

Path: X:\KOWM\NLAN1613435-final\ds\51-drawings\90-GISEAW\Fig01\_Location.mxd



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Project: MNLAN 161343  
Print Date: 9/8/2021

User Name: ebudrow  
Projection: NAD 83 UTM Z 15N  
Source: SEHinc, MLT, MNDNR,  
MNDOT, USGS  
Background: World Topographic Map

# St. Louis River Restoration Initiative - Perch Lake Restoration

## St. Louis County, Minnesota

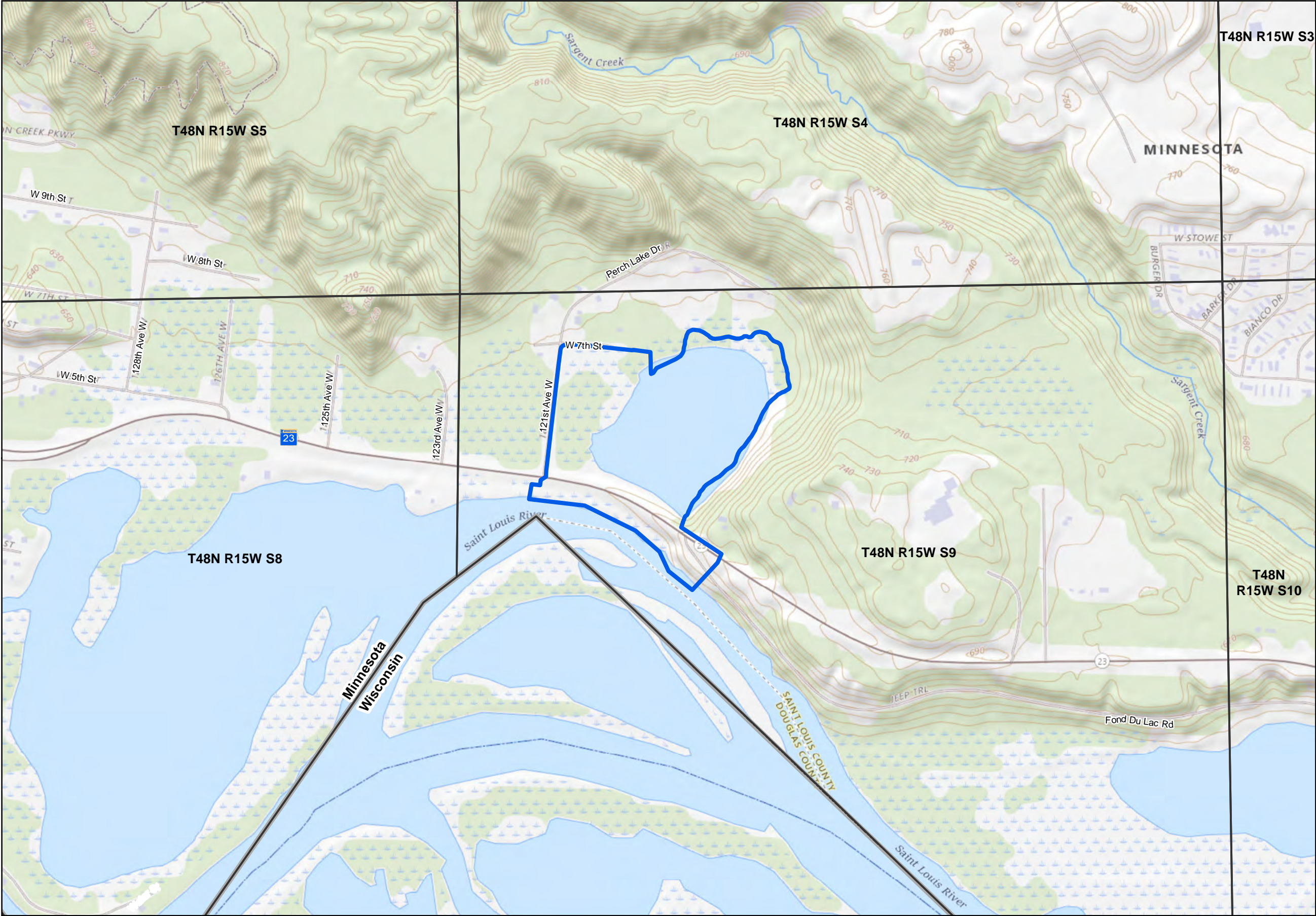
Site Location  
Map

Figure  
1



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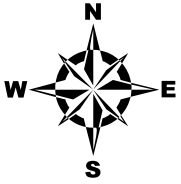


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**Legend**

-  EAW Study Area
-  Township, Range, Section



0 250 500 1,000  
Feet

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Project: MNLAN 161343  
Print Date: 10/1/2021  
User Name: ebudrow  
Projection: NAD 83 UTM Z 15N  
Source: SEHinc, MLT, USGS,  
MNDOT  
Background: USGS The National Map

# St. Louis River Restoration Initiative - Perch Lake Restoration

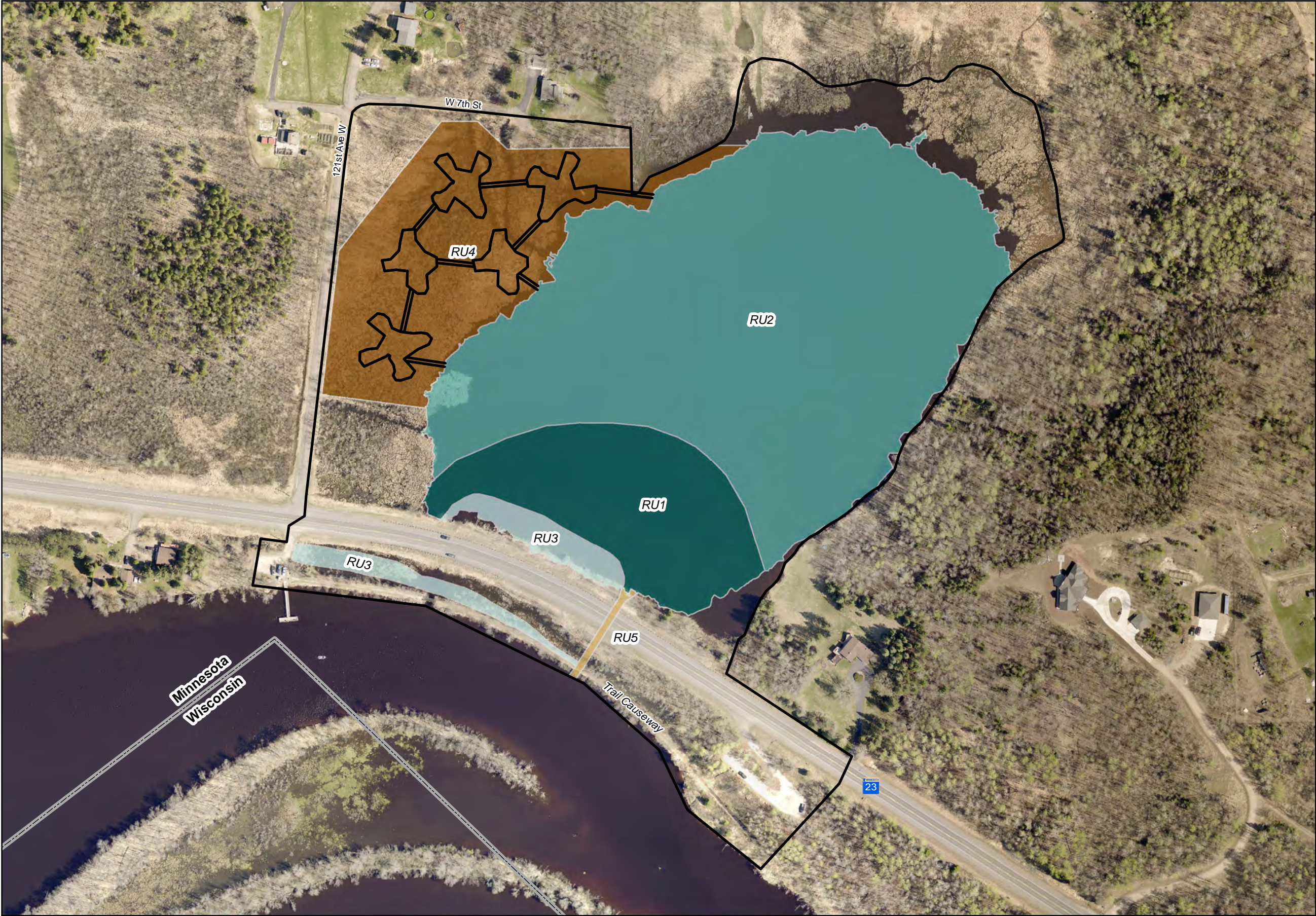
## St. Louis County, Minnesota

**USGS 24K**  
**Topographic Map -**  
**Esko & West Duluth**  
**2019**

**Figure**  
**2**



Path: X:\KOW\MMNL\AN1613435-final-dsgn\51-drawings\90-GISEAW\Fig03\_RestorationUnits.mxd



**Legend**

EAW Study Area

Hemi-Marsh Wetland

**Restoration Units**

RU1 - Deep Water

RU2 - Coastal Wetland

RU3 - Spawning Habitat

RU4 - Hemi-Marsh

RU5 - Aquatic Organism Passage

Restoration Unit	Size (acres)
RU1 - Deep Water	4.5
RU2 - Coastal Wetland	15.8
RU3 - Spawning Habitat	1.3
RU4 - Hemi-Marsh	5.6
RU5 - Aquatic Organism Passage	0.1
<b>Total</b>	<b>27.3</b>

N

E

S

W

0

100

200

400

Feet

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Print Date: 12/15/2021  
User Name: ebudrow  
Projection: NAD 83 UTM Z 15N  
Source: SEHinc, MLT, MNDNR, MDH  
MNDOT, USGS, NRCS  
Background: 2019 St. Louis Co.

St. Louis River Restoration Initiative - Perch Lake Restoration

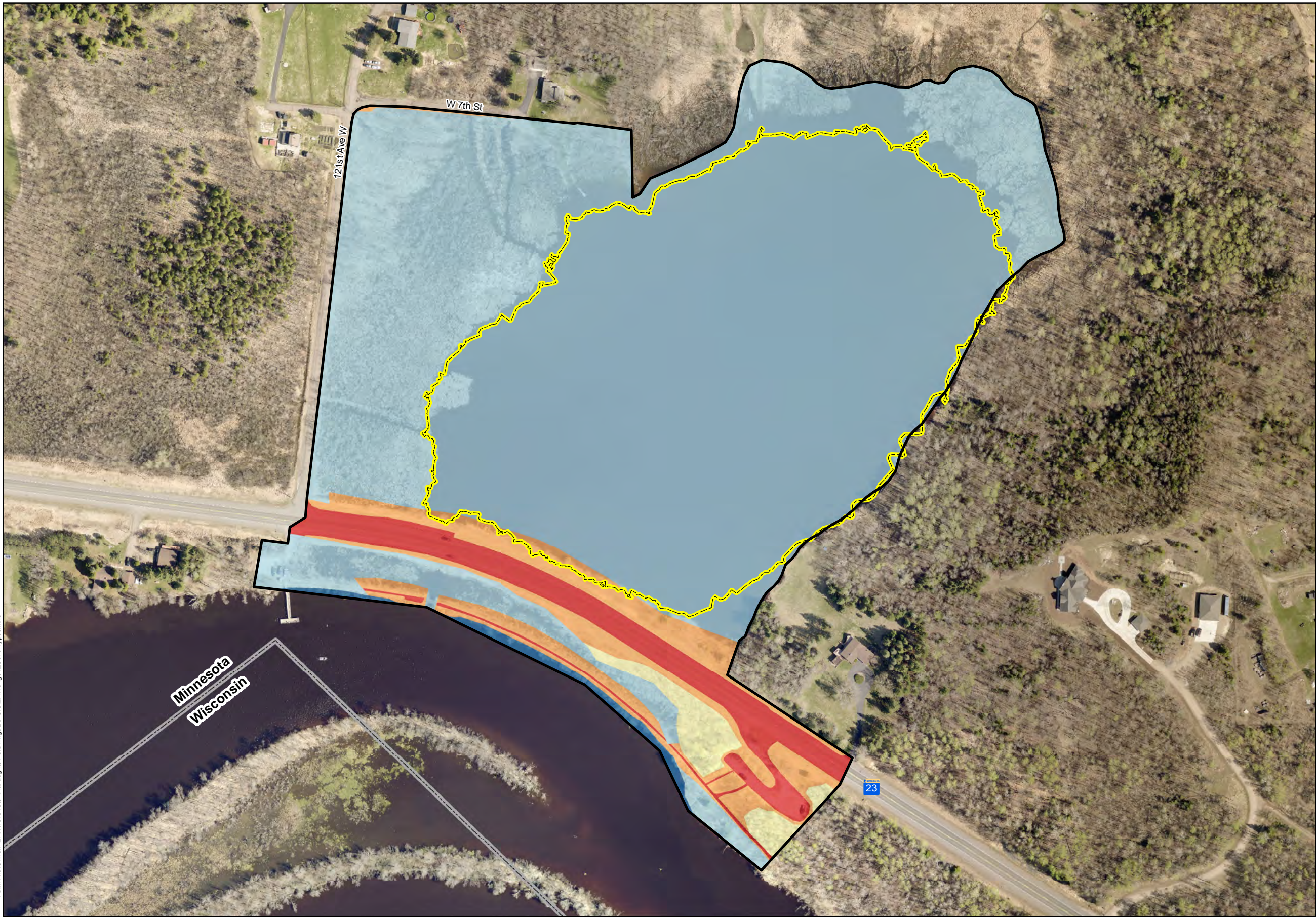
St. Louis County, Minnesota

Restoration Units  
Map





Figure  
3





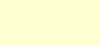


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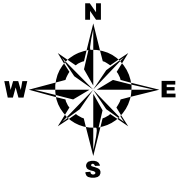
**Legend**

-  EAW Study Area
-  Ordinary High Water Level
-  Elevation Contour 602.1 AMSL
-  Datum: NAVD88

**Cover Type**

-  Wetland
-  Deepwater / Streams
-  Wooded / Forest
-  Impervious Surface
-  Disturbed Upland

Detailed Cover Type	Before (Acres)	After (Acres)
Wetlands	33.6	29.8
Deep water/streams	0.4	4.2
Wooded/forest	0.7	0.7
Brush/Grassland	0.0	0.0
Cropland	0.0	0.0
Lawn/landscaping	0.0	0.0
Impervious surface	2.2	2.2
Stormwater Pond	0.0	0.0
Other (Non-native vegetation)	2.8	2.8
<b>TOTAL</b>	<b>39.7</b>	<b>39.7</b>



0 100 200 400  
Feet

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Print Date: 12/10/2021

User Name: ebudrow  
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Source: SEHinc, MLT, MNDNR,  
MNDOT,  
Background: 2019 St. Louis Co.

# St. Louis River Restoration Initiative - Perch Lake Restoration

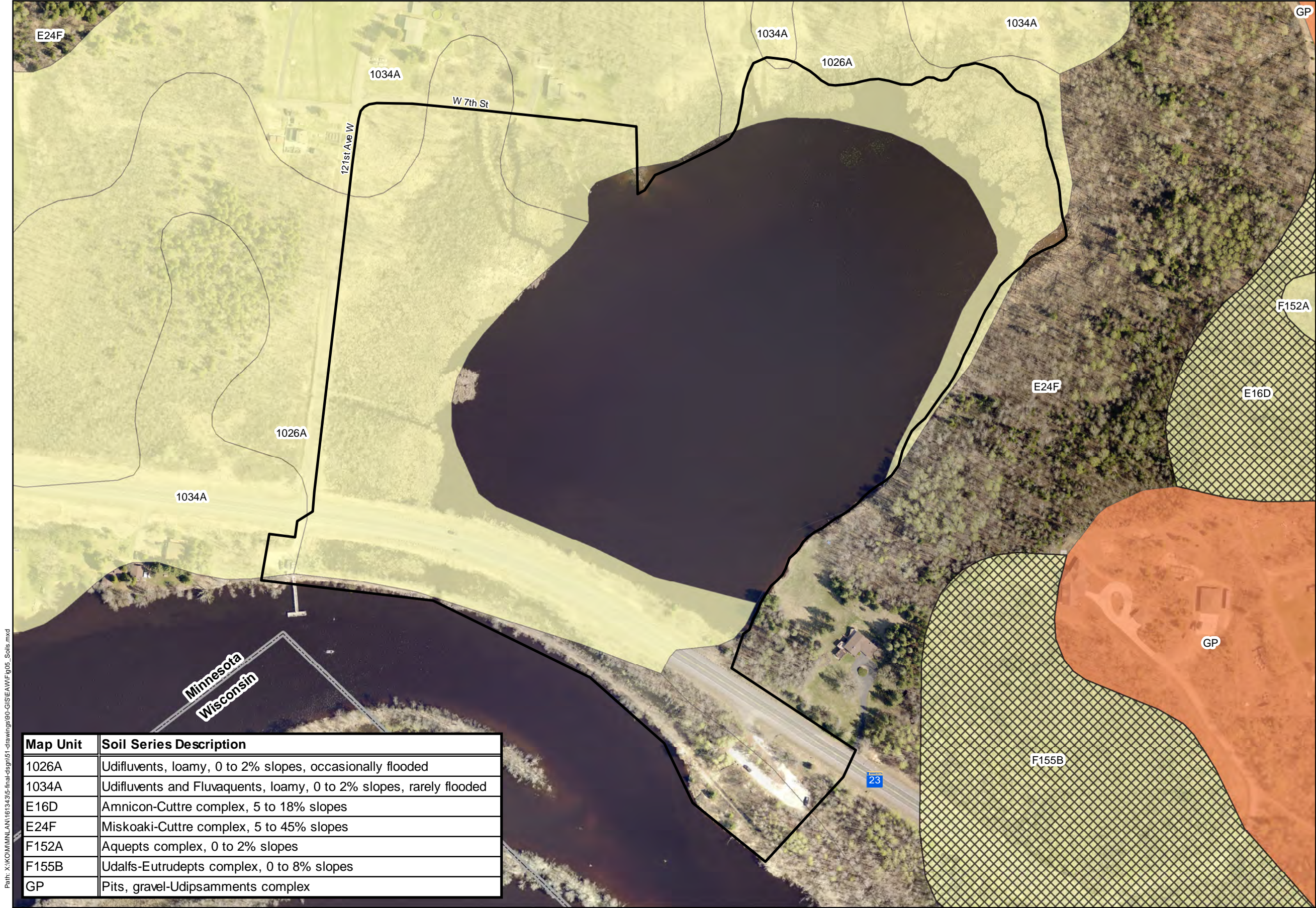
## St. Louis County, Minnesota

**Generalized Land  
Cover Types**

**Figure  
4**



Path: X:\KOW\MNLAN\161343\5-final-dsgn\51-drawings\90-GISEAW\Fig05\_Soils.mxd




Map Unit	Soil Series Description
1026A	Udifuvents, loamy, 0 to 2% slopes, occasionally flooded
1034A	Udifuvents and Fluvaquents, loamy, 0 to 2% slopes, rarely flooded
E16D	Amnicon-Cuttre complex, 5 to 18% slopes
E24F	Miskoaki-Cuttre complex, 5 to 45% slopes
F152A	Aquepts complex, 0 to 2% slopes
F155B	Udalfs-Eutrudepts complex, 0 to 8% slopes
GP	Pits, gravel-Udipsammments complex

Legend


 EAW Study Area

Prime Farmland Soil Status

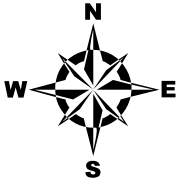
 Farmland of Statewide Importance

SSURGO Hydric Soil Status

 Partially Hydric

 Not Hydric

 Unknown



0 100 200 400 Feet

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Project: MNLAN 161343  
Print Date: 12/9/2021

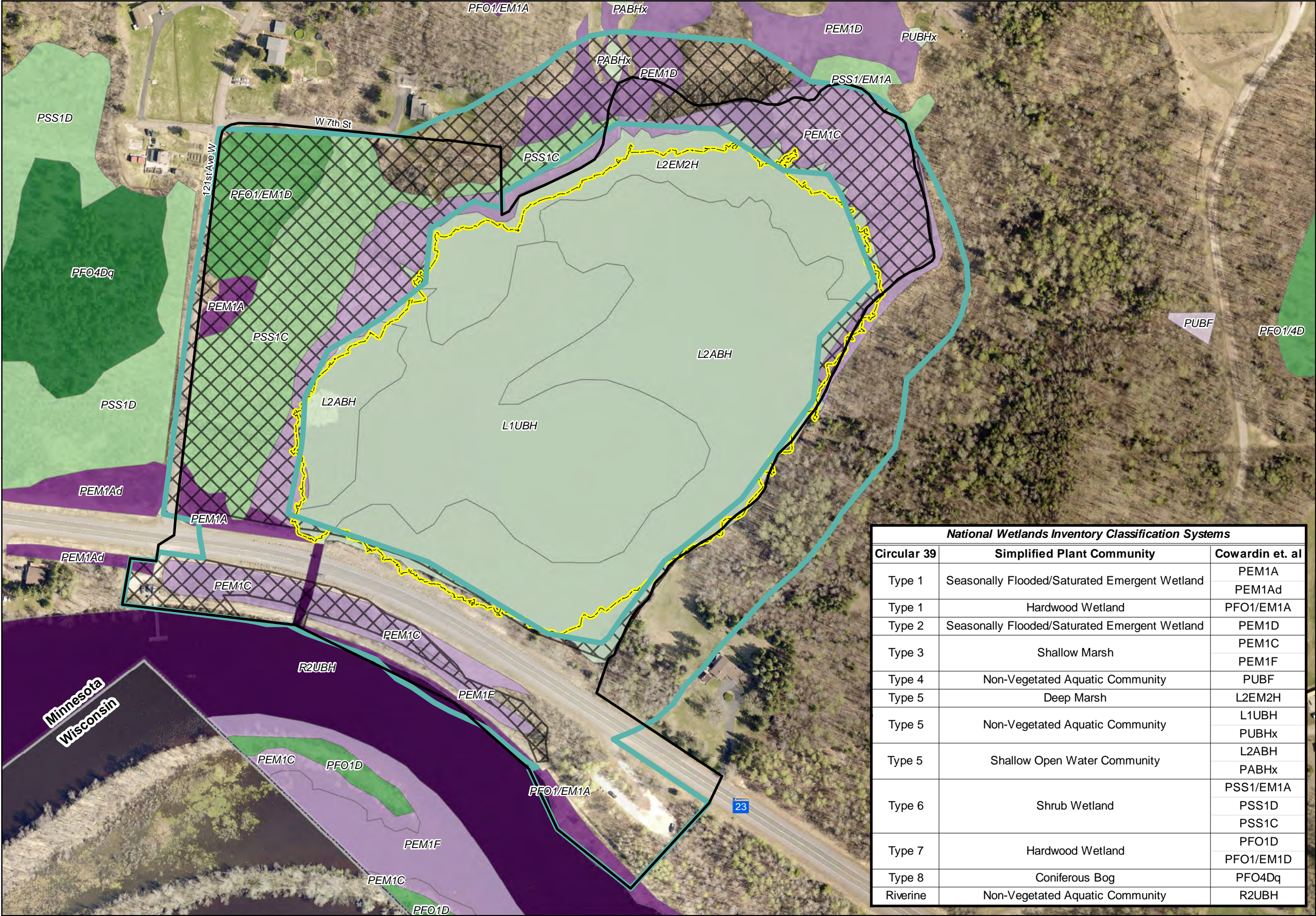
User Name: ebudrow  
Projection: NAD 83 UTM Z 15N  
Source: SEHinc, MLT, MNDNR,  
MNDOT, NRCS  
Background: 2019 St. Louis Co.

St. Louis River Restoration Initiative - Perch Lake Restoration  
St. Louis County, Minnesota

Soil Survey &  
Prime Farmland

Figure  
5





Legend

- EAW Study Area
- USACE Wetland Delineation Area of Investigation
- USACE Wetland Area
- Ordinary High Water Level
- Elevation Contour 602.1 AMSL Datum: NAVD88

NWI Circular 39 Class

- Type 1
- Type 2
- Type 3
- Type 4
- Type 5
- Type 6
- Type 7
- Type 8
- Riverine System

National Wetlands Inventory Classification Systems		
Circular 39	Simplified Plant Community	Cowardin et. al
Type 1	Seasonally Flooded/Saturated Emergent Wetland	PEM1A PEM1Ad
Type 1	Hardwood Wetland	PFO1/EM1A
Type 2	Seasonally Flooded/Saturated Emergent Wetland	PEM1D PEM1C PEM1F
Type 3	Shallow Marsh	PUBF
Type 4	Non-Vegetated Aquatic Community	L2EM2H
Type 5	Deep Marsh	L1UBH PUBHx L2ABH PABHx
Type 5	Shallow Open Water Community	PSS1/EM1A PSS1D PSS1C PFO1D PFO1/EM1D
Type 6	Shrub Wetland	PFO4Dq
Type 7	Hardwood Wetland	R2UBH
Type 8	Coniferous Bog	
Riverine	Non-Vegetated Aquatic Community	



0 100 200 400 Feet

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Source: SEHinc, MLT, MNDNR,  
MNDOT  
Background: 2019 St. Louis Co.

St. Louis River Restoration Initiative - Perch Lake Restoration  
St. Louis County, Minnesota

National Wetlands  
Inventory Map




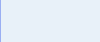
Figure  
6



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## Legend

-  EAW Study Area
  -  Ordinary High Water Level
  -  Public Water Course
  -  Public Water Basin
- \*Ordinary High Water Level defines the jurisdictional limit of a Public Water*



0 200 400 800 Feet

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User Name: ebudrow  
Projection: NAD 83 UTM Z 15N  
Source: SEHinc, MLT, MNDNR,  
MNDOT  
Background: 2019 St. Louis Co.

# St. Louis River Restoration Initiative - Perch Lake Restoration

## St. Louis County, Minnesota

Public Waters  
Inventory Map

Figure  
7



Path: X:\KOW\MINLAN\1613435-final-dgn\51-drawings\90-GISEAW\Fig08\_Wells.mxd

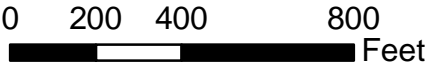
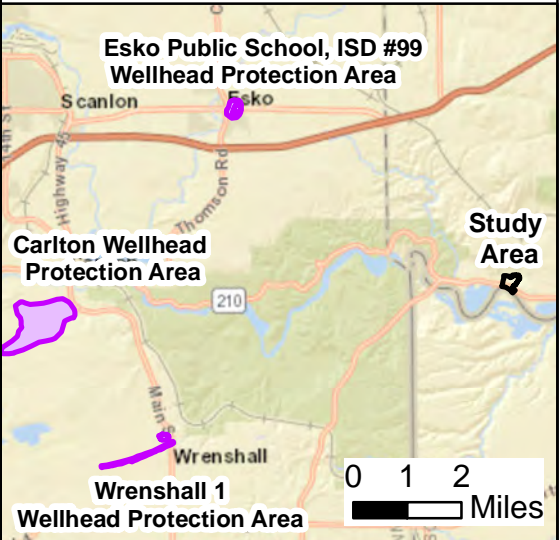


**Legend**

- EAW Study Area
- Study Area Buffer (1,000-ft)

**County Well Index**

- Field Verified Well
- Unlocated Well



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Source: SEHinc, MLT, MNDNR, MDH  
MNDOT  
Background: 2019 St. Louis Co.

# St. Louis River Restoration Initiative - Perch Lake Restoration

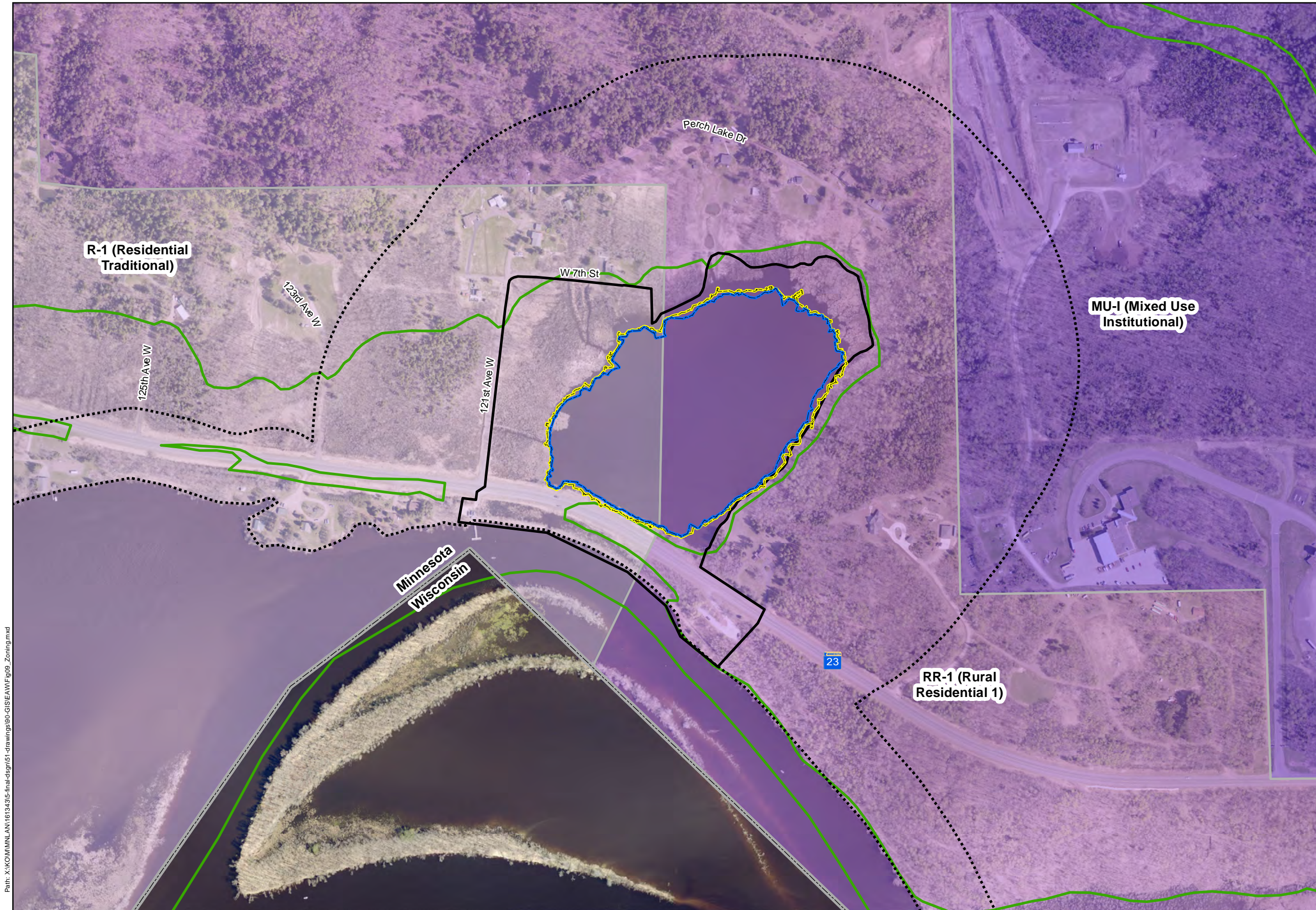
St. Louis County, Minnesota

County Well Index  
& Wellhead  
Protection Area

Figure  
8



Path: X:\KOWM\MINLAN\1613435-final\dsn\51-drawings\90-GISEAW\Fig09\_Zoning.mxd



### Legend

EAW Study Area

Shoreland Management Zone  
(1,000-ft from waterbodies,  
300-ft from watercourses)

Ordinary High Water Level  
Elevation Contour 602.1 AMSL  
Datum: NAVD88

Ordinary Low Water Level  
Elevation Contour 601 AMSL  
Datum: NAVD88

100-year Floodplain

### City of Duluth

#### Zoning Districts (Approximate)

MU-I (Mixed Use Institutional)

R-1 (Residential Traditional)

RR-1 (Rural Residential 1)

*\*IGLD85 to NAVD88 datum conversion  
for Ordinary High & Low Water Levels is  
approximate*

*\*Actual Ordinary Low Water Level is  
601.226 AMSL (NAVD88); for the  
purposes of this figure, the elevation  
is shown using 601 AMSL (NAVD88)*

N  
W E  
S

0200400800

Feet

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MNDOT, USGS, NRCS  
Background: 2019 St. Louis Co.

# St. Louis River Restoration Initiative - Perch Lake Restoration

## St. Louis County, Minnesota

Zoning & Setback  
Map

Figure  
9



