematic.
				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10 11.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12.				Woody vines – All woody vines greater than 3.28 ft in
12.	100	= Total Co		height.
Woody Vine Stratum (Plot size:30)	100	- Total Co	ivei	
1				
3				Hydrophytic Vegetation
4	_	= Total Co	ver	Present? Yes <u>✓</u> No
Remarks: (Include photo numbers here or on a separate		- 10tai 00		
`	,			

SOIL Sampling Point: <u>LES-C1W</u>

			o the de	oth needed				or confirm	the absence	of indicators.)			
Depth (inches)	Color (m	<u>/latrix</u> oist)	%	Color (r		x Features%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-11	7.5YR	3/2	90	7.5YR	4/6	_10	_C_	_M_	CL				
11-20	7.5YR	4/2	85	7.5YR		15	С	M	С	-			
	7.10			710111	17 🗸								
						· ——				<del></del> -			
		_											
				-									
<sup>1</sup> Type: C=Co		D=Deple	etion, RM	=Reduced N	Matrix, MS	S=Masked	Sand Gr	ains.		: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :			
Histosol				Polyva	alue Belov	v Surface	(S8) ( <b>LR</b> I	R R.		fuck (A10) (LRR K, L, MLRA 149B)			
Histic Ep	oipedon (A2)				RA 149B)		()(	,		Prairie Redox (A16) (LRR K, L, R)			
Black Hi		`						LRA 149B)		flucky Peat or Peat (S3) (LRR K, L, R)			
	n Sulfide (A4 d Layers (A5)					⁄lineral (F1 Matrix (F2		, L)	Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)				
	d Below Dark		(A11)		ted Matrix		,		Thin Dark Surface (S9) (LRR K, L)				
	ark Surface (A	-		Redox					Iron-Manganese Masses (F12) (LRR K, L, R)				
	lucky Minera Gleyed Matrix				ted Dark S Depress	Surface (F	7)		Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
	Redox (S5)	(04)		11000	СВСРІСОО	10113 (1 0)			Red Parent Material (F21)				
	Matrix (S6)								Very Shallow Dark Surface (TF12)				
Dark Su	rface (S7) ( <b>L</b> l	RR R, M	LRA 149	<b>B</b> )					Other (	Explain in Remarks)			
<sup>3</sup> Indicators of	f hydrophytic	vegetation	on and w	etland hydro	ology mus	t be prese	ent, unles	s disturbed	or problematic	) <u>.</u>			
Restrictive I	_ayer (if obs	erved):		-									
Type:													
Depth (ind	ches):								Hydric Soil	Present? Yes <u></u> ✓ No			
Remarks:													

Project/Site: Lester Golf			City/C	County: St.	Louis Cou	unty Sa	mpling Date: <u>2</u>	2022-07-08
Applicant/Owner: City Of D						State: Minnesota		
Investigator(s): GEI - Rob	Peterson		Section Section	on, Township	o, Range: <b>Se(</b>	04 T050N R	1013W	
Landform (hillslope, terrace, etc								e (%): <b>3-7</b>
Subregion (LRR or MLRA): LR								
Soil Map Unit Name: Urban Ia								· <u> </u>
Are climatic / hydrologic condition					-	<del></del>	<u> </u>	
Are Vegetation, Soil			•	<u> </u>	•	•	,	✓ No
								NO
Are Vegetation, Soil						olain any answers ir		
SUMMARY OF FINDING	S – Attach si	te m	nap showing sam	npling poi	nt location	s, transects, in	nportant fea	atures, etc.
Hydrophytic Vegetation Prese	nt? Yes		No <u> </u>	Is the Sam	pled Area			
Hydric Soil Present?	Yes _			within a We	etland?	Yes	No <u> </u>	
Wetland Hydrology Present?	Yes		No <u></u> _	If yes, optio	nal Wetland S	Site ID:		
Remarks: (Explain alternative				<u>'</u>				
Hardwood forest ups	slope trom na	arav	wood swamp					
HYDROLOGY								
Wetland Hydrology Indicato	rs:				<u>S</u>	econdary Indicators	(minimum of t	wo required)
Primary Indicators (minimum o	of one is required;	chec	k all that apply)			_ Surface Soil Cra	cks (B6)	
Surface Water (A1)			Water-Stained Leave	∍s (B9)	_	Drainage Patterr	ns (B10)	
High Water Table (A2)			Aquatic Fauna (B13)		_	_ Moss Trim Lines		
Saturation (A3)			Marl Deposits (B15)		_	Dry-Season Wat	er Table (C2)	
Water Marks (B1)			Hydrogen Sulfide Od	lor (C1)	_	Crayfish Burrows	s (C8)	
Sediment Deposits (B2)			Oxidized Rhizosphere	_	Roots (C3) _	Saturation Visibl	e on Aerial Ima	gery (C9)
Drift Deposits (B3)			Presence of Reduced		_	_ Stunted or Stres		)
Algal Mat or Crust (B4)			Recent Iron Reductio			_ Geomorphic Pos		
Iron Deposits (B5)			Thin Muck Surface (C			Shallow Aquitard		
Inundation Visible on Aeri			Other (Explain in Rer	marks)	_	Microtopographi		
Sparsely Vegetated Conc	ave Surface (B8)				<u> </u>	FAC-Neutral Tes	st (D5)	
Field Observations:								
Surface Water Present?			Depth (inches):					
Water Table Present?			Depth (inches):				.,	
Saturation Present? (includes capillary fringe)	Yes No _		_ Depth (inches):		Wetland Hyd	drology Present?	Yes	No <u>/</u>
Describe Recorded Data (stre	am gauge, monito	ring v	well, aerial photos, pre	evious inspect	tions), if availa	able:		
Remarks:	and budrala	<b>~</b> \.	wara abaamkad					
No indicators of wetl	and hydrolog	yy v	were observed.	•				

Sapling/Shrub Stratum (Plot size: 15 )

Herb Stratum (Plot size: 5

1. Populus tremuloides 30 Y FAC

2. Betula papyrifera 20 Y FACU

3. Fraxinus nigra 5 N FACW

4. Rhamnus cathartica 3 N FAC

1 Rhamnus cathartica 10 Y FAC

2. <u>Corylus americana</u> 10 Y FACU

1. Eurybia macrophylla 40 Y UPL

3. Ranunculus acris
 4. Solidago gigantea
 5 N FAC
 5 N FACW

5. Aralia nudicaulis 5 N FACU

6. <u>Valerian officinalis</u> 3 N NI

7. Rosa woodsii 2 N FACU

8. \_\_\_\_\_ \_\_\_ \_\_\_\_\_

9. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_

2. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

2. Rubus pubescens 15 Y

3. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_

 5.
 \_\_\_\_\_\_

 6.
 \_\_\_\_\_\_

 \_\_\_\_\_\_
 \_\_\_\_\_\_

<u>Tree Stratum</u> (Plot size: \_\_\_\_\_\_)

Absolute Dominant Indicator

% Cover Species? Status

\_\_\_<u>58</u>\_ = Total Cover

\_\_\_\_\_\_ = Total Cover

75 = Total Cover

\_ = Total Cover

FACW

Sampling Point: <u>LES-D1U</u>
Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC:3(A)
Total Number of Dominant Species Across All Strata:
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)
Prevalence Index worksheet:Total % Cover of:Multiply by:OBL species $0.00$ × 1 = $0.00$ FACW species $25.00$ × 2 = $50.00$ FAC species $48.00$ × 3 = $144.00$ FACU species $37.00$ × 4 = $148.00$ UPL species $40.00$ × 5 = $200.00$ Column Totals: $150.00$ (A) $542.00$ (B)Prevalence Index = B/A = $3.61$ Hydrophytic Vegetation Indicators:1 - Rapid Test for Hydrophytic Vegetation2 - Dominance Test is >50%3 - Prevalence Index is ≤3.014 - Morphological Adaptations1 (Provide supporting)
data in Remarks or on a separate sheet)  Problematic Hydrophytic Vegetation¹ (Explain)
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Definitions of Vegetation Strata:
<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
Hydrophytic Vegetation Present? Yes No <u>✓</u>

Remarks:	(Include pho	to numbers he	re or on a sepa	rate sheet

Woody Vine Stratum (Plot size: 30 )

Sampling Point: <u>LES-D1U</u>

	cription: (Describe	to the dep	oth needed t				or confirm	the absence o	f indicato	ors.)		
Depth (inches)	Matrix Color (moist)	%	Color (m		x Feature %	sType <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks		
0-6	7.5YR 3/2	100		,				SICL				
6-13	7.5YR 3/3	100						CL				
13-24	7.5YR 4/2	95	7.5YR	4/4	5	С	M	C				
			<u>, 10 </u>									
			-									
<sup>1</sup> Type: C=C <b>Hydric Soil</b>	oncentration, D=Depl	letion, RM	=Reduced M	latrix, MS	S=Masked	Sand Gr	ains.			Lining, M=Mat matic Hydric :		
Histosol			Polvva	lue Belov	v Surface	(S8) ( <b>LR</b> I	R R.			-		
Histic E	pipedon (A2)		MLR	RA 149B)				2 cm Muck (A10) ( <b>LRR K, L, MLRA 149B</b> ) Coast Prairie Redox (A16) ( <b>LRR K, L, R</b> )				
	istic (A3) en Sulfide (A4)					₋RR R, M 1) (LRR K	LRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K, L)				
Stratifie	d Layers (A5)				Matrix (F2		·, <b>-</b> /		Polyvalue Below Surface (S8) (LRR K, L)			
	d Below Dark Surface ark Surface (A12)	e (A11)	Depleted Matrix (F3)					Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R)				
	Mucky Mineral (S1)		Redox Dark Surface (F6) Depleted Dark Surface (F7)					Piedmont Floodplain Soils (F19) (MLRA 149B)				
	Gleyed Matrix (S4)		Redox Depressions (F8)					Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
-	Redox (S5) d Matrix (S6)							Red Parent Material (F21) Very Shallow Dark Surface (TF12)				
	ırface (S7) ( <b>LRR R, N</b>	ILRA 149	<b>B</b> )						Explain in F		′	
<sup>3</sup> Indicators o	f hydrophytic vegetat	ion and w	etland hydro	loav mus	t he nres	ent unles	s disturbed	or problematic				
	Layer (if observed):		Stiana nyaro	logy mao	it bo proof	511t, a11100	o diotarboa	or problematic.				
Туре:												
Depth (in	ches):							Hydric Soil P	resent?	Yes	No <u>✓</u>	
Remarks:												

Project/Site: Lester Golf			City/C	County: St. I	Louis Co	ounty s	Sampling Date	: <u>2022-07-08</u>
Applicant/Owner: City Of [						' <del>-</del>		oint: <u>LES-D1</u>
Investigator(s): GEI - Rob							R013W	
Landform (hillslope, terrace, et								lope (%): <b>0-2</b>
Subregion (LRR or MLRA): LI								
Soil Map Unit Name: Urban								<u>. , , , , , , , , , , , , , , , ,</u>
Are climatic / hydrologic condit			•	-	<u>-</u>			
Are Vegetation, Soil			•	<u></u>		•	•	✓ No
Are Vegetation, Soil						xplain any answers		
							•	
SUMMARY OF FINDING		te m	nap snowing sam	npling poir	nt locatio	ns, transects, l	important	reatures, etc.
Hydrophytic Vegetation Pres	ent? Yes_	/	No	Is the Samp				
Hydric Soil Present?			No	within a We	etland?	Yes <u>✓</u>	_ No	_
Wetland Hydrology Present?			No	If yes, option	nal Wetland	Site ID:		
Remarks: (Explain alternative Hardwood swamp compared to the c	e procedures here of the control of	or in n ha	a separate report.) ardwood forest					
	iowinoda non		arawood forest	•				
HYDROLOGY								
Wetland Hydrology Indicate	ors:					Secondary Indicato	ors (minimum o	of two required)
Primary Indicators (minimum	of one is required;	chec	k all that apply)			Surface Soil C	racks (B6)	
Surface Water (A1)		_/	Water-Stained Leave	es (B9)		Drainage Patte	erns (B10)	
High Water Table (A2)			Aquatic Fauna (B13)			Moss Trim Line	es (B16)	
Saturation (A3)			Marl Deposits (B15)			Dry-Season W	ater Table (C2	2)
Water Marks (B1)			Hydrogen Sulfide Ode			Crayfish Burro		
Sediment Deposits (B2)			Oxidized Rhizosphere	_	Roots (C3)	Saturation Visi		
Drift Deposits (B3)			Presence of Reduced			Stunted or Stre		D1)
Algal Mat or Crust (B4)			Recent Iron Reductio			✓ Geomorphic Po		
Iron Deposits (B5)	(D.7)		Thin Muck Surface (C			Shallow Aquita		
Inundation Visible on Ae	=	_	Other (Explain in Ren	marks)		Microtopograpi		)
Sparsely Vegetated Con Field Observations:	Cave Surface (B8)					✓ FAC-Neutral T	est (D5)	
Surface Water Present?	Yes No	/	Depth (inches):					
Water Table Present?			Depth (inches):					
Saturation Present?	·		Depth (inches):	<u> </u>	Wetland H	ydrology Present?	? Yes ✓	No
(includes capillary fringe)			. , ,					
Describe Recorded Data (str	eam gauge, monito	ring v	well, aerial photos, pre	evious inspecti	ions), if avai	lable:		
Remarks:								
Tromano.								

Sapling/Shrub Stratum (Plot size: 15 )

Herb Stratum (Plot size: 5

1. Rubus pubescens

1 Populus tremuloides 40 Y FAC

2. Fraxinus nigra 30 Y FACW

3. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

5. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_\_ 6. \_\_\_\_\_\_

1 Populus tremuloides 15 Y FAC

2. Rhamnus cathartica 10 Y FAC

2. Rhamnus cathartica 20 Y FAC 3. Athyrium angustum 5 N FAC

4. Ribes triste 5 N OBL

5. <u>Carex projecta</u> 5 N FACW

6. Ranunculus acris 3 N FAC

7. <u>Carex gracillima</u> 3 N FACU

8. <u>Agrimonia parviflora</u> 2 N FAC

9. Solidago gigantea 2 N FACW

10. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_

2. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_

12. \_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_\_

3. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_

4. \_\_\_\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_ 5. \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_ 6. \_\_\_\_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_\_

4. \_\_\_\_\_\_ \_\_\_ \_\_\_\_ \_\_\_\_\_

<u>Tree Stratum</u> (Plot size: \_\_\_\_\_\_)

Absolute Dominant Indicator

% Cover Species? Status

\_\_\_<u>25</u>\_\_ = Total Cover

85 = Total Cover

\_\_ = Total Cover

				D4\A/			
			oint: <u>LES-</u>	<u>DIVV</u>			
Dominance Test worksheet:  Number of Dominant Species							
That Are OBL, F			6	(A)			
Total Number of Species Across A			6	(B)			
Percent of Domir That Are OBL, F			00.00	(A/B)			
Prevalence Inde	x workshee	et:					
Total % Cov	er of:	Mι	ultiply by:	_			
OBL species	5.00	x 1 =	5.00				
FACW species _	77.00	x 2 =	154.00				
FAC species	95.00	x 3 =	285.00				
FACU species	3.00	x 4 =	12.00	_			
UPL species	0.00	x 5 =	0.00	_			
Column Totals:	180.00	(A)	456.00	_ (B)			
Prevalence	Index = B/	4 = <u>2.</u>	53				
Hydrophytic Vegetation Indicators:							
1 - Rapid Te	st for Hydro	ohytic Ve	egetation				
👱 2 - Dominan	ce Test is >5	50%					
3 - Prevalence Index is ≤3.0 <sup>1</sup>							
4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)							
Problematic	Hydrophytic	Vegeta	tion¹ (Explai	n)			
<sup>1</sup> Indicators of hydbe present, unless	dric soil and s	wetland or probl	hydrology n ematic.	nust			
Definitions of V	egetation S	trata:					
Tree – Woody pl at breast height (				ameter			
Sapling/shrub – and greater than				ЗН			
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.							
Woody vines – All woody vines greater than 3.28 ft in height.							
Hydrophytic Vegetation Present?	Yes <u></u>	<u>′</u> N	o				

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

Woody Vine Stratum (Plot size: 30 )

SOIL Sampling Point: <u>LES-D1W</u>

Depth (Inches)   Education   Color (Moist)   Section   Color (Moist)
8-18 7.5YR 4/2 90 7.5YR 4/6 10 C M C
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1) Polyvalue Below Surface (S8) (LRR R, 2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR K, L) Dark Surface (S7) (LRR K, L)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Polyvalue Below Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11)
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5) Red Parent Material (F21) Stripped Matrix (S6) Very Shallow Dark Surface (TF12)
Dark Surface (S7) (LRR R, MLRA 149B)  Other (Explain in Remarks)
<sup>3</sup> Indicators of hydrophytic vogotation and watland hydrology must be present, unless disturbed or problematic
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed):
Type:
Depth (inches): Hydric Soil Present? Yes _ ✓ No
Remarks:

Project/Site: Lester Golf City/C	County: St. Louis County Sampling Date: 2022-07-08
0.1 0.1 D 1 11	State: Minnesota Sampling Point: LES-E1U
Investigator(s): GEI - Rob Peterson Section	
Landform (hillslope, terrace, etc.): Backslope Local rel	
Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.834966	
Soil Map Unit Name: <u>Urban land-Amnicon-Rock outcrop complex</u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Y	
Are Vegetation, Soil, or Hydrology significantly distur	bed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problems	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No _✓	Is the Sampled Area
Hydrophytic Vegetation Present? Yes No✓  Hydric Soil Present? Yes No✓	within a Wetland? Yes No
Wetland Hydrology Present? Yes No✓	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedures here or in a separate report.)	
Hardwood forest	
LIVEROLOGY	
HYDROLOGY Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leave	
Surface Water (A1) Water Stamed Leave Aquatic Fauna (B13)	
Saturation (A3) Marl Deposits (B15)	
Water Marks (B1) Hydrogen Sulfide Od	
Sediment Deposits (B2)  Oxidized Rhizospher	
Drift Deposits (B3) Presence of Reduced	
Algal Mat or Crust (B4) Recent Iron Reduction	on in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (0	C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Rer	· · · · · · · · · · · · · · · · · · ·
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No ✓ Depth (inches):	
Water Table Present? Yes No ✓ Depth (inches):	
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	
Remarks: No indicators of wetland hydrology were observed	
The maleatore of Welland Hydrology Were observed	

Tree Stratum (Plot size:30)	Absolute % Cover		t Indicator Status	Dominance Test worksheet:
1. Populus tremuloides				Number of Dominant Species
<b>'</b>				That Are OBL, FACW, or FAC:2 (A)
2.				Total Number of Dominant Species Across All Strata:5(B)
3				Species Across All Strata (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 40.00 (A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	60	= Total Co	over	OBL species <u>0.00</u> x 1 = <u>0.00</u>
Sapling/Shrub Stratum (Plot size: 15 )				FACW species 10.00 x 2 = 20.00
1. Rhamnus cathartica			_FAC_	FAC species <u>93.00</u> x 3 = <u>279.00</u> FACU species <u>15.00</u> x 4 = <u>60.00</u>
2. <u>Corylus americana</u>	10	Y	<u>FACU</u>	UPL species <u>55.00</u> x 5 = <u>275.00</u>
3. Lonicera tatarica	5	Y	<u>FACU</u>	Column Totals: 173.00 (A) 634.00 (B)
4				
5				Prevalence Index = B/A = 3.66
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Co		2 - Dominance Test is >50%
Herb Stratum (Plot size:5				3 - Prevalence Index is ≤3.0 <sup>1</sup>
1 Eurybia macrophylla	55	Y	UPL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. Athyrium angustum		N	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Rubus pubescens			FACW	
4. <u>Trientalis borealis</u>			FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. Equisetum arvense				
6				Definitions of Vegetation Strata:
7.				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8.				
				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9				
10.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11.				Woody vines – All woody vines greater than 3.28 ft in
12				height.
	88	= Total Co	over	
Woody Vine Stratum (Plot size:30)				
1				
2				
3		-		Hydrophytic Vegetation
4				Present? Yes No ✓
		= Total Co	over	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Sampling Point: LES-E1

SOIL

Profile Des	cription: (Describe Matrix	to the de <sub>l</sub>	oth needed		nent the i x Feature:		or confirm	the absence of	f indicato	rs.)	
(inches)	Color (moist)	%	Color (m		<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-5	7.5YR 3/2	100						SICL			
5-13	7.5YR 3/3	100						SICL			
13-22	7.5YR 4/2	95	<u>7.5YR</u>	4/6	5	С	М	CL			
	-	<del></del>	-								
	-										
			-								
	-										
	-										_
	-										
1Type: C=C	Concentration, D=Dep	letion RM	I=Reduced N	Matrix MS		Sand Gr		<sup>2</sup> l ocation:	PI =Pore I	_ining, M=Ma	atri×
Hydric Soil		ietion, rav	-reduced iv	idilix, ivic	)-Wasket	Sand On	allis.	Indicators fo			
Histoso	I (A1)					(S8) ( <b>LRI</b>	RR,			LRR K, L, M	
	pipedon (A2)			RA 149B)		DD D M	DA 440D)			ox (A16) ( <b>LRI</b>	
	listic (A3) en Sulfide (A4)					-KK K, WII 1) (LRR K	LRA 149B) L)			(LRR K, L)	(LRR K, L, R)
	d Layers (A5)				Matrix (F2		, -,			urface (S8) (	LRR K, L)
	d Below Dark Surfac	e (A11)		ed Matrix						(S9) (LRR K	
	ark Surface (A12)				face (F6) Surface (F						(LRR K, L, R)
	Mucky Mineral (S1) Gleyed Matrix (S4)			Depressi		7)					) (MLRA 149B) 4A, 145, 149B)
	Redox (S5)				( )				ent Materi		<b>,</b> ,
	d Matrix (S6)									Surface (TF	12)
Dark Su	urface (S7) ( <b>LRR R, N</b>	/ILRA 149	<b>B</b> )					Other (E	xplain in F	Remarks)	
<sup>3</sup> Indicators o	of hydrophytic vegetat	tion and w	etland hydro	logy mus	t be prese	ent, unles:	s disturbed	or problematic.			
	Layer (if observed):				· ·	<del></del>					
Type:											
Depth (in	nches):							Hydric Soil P	resent?	Yes	_ No <u> </u>
Remarks:								l			

Project/Site: Lester Golf City/	County: St. Louis County Sampling Date: 2022-07-08
	State: Minnesota Sampling Point: LES-E1
Investigator(s): GEI - Rob Peterson Sect	
	elief (concave, convex, none): Concave Slope (%): 0-2
	Long: <u>-91,99912</u> Datum: <u>WGS84</u>
Soil Map Unit Name: Cuttre complex, 0 to 8 percent slope	
•	
Are climatic / hydrologic conditions on the site typical for this time of year?	
	urbed? Are "Normal Circumstances" present? Yes _ ✓ No
Are Vegetation, Soil, or Hydrology naturally problem	natic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sar	mpling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area
Hydric Soil Present? Yes ✓ No	within a Wetland? Yes No
Wetland Hydrology Present? Yes ✓ No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedures here or in a separate report.)	
Hardwood swamp down slope from hardwood fore	est
HYDROLOGY	J
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leav	
✓ High Water Table (A2) — Aquatic Fauna (B13	
✓ Saturation (A3) — Marl Deposits (B15)	
Water Marks (B1)	
	res on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduce	
Algal Mat or Crust (B4) Recent Iron Reducti	on in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Re	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No ✓ Depth (inches):	
Water Table Present? Yes _ < No Depth (inches): 11	
Saturation Present? Yes _ ✓ No Depth (inches): 0	Wetland Hydrology Present? Yes _ ✓ No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, pr	evious inspections) if available:
Describe Necorded Data (Stream gauge, monitoring won, denial process, p.	evious inspections), il available.
Remarks:	

Sampling Point: <u>LES-E1</u> ¥							
rksheet:							
Species /, or FAC:5	(A)						
ninant trata: <u>5</u>	(B)						
Species /, or FAC: <u>100.00</u>	(A/B)						
orksheet:							
: Multiply by:	_						
<u>.00</u> x 1 = <u>0.00</u>	-						
0.00 x 2 = <u>320.00</u>	-						
.00 x 3 = 15.00	_						
.00 x 4 = 0.00	_						
<u>.00</u> x 5 = <u>0.00</u>	_						
<u>335.00</u> (A) <u>335.00</u>	_ (B)						
ex = B/A = <u>2.03</u>	_						
tion Indicators:							
r Hydrophytic Vegetation							
est is >50%							
ndex is ≤3.0 <sup>1</sup>							

Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Fraxinus nigra			FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
2. Populus balsamifera			FACW	
3.				Total Number of Dominant Species Across All Strata: (B)
4.				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100.00 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	40	= Total Cov	ver	OBL species x 1 = 0.00
Sapling/Shrub Stratum (Plot size:15)				FACW species 160.00 x 2 = 320.00
1. Alnus incana	35	<u>Y</u>	<b>FACW</b>	FAC species <u>5.00</u> x 3 = <u>15.00</u>
2				FACU species <u>0.00</u> x 4 = <u>0.00</u>
3.				UPL species <u>0.00</u> x 5 = <u>0.00</u>
4.				Column Totals: <u>165.00</u> (A) <u>335.00</u> (B)
5.				Prevalence Index = B/A = 2.03
6.				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	er	∠ 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 )		rotal cov	0.	3 - Prevalence Index is ≤3.0¹
1. Impatiens capensis	40	V	FACW	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
•			FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
•			FACW	
3. Solidago gigantea				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Geum aleppicum	_	_N_	FAC	be present, unless disturbed or problematic.
5. <u>Rubus pubescens</u>		·	<u>FACW</u>	Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in height.
	90	= Total Cov	er er	neight.
Woody Vine Stratum (Plot size:)				
1				
2				
3				Hydrophytic
4				Vegetation
		= Total Cov	er	Present? Yes No
Remarks: (Include photo numbers here or on a separate s				

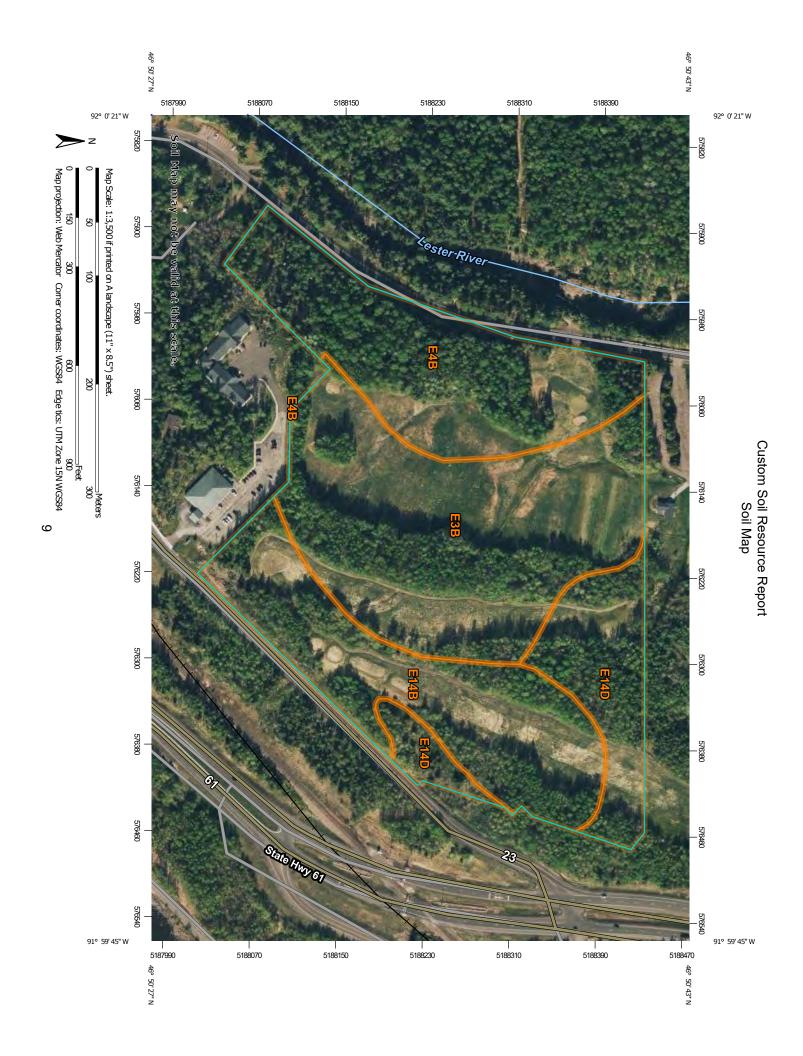
Sampling Point: LES-E1

inches)	Matrix			<u>k Features</u>		. 2		
	Color (moist)		Color (moist)	<u></u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-13</u>	N 2.5/0	100					_MMI_	Loamy
13-18	7.5YR 4/2	95	7.5YR 4/6	<u>5</u>	_C_	_M_ 	CL	
							21 11	
	oncentration, D=Depl Indicators:	etion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.		n: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils <sup>3</sup> :
Black Hi Hydroge Stratified Depleted Thick Da Sandy M Sandy R Stripped	pipedon (A2) stic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4) Redox (S5) I Matrix (S6) rface (S7) (LRR R, M		MLRA 149B)  Thin Dark Surfa Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Sur Depleted Dark Sur Redox Depressi	ce (S9) ( <b>L</b> lineral (F1 Matrix (F2) (F3) face (F6) Surface (F	) (LRR K		5 cm I Dark \$ Polyva Thin E Iron-M Piedm Mesic Red P Very \$	Prairie Redox (A16) (LRR K, L, R) Mucky Peat or Peat (S3) (LRR K, L, R) Surface (S7) (LRR K, L) alue Below Surface (S8) (LRR K, L) Dark Surface (S9) (LRR K, L) danganese Masses (F12) (LRR K, L, R) nont Floodplain Soils (F19) (MLRA 1498 Spodic (TA6) (MLRA 144A, 145, 1498 Parent Material (F21) Shallow Dark Surface (TF12) (Explain in Remarks)
			etland hydrology mus	t be prese	nt, unless	disturbed of	or problemati	c.
	Layer (if observed):							
estrictive l								
Restrictive I								
	ches):						Hydric Soil	I Present? Yes <u>✓</u> No

Wetland Delineation Report Lester Golf Course Duluth, MN 7/18/2022

### **Appendix D**

**USDA Soil Survey Information** 



## MAP LEGEND

## Area of Interest (AOI) Area of Interest (AOI) W Spoil Area

Soils

Soil Map Unit Lines Soil Map Unit Polygons

Soil Map Unit Points



Borrow Pit Clay Spot



Gravelly Spot **Gravel Pit** 

Landfill Lava Flow

Marsh or swamp

X) Miscellaneous Water Mine or Quarry

0 Perennial Water

Rock Outcrop

Sandy Spot Saline Spot

ŵ Severely Eroded Spot

0 Sinkhole

₩ Slide or Slip

Sodic Spot

8 Very Stony Spot Stony Spot

Other Wet Spot

Special Line Features

### Water Features

Streams and Canals

Transportation | ŧ

## Interstate Highways

**US Routes** 

Major Roads

Background

### Local Roads

Aerial Photography

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

contrasting soils that could have been shown at a more detailed misunderstanding of the detail of mapping and accuracy of soil Enlargement of maps beyond the scale of mapping can cause

line placement. The maps do not show the small areas of

Warning: Soil Map may not be valid at this scale

The soil surveys that comprise your AOI were mapped at 1:24,000.

MAP INFORMATION

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Survey Area Data: Soil Survey Area: St. Louis County, Minnesota, Duluth Part Version 19, Sep 10, 2021

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

Date(s) aerial images were photographed: 2021 May 18, 2021—Jul 8,

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

### Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
E3B	Cuttre complex, 0 to 8 percent slopes	14.5	38.2%
E4B	Cuttre-Eutrudepts, complex, 0 to 8 percent slopes	9.3	24.6%
E14B	Barto, stony-Greysolon-Rock outcrop complex, 0 to 8 percent slopes	9.0	23.8%
E14D	Barto, stony-Greysolon-Rock outcrop complex, 0 to 18 percent slopes	5.1	13.4%
Totals for Area of Interest		37.9	100.0%

### **Map Unit Descriptions**

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.



MAP LEGEND

MAP INFORMATION

#### Water Features Area of Interest (AOI) Soil Rating Polygons Soil Rating Points Soil Rating Lines Not rated or not available Not Hydric (0%) Hydric (1 to 32%) Hydric (33 to 65%) Hydric (66 to 99%) Hydric (100%) Streams and Canals Not rated or not available Hydric (1 to 32%) Hydric (33 to 65%) Hydric (66 to 99%) Hydric (100%) Not rated or not available Not Hydric (0%) Hydric (1 to 32%) Hydric (33 to 65%) Hydric (66 to 99%) Not Hydric (0%) Hydric (100%) Area of Interest (AOI) Background Transportation Rails Aerial Photography Major Roads **US Routes** Interstate Highways Local Roads compiled and digitized probably differs from the background Date(s) aerial images were photographed: May 18, 2021—Jul 8, 2021 1:50,000 or larger. Survey Area Data: Soil Survey Area: St. Louis County, Minnesota, Duluth Part of the version date(s) listed below. distance and area. A projection that preserves area, such as the Coordinate System: Web Mercator (EPSG:3857) Source of Map: Natural Resources Conservation Service measurements. contrasting soils that could have been shown at a more detailed misunderstanding of the detail of mapping and accuracy of soil Enlargement of maps beyond the scale of mapping can cause Warning: Soil Map may not be valid at this scale shifting of map unit boundaries may be evident. imagery displayed on these maps. As a result, some minor The orthophoto or other base map on which the soil lines were Soil map units are labeled (as space allows) for map scales This product is generated from the USDA-NRCS certified data as accurate calculations of distance or area are required. Albers equal-area conic projection, should be used if more projection, which preserves direction and shape but distorts Maps from the Web Soil Survey are based on the Web Mercator Web Soil Survey URL: Please rely on the bar scale on each map sheet for map line placement. The maps do not show the small areas of The soil surveys that comprise your AOI were mapped at 1:24,000. Version 19, Sep 10, 2021

### **Table—Hydric Rating by Map Unit**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI						
E3B	Cuttre complex, 0 to 8 percent slopes	20	14.5	38.2%						
E4B	Cuttre-Eutrudepts, complex, 0 to 8 percent slopes	20	9.3	24.6%						
E14B	Barto, stony-Greysolon- Rock outcrop complex, 0 to 8 percent slopes	5	9.0	23.8%						
E14D	Barto, stony-Greysolon- Rock outcrop complex, 0 to 18 percent slopes	5	5.1	13.4%						
Totals for Area of Intere	est	1	37.9	100.0%						

### Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower