Level 2 Wetland Delineation

Spring Creek Stabilization
5th Steet West
Carver, Minnesota

October 6, 2023

Project No. 23-29507

ISG
Architecture
Engineering
Environmental
Planning
ISGInc.com

REPORT FOR:
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FROM:
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CERTIFICATION + SIGNATURES

Spring Creek Stabilization – Carver, Minnesota
Level 2 Wetland Delineation
ISG Project Number: 23-29507

I hereby certify the above-described routine on-site Level 2 wetland delineation was performed on October 3, 2023. The wetland delineation meets standards and criteria specified in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, and that I am a Certified Minnesota Wetland Professional.

Jeremy Groskreutz, **CMWP (#1400)**
Environmental Scientist

I hereby certify the quality assurance review of this wetland delineation report was completed by me or under my direct supervision, and that I am a Certified Minnesota Wetland Professional.

Nick McCabe, **CMWP (#1218)**
Senior Environmental Scientist

ISG
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Dated this 6th day of October 2023

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EXECUTIVE SUMMARY

ISG completed a wetland investigation within a 2.3-acre investigation area in Carver, Minnesota on October 3, 2023 (as shown on the attached Figures).

This wetland investigation was performed in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual and the 2010 Midwest Regional Supplement, and all applicable supporting documents for areas meeting wetland criteria for a routine wetland delineation in accordance to the MN Wetland Conservation Act and the US Army Corps of Engineers Section 404 Program.

Vegetation, soil and hydrology sampling have been completed on all potential wetland areas within the investigation area. Wetland determinations were based on the three required technical criteria: occurrence of hydric soil, predominance of hydrophytic vegetation, and the presence of one primary and/or two secondary indicators of wetland hydrology. Potential wetland areas (mapped hydric soils, NWI signatures, and low depressional areas) were investigated on-site.

Table 1. Delineated Wetland Summary

Wetland No.	Dominant Wetland Type(s)		Dominant Plant Community	Delineated Wetland Area	Soil Classification (Hydric Rating)	Mapped NWI	DNR Protected Waters Inventory
	Circ. 39	Cowardin Classification	Eggers & Reed				
A	Type 2	PEMB	Fresh (wet) Meadow	0.19 Acres (8,290 SF)	TB (Predominantly Non-Hydric)	No	No

PROJECT DESCRIPTION

Project Purpose

ISG was retained to identify and delineate all wetland areas that exist within the investigation area. The purpose of the wetland investigation is to accurately identify wetland areas onsite so that they can be incorporated into plans for any future development of the property. This report is intended to facilitate any regulatory discussions of Wetland Conservation Act and Clean Water Act Section 10/404 permitting for this project.

Project Location

The investigation area was located southwest of the intersection of 5th Street West and Broadway Street North in Section 18 of Carver Township (T115N, R23W), in the city of Carver, Minnesota (See Figure 1, Appendix A for a location map). The site was located within the Lower Minnesota River major watershed (33) and the Minnesota River minor watershed (33110). The topography of the site sloped toward Spring Creek. Site elevation ranged from approximately 722’ to 782’ above msl. At the time of this delineation, the investigation area consisted of Spring Creek, an unnamed tributary, and adjacent lands.

Surrounding Properties

The project site is located in the outskirts of historic Carver. Due to its location single-family residences and wooded lots surrounded the investigation area.

DEFINITIONS + METHODOLOGY

This investigation was performed in accordance with the US Army Corps of Engineers 1987 Wetland Delineation Manual and the 2010 Midwest Regional Supplement, and all applicable supporting documents for areas meeting wetland criteria for a routine wetland delineation in accordance to the Minnesota Wetland Conservation Act and the US Army Corps of Engineers Section 404 Program. The following definitions, diagnostic environmental characteristics, and the methodology used is based on the mandatory technical criteria for the identification and delineation of wetlands.

Wetlands Definition

As defined in 33 CFR Part 328, Section 3, the term wetlands is defined as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The frequency and duration of saturation may vary by geographical region, and is largely dependent upon climatic conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands have the following general diagnostic environmental characteristics:

HYDROPHYTIC VEGETATION

The wetland vegetation criterion is satisfied when the prevalent vegetation consists of plant species adapted to inundation or substrates periodically deficient in oxygen as a result of prolonged saturation. Specifically, this includes plant communities that under normal circumstances have more than 50% of the composition of the dominant species from all strata ranked with an indicator status as obligate wetland (OBL), facultative wetland (FACW), and/or facultative (FAC) species.

The indicator status for individual plants as defined by the updated 2018 Minnesota National Wetland Plant List are Identified and described in the following table:

Table 2. Vegetation Indicator Categories

Indicator Category	Occurrence in Wetlands
Obligate (OBL)	Almost always
Facultative Wetland (FACW)	Usually
Facultative (FAC)	Equally likely to occur in uplands
Facultative Upland (FACU)	Rarely
Upland (UPL)	Almost never

HYDRIC SOIL

A hydric soil is a soil formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Examples of hydric soil indicators include: the accumulation of organic matter, low-chroma soil matrices, gleying, redox concentrations, redox depletions, and hydrogen sulfide odor.

WETLAND HYDROLOGY

According to the 1987 manual, wetland hydrology is present when the area is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season. The Midwest Regional Supplement requires fourteen (14) or more consecutive days of flooding or ponding, or a water table of twelve (12) inches (30 cm) or less below the soil surface, during the growing season at a minimum frequency of five (5) years in ten (10) (50% or higher probability) to satisfy wetland hydrology.

The wetland hydrology criterion can be satisfied with observation of one (1) primary hydrology indicator or two (2) secondary hydrology indicators. Potential primary indicators of wetland hydrology may include, but are not limited to: inundation, saturation, water marks, drift lines, sediment deposits, and a thin muck surface. Potential secondary indicators of wetland hydrology may include, but are not limited to: surface soil cracks, drainage patterns, saturation visible on aerial imagery, and the FAC-neutral test.

Off-Site Methodology

MAP REVIEW

Prior to fieldwork, several mapping sources were consulted to identify potential wetland habitats. The sources consulted include the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), formerly Soil Conservation Service (SCS) Soil Survey, Minnesota Department of Natural Resources (DNR) Public Waters Inventory (PWI), and United States Geological Survey (USGS) Topographic maps. Areas indicating evidence of potential wetland conditions were evaluated in greater detail through fieldwork.

PRECIPITATION DATA ANALYSIS

Precipitation data from the Minnesota Climatology Working Group and Natural Resources Conservation Service WETS Tables were used in conjunction with the NRCS Method for Evaluating Antecedent Moisture Conditions to determine precipitation conditions under which the investigation was conducted.

On-Site Methodology

FIELD SAMPLING PROCEDURES

Sample transects were established in representative transition zones between wetland and upland for each observed plant community. For potential wetland areas greater than five acres in size, a minimum of three transects were established along the baseline wetland boundary for lengths of up to one mile, three to five transects for one to two miles, five to eight transects for two to four miles, and eight or more transects for wetland baseline boundaries that exceed four miles in length. Transect intervals do not exceed 0.5 mile apart from each other.

Transects are comprised of two sample points, one sample in upland and one sample point in wetland. A field data sheet was completed describing the dominant soil characteristics (to a minimum of 24 inches below the soil surface), plant communities, and hydrology indicators at the sample point. The presence of water was observed after time (depending on soil characteristics) was allowed for movement of water through the soil substrate. Absolute percent areal cover was recorded for the species that were observed (which may exceed 100% total area due to overlap) and dominance was determined by using the 50/20 rule. Vegetation was sampled within each stratum present at a sample point using the following circular plot sizes:

- Trees – 30 ft radius
- Saplings and Shrubs – 15 ft radius
- Herbaceous – 5 ft radius
- Woody Vines – 30 ft radius

The sample points were marked with blue pin flags (if not within an agricultural land use) and photographed. Other samples were taken at unmarked locations to provide verification of the wetland edge, as needed.

The wetland boundaries were determined using changes in topography, dominance of hydrophytic/non-hydrophytic vegetation, hydric soil indicators, and/or hydrology characteristics. Wetland edges were marked with pink "wetland delineation" flags (if not within an agricultural land use). The wetland edge is considered to be the highest extent of the wetland basin. Areas below the flagged edge satisfy the three required wetland criteria while areas above were lacking in one or more of these criteria.

US Army Corps of Engineers Regulatory Guidance Letter 90-6 requires documentation sufficient to allow a reasonably accurate replication of the delineation at a future date. Reasonably accurate is defined as within 0-2 meters accuracy. Precise positions of sample points and the wetland edge have been located by a sub-meter GPS unit and have been included in the wetland delineation drawing or map for this property.

WETLAND TYPE CLASSIFICATION

Wetlands were classified using Wetland Plants and Plant Communities of Minnesota and Wisconsin (Eggers & Reed 2007), Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al, 1979) and Wetlands of the United States (Fish and Wildlife Service Circular 39, Shaw and Fredine 1971).

FINDINGS

Map Review

There were no NWI wetlands or DNR Public Waters located within or adjacent to the investigation area (Figure 3, Appendix A).

Soils within the investigation area have been mapped by the NRCS along with their hydric classification. The location of each soil unit occurring within the investigation area are shown on the Carver County Soil Survey map (Figure 3, Appendix A).

The LiDAR map (Figure 4, Appendix B) illustrates the highest elevations along the northwestern edge of the site at the top of he hillslope. Elevations varied within the investigation area, ranging from 722' to 782' above msl.

Antecedent Precipitation Data Analysis

The precipitation received in the investigation area during the previous three months was within the normal range (30-70th percentile) for this area. Prior to the sample date of October 3, 2023, there was above normal precipitation in September, and below normal precipitation in August and July. Therefore, the field work was completed under normal conditions according to the precipitation worksheet for wetland delineations (Appendix C).

Field Delineation Results

Based on the data reviewed and fieldwork conducted, one (1) area was examined for wetland characteristics within the investigation area. One (1) wetland was ultimately delineated and is further described within this report. The delineated wetland was identified as Wetland A, which included sample points 1 through 2. One transect was taken along Wetland A's boundary.

Field data forms for each sample point are located in Appendix B. Refer to Figure 6 (Appendix B) for a map of the investigation area, wetland basins, sampling transect, and photo point locations. Photos of the wetland basins within the investigation area are included in Appendix C.

Other Aquatic Resources

Prominent, non-wetland, aquatic resources located within the investigation area included two watercourses. This included the stream known locally as Spring Creek and an unnamed tributary of it. Neither watercourse has DNR Public Waters designations. Spring Creek flows into the investigation area from the north, meanders through the site, and exits the site to the east through a bridge structure. The tributary flows into the site from the west and briefly meanders through the site before joining with Spring Creek. The width of streambanks varied throughout the investigation area, typically ranging from 5' to 10' across. At the time of the site visit the water depth within the creeks was approximately 6".

Wetland Summary

WETLAND A

Wetland A was wetland complex consisting of various Type 2 – Fresh (wet) Meadow communities. Wetland A consisted of a series of floodplain benches located along Spring Creek. This included natural benches as well as areas where it appears the streambanks have sloughed in and become vegetated. Wetland A appears to primarily receive hydrology from Spring Creek. Vegetation across the areas of Wetland A was typically dominated by Reed Canary Grass and Yellow Jewelweed. The adjacent upland consisted of wooded land as well as manicured lawn. The boundary of Wetland A was determined based on vegetation and topography. Flags were placed along change in dominant vegetation which typically corresponded with a toe of an adjacent hillslopes.

RECOMMENDATIONS

Activities impacting or potentially impacting the wetlands identified are regulated through several levels of government in Minnesota:

- **Federal:** US Army Corps of Engineers: Permit Programs under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act
- **Federal:** USDA NRCS: Wetland Conservation Provisions of the 1996 Farm Bill
- **State of Minnesota:** Minnesota Department of Natural Resources: Public Waters Work Permit Program
- **Local:** Local Units of Government (LGU) administer the Minnesota Wetland Conservation Act (WCA) of 1991.

Please note that grading, excavating, or filling is not allowed until all necessary permits have been obtained. If wetland impacts are proposed, ISG can assist in the proper steps to acquire the appropriate permit or exemption. By initiating the permit process as soon as possible, potential costly delays to the project may be avoided.

DATA SOURCES + LITERATURE CITED

Cowardin, L.M., V. Carter, F.C. Golet, and R.T. LA Roe. 1979. Classification of wetlands and deep water habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31.

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

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Minnesota Department of Natural Resources Protected Waters Inventory Map, Carver County.

Shaw, S.P., and C.G. Fredine. 1956. Wetlands of the United States. U.S. Fish and Wildlife Service, Circular 39. 67pp.
State of Minnesota Interagency Cooperative Agreement for Implementation of the Federal Wetland Delineation Memorandum of Agreement. Minnesota Wetland Mapping Conventions for 1985 Food Security Act (FSA) as Amended and Section 404 Clean Water Act (CWA), August 1994.

United States Army Corps of Engineers- St. Paul District and Minnesota Board of Water & Soil Resources. March 4, 2015. Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota.

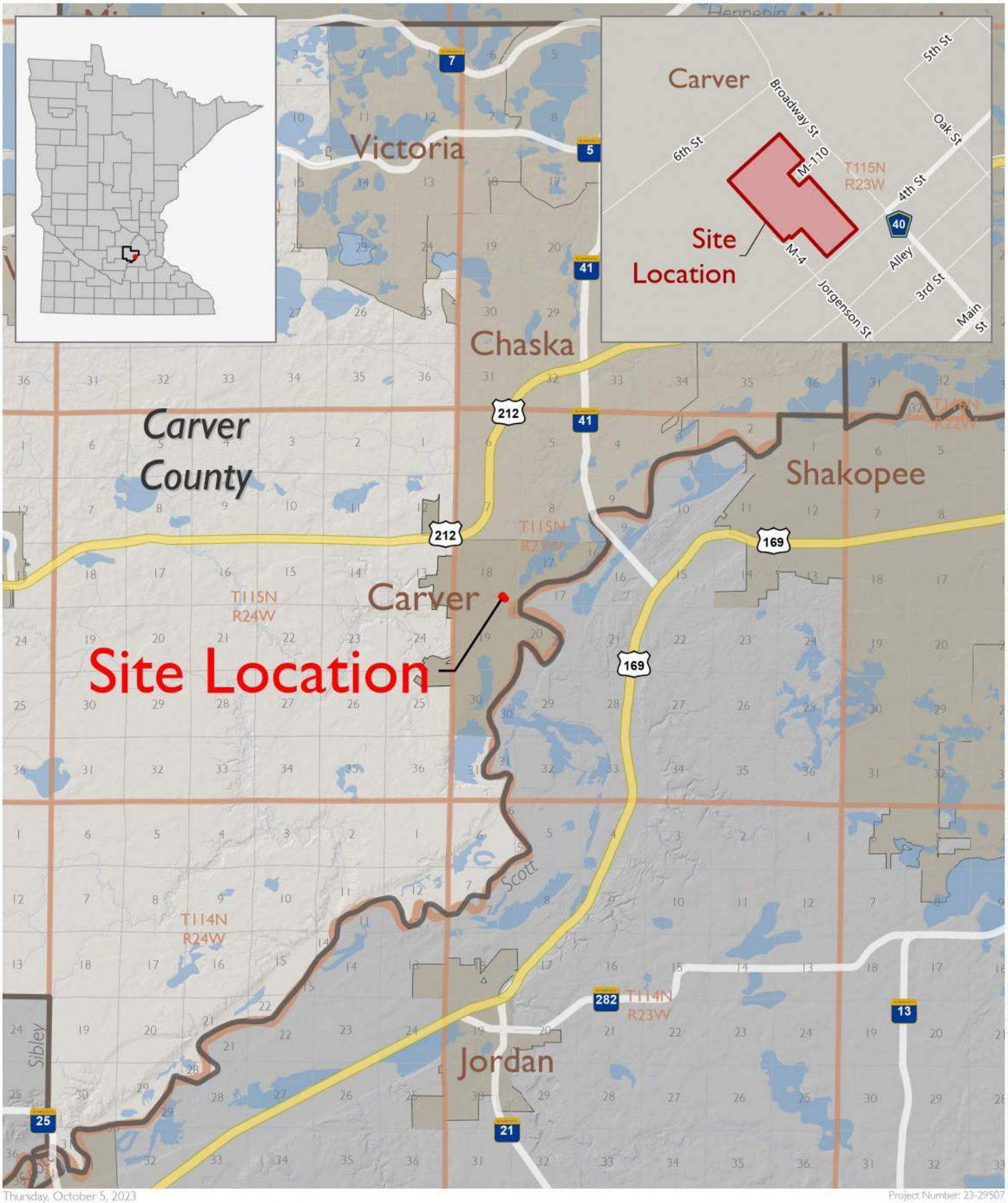
United States Department of Agriculture. Natural Resources Conservation Service. Climate Analysis for Wetlands. http://www.wcc.nrcs.usda.gov/ftpref/support/climate/wetlands/

United States Department of Agriculture. Natural Resources Conservation Service. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/

United States Fish and Wildlife Service National Wetland Inventory Map. May 2015 Update (April 30, 2015 metadata), Minnesota Department of Natural Resources

United States Geological Survey. 7.5 minute, 1:24,000 scale Topographic Quadrangle Map.

Appendix A: Project Site Information



Thursday, October 5, 2023

Project Number: 23-29507

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0 1 2 Miles

1 inch = 2 miles

N

Figure 1

Project Location Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Municipalities (MnDOT, 2016)
Roads (MnDOT, 2020)
Lakes (MN DNR, 2020)
Counties (MN DNR, 2013)
PLSS (USGS)

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Figure 2

Aerial Photograph and Parcel Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Orthophoto (Carver Co, 2023)
Parcels (Carver Co, 2022)

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0 38 75 ft

1 inch = 75 feet

N

Figure 3

DNR Public Waters Inventory and National Wetlands Inventory Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Orthophoto (Carver Co, 2023)
NWI (MN DNR, 2019)
PWI (MN DNR, 2020)

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0 38 75 ft

1 inch = 75 feet

N

Figure 4

Carver County Soil Survey Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Orthophoto (Carver Co. 2023)
Soil Survey (USDA NRCS, 2017)

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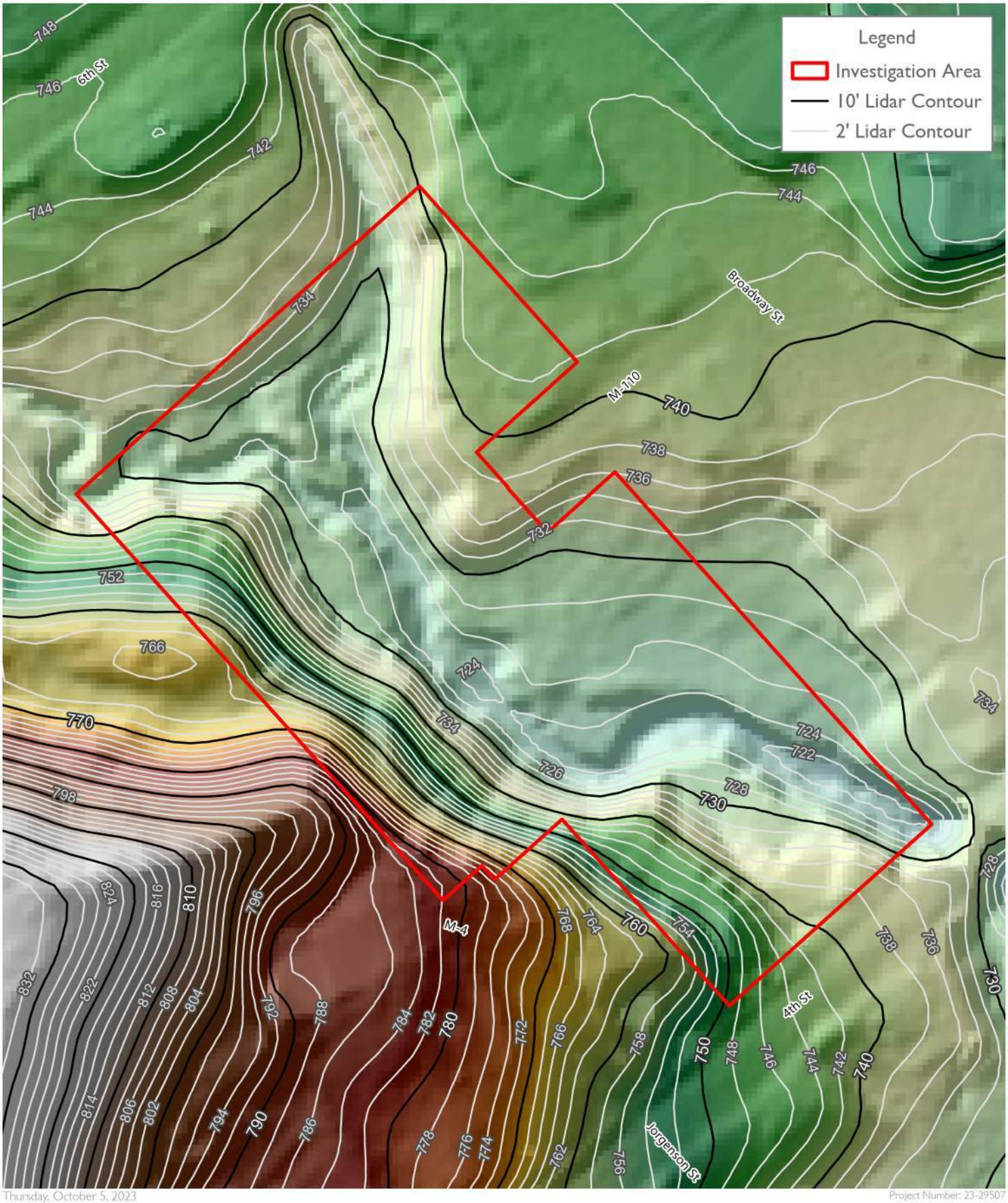

Thursday, October 5, 2023

Project Number: 23-29507

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0 38 75 ft

1 inch = 75 feet

N

Figure 5

LiDAR Elevations and Hillshade Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Contours (MnTopo, 2011)
Hillshade (MnTopo, 2011)

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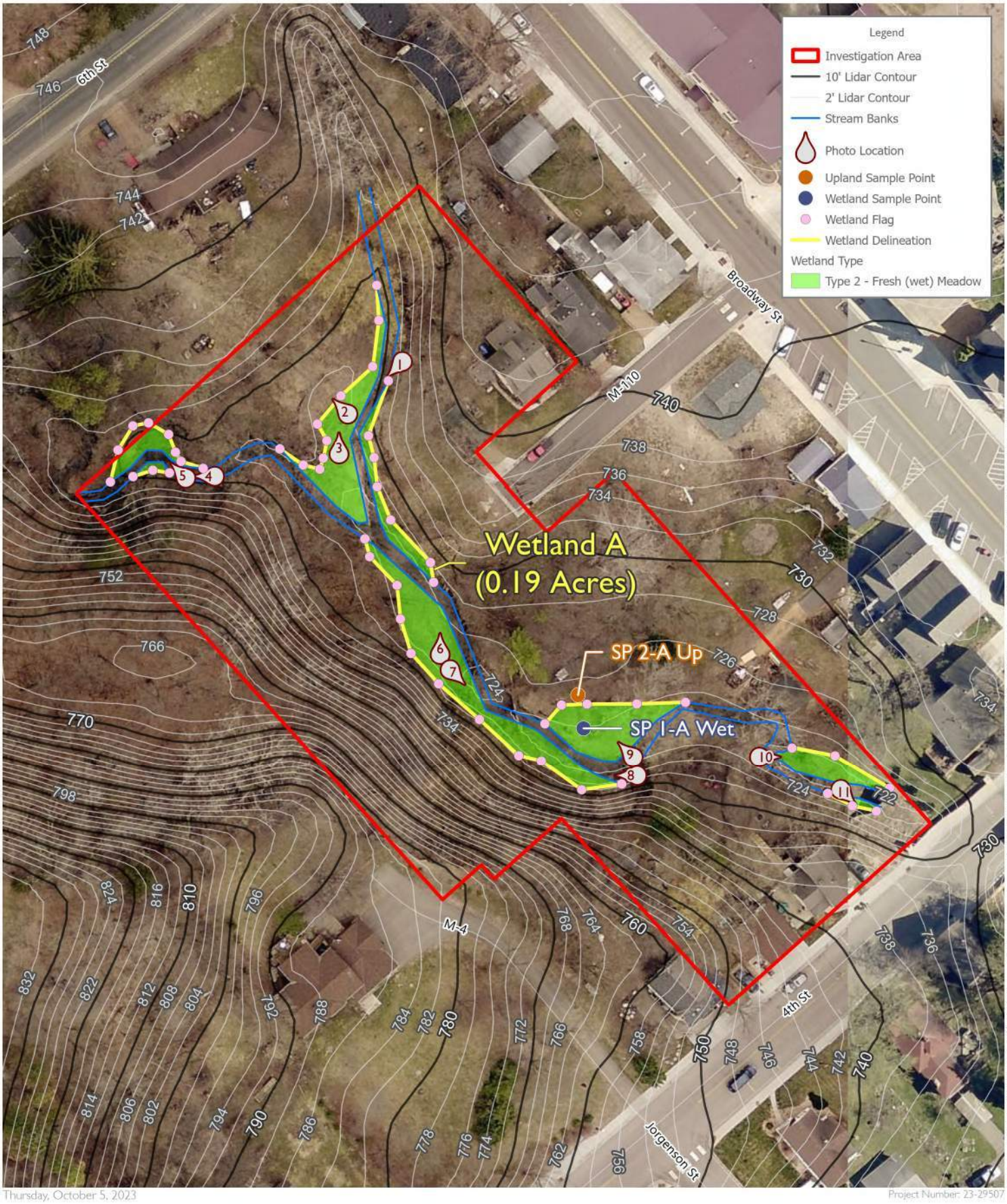
Appendix B: Wetland Delineation Information

Figure 6. Wetland Delineation Map

Wetland Determination Data Forms



Thursday, October 5, 2023

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0 38 75 ft

1 inch = 75 feet

N

Figure 6

Wetland Delineation Map

Spring Creek Stabilization

Carver, Carver County, Minnesota

Source(s):
Orthophoto (Carver Co. 2020)
Wetland Delineation (ISG, 2023)
Contours (MnTopo, 2011)

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U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Spring Creek Stabilization | City/County: Carver, Carver County | Sampling Date: 10/3/23
Applicant/Owner: Linda Loomis - Lower Minnesota River Watershed District | State: MN | Sampling Point: 1-A Wet
Investigator(s): Jeremy Groskreutz | Section, Township, Range: Sec 18, T115N, R23W
Landform (hillside, terrace, etc.): Toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0-1 | Lat: 44.763525 | Long: -93.627017 | Datum: NAD 1983
Soil Map Unit Name: TB - Terril loam, 2 to 6 percent slopes | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Phalaris arundinacea*	45	Yes	FACW
2. *Impatiens pallida*	30	Yes	FACW
3. *Glechoma hederacea*	15	No	FACU
4. *Laportea canadensis*	5	No	FACW
5. *Pilea pumila*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 30' Radius)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	100 (A)		230 (B)
Prevalence Index = B/A =			2.30

Hydrophytic Vegetation Indicators:
____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 1-A Wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	97	10YR 3/4	2	C	M	Loamy/Clayey	Distinct redox concentrations
			10YR 5/1	1	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

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)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Hydrology sampled to 6".

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Spring Creek Stabilization | City/County: Carver, Carver County | Sampling Date: 10/3/23
Applicant/Owner: Linda Loomis - Lower Minnesota River Watershed District | State: MN | Sampling Point: 2-A Up
Investigator(s): Jeremy Groskreutz | Section, Township, Range: Sec 18, T115N, R23W
Landform (hillside, terrace, etc.): Backslope | Local relief (concave, convex, none): Concave
Slope (%): 5 | Lat: 44.763562 | Long: -93.626940 | Datum: NAD 1983
Soil Map Unit Name: TB - Terril loam, 2 to 6 percent slopes | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans cinerea*	40	Yes	FACU
2. *Celtis occidentalis*	40	Yes	FAC
3. *Populus deltoides*	20	Yes	FAC
4.			
5.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Glechoma hederacea*	30	Yes	FACU
2. *Cryptotaenia canadensis*	30	Yes	FAC
3. *Oxalis stricta*	5	No	FACU
4. *Poa pratensis*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	170 (A)		585 (B)
Prevalence Index = B/A =			3.44

Hydrophytic Vegetation Indicators:
____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Manicured Lawn. 30% Bare Soil.

SOIL

Sampling Point: 2-A Up

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/2	100					Loamy/Clayey	
15-24	10YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

Hydrology sampled to 24".

Appendix C: Supporting Documentation

Antecedent Precipitation Data

Photo Log

Spring Creek Stabilization

Wetland Delineation

Antecedent Precipitation Data Worksheet

Date: 10/3/2023
Location: Carver, Carver County

	LONG TERM PRECIP CONDITIONS							
	MONTH	**LOW 30TH PERCENTILE**	**AVERAGE**	**HIGH 70TH PERCENTILE**	**PRECIP**	**CONDITION: DRY, WET, NORMAL**	**CONDITION VALUE**	**MONTH WEIGHT VALUE**	**WEIGHTED CONDITION VALUE**
1st Month Prior	September	1.87	3.20	4.17	5.82	**Wet**	3	3	9
2nd Month Prior	August	3.09	4.60	5.60	2.24	**Dry**	1	2	2
3rd Month Prior	July	3.19	3.93	4.50	1.76	**Dry**	1	1	1

Precipitation Data Source: http://climateapps.dnr.state.mn.us/
Weather Station Location: Sec. 18, T115N, R23W
Precipitation normals based on the peroid of 1991-2020

SUM = 12

Condition Value Dry = 1
Normal = 2
Wet = 3

Note - If sum is 6 - 9 = Dry
10 - 14 = Normal
15 - 18 = Wet

Photo Log

October 3, 2023

Photo 1 – View of a portion of Wetland A within a sloughed area along Spring Creek, facing southwest.

Photo 2 – View of a small ridge that acts as a boundary of a portion of Wetland A, facing northwest.

Photo Log

October 3, 2023

Photo 3 – View of a portion of Wetland A, facing north.

Photo 4 – View of a steep hillslope leading directly into the stream, facing west.

Photo 5 – View of a portion of Wetland A within a sloughed area along the creek, facing southwest.

Photo 6 – View of drop from the adjacent upland to Spring Creek, facing north.

Photo 7 – View of a portion of Wetland A, facing southeast.

Photo 8 – View of a portion of Wetland A, facing west.

Photo Log
October 3, 2023

Photo 9 – View of a portion of Wetland A, facing northwest.

Photo 10 – View of a portion of Wetland A, facing east.

Photo Log
October 3, 2023

Photo 11 – View of a portion of Wetland A, facing southeast.

Appendix D: Regulatory Review

Joint Application Form for Activities Affecting Water Resources in Minnesota

Project Name and/or Number: *Spring Creek Stabilization, ISG # 23-29507*

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: *Linda Loomis - Lower Minnesota River Watershed District*
Mailing Address: *112 East 5th Street, Suite 102, Chaska, MN 55318*
Phone: *763.545.4659*
E-mail Address: *admin@lowermnriverwd.org*

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

Agent Name: *Nick McCabe – ISG*
Mailing Address: *115 East Hickory Street, Suite 300, Mankato, MN 56001*
Phone: *507.387.6651*
E-mail Address: *Nick.McCabe@ISGInc.com*

PART TWO: Site Location Information

County: *Carver* **City/Township:** *Carver*
Parcel ID and/or Address: *112 5th Street West*
Legal Description (Section, Township, Range): *Sec 18, T115N, R23W*
Lat/Long (decimal degrees): *44.763687, -93.627134*
Attach a map showing the location of the site in relation to local streets, roads, highways. *See Figure 1 (Appendix A)*
Approximate size of site (acres) or if a linear project, length (feet): *2.3 Acres*

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

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

PART THREE: General Project/Site Information

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

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

A wetland delineation was performed by ISG on October 3, 2023 to determine the location of any possible wetlands within the investigation area for use in planning and/or permitting of a planned streambank stabilization project.

Project Name and/or Number: *Spring Creek Stabilization, ISG # 23-29507*

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:

No impacts have occurred to date.

PART FIVE: Applicant Signature

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

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

Signature: _____ Date: _____

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

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

Project Name and/or Number: *Spring Creek Stabilization, ISG # 23-29507*

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