



City of Blaine

City Council Workshop

January 21, 2026 | 5:30 PM
Blaine City Hall
10801 Town Square Drive NE
Blaine, MN 55449

AGENDA

NOTICE OF WORKSHOP MEETING

In accordance with the provisions of Section 3.01 of the Blaine City Charter, a Council Workshop meeting is scheduled for the following purpose:

- 1. Call to Order**
- 2. Roll Call**
- 3. New Business**
 - 3.1.** 2026-028 Closed Session Pursuant to MN Statute 13D.05 Subd. (3)(c) to Consider Acquisition of Property Within the 105th Redevelopment Project
Sponsors: Erik Thorvig, City Manager
 - 3.2.** 2026-020 Site 7 - Wetland Banking
Sponsors: Daniel Schluender, Director of Engineering
 - 3.3.** 2026-027 Open Forum Procedure
Sponsors: Erik Thorvig, City Manager
- 4. Other Business**
- 5. Adjournment**



City of Blaine Staff Report

File Number: 2026-028

Agenda Date	Status
January 21, 2026	
In Control	File Type
City Council	Workshop Item

New Business

- Erik Thorvig, City Manager

Agenda Item # 3.1

Closed Session Pursuant to MN Statute 13D.05 Subd. (3)(c) to Consider Acquisition of Property Within the 105th Redevelopment Project

Background

Staff Recommendation

Questions for Council

Attachment List

None



Wetland Bank Monitoring Report

*City of Blaine Site 7 Wetland Mitigation Bank
Anoka County, Minnesota*

December 31, 2025

Project No. 24-32102



Architecture
Engineering
Environmental
Planning
ISGInc.com

REPORT FOR:
Megan Hedstrom
The City of Blaine
10801 Town Square Drive NE
Blaine, MN 55449
763.785.6194
mhedstrom@blainemn.gov

FROM:
ISG
Nick McCabe
Senior Environmental Scientist
115 East Hickory Street + Suite 300
Mankato, MN 56001
507.387.6651
Nick.McCabe@ISGInc.com

**MN Board of Water and Soil Resources
WETLAND BANK
YEAR 1 ANNUAL MONITORING REPORT**

Project type: ☐ Project Specific ☒ Wetland Banking
Monitoring year: 2025 growing season

PROJECT INFORMATION

Landowner Name: City of Blaine, Minnesota		Site ID #: 7590
Applicant (if different from landowner):		Account #:
Project Name: Site 7 Wetland Bank	Bank Area (acres): 171.5	US ACE #: MVP-2014-01829-MVM
County: Anoka	Legal Description: Section 11 (T31N, R22W)	
Report Prepared By: ISG		Date: December 31, 2025

PROJECT OVERVIEW

Replacement wetland goals in terms of size, replacement credit amount, wetland types, hydrology, and wetland functions.

The wetland restoration site, known as the Blaine Wetland Sanctuary Site 7 Wetland Bank, is located at 11980 Lexington Ave NE in the City of Blaine, Anoka County, Minnesota (see Figure 1 – Location Map). The site contains a large wetland complex with upland forested/wooded islands. The wetland portion of the project area contains three major plant community types: Rich Fen, Poor Fen, and Anoka Sand Plain (ASP) Wet Meadow. The overall goal for the project site is to enhance the existing vegetation in an effort increase the floristic diversity of the site and functionally lift the ecological integrity of the wetland complex.

Hydrologic restoration is not a component of this project. All potential wetland mitigation credits are to be generated through vegetation enhancement efforts only. The project area has the potential to generate up to 81.06 wetland mitigation credits. In order to obtain maximum crediting, all vegetation performance standards will need to be met or exceeded.

MANAGEMENT HISTORY

Dates restoration activities commenced and/or were completed. Include amendments to the plan.

Table 1. Management History

Date	Activity
February-March 2017	Tree and Shrub Removal; Mowing; Mechanical Dethatching
May 2017	Broadcast Herbicide Application
June 2017	Aerial Herbicide Application
August 2017	Spot Herbicide Application
September 2017	Follow-up Spot Herbicide Application; Vegetation Monitoring
March 2018	Tree and Shrub Removal; Mowing; Mechanical Dethatching
March 2018-April 2018	Forestry Tilling

Date	Activity
June 2018	Broadcast and Spot Herbicide Applications
August 2018	Spot Herbicide Application
September 2018	Spot Herbicide Application

METHODS

What was monitored (example: vegetation, hydrology), when and how.

Vegetation

Vegetation at the site was monitored twice during the 2025 growing season. The vegetation sampling method follows the relevé vegetation plot sampling method and is to be consistent with the Minnesota DNR's *A Handbook for Collecting Vegetation Plot Data in Minnesota: The Relevé Method* (2007). A total of sixteen (16) permanent relevé monitoring plots measuring 100 square meters (10m x 10m) are located within the investigation area. One hundred square meter dimension relevé plots are standard for sampling herbaceous plant communities in Minnesota (MN DNR, 2007). These 16 plots were established in 2017 during a previous round of monitoring by another consultant. The 16 monitoring plots are distributed across all three of the wetland plant community types found within the boundary. These monitoring plots will be repeatedly visited throughout the duration of the project to monitor changes and trends in the plant community composition following yearly implementation activities. The locations of the monitoring plots are shown on Figure 2 – Monitoring Map.

Species present in each monitoring plot were documented during surveys on May 30th and 31st, June 4th, and July 22nd and 23rd.

RESULTS

Summary of observations of vegetation (plant communities, dominant species).

Vegetation

The sizes of the plant communities were estimated utilizing aerial orthomosaic imagery that was captured by ISG on August 7th, 2025, imagery available from Anoka County captured in the Spring of 2024, as well as on-site meanders during the monitoring periods. Changes in vegetation were delineated by GPS and used to map the plant communities which are shown on Figure 3 – 2025 Vegetation Community Map. An increase in the total (including native and non-native species) mean coefficient of conservatism value (C) was observed in nine (9) of the sixteen (16) monitoring plots.

The orthomosaic drone imagery and the Anoka County imagery are included in Appendix B. Photographs of the site are included as Appendix C – Photo Log. An aggregate of each plant community for the entire site was estimated as well. This data is listed in Appendix D – 2025 Vascular Plant Species List & Relevé Monitoring Plot Data. A summary of acres planned and observed in each community is provided below.

Table 2. Vegetative Communities: Planned and Observed

Community	Acres Planned (2017 & 2018)	Acres Observed (2025)
Type 2 – Rich Fen	56.6	20.3
Type 2 – Poor Fen	28.6	20.9
Type 2 – Wet Meadow	69.3	120.3
Buffer Enhancement	1.9	1.9
Upland Buffer	13.2	6.2
No Credit Areas	1.9	1.9

Community	Acres Planned (2017 & 2018)	Acres Observed (2025)
Total Wetland	154.5	161.5
Total Upland	17.0	10.0
Total Area	171.5	171.5

Type 2 – Rich Fen:

The rich fen plant community was highly diverse and performed as a balanced plant community. The prime dominant species were bluejoint (*Calamagrostis canadensis*) and wiregrass sedge (*Carex lasiocarpa*). Rare species such as lance-leaf violet (*Viola lanceolata*) and twisted yellow-eyed grass (*Xyris torta*) are found within this plant community (Figure 5). Other unique species included blood milkwort (*Polygala sanguinea*), steeplebush (*Spiraea tomentosa*), and bristleberries (*Rubus spp.*) with varying cover. Rich fens are notorious for having a diverse community of fen specific plants present. Diversity was high with plots containing a range of 19-34 native species recorded. Non-native or invasive species included reed canary grass (*Phalaris arundinacea*), perennial sowthistle (*Sonchus arvensis*), glossy buckthorn (*Frangula alnus*), and narrowleaf cattail (*Typha angustifolia*), all found in low amounts.

Type 2 – Poor Fen:

The poor fen plant community was in excellent condition, with minimal invasive or non-native species found, except for the edges of the native plant community where reed canary grass is slowly expanding inward. Two dominant native plant species found within this community included wiregrass sedge (*Carex lasiocarpa*) and Northern marsh fern (*Thelypteris palustris*). Poor fens lack the amount of diversity compared to their rich fen counterparts, so species count was expected to be lower. The lowest number of species was in plot 15 with 12 native species found, and the highest was plot 3 with 13 species found. No non-native or invasive species were present within any of the monitored plots.

Type 2 – Wet Meadow:

The wet meadow was dominated by reed canary grass (*Phalaris arundinacea*), bristleberries (*Rubus spp.*), giant goldenrod (*Solidago gigantea*), arrow-leaved tearthumb (*Persicaria sagittata*), and bluejoint (*Calamagrostis canadensis*). Across the site, there was a range in the total of native species found in the wet meadow depending on the plot, with the lowest amount in plot 14 with six total native species, and the highest being plot 4 with 28 native species found. Non-native or invasive species included Canada thistle (*Cirsium arvense*) and reed canary grass (*Phalaris arundinacea*), which were found in abundant coverage at greater than 95% relative cover throughout the mapped wet meadow community (Figure 4– 2025 Management Recommendation Map).

Wooded Upland:

The woodland plant communities varied by micro elevation and openings within the canopy. Overall, the communities were dominated by mature trees including hackberry (*Celtis occidentalis*), American elm (*Ulmus americana*), red oak (*Quercus rubra*), basswood (*Tilia americana*) and green ash (*Fraxinus pennsylvanica*). The sapling/shrub strata was sparse with notable species including quaking aspen (*Populus tremuloides*), wild grape (*Vitis riparia*) and ironwood (*Ostrya virginiana*). Dominant species in the herbaceous layer typically included Pennsylvania sedge (*Carex pennsylvanica*), bottlebrush grass (*Elymus hystrix*) and hog peanut (*Amphicarpaea bracteata*). Invasive buckthorn (*Rhamnus cathartica*) was also present in the wooded communities in small amounts, but abundant enough to cause alarm. Extent of invasive and noxious species can be found on Figure 4 – 2025 Management Recommendation Map.

A comprehensive list of vascular plant species found on site as well as data for native and total species richness, native and total mean Coefficient of Conservatism (C), native and total FQI scores, and vascular plant species for individual relevé plots can be found in Appendix D - 2025 Relevé Monitoring Plot Data.

Table 3. Newly Detected Vascular Plant Species in 2025 as Compared to 2018 and 2017 Monitoring Results

Scientific Name	Common Name	C-Value	Status	Occurrences Per 16 Plots
<i>Ambrosia artemisiifolia</i>	Common ragweed	0	Native	2
<i>Asclepias exaltata</i>	Poke milkweed	7	Native	1
<i>Calystegia sepium</i>	Hedge bindweed	1	Native	3
<i>Carex aquatilis</i>	Aquatic sedge	7	Native	1
<i>Carex bebbii</i>	Bebb's sedge	5	Native	1
<i>Carex sprengei</i>	Sprengel's sedge	5	Native	1
<i>Chenopodium simplex</i>	Maple-leaf Goosefoot	2	Native	1
<i>Cirsium muticum</i>	Swamp thistle	6	Native	1
<i>Cornus sericea</i>	Red-osier dogwood	3	Native	1
<i>Equisetum pratense</i>	Meadow horsetail	6	Native	1
<i>Festuca subverticillata</i>	Nodding fescue	6	Native	1
<i>Galeopsis tetrahit</i>	Brittlestem hemp-nettle	0	Introduced	1
<i>Impatiens capensis</i>	Spotted touch-me-nots	2	Native	1
<i>Lactuca canadensis</i>	Canada lettuce	2	Native	1
<i>Myosoton aquaticum</i>	Giant chickweed	0	Introduced	1
<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	2	Native	1
<i>Persicaria lapathifolia</i>	Nodding smartweed	2	Native	3
<i>Poa nemoralis</i>	Wood Bluegrass	0	Introduced	1
<i>Poa palustris</i>	Fowl bluegrass	5	Native	1
<i>Polygonatum biflorum</i>	Smooth Solomon's seal	5	Native	1
<i>Ranunculus hispidus</i>	Hispid buttercup	6	Native	3
<i>Rubus stipulatus</i>	Bristly blackberry	7	Native	7
<i>Rudbeckia laciniata</i>	Cut leafed coneflower	4	Native	1
<i>Salix bebbiana</i>	Bebb's willow	6	Native	1
<i>Scirpus atrovirens</i>	Dark green bulrush	4	Native	1

Scientific Name	Common Name	C-Value	Status	Occurrences Per 16 Plots
<i>Sonchus arvensis</i>	Perennial sowthistle	0	Introduced	1
<i>Stachys hispida</i>	Hairy Hedge Nettle	5	Native	1
<i>Taraxacum officinale</i>	Common dandelion	0	Introduced	2
<i>Verbascum thapsus</i>	Common mullein	0	Introduced	1
<i>Verbena hastata</i>	Blue vervain	6	Native	3
<i>Viburnum lentago</i>	Nannyberry	4	Native	1

DISCUSSION

Compare the current replacement wetland to functional goals and performance standards; discuss progress to date. Discuss field conditions during the observation periods (i.e. drought, flooding, normal, etc.). Justify any changes to the approved design plan (construction, vegetation establishment or management).

Performance standards were defined in the Blaine Wetland Bank Plan in 2016.

In late 2018, the sponsor met all requirements for the Initial credit release, resulting in the deposit of 15% of total projected credits for the site, or 12.1590 credits (December 2018). In order to meet the Interim 1 vegetation performance standards, resulting in the release of an additional 15% of total projected credits by plant community type, vegetation performance standards as outlined in Table 4 must be met for two consecutive growing seasons. To achieve the Interim 1 vegetation performance standards, FQI scores must reach a prescribed threshold within each prescribed plant community and be held for two consecutive growing seasons. Due to monitoring and maintenance activities not taking place after 2018, the 2025 growing season has been determined to be Year 1 of vegetation monitoring with regard to the Interim 1 performance standards. Additionally, the project sponsor must demonstrate a reduction of relative cover by non-native invasive species to less than 25% within each plant community type.

In order to meet the Interim 2 vegetation performance standards, resulting in the release of an additional 45% of total projected credits by plant community type, vegetation performance standards as outlined in Table 5 must be met. To achieve the Interim 2 vegetation performance standards, FQI scores must reach a prescribed threshold for each plant community and be held for two consecutive growing seasons. The project sponsor must demonstrate a reduction of relative cover by non-native invasive species to less than or equal to 10% across each plant community types.

Table 4. Interim 1 Vegetation Performance Standards (15% of Total Projected Credits)

Interim 1 Vegetation Performance Standards (15% of Total Projected Credits)	
Rich Fen	FQI of at least 18 for two consecutive growing seasons for the Rich Fen Areas (Average of all Rich Fen FQI plots)
	Percent Relative Cover: less-than or equal to 25% Relative Cover (p) by Non-Native Invasive species

Interim 1 Vegetation Performance Standards (15% of Total Projected Credits)	
Poor Fen	FQI of at least 16 for two consecutive growing seasons for the Poor Fen Areas (Average of all Poor Fen FQI Plots)
	Percent Relative Cover: less-than or equal to 25% Relative Cover (p) by Non-Native Invasive species
ASP Wet Meadow	FQI of at least 18 for two consecutive growing seasons for the ASP Wet Meadow Areas (Average of all Wet Meadow FQI plots)
	Percent Relative Cover: less-than or equal to 25% Relative Cover (p) by Non-Native Invasive species
Buffer	Percent Relative Cover: less-than 25% Relative Cover (p) by Non-Native Invasive species

Table 5. Interim 2 Vegetation Performance Standards (45% of Total Projected Credits)

Interim 2 Vegetation Performance Standards (45% of Total Projected Credits)	
Rich Fen	FQI of at least 24 for two consecutive growing seasons for the Rich Fen Areas (Average of all Rich Fen FQI plots)
	Percent Relative Cover: less-than or equal to 10% Relative Cover (p) by Non-Native Invasive species
Poor Fen	FQI of at least 18 for two consecutive growing seasons for the Poor Fen Areas (Average of all Poor Fen FQI Plots)
	Percent Relative Cover: less-than or equal to 10% Relative Cover (p) by Non-Native Invasive species
ASP Wet Meadow	FQI of at least 24 for two consecutive growing seasons for the ASP Wet Meadow Areas (Average of all Wet Meadow FQI plots)
	Percent Relative Cover: less-than or equal to 10% Relative Cover (p) by Non-Native Invasive species
Buffer	Percent Relative Cover: less-than 10% Relative Cover (p) by Non-Native Invasive species

The results of the 2025 monitoring season in Table 6 below showed that the Rich Fen and Poor Fen met the Interim 1 Vegetation Performance Standards, but the Wet Meadow did not meet the performance standards. As this is Year 1 of monitoring, the vegetation performance standards will be revisited at the end of the growing season of Year 2 (2026) after maintenance activities begin in 2026.

Table 6. 2025 Monitoring Results

Plant Community	Mean Total Floristic Quality Index (FQI) Score	Interim 1 Vegetation Performance Standards: FQI	Interim 1 Vegetation Performance Standards: NNI (Non-Native Invasive) Species Relative Cover
Rich Fen	25.20	FQI > 18: Met	NNI < 25%: Met
Poor Fen	18.79	FQI > 16: Met	NNI < 25%: Met
Wet Meadow	15.43	FQI > 18: Not Met	NNI < 25%: Not Met

FUTURE MANAGEMENT

Activities planned for the upcoming year and including any additional corrective or remedial action.

Vegetation monitoring will be conducted in 2026 similar to the growing season of 2025 with an added focus on areas that require invasive species management.

Maintenance activities planned for the upcoming year will follow the 2026 Vegetation Work Plan (Appendix E) and should include mowing and spraying herbicide to control invasive species, prescribed burns, and buckthorn removal. Spot mowing and/or spraying herbicide will be utilized in any areas where invasive species such as Canada Thistle or Reed Canary Grass are observed to be a nuisance. Light-intensity prescribed burning should be conducted across the rich fen, poor fen, wet meadow, and upland buffer between early spring and late spring to reduce litter, suppress woody encroachment, and prepare the seedbed. During the winter season, all mapped buckthorn stands should be removed and cut stump treated with an oil-based herbicide.

Areas of Reed Canary Grass and Canada Thistle were mapped in Figure 4 - 2025 Management Recommendation Map. It is recommended that these areas continue to be monitored in 2026 and that additional management activities take place based on monitoring results if warranted. Additionally, it should be considered to supplement the seed bank with an approved native wet meadow mix after herbicide is used on invasive species. This will promote native vegetation cover which should help reduce the aggressive spread of Reed Canary Grass and Canada Thistle.

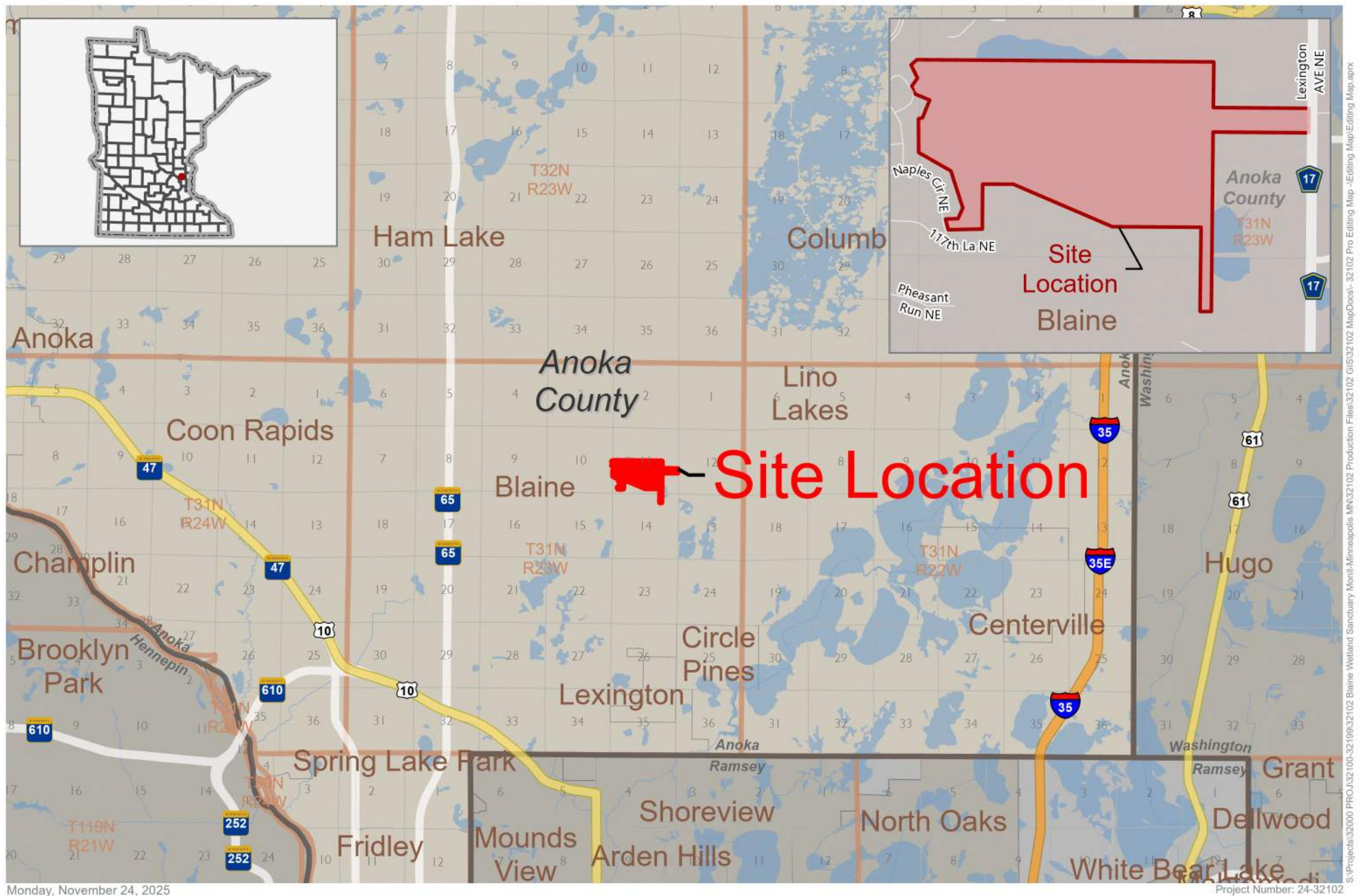
FIGURES AND TABLES

- **Table 1** – Management History
- **Table 2** – Vegetative Communities: Planned and Observed
- **Table 3** – Newly Detected Vascular Plant Species in 2025 as Compared to 2018 and 2017 Monitoring Results
- **Table 4** – Interim 1 Vegetation Performance Standards
- **Table 5** – Interim 2 Vegetation Performance Standards
- **Table 6** – 2025 Monitoring Results

APPENDICES

- **Appendix A** – Supporting Figures
 - Figure 1 – Site Location Map
 - Figure 2 – Monitoring Map (including photo reference points)
 - Figure 3 – 2025 Vegetation Community Map
 - Figure 4 – 2025 Management Recommendation Map
 - Figure 5 – Rare Features Map
- **Appendix B** – 2025 Drone Orthomosaic Map; 2024 Anoka County Aerial Map
- **Appendix C** – 2025 Photo Logs
- **Appendix D** – 2025 Vascular Plant Species List & Relevé Monitoring Plot Data
- **Appendix E** – Blaine Wetland Sanctuary 2026 Vegetation Work Plan

Appendix A



0 1 2 Miles
1 inch = 2 miles



Figure 1
Project Location Map
Blaine Wetland Sanctuary
Blaine, Anoka County, Minnesota

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



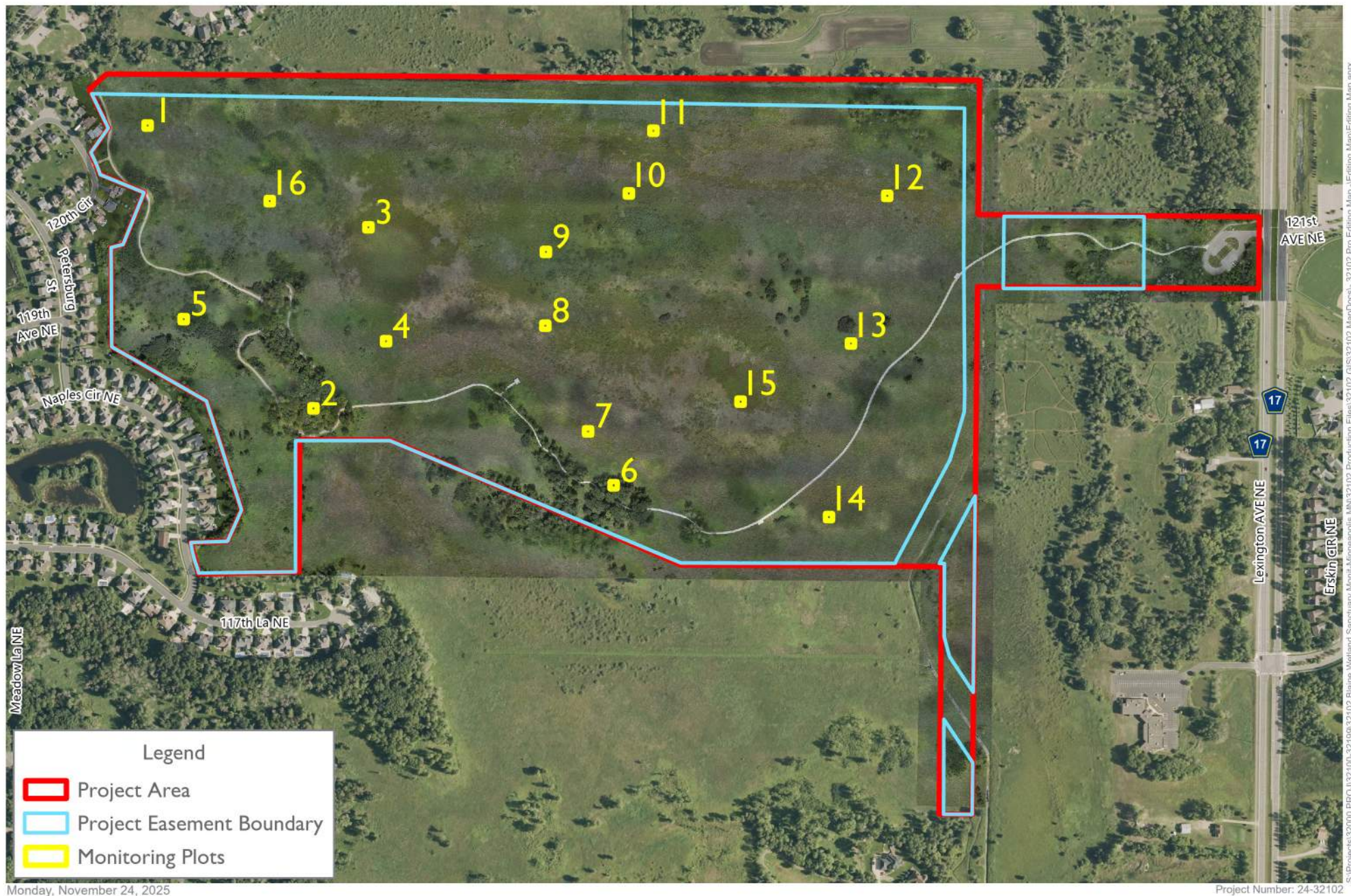


Figure 2
Monitoring Plan Map
Blaine Wetland Sanctuary
 Blaine, Anoka County, Minnesota

Source(s):
 Orthophoto (ISG, 2025)
 Orthophoto (FSA, 2023)
 Easement Boundary (BWSR, 2025)

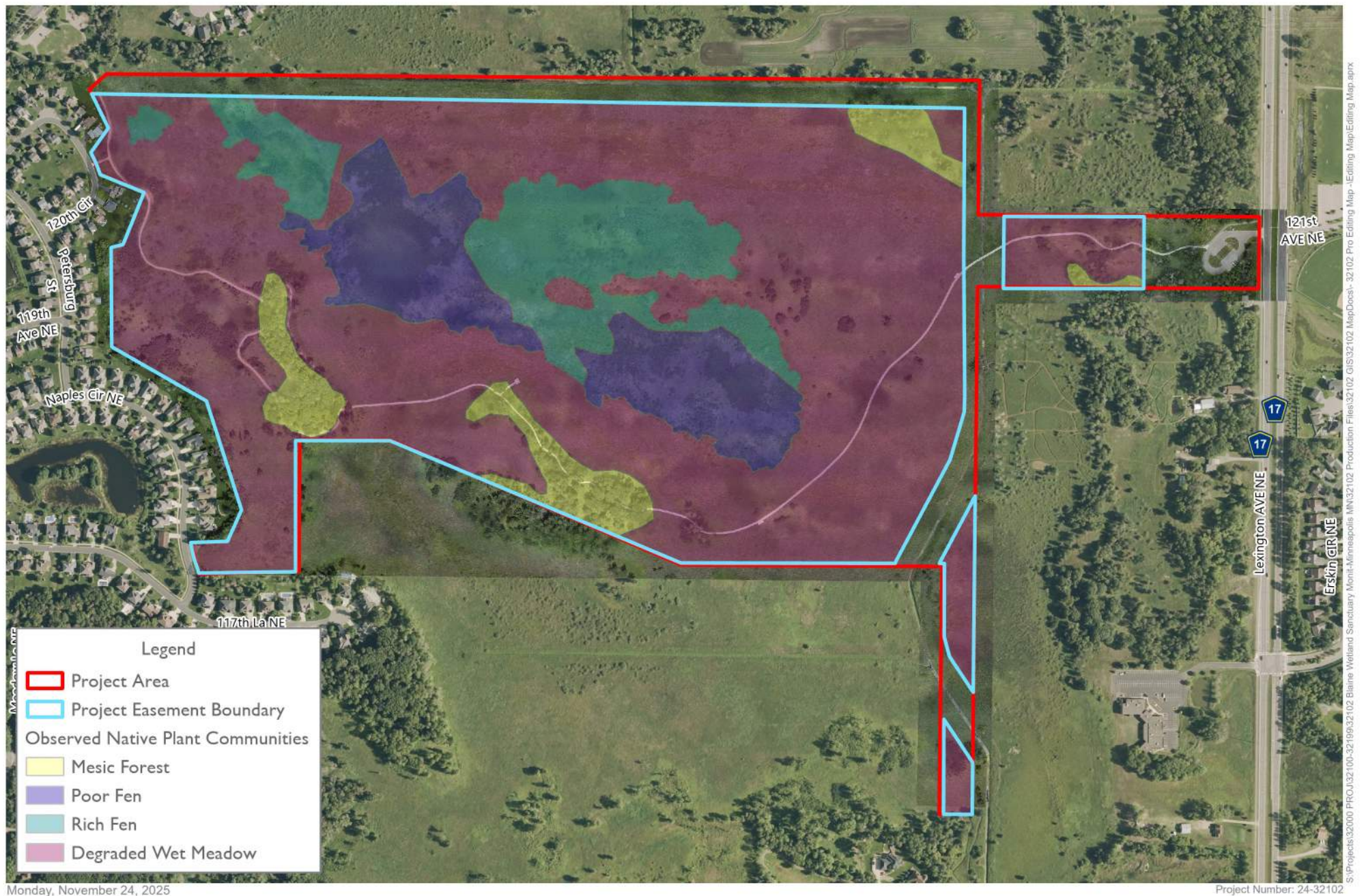


Figure 3
 Vegetation Community Map
 Blaine Wetland Sanctuary
 Blaine, Anoka County, Minnesota

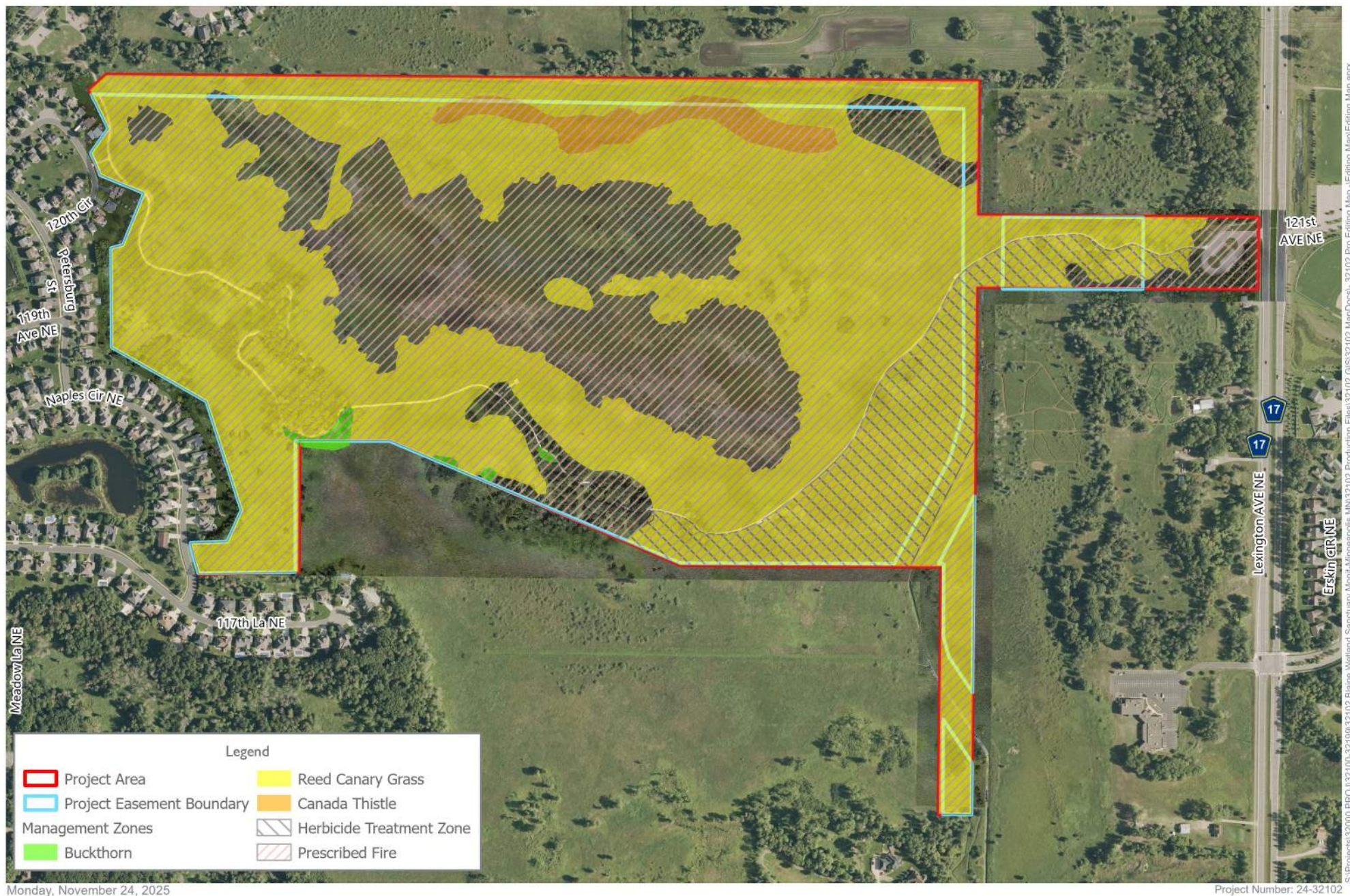


Figure 4
Management Recommendations Map
Blaine Wetland Sanctuary
 Blaine, Anoka County, Minnesota

Source(s):
 Orthophoto (ISG, 2025)
 Orthophoto (FSA, 2023)



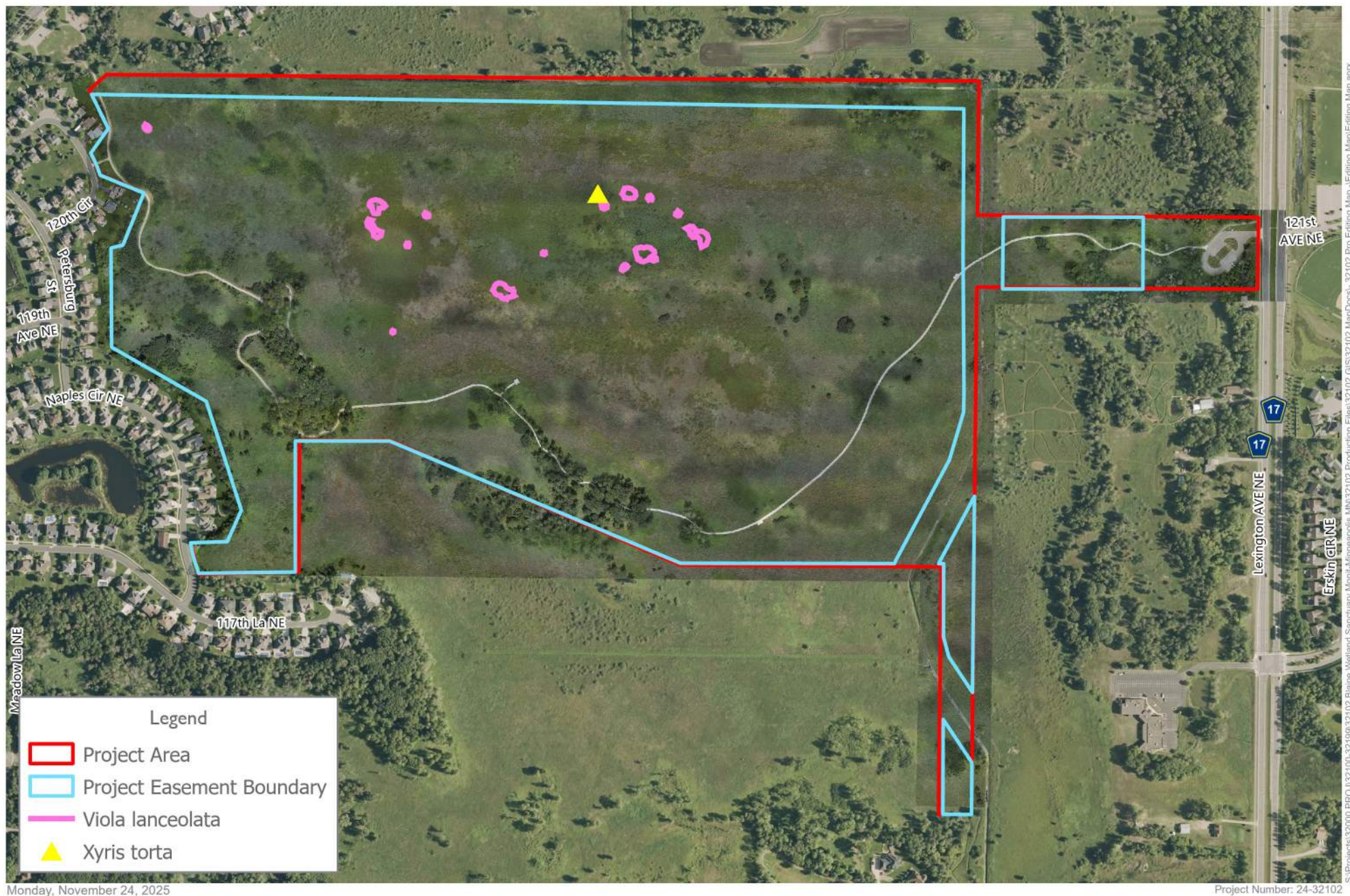
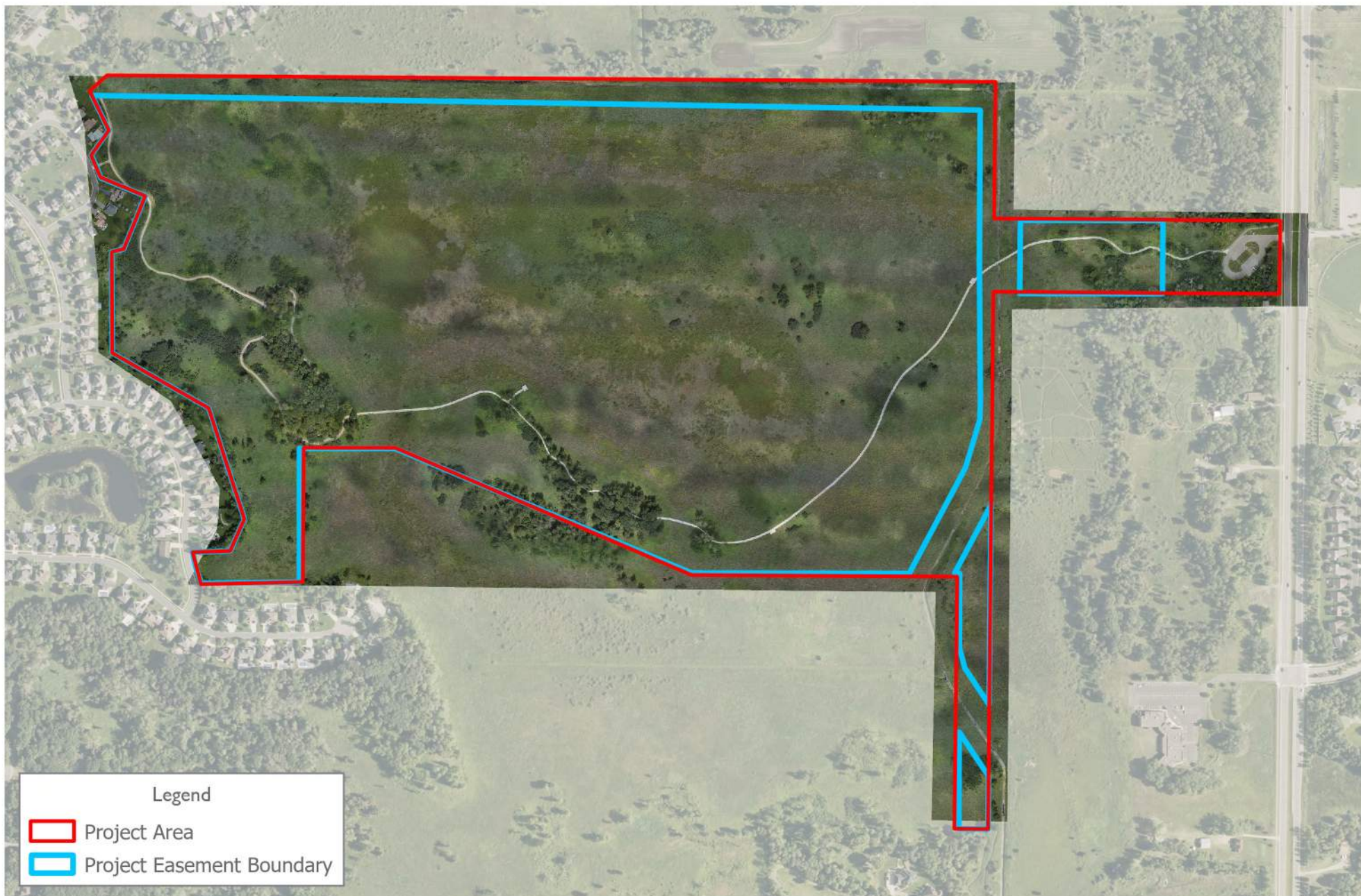


Figure 5
Rare Features Map
Blaine Wetland Sanctuary
Blaine, Anoka County, Minnesota

Appendix B



Monday, November 24, 2025

Project Number: 24-32102

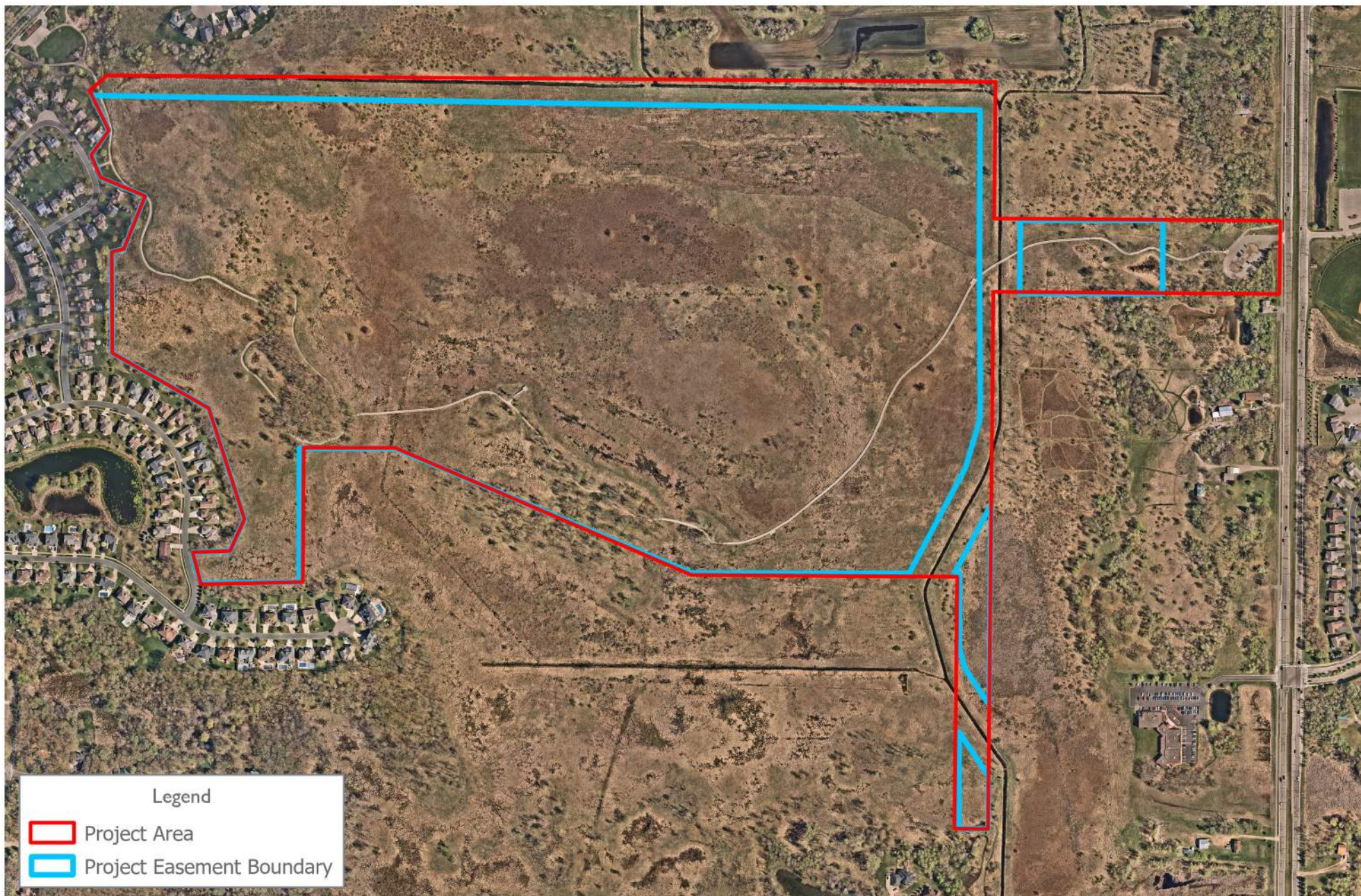
0 300 600
Feet
1 inch = 600 feet



2025 Drone Orthomosaic Map Blaine Wetland Sanctuary Blaine, Anoka County, Minnesota

Source(s):
Orthophoto (ISG, 2025)
Orthophoto (FSA, 2023)





Monday, November 24, 2025

Project Number: 24-32102

0 300 600
Feet
1 inch = 600 feet



2024 Anoka County Aerial Map

Blaine Wetland Sanctuary

Blaine, Anoka County, Minnesota

Source(s):
Orthophoto (Anoka Co, 2024)



Appendix C

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 1, facing north.



View of Plot 2, facing west.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 3, facing southwest.



View of Plot 4, facing north.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 5, facing northeast.



View of Plot 6, facing northeast.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 7, facing north.



View of Plot 8, facing southwest.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 9, facing west.



View of Plot 10, facing south.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 11, facing southwest.



View of Plot 12, facing west.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 13, facing southwest.



View of Plot 14, facing east.

Photo Log

May 30th & 31st, 2025, and June 4th, 2025

ISG



View of Plot 15, facing north.



View of Plot 16, facing north.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 1, facing southeast.



View of Plot 2, facing west.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 3, facing southwest.



View of Plot 4, facing south.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 6, facing northeast.



View of Plot 7, facing northeast.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 8, facing north.



View of Plot 9, facing southwest.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 10, facing northeast.



View of Plot 11, facing north.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 12, facing southwest.



View of Plot 13, facing southeast.

Photo Log

July 22nd & 23rd, 2025

ISG



View of Plot 14, facing east.



View of Plot 15, facing northwest.

Appendix D

City of Blaine Site 7 Wetland Mitigation Bank – Year 1 (2025) Complete Species List

#	Scientific Name	Common Name	C-Value	Native Status	Plots Detected In	Occurrences Per 16 Plots
1	<i>Acer rubrum</i>	Red maple	3	Native	2,4,9,15	4
2	<i>Ageratina altissima</i>	White snakeroot	2	Native	2,5,6	3
3	<i>Agrostis scabra</i>	Rough bentgrass	8	Native	10	1
4	<i>Alisma triviale</i>	Common water plantain	4	Native	12	1
5	<i>Ambrosia artemisiifolia</i>	Common ragweed	0	Native	11,12	2
6	<i>Amphicarpaea bracteata</i>	Hog peanut	2	Native	2,6	2
7	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	4	Native	6	1
8	<i>Aronia melanocarpa</i>	Black Chokeberry	7	Native	1,9,10	3
9	<i>Asclepias exaltata</i>	Poke milkweed	7	Native	6	1
10	<i>Asclepias incarnata</i>	Swamp milkweed	5	Native	3,12	2
11	<i>Athyrium filix-femina</i>	Lady fern	4	Native	6	1
12	<i>Betula papyrifera</i>	Paper birch	6	Native	1,4,10,16	4
13	<i>Betula pumila</i>	Bog birch	7	Native	9,10	2
14	<i>Bidens cernua</i>	Nodding bur marigold	3	Native	7,11	2
15	<i>Bidens connata</i>	Swamp beggarticks	3	Native	7,11,12	3
16	<i>Boehmeria cylindrica</i>	False nettle	5	Native	5,7	2
17	<i>Calamagrostis canadensis</i>	Bluejoint	4	Native	1,3,4,5,7,8,9,10,11,12,13,16	12
18	<i>Calystegia sepium</i>	Hedge bindweed	1	Native	1,14,16	3
19	<i>Campanula aparinoides</i>	Marsh bellflower	5	Native	3,8,10	3
20	<i>Carex aquatilis</i>	Aquatic sedge	7	Native	16	1
21	<i>Carex bebbii</i>	Bebb's sedge	5	Native	12	1
22	<i>Carex cryptolepis</i>	Secretive sedge	7	Native	9,10	2
23	<i>Carex deweyana</i>	Dewey's sedge	6	Native	6	1
24	<i>Carex lacustris</i>	Lake sedge	5	Native	1,4,7,8,9,10,16	7
25	<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native	3,8,9,10,15	5
26	<i>Carex pensylvanica</i>	Pennsylvania sedge	3	Native	2,6	2
27	<i>Carex pseudocyperus</i>	Cypress-like sedge	5	Native	4,5,11	3
28	<i>Carex scoparia</i>	Pointed broom sedge	4	Native	7,8,11,12,13	5
29	<i>Carex sprengei</i>	Sprengel's sedge	5	Native	6	1
30	<i>Carex stricta</i>	Tussock sedge	5	Native	9	1
31	<i>Celtis occidentalis</i>	Hackberry	3	Native	6	1
32	<i>Chenopodium simplex</i>	Maple-leaf Goosefoot	2	Native	6	1
33	<i>Circaea alpina</i>	Alpine enchanter's nightshade	6	Native	6	1
34	<i>Cirsium muticum</i>	Swamp thistle	6	Native	4	1
35	<i>Cornus racemosa</i>	Gray dogwood	2	Native	4	1
36	<i>Cornus sericea</i>	Red-osier dogwood	3	Native	13	1
37	<i>Cuscuta gronovii</i>	Swamp dodder	3	Native	11	1
38	<i>Dichanthelium oligosanthes</i>	Heller's rosette grass	3	Native	10	1
39	<i>Dryopteris carthusiana</i>	Spinulose shield fern	6	Native	4	1
40	<i>Dryopteris cristata</i>	Crested Fern	7	Native	4	1
41	<i>Elymus hystrix</i>	Bottlebrush grass	6	Native	6	1
42	<i>Equisetum pratense</i>	Meadow horsetail	6	Native	6	1
43	<i>Erechtites hieraciifolius</i>	American burnweed	1	Native	6,7	2
44	<i>Eupatorium perfoliatum</i>	Common boneset	4	Native	4,7,12	3
45	<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native	4,8,9,10,12,13	6

46	<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native	1,3,4,8,9,10,16	7
47	<i>Festuca subverticillata</i>	Nodding fescue	6	Native	2	1
48	<i>Fraxinus pennsylvanica</i>	Green ash	2	Native	2,5,6,8	4
49	<i>Galium tinctorium</i>	Small bedstraw	5	Native	11	1
50	<i>Galium triflorum</i>	Sweet-scented bedstraw	4	Native	6,9	2
51	<i>Hackelia virginiana</i>	Virginia stickseed	1	Native	2,6	2
52	<i>Hypericum majus</i>	Large St. John's wort	5	Native	10,12	2
53	<i>Impatiens capensis</i>	Spotted touch-me-nots	2	Native	5	1
54	<i>Juncus nodosus</i>	Knotty rush	5	Native	10	1
55	<i>Lactuca canadensis</i>	Canada lettuce	2	Native	2	1
56	<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native	1,7,10,11,13,16	6
57	<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native	1,8,10,12,16	5
58	<i>Lysimachia thyrsiflora</i>	Tufted loosestrife	6	Native	12	1
59	<i>Matteuccia struthiopteris</i>	Ostrich fern	5	Native	6	1
60	<i>Onoclea sensibilis</i>	Sensitive fern	4	Native	5,7	2
61	<i>Osmorhiza claytonii</i>	Clayton's sweet cicely	3	Native	2	1
62	<i>Osmorhiza longistylis</i>	Aniseroot	4	Native	6	1
63	<i>Osmunda regalis</i>	Royal Fern	7	Native	4,10	2
64	<i>Ostrya virginiana</i>	Ironwood	4	Native	2	1
65	<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	2	Native	2	1
66	<i>Parthenocissus quinquefolia</i>	Woodbine	9	Native	2,5,6	3
67	<i>Persicaria amphibia</i>	Water smartweed	4	Native	8	1
68	<i>Persicaria lapathifolia</i>	Nodding smartweed	2	Native	7,11,12	3
69	<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native	4,7,8,11,12,13,14	7
70	<i>Phragmites australis</i>	Common reed grass	1	Native	4,8,9,15	4
71	<i>Phryma leptostachya</i>	Lopseed	5	Native	6	1
72	<i>Pilea pumila</i>	Clearweed	3	Native	2,5,6	3
73	<i>Piptatherum racemosum</i>	Black-fruited rice grass	8	Native	6	1
74	<i>Poa palustris</i>	Fowl bluegrass	5	Native	12	1
75	<i>Polygala sanguinea</i>	Blood milkwort	5	Native	10	1
76	<i>Polygonatum biflorum</i>	Smooth Solomon's seal	5	Native	2	1
77	<i>Populus grandidentata</i>	Big-toothed aspen	4	Native	2	1
78	<i>Populus tremuloides</i>	Quaking aspen	2	Native	1,5,6,8,10,13,16	7
79	<i>Potentilla norvegica</i>	Rough cinquefoil	1	Native	1,4,7,12	4
80	<i>Prunus serotina</i>	Black cherry	4	Native	2,10	2
81	<i>Quercus ellipsoidalis</i>	Northern pin oak	5	Native	2	1
82	<i>Quercus rubra</i>	Northern red oak	5	Native	2,6	2
83	<i>Ranunculus hispidus</i>	Hispid buttercup	6	Native	7,11,12	3
84	<i>Rhynchospora alba</i>	White beak rush	7	Native	10	1
85	<i>Ribes americanum</i>	Wild black currant	4	Native	1,4,16	3
86	<i>Rubus idaeus</i>	Red raspberry	3	Native	4,5,8,13,14	5
87	<i>Rubus stipulatus</i>	Bristly blackberry	7	Native	3,4,8,9,10,12,16	7
88	<i>Rubus superioris</i>	Lake Superior blackberry	7	Native	1,3,4,8,9,13	6
89	<i>Rubus wheeleri</i>	Wheeler's blackberry	7	Native	9,10	2
90	<i>Rudbeckia laciniata</i>	Cut leafed coneflower	4	Native	6	1
91	<i>Salix bebbiana</i>	Bebb's willow	6	Native	8	1
92	<i>Salix interior</i>	Sandbar willow	2	Native	1	1

93	<i>Salix petiolaris</i>	Slender willow	5	Native	1,3,4,7,8,9,10,13,15,16	10
94	<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush	5	Native	7,15	2
95	<i>Scirpus atrovirens</i>	Dark green bulrush	4	Native	13	1
96	<i>Scirpus cyperinus</i>	Woolgrass	3	Native	8,9,10,11,13,14	6
97	<i>Scutellaria galericulata</i>	Marsh skullcap	5	Native	8,12,13,15	4
98	<i>Solidago canadensis</i>	Canada goldenrod	1	Native	2,5,12	3
99	<i>Solidago flexicaulis</i>	Zigzag goldenrod	5	Native	6	1
100	<i>Solidago gigantea</i>	Giant goldenrod	3	Native	1,3,4,6,7,8,9,10,11,12,13,14,15,16	14
101	<i>Spiraea alba</i>	White meadowsweet	5	Native	1,3,4,8,9,10,12,15,16	9
102	<i>Spiraea tomentosa</i>	Steeplebush	7	Native	1,3,4,8,9,10,13,15,16	9
103	<i>Stachys hispida</i>	Hairy Hedge Nettle	5	Native	2	1
104	<i>Stachys tenuifolia</i>	Narrow-leaved hedge nettle	5	Native	4,5	2
105	<i>Staphylea trifolia</i>	Bladdernut	6	Native	6	1
106	<i>Symphyotrichum lanceolatum</i>	Eastern panicled aster	5	Native	4	1
107	<i>Symphyotrichum puniceum</i>	Red-stemmed aster	6	Native	9	1
108	<i>Thelypteris palustris</i>	Northern marsh fern	7	Native	1,3,4,7,8,9,10,15	8
109	<i>Tilia americana</i>	Basswood	6	Native	2,6	2
110	<i>Triadenum fraseri</i>	Marsh St. John's wort	6	Native	15	1
111	<i>Ulmus americana</i>	American elm	3	Native	2,6	2
112	<i>Urtica dioica</i>	Stinging nettle	1	Native	5,7,12,14	4
113	<i>Verbena hastata</i>	Blue vervain	6	Native	7,11,12	3
114	<i>Viburnum lentago</i>	Nannyberry	4	Native	5	1
115	<i>Viola canadensis</i>	Rugulose violet	7	Native	6	1
116	<i>Viola lanceolata</i>	Lance-leaved violet	7	Native	1,3,9,10	4
117	<i>Viola minuscula</i>	Northern white violet	7	Native	8,9,10,15	4
118	<i>Viola x primulifolia</i>	Primrose violet	8	Native	9	1
119	<i>Vitis riparia</i>	Wild grape	2	Native	2,5,6	2
120	<i>Xyris torta</i>	Twisted yellow-eyed grass	10	Native	10	1
121	<i>Zanthoxylum americanum</i>	Prickly ash	3	Native	2	1
122	<i>Arctium minus</i>	Common burdock	0	Introduced	6	1
123	<i>Chenopodium album</i>	Common lambsquarters	0	Introduced	2	1
124	<i>Cirsium arvense</i>	Canada thistle	0	Introduced	7,11,12,16	4
125	<i>Frangula alnus</i>	Glossy buckthorn	0	Introduced	8	1
126	<i>Galeopsis tetrahit</i>	Brittlestem hemp-nettle	0	Introduced	2	1
127	<i>Myosoton aquaticum</i>	Giant chickweed	0	Introduced	7	1
128	<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced	1,2,4,5,6,7,9,11,12,13,14,16	12
129	<i>Poa nemoralis</i>	Wood Bluegrass	0	Introduced	2	1
130	<i>Rhamnus cathartica</i>	Common buckthorn	0	Introduced	6	1
131	<i>Sonchus arvensis</i>	Perennial sowthistle	0	Introduced	9	1
132	<i>Stellaria media</i>	Common chickweed	0	Introduced	13	1
133	<i>Taraxacum officinale</i>	Common dandelion	0	Introduced	2,6	2
134	<i>Typha angustifolia</i>	Narrowleaf cattail	0	Introduced	7,8,11	3
135	<i>Verbascum thapsus</i>	Common mullein	0	Introduced	6	1

Blaine Site 7 Relevé Plot 1 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Aronia melanocarpa</i>	Black Chokeberry	7	Native
<i>Betula papyrifera</i>	Paper birch	6	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Calystegia sepium</i>	Hedge bindweed	1	Native
<i>Carex lacustris</i>	Lake sedge	5	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Potentilla norvegica</i>	Rough cinquefoil	1	Native
<i>Ribes americanum</i>	Wild black currant	4	Native
<i>Rubus superioris</i>	Lake Superior blackberry	7	Native
<i>Salix interior</i>	Sandbar willow	2	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Viola lanceolata</i>	Lance-leaved violet	7	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	19
Total Species Richness	20
Native Mean Coefficient of Conservatism	4.53
Total Mean Coefficient of Conservatism	4.3
Native Floristic Quality Index	19.73
Total Floristic Quality Index	19.23

Blaine Site 7 Relevé Plot 2 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Acer rubrum</i>	Red maple	3	Native
<i>Ageratina altissima</i>	White snakeroot	2	Native
<i>Amphicarpaea bracteata</i>	Hog peanut	2	Native
<i>Carex pensylvanica</i>	Pennsylvania sedge	3	Native
<i>Festuca subverticillata</i>	Nodding fescue	6	Native
<i>Fraxinus pennsylvanica</i>	Green ash	2	Native
<i>Lactuca canadensis</i>	Canada lettuce	2	Native
<i>Osmorhiza claytonii</i>	Clayton's sweet cicely	3	Native
<i>Ostrya virginiana</i>	Ironwood	4	Native
<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	2	Native
<i>Parthenocissus quinquefolia</i>	Woodbine	9	Native
<i>Pilea pumila</i>	Clearweed	3	Native
<i>Polygonatum biflorum</i>	Smooth Solomon's seal	5	Native
<i>Populus grandidentata</i>	Big-toothed aspen	4	Native
<i>Prunus serotina</i>	Black cherry	4	Native
<i>Quercus ellipsoidalis</i>	Northern pin oak	5	Native
<i>Quercus rubra</i>	Northern red oak	5	Native
<i>Solidago canadensis</i>	Canada goldenrod	1	Native
<i>Stachys hispida</i>	Hairy Hedge Nettle	5	Native
<i>Tilia americana</i>	Basswood	6	Native
<i>Ulmus americana</i>	American elm	3	Native
<i>Virginia Stickseed</i>	Hackelia virginiana	2	Native
<i>Vitis riparia</i>	Riverbank grape	2	Native
<i>Zanthoxylum americanum</i>	Prickly ash	3	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced
<i>Chenopodium album</i>	Common lambsquarters	0	Introduced
<i>Galeopsis tetrahit</i>	Brittlestem hemp-nettle	0	Introduced
<i>Poa nemoralis</i>	Wood Bluegrass	0	Introduced
<i>Taraxacum officinale</i>	Common dandelion	0	Introduced

Native Species Richness	24
Total Species Richness	29
Native Mean Coefficient of Conservatism	3.58
Total Mean Coefficient of Conservatism	2.97
Native Floristic Quality Index	17.55
Total Floristic Quality Index	15.97

Blaine Site 7 Relevé Plot 3 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Asclepias incarnata</i>	Swamp milkweed	5	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Campanula aparinoides</i>	Marsh bellflower	5	Native
<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Rubus stipulatus</i>	Bristly blackberry	7	Native
<i>Rubus superioris</i>	Lake Superior blackberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Viola lanceolata</i>	Lance-leaved violet	7	Native

Native Species Richness	13
Total Species Richness	13
Native Mean Coefficient of Conservatism	5.62
Total Mean Coefficient of Conservatism	5.62
Native Floristic Quality Index	20.25
Total Floristic Quality Index	20.25

Blaine Site 7 Relevé Plot 4 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Acer rubrum</i>	Red maple	3	Native
<i>Betula papyrifera</i>	Paper birch	6	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex lacustris</i>	Lake sedge	5	Native
<i>Carex pseudocyperus</i>	Cypress-like sedge	5	Native
<i>Cirsium muticum</i>	Swamp thistle	6	Native
<i>Cornus racemosa</i>	Gray dogwood	2	Native
<i>Dryopteris carthusiana</i>	Spinulose shield fern	6	Native
<i>Dryopteris cristata</i>	Crested Fern	7	Native
<i>Eupatorium perfoliatum</i>	Common boneset	4	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Osmunda regalis</i>	Royal Fern	7	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Phragmites australis</i>	Common reed grass	1	Native
<i>Potentilla norvegica</i>	Rough cinquefoil	1	Native
<i>Ribes americanum</i>	Wild black currant	4	Native
<i>Rubus idaeus</i>	Red raspberry	3	Native
<i>Rubus stipulatus</i>	Bristly blackberry	7	Native
<i>Rubus superioris</i>	Lake superior blackberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Stachys tenuifolia</i>	Narrow-leaved hedge nettle	5	Native
<i>Symphyotrichum lanceolatum</i>	Eastern panicled aster	5	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	28
Total Species Richness	29
Native Mean Coefficient of Conservatism	4.70
Total Mean Coefficient of Conservatism	4.54
Native Floristic Quality Index	24.89
Total Floristic Quality Index	24.43

Blaine Site 7 Relevé Plot 5 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Ageratina altissima</i>	White snakeroot	2	Native
<i>Boehmeria cylindrica</i>	False nettle	5	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex pseudocyperus</i>	Cypress-like sedge	5	Native
<i>Fraxinus pennsylvanica</i>	Green ash	2	Native
<i>Impatiens capensis</i>	Spotted touch-me-nots	2	Native
<i>Onoclea sensibilis</i>	Sensitive fern	4	Native
<i>Parthenocissus quinquefolia</i>	Woodbine	9	Native
<i>Pilea pumila</i>	Dwarf clearweed	3	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Rubus idaeus</i>	Red raspberry	3	Native
<i>Solidago canadensis</i>	Canada goldenrod	1	Native
<i>Stachys tenuifolia</i>	Narrow-leaved hedge nettle	5	Native
<i>Urtica dioica</i>	Stinging nettle	1	Native
<i>Viburnum lentago</i>	Nannyberry	4	Native
<i>Vitis riparia</i>	Wild grape	2	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	16
Total Species Richness	17
Native Mean Coefficient of Conservatism	3.38
Total Mean Coefficient of Conservatism	3.18
Native Floristic Quality Index	13.50
Total Floristic Quality Index	13.10

Blaine Site 7 Relevé Plot 6 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Ageratina altissima</i>	White snakeroot	2	Native
<i>Amphicarpaea bracteata</i>	Hog peanut	2	Native
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	4	Native
<i>Asclepias exaltata</i>	Poke milkweed	7	Native
<i>Athyrium filix-femina</i>	Lady fern	4	Native
<i>Carex deweyana</i>	Dewey's sedge	6	Native
<i>Carex pensylvanica</i>	Pennsylvania sedge	3	Native
<i>Carex sprengelii</i>	Sprengel's sedge	5	Native
<i>Celtis occidentalis</i>	Hackberry	3	Native
<i>Chenopodium simplex</i>	Maple-leaf Goosefoot	2	Native
<i>Circaea alpina</i>	Alpine enchanter's nightshade	6	Native
<i>Elymus hystrix</i>	Bottlebrush grass	6	Native
<i>Equisetum pratense</i>	Meadow horsetail	6	Native
<i>Erechtites hieraciifolius</i>	American burnweed	1	Native
<i>Fraxinus pennsylvanica</i>	Green ash	2	Native
<i>Galium triflorum</i>	Sweet-scented bedstraw	4	Native
<i>Hackelia virginiana</i>	Virginia stickseed	1	Native
<i>Matteuccia struthiopteris</i>	Ostrich fern	5	Native
<i>Osmorhiza longistylis</i>	Aniseroot	4	Native
<i>Parthenocissus quinquefolia</i>	Woodbine	9	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Native
<i>Phryma leptostachya</i>	Lopseed	5	Native
<i>Pilea pumila</i>	Clearweed	3	Native
<i>Piptatherum racemosum</i>	Black-fruited rice grass	8	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Quercus rubra</i>	Northern red oak	5	Native
<i>Rudbeckia laciniata</i>	Cut leafed coneflower	4	Native
<i>Solidago flexicaulis</i>	Zigzag goldenrod	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Staphylea trifolia</i>	Bladdernut	6	Native
<i>Tilia americana</i>	Basswood	6	Native
<i>Ulmus americana</i>	American elm	3	Native
<i>Viola canadensis</i>	Rugulose violet	7	Native
<i>Vitis riparia</i>	Wild grape	2	Native
<i>Arctium minus</i>	Common burdock	0	Introduced
<i>Taraxacum officinale</i>	Common dandelion	0	Introduced
<i>Rhamnus cathartica</i>	Common buckthorn	0	Introduced
<i>Verbascum thapsus</i>	Common mullein	0	Introduced

Native Species Richness	35
Total Species Richness	39
Native Mean Coefficient of Conservatism	4.15
Total Mean Coefficient of Conservatism	3.71
Native Floristic Quality Index	24.53
Total Floristic Quality Index	23.17

Blaine Site 7 Relevé Plot 7 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Bidens cernua</i>	Nodding bur marigold	3	Native
<i>Bidens connata</i>	Swamp beggarticks	3	Native
<i>Boehmeria cylindrica</i>	False nettle	5	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex lacustris</i>	Lake sedge	5	Native
<i>Carex scoparia</i>	Pointed broom sedge	4	Native
<i>Erechtites hieraciifolius</i>	American burnweed	1	Native
<i>Eupatorium perfoliatum</i>	Common boneset	4	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Onoclea sensibilis</i>	Sensitive fern	4	Native
<i>Persicaria lapathifolia</i>	Nodding smartweed	2	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Potentilla norvegica</i>	Rough cinquefoil	1	Native
<i>Ranunculus hispidus</i>	Hispid buttercup	6	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Urtica dioica</i>	Stinging nettle	1	Native
<i>Verbena hastata</i>	Blue vervain	6	Native
<i>Cirsium arvense</i>	Canada thistle	0	Introduced
<i>Myosoton aquaticum</i>	Giant chickweed	0	Introduced
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced
<i>Typha angustifolia</i>	Narrowleaf cattail	0	Introduced

Native Species Richness	20
Total Species Richness	24
Native Mean Coefficient of Conservatism	3.85
Total Mean Coefficient of Conservatism	3.21
Native Floristic Quality Index	17.22
Total Floristic Quality Index	15.72

Blaine Site 7 Relevé Plot 8 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Fraxinus pennsylvanica</i>	Green ash	2	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Campanula aparinoides</i>	Marsh bellflower	5	Native
<i>Carex lacustris</i>	Lake sedge	5	Native
<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native
<i>Carex scoparia</i>	Pointed broom sedge	4	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native
<i>Persicaria amphibia</i>	Water smartweed	4	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Phragmites australis</i>	Common reed grass	1	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Rubus idaeus</i>	Red raspberry	3	Native
<i>Rubus stipulatus</i>	Bristly blackberry	7	Native
<i>Rubus superioris</i>	Lake Superior blackberry	7	Native
<i>Salix bebbiana</i>	Bebb's willow	6	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Scutellaria galericulata</i>	Marsh skullcap	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Viola minuscula</i>	Northern white violet	7	Native
<i>Frangula alnus</i>	Glossy buckthorn	0	Introduced
<i>Typha angustifolia</i>	Narrowleaf cattail	0	Introduced

Native Species Richness	25
Total Species Richness	27
Native Mean Coefficient of Conservatism	4.64
Total Mean Coefficient of Conservatism	4.30
Native Floristic Quality Index	23.20
Total Floristic Quality Index	22.32

Blaine Site 7 Relevé Plot 9 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Acer rubrum</i>	Red maple	3	Native
<i>Aronia melanocarpa</i>	Black chokeberry	7	Native
<i>Betula pumila</i>	Bog birch	7	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex cryptolepis</i>	Secretive sedge	7	Native
<i>Carex lacustris</i>	Lake Sedge	5	Native
<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native
<i>Carex stricta</i>	Tussock sedge	5	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Galium triflorum</i>	Sweet-scented bedstraw	4	Native
<i>Phragmites australis</i>	Common reed grass	1	Native
<i>Rubus stipulatus</i>	Big Horseshoe Lake Bristleberry	7	Native
<i>Rubus superioris</i>	Lake Superior blackberry	7	Native
<i>Rubus wheeleri</i>	Wheeler's blackberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Symphyotrichum puniceum</i>	Red-stemmed aster	6	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Viola lanceolata</i>	Lance-leaved violet	7	Native
<i>Viola minuscula</i>	Northern white violet	7	Native
<i>Viola x primulifolia</i>	Primrose violet	8	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced
<i>Sonchus arvensis</i>	Perennial sowthistle	0	Introduced

Native Species Richness	25
Total Species Richness	27
Native Mean Coefficient of Conservatism	5.48
Total Mean Coefficient of Conservatism	5.07
Native Floristic Quality Index	27.40
Total Floristic Quality Index	26.37

Blaine Site 7 Relevé Plot 10 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Agrostis scabra</i>	Winter bentgrass	8	Native
<i>Aronia melanocarpa</i>	Black chokeberry	7	Native
<i>Betula papyrifera</i>	Paper birch	6	Native
<i>Betula pumila</i>	Bog birch	7	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Campanula aparinoides</i>	Marsh bellflower	5	Native
<i>Carex cryptolepis</i>	Secretive sedge	7	Native
<i>Carex lacustris</i>	Lake Sedge	5	Native
<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native
<i>Dichanthelium oligosanthos</i>	Heller's rosette grass	3	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Hypericum majus</i>	Large St. John's wort	5	Native
<i>Juncus nodosus</i>	Knotty rush	5	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native
<i>Osmunda regalis</i>	Royal fern	7	Native
<i>Polygala sanguinea</i>	Blood milkwort	5	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Prunus serotina</i>	Black cherry	4	Native
<i>Rhynchospora alba</i>	White beak rush	7	Native
<i>Rubus stipulatus</i>	Big Horseshoe Lake Bristleberry	7	Native
<i>Rubus superioris</i>	Lake Superior blackberry	7	Native
<i>Rubus wheeleri</i>	Wheeler's blackberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Viola lanceolata</i>	Lance-leaved violet	7	Native
<i>Viola minuscula</i>	Northern white violet	7	Native
<i>Xyris torta</i>	Twisted yellow-eyed grass	10	Native

Native Species Richness	34
Total Species Richness	34
Native Mean Coefficient of Conservatism	5.64
Total Mean Coefficient of Conservatism	5.64
Native Floristic Quality Index	32.87
Total Floristic Quality Index	32.87

Blaine Site 7 Relevé Plot 11 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Ambrosia artemisiifolia</i>	Common ragweed	0	Native
<i>Bidens cernua</i>	Nodding bur marigold	2	Native
<i>Bidens connata</i>	Swamp beggarticks	3	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex pseudocyperus</i>	Cyperus sedge	5	Native
<i>Carex scoparia</i>	Pointed broom sedge	4	Native
<i>Cuscuta gronovii</i>	Swamp dodder	3	Native
<i>Galium tinctorium</i>	Small bedstraw	5	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Persicaria lapathifolia</i>	Nodding smartweed	2	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Ranunculus hispidus</i>	Hispid buttercup	6	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Verbena hastata</i>	Common vervain	6	Native
<i>Cirsium arvense</i>	Canada thistle	0	Introduced
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced
<i>Typha angustifolia</i>	Narrowleaf cattail	0	Introduced

Native Species Richness	15
Total Species Richness	18
Native Mean Coefficient of Conservatism	3.60
Total Mean Coefficient of Conservatism	3.00
Native Floristic Quality Index	13.94
Total Floristic Quality Index	12.73

Blaine Site 7 Relevé Plot 12 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Solidago canadensis</i>	Canada goldenrod	1	Native
<i>Alisma triviale</i>	Common water plantain	4	Native
<i>Ambrosia artemisiifolia</i>	Common ragweed	0	Native
<i>Asclepias incarnata</i>	Swamp milkweed	5	Native
<i>Bidens connata</i>	Swamp beggarticks	3	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex bebbii</i>	Bebb's sedge	5	Native
<i>Carex scoparia</i>	Pointed broom sedge	4	Native
<i>Eupatorium perfoliatum</i>	Common boneset	4	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Hypericum majus</i>	Large St. John's wort	5	Native
<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native
<i>Lysimachia thyrsiflora</i>	Tufted loosestrife	6	Native
<i>Persicaria lapathifolia</i>	Nodding smartweed	2	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Poa palustris</i>	Fowl bluegrass	5	Native
<i>Potentilla norvegica</i>	Rough cinquefoil	1	Native
<i>Ranunculus hispidus</i>	Hispid buttercup	6	Native
<i>Rubus stipulatus</i>	Big Horseshoe Lake Bristleberry	7	Native
<i>Scutellaria galericulata</i>	Marsh skullcap	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Urtica dioica</i>	Stinging nettle	1	Native
<i>Verbena hastata</i>	Common vervain	6	Native
<i>Cirsium arvense</i>	Canada thistle	0	Introduced
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	24
Total Species Richness	26
Native Mean Coefficient of Conservatism	3.96
Total Mean Coefficient of Conservatism	3.65
Native Floristic Quality Index	19.39
Total Floristic Quality Index	18.63

Blaine Site 7 Relevé Plot 13 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Rubus idaeus</i>	Red raspberry	3	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Carex scoparia</i>	Pointed broom sedge	4	Native
<i>Cornus sericea</i>	Red-osier dogwood	3	Native
<i>Euthamia graminifolia</i>	Grass leaved goldenrod	4	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Rubus superioris</i>	Lake Superior Blackberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Scirpus atrovirens</i>	Dark green bulrush	4	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Scutellaria galericulata</i>	Marsh skullcap	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced
<i>Stellaria media</i>	Common chickweed	0	Introduced

Native Species Richness	16
Total Species Richness	18
Native Mean Coefficient of Conservatism	4.13
Total Mean Coefficient of Conservatism	3.65
Native Floristic Quality Index	16.53
Total Floristic Quality Index	15.47

Blaine Site 7 Relevé Plot 14 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Calystegia sepium</i>	Hedge bindweed	1	Native
<i>Rubus idaeus</i>	Red raspberry	3	Native
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	4	Native
<i>Scirpus cyperinus</i>	Woolgrass	3	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Urtica dioica</i>	Stinging nettle	1	Native
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	6
Total Species Richness	7
Native Mean Coefficient of Conservatism	2.50
Total Mean Coefficient of Conservatism	2.14
Native Floristic Quality Index	6.12
Total Floristic Quality Index	5.67

Blaine Site 7 Relevé Plot 15 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Acer rubrum</i>	Red maple	3	Native
<i>Viola minuscula</i>	Northern white violet	7	Native
<i>Carex lasiocarpa</i>	Wiregrass sedge	7	Native
<i>Phragmites australis</i>	Common reed grass	1	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush	4	Native
<i>Scutellaria galericulata</i>	Marsh skullcap	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Thelypteris palustris</i>	Northern marsh fern	7	Native
<i>Triadenum fraseri</i>	Marsh St. John's wort	6	Native

Native Species Richness	12
Total Species Richness	12
Native Mean Coefficient of Conservatism	5.00
Total Mean Coefficient of Conservatism	5.00
Native Floristic Quality Index	17.32
Total Floristic Quality Index	17.32

Blaine Site 7 Relevé Plot 16 (2025)

Scientific Name	Common Name	C-Value	Native/Introduced
<i>Betula papyrifera</i>	Paper birch	6	Native
<i>Calamagrostis canadensis</i>	Bluejoint	4	Native
<i>Calystegia sepium</i>	Hedge bindweed	1	Native
<i>Carex aquatilis</i>	Aquatic sedge	7	Native
<i>Carex lacustris</i>	Lake Sedge	5	Native
<i>Eutrochium maculatum</i>	Joe-pye weed	4	Native
<i>Lycopus americanus</i>	Cut-leaved bugleweed	4	Native
<i>Lycopus uniflorus</i>	Northern bugleweed	5	Native
<i>Populus tremuloides</i>	Quaking aspen	2	Native
<i>Ribes americanum</i>	Wild black currant	4	Native
<i>Rubus stipulatus</i>	Big Horseshoe Lake Bristleberry	7	Native
<i>Salix petiolaris</i>	Slender willow	5	Native
<i>Solidago gigantea</i>	Giant goldenrod	3	Native
<i>Spiraea alba</i>	White meadowsweet	5	Native
<i>Spiraea tomentosa</i>	Steeplebush	7	Native
<i>Cirsium arvense</i>	Canada thistle	0	Introduced
<i>Phalaris arundinacea</i>	Reed canary grass	0	Introduced

Native Species Richness	17
Total Species Richness	19
Native Mean Coefficient of Conservatism	4.60
Total Mean Coefficient of Conservatism	4.06
Native Floristic Quality Index	18.97
Total Floristic Quality Index	17.69

Appendix E



Blaine Wetland Sanctuary Vegetation Work Plan

Blaine Wetland Sanctuary Wetland Bank Conservation Easement

December 31, 2025

Project No. 24-32102



Architecture
Engineering
Environmental
Planning
ISGInc.com

REPORT FOR:
The City of Blaine
10801 Town Square Drive NE
Blaine, MN 55449

PREPARED BY:
ISG
115 East Hickory Street + Suite 300
Mankato, MN 56001

INTRODUCTION

ISG was retained by the City of Blaine to conduct annual wetland bank monitoring and to oversee the implementation of all restoration and management activities within a 171.5-acre wetland mitigation bank known as the City of Blaine Site 7 Wetland Mitigation Banking Project.

The purpose of this Vegetation Management Plan is to outline to the City of Blaine the plan for managing vegetation within the Blaine Wetland Site 7 for the next two years.

Project Background

The Project is located southwest of the intersection of Lexington Avenue North and 122nd Avenue Northeast, and northwest of the intersection of Lexington Avenue North and Woodland Parkway Northeast in Section 11 of Township 31 North, Range 22 West, City of Blaine, Anoka County, Minnesota (see Appendix A, Figure 1). The Project is 171.5 acres in size and is the northernmost portion of a 500+ acre City-owned open space that is currently being managed as the Blaine Wetland Sanctuary. The Project area contains a large wetland complex that is approximately 90% jurisdictional wetland, and 10% upland forested/wooded islands. The wetland portion of the Project area contains three major plant community types including about 20.3 acres of Type 2 Rich Fen, 28.6 acres of Type 2 Poor Fen, and 120.3 acres of Type 2 Anoka Sand Plain Wet Meadow. These three herbaceous plant community types were in varying states of degradation when baseline vegetation information was collected during the 2025 growing season.

During the 2025 baseline vegetation assessment, invasive plants species were observed within the Project boundary and included reed canary grass (*Phalaris arundinacea*), glossy buckthorn (*Frangula alnus*), narrow-leaved cattail (*Typha angustifolia*), Canada thistle (*Cirsium arvense*), and common buckthorn (*Rhamnus cathartica*). Invasive species percent cover was estimated within the Poor Fen, Rich Fen, and Anoka Sand Plain Wet Meadow at varying cover levels recorded at 0-5%, 0-5%, and 90-100%, respectively.

The overall goal for the Project site is to enhance the existing vegetation in an effort to increase the floristic diversity of the site and functionally lift the ecological integrity of the wetland complex. To achieve this goal, implementation activities will be completed in wetland areas on an annual basis to reduce the cover of non-native invasive species and to stimulate the growth of the dormant existing native seed bank. In upland and buffer areas, the goal will be to reduce the cover of non-native and invasive species and to reintroduce native species through seeding efforts if necessary.

Hydrologic restoration is not a component of this Project. All potential wetland mitigation credits are to be generated through vegetation enhancement efforts only.



Figure 1. Project Area Map

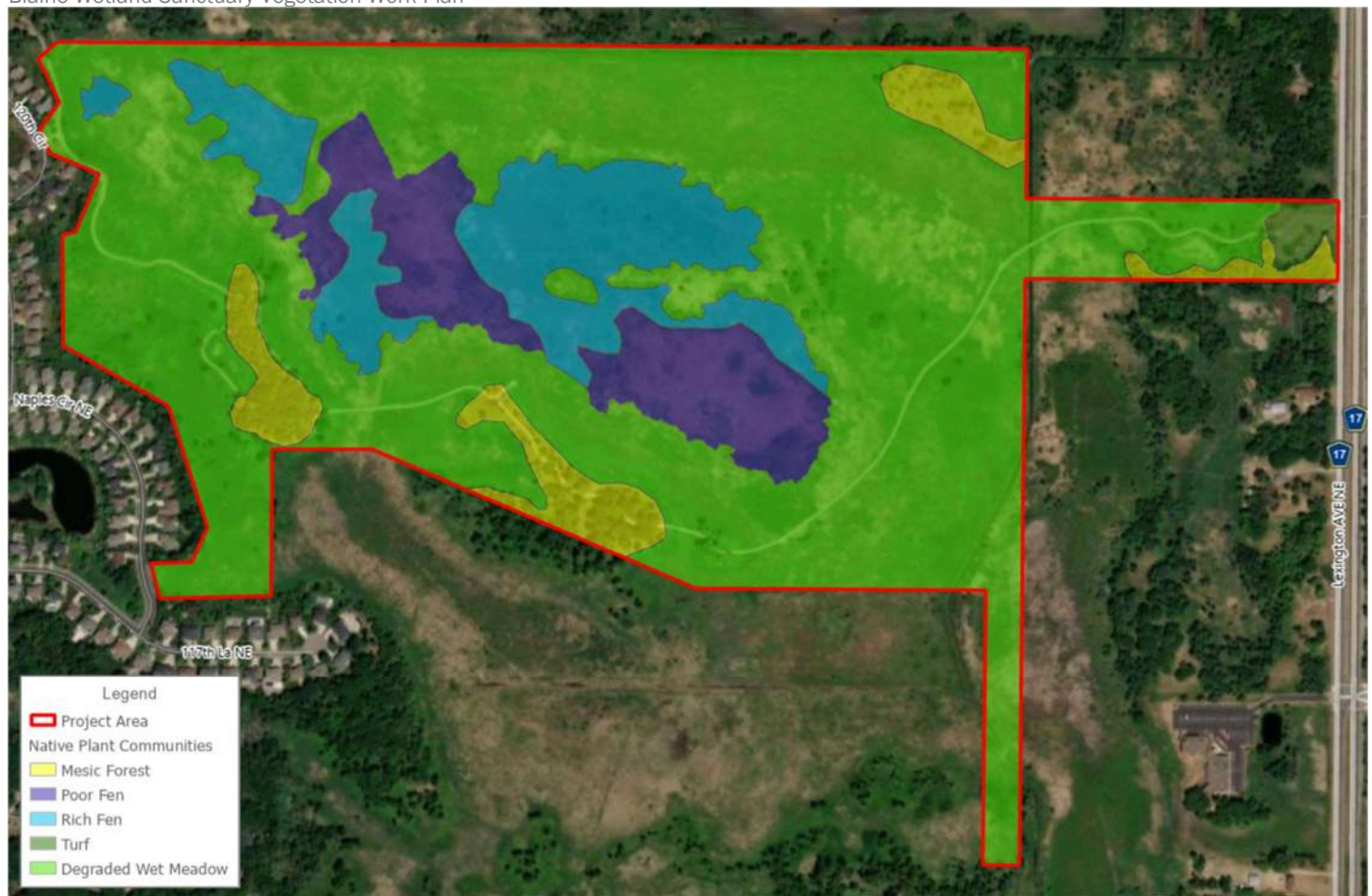


Figure 2. Overview of land cover and Native Plant Communities on the Protected Property

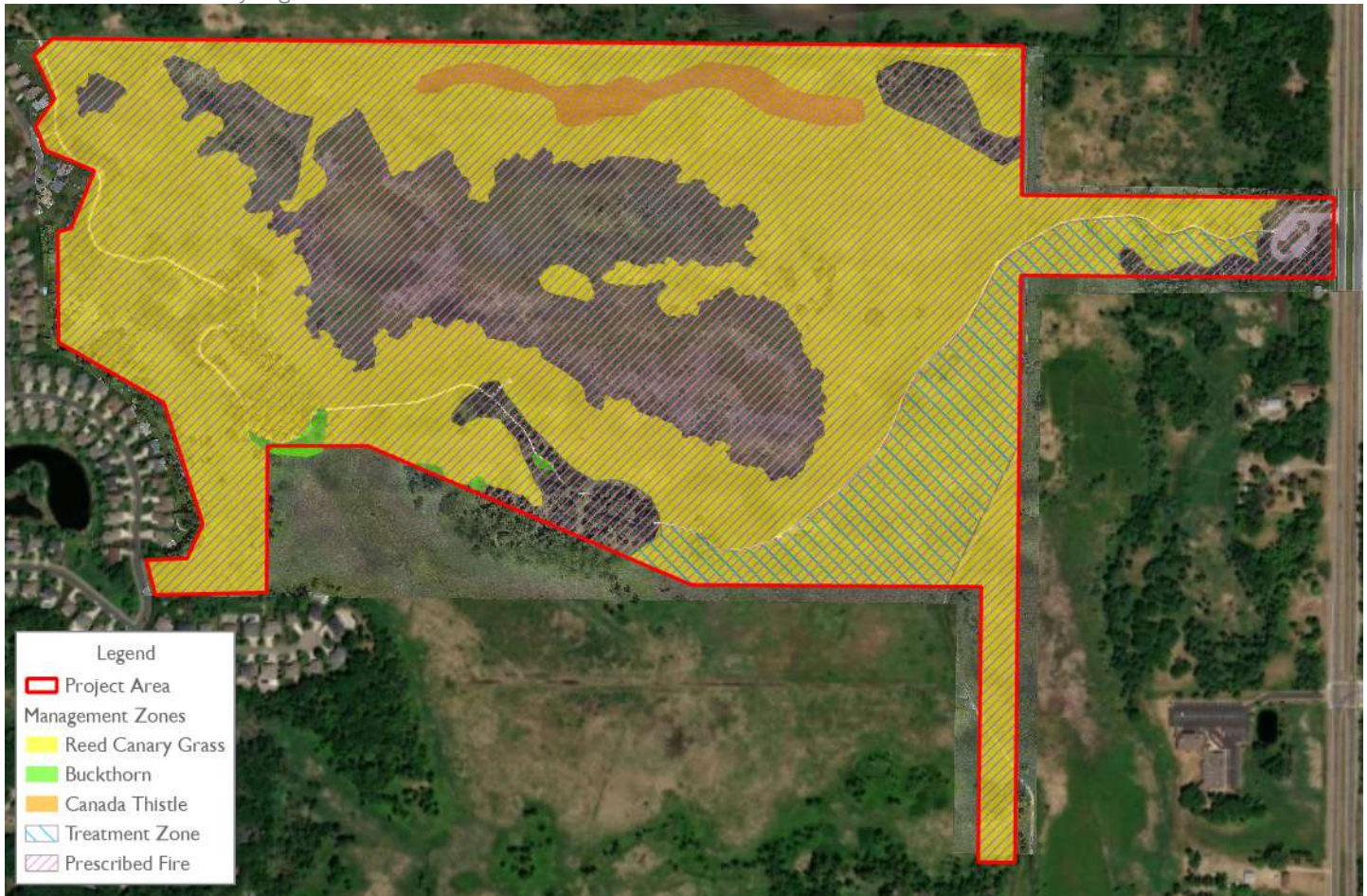


Figure 3. Overview of management priorities on the Protected Property

LAND COVER AND NATIVE PLANT COMMUNITIES

Historic Context

The Protected Property is in a region that was influenced by the most recent glacial events between 9,000 and 14,000 years ago. These glacial events formed large end moraines, outwash plains, and drumlin fields, resulting in the modern-day topography. Following these events over the last 9,000 years, the climate has warmed and fluctuated, giving rise to the Anoka Sandplain landscape. The region is characterized by sandy soils deposited by glacial meltwater, interspersed with kettle wetlands, outwash channels, and dry prairie ridges. These soils and landforms have strongly influenced the vegetation, leading to a mosaic of habitats including oak savanna, wet meadows, and sedge fens, all of which contribute to the high biodiversity of the area.

Prior to European settlement, white and red pine dominated many of the forests on the rolling to irregularly sloped landscape. Jack pine barrens and oak savannas, with species commonly found in prairie intermixed, occurred on well-drained sites on outwash plains. Historically, fire was a common natural disturbance in these communities and occurred on a 10- to 40-year rotation within the region. Indigenous peoples used fire as a land management tool to maintain and shape forests and open areas, favoring regeneration of culturally significant plants and wild game. Fire is important in maintaining habitats because it exposes the soil surface which promotes seed germination, increases nutrient cycling in the soils, and reduces competition from shrub and hardwood species. Additionally, fire interrupts succession and results in a mosaic of different forest age classes and habitat types, which is also known as habitat heterogeneity. Habitat heterogeneity supports a wide diversity of wildlife species that are adapted to and rely on different site conditions, including forest structure and species composition. Understanding the historical land cover and natural processes is important from a management context when goals are to maintain high quality natural areas.

Current Land Cover

Native Plant Communities

The current land cover of the Protected Property includes four Native Plant Communities (NPCs). The Minnesota Department of Natural Resources (DNR) developed the NPC Classification system to improve vegetation management, survey natural areas for biodiversity conservation, identify research needs, and promote the study and appreciation of native vegetation in Minnesota. NPCs are generally defined by the vegetation present and have similar soil properties (texture, moisture, and nutrients), topography, and natural disturbance regimes (i.e., fires or drought). Vegetation in an NPC occurs in layers (referred to as structure), such as dominant canopy trees, sub-canopy trees, shrubs, and species in the ground layer (referred to as herbaceous species). Because NPCs are classified by the DNR with specific assemblages of plants, they can be used to set targets for habitat goals and measure progress toward reaching those goals. Native plant communities are generally intact, relatively high-quality habitats, dominated by native species; they have not been greatly altered by human activities. Alternatively, vegetated areas where native species have been largely replaced by non-native or invasive species, and the overall structure of the community has been altered (i.e., following agriculture or non-sustainable logging) are referred to as Land Cover Types.

NPCs on The Protected Property

ISG conducted a field survey in the growing season of 2025 to map NPCs and land cover types on the Protected Property, following the DNR Field Guide to Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province. The species composition and structure of some of the plant communities may have been altered and are not necessarily representative of intact NPCs. Based on the data collected from the field survey and aerial photo interpretation, ISG mapped four NPCs.

The DNR uses Element Occurrence (EO) Ranks to describe the overall condition of NPCs; EO-ranks are not applicable to other land cover types. The EO-rank is a continuum of “A” through “D”, where “A” rank indicates an excellent quality natural community and “D” indicates a poor-quality natural community. ISG compiled a comprehensive species list using relevé plots which can be used for reference for future monitoring activities (Appendix A).

Table 1: NPCs within the Protected Property

Ecological System/Land Cover	Native Plant Community Name	NPC Code	EO-Rank	S-Rank ¹
Northern Poor Fen	Graminoid Poor Fen	APn91	AB	S3
Northern Rich Fen	Graminoid Rich Fen	OPn92	AB	S4
Southern Dry—Mesic Oak (Maple) Woodland	Oak – (Red Maple) Woodland	FDs37a	BC	S4
Northern Wet Meadow/Carr	Sedge Meadow	WMn82b1	D	S5

MANAGEMENT OF THE PROTECTED PROPERTY

This section provides management recommendations in the context of the NPCs on the Protected Property, as well as recommendations for management activities that are considered priorities. The following section gives an end goal of what the management is intended to accomplish over time.

Native Plant Community Profile: Northern Poor Fen Plant Community (APn91)



Figure 4. Poor Fen – Northern Poor Fen [APn91a] management unit view from monitoring plot 15

¹ The DNR assigns a state conservation rank (S-rank) to each NPC. The S-rank reflects the risk of elimination of the NPC within Minnesota. S-ranks range from S1 to S5, with S1 indicating the NPC is critically imperiled, and S5 indicating it is secure/common/abundant.

The Poor Fen plant community was mapped on center inclusions inside of the Protected Property and in the central wetland area. Human disturbance was minimal, with invasive species encroaching from the wet meadow community, likely due to the dominance of Reed Canary Grass. Within the community, invasive species pressure was low, most likely due to the soil type and hydrology conditions, as well as native species dominance which hinders the spread of foreign species.

The community was given an EO-rank of AB due to the concerning invasive species that could invade the Poor Fen if management is not taken. Reed canary grass (*Phalaris arundinacea*) is the most prevalent invasive present and was found growing in small, but healthy, patches as inclusions within this native plant community. The grass could be a future concern and threat to this wetland Native Plant Community.

Currently, the community contains a continuous cover consisting of a dominance of graminoids, with inclusions of native shrubs/tree saplings, and forbs. The herbaceous layer was continuous, with some areas of standing water. Some notable species include Canada bluejoint (*Calamagrostis canadensis*), wiregrass sedge (*Carex lasiocarpa*), slender willow (*Salix petiolaris*), and steppelbush (*Spiraea tomentosa*).

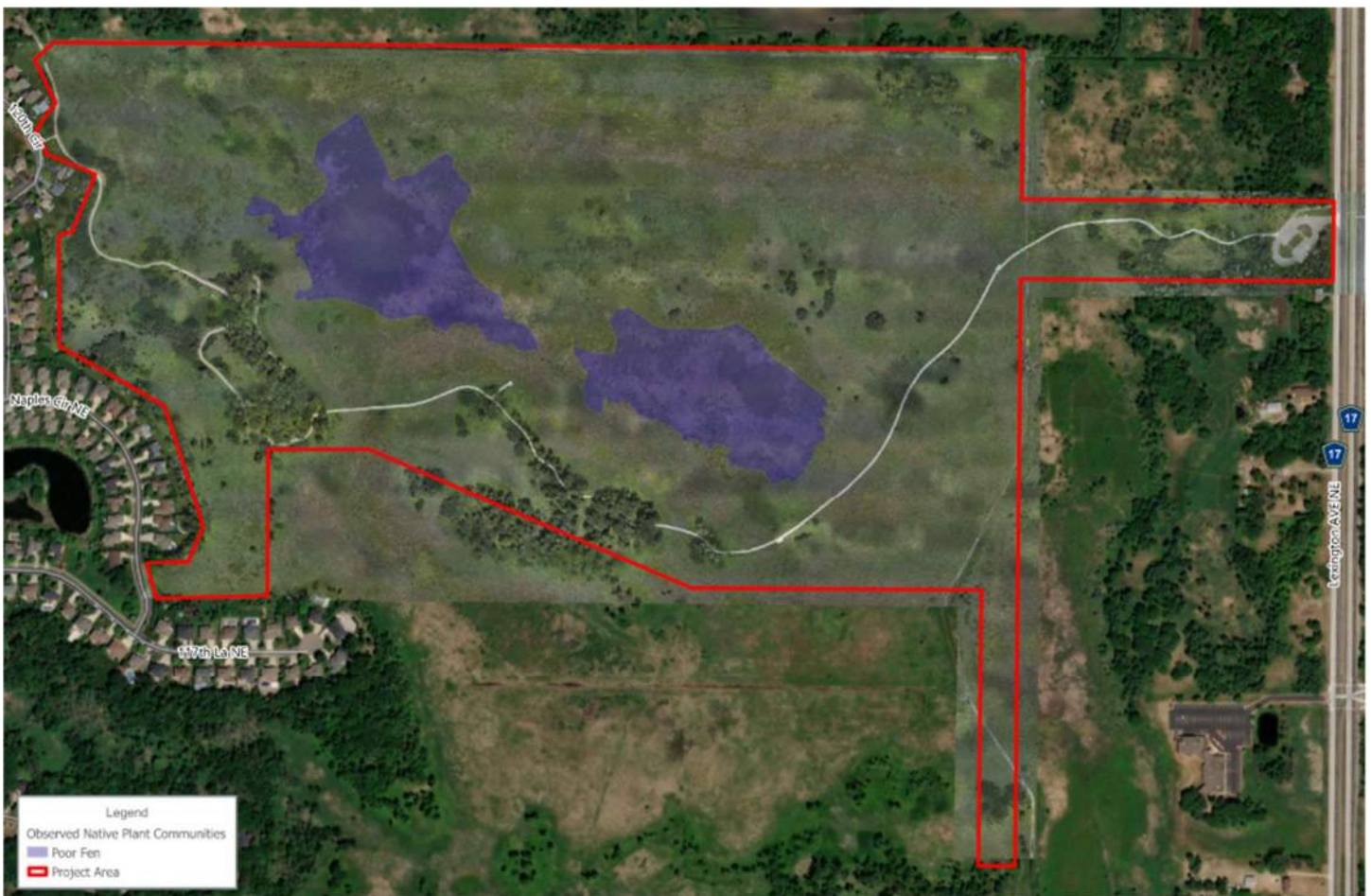


Figure 5. Poor Fen community near the north-central side of the Protected Property

Desired Conditions for Northern Poor Fen

- Tree cover is < 25% and may consist of scattered tamarack and black spruce of various heights but usually less than 30ft.

- The shrub cover is variable but are the dominant species on many sites and can have >50% cover. Tall shrubs such as bog birch (*Betula pumila*), speckled alder (*Alnus incana*), and meadowsweet (*Spiraea alba*) can become dense. Paper birch, black ash, red maple, and tamarack saplings are occasionally present in the shrub layer.
- The ground layer consists of dense stands of moss, broad-leaved graminoids, and variable forbs (75-100%). Typical herbaceous plants found within a APn91 plant community include wiregrass sedge (*Carex lasiocarpa*), Canada bluejoint (*Calamagrostis canadensis*), round-leaved sundew (*Drosera rotundifolia*) and tawny cottongrass (*Eriophorum virginicum*).
- Non-native and invasive species are not present.

Detailed information about the Poor Fen native plant community can be found at the link below:

https://files.dnr.state.mn.us/natural_resources/npc/acid_peatland/apn91.pdf

Priority management concerns within the WMn82a management unit include invasive species management and monitoring. Herbicide application for reed canary grass should take place in late summer throughout the fall, as well as early spring. Avoiding management during the growing season to not affect actively growing native vegetation. Invasive species should be monitored once during the early part of the season (May/June) and again later in the season (late July/August) and treated to manage the populations and prevent further spread. Equipment should be cleaned after each use to prevent spread or colonization of new invasive species.

Table 2: Management options for Poor Fen. Current EO-rank is AB.

Management Effort	Management Options	Management Activities	Trajectory
High	Dormant season prescribed burn on a 3-year cycle	Prescribed Burn	Stimulate disturbance by opening portions of the shrub layer to let herbaceous layer flourish, seed bank exposure. Prescribed burn shall be conducted before the month of May to avoid peat layer from igniting
Medium	Seeding outside of Native Plant Community	Seeding	Use Anoka Sandplain Wet Meadow Mix around edges of mapped native plant community. to give fighting edge against invasive species found near the edge of the NPC. This will replenish grass species lost to herbicide while also adding species to the seed bank to become aggressive against reed canary grass.
Medium	Spraying grass specific herbicide for reed canary grass after prescribed burn	Spray	Spraying early in the season with Clethodim, most species are dormant and reed canary grass is growing. Only spray with Clethodim while reed canary grass is 3-12 inches tall (typically early- May to mid-June).

Native Plant Community Profile: Northern Rich Fen Plant Community (OPn92a)



Figure 6. Rich Fen community near the center of the Protected Property, dominated by encroaching woody plants

General Description and Current Conditions

The Rich Fen community was mapped on center inclusions inside of the Protected Property and in the central wetland area. Human disturbance was minimal, with invasive species encroaching from the wet meadow community, likely due to the dominance of reed canary grass.

The community was given an EO-rank of AB due to the concerning invasive species that could invade the Rich Fen if management is not taken. Reed canary grass (*Phalaris arundinacea*) is the most prevalent invasive present, and was found growing in small, but healthy patches as inclusions within this native plant community. The grass could be a future concern and threat to this wetland Native Plant Community.

Currently, the community contains a continuous cover consisting of young native shrubs/tree saplings, forbs, sedges, and grasses. Shrub species include bog willow (*Salix pedicellaris*), bristleberries (*Rubus spp.*), meadowsweet (*Spiraea alba*), and bog birch (*Betula pumila*). Herbaceous species include northern marsh fern (*Thelypteris palustris*), Canada bluejoint (*Calamagrostis canadensis*), with wiregrass sedge (*Carex lasiocarpa*) being a common *Carex* species.



Figure 7. Rich Fen – Graminoid Rich Fen [OPn92a] management unit

Desired Conditions for Northern Rich Fen (Basin)

- Tree cover is usually absent, may include stunted tamarack within comparable Northern Rich Fen sites. Note that no tamarack is present at this site, so the goal of tree cover will remain a 0% cover.
- The shrub layer will be sparse and only occasionally >25% cover. Common species include bog willow (*Salix pedicellaris*), with bog birch (*Betula pumila*) common.
- The herbaceous layer will be continuous but graminoid cover is commonly greater than 50% cover. Graminoid species are dominated by fine leaved sedges, especially wiregrass sedge (*Carex lasiocarpa*), with creeping sedge (*Carex chordorrhiza*), and Canada bluejoint (*Calamagrostis canadensis*) occasionally present. Forb cover is variable. Species commonly present include marsh cinquefoil (*Potentilla palustris*), northern marsh fern (*Thelypteris palustris*), marsh St. John's wort (*Triadenum fraseri*), tufted loosestrife (*Lysimachia thyrsiflora*), and marsh bellflower (*Campanula aparinoides*).
- Invasive species will remain absent.

Detailed information about Northern Rich Fen can be found at the link below:

https://files.dnr.state.mn.us/natural_resources/npc/open_rich_peatland/opn92.pdf

Priority management concerns within the OPn92 management unit include natural succession of native species and monitoring of invasive species and tree encroachment. Monitoring for invasive species will occur once during the early part of the season (May/June) and again later in the season (late July/August) by ISG. Treating invasive species should be completed to prevent the spread of invasive species from establishing from neighboring communities which will be discussed in the following sections.

Table 3: Management options for Northern Rich Fen (Basin). Current EO-rank is AB.

Management Effort	Management Options	Management Activities	Trajectory
High	Dormant season prescribed burn on a 3-year cycle	Prescribed Burn	Stimulate disturbance by opening portions of the shrub layer to let herbaceous layer flourish, seed bank exposure. Prescribed burn shall be conducted before the month of May to avoid peat layer from igniting.
Medium	Seeding outside of Native Plant Community	Seeding	Use Anoka Sandplain Wet Meadow Mix around edges of mapped native plant community. to give fighting edge against invasive species found near the edge of the NPC. This will replenish grass species lost to herbicide while also adding species to the seed bank to become aggressive against reed canary grass.
Medium	Spraying grass specific herbicide for reed canary grass after prescribed burn	Spray	Spraying early in the season with Clethodim, most species are dormant and reed canary grass is growing. Only spray with Clethodim while reed canary grass is 3-12 inches tall (typically early May to mid-June).

Native Plant Community Profile: Northern Wet Meadow/Carr (WMn82b)



Figure 8. A native species dominant portion of the Northern Wet Meadow near the center of the Protected Property

General Description and Current Conditions

The Northern Wet Meadow plant community was mapped surrounding the Rich and Poor Fen plant communities and also surrounding the upland wooded buffers on the southern border. This community is large, and recent disturbances, as well as historic use, have caused the plant community to become severely degraded. Invasive species dominate this community, with reed canary grass and Canada thistle being the main issues.

The plant community is currently given an EO-rank of D due the relative lack of native species present. The goal for this plant community is to begin the transition to a Northern Wet Meadow/Carr through intensive management. Currently and as mentioned, this community contains a continuous cover consisting of a dominance of graminoids with inclusions of native wet meadow species. Some notable native species include steeplebush (*Spiraea spp.*), bristleberries (*Rubus spp.*), Joe-pye weed (*Eutrochium maculatum*), and giant goldenrod (*Solidago gigantea*).

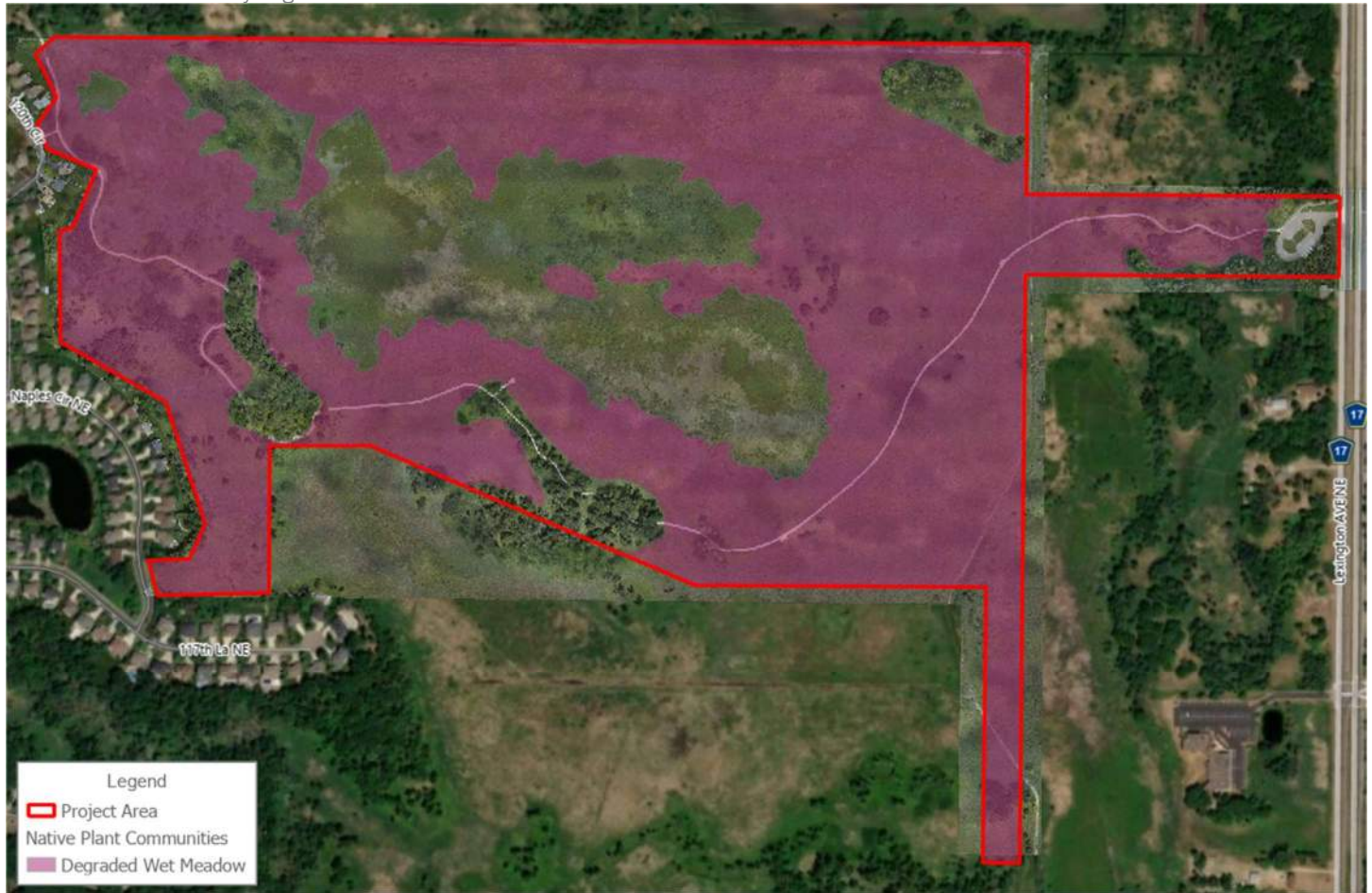


Figure 9. Northern Wet Meadow/Carr [WMn82b] management unit view from monitoring plot 15

Desired Conditions for Northern Wet Meadow/Carr

- Tree cover is < 25% and trees greater than 16 feet tall are rarely present.
- Shrub cover is variable. Tall shrubs such as willows (*Salix spp.*), red-osier dogwood (*Cornus sericea*), and speckled alder (*Alnus incana*) can be dense, along with meadowsweet (*Spiraea alba*). Paper birch, black ash, red maple, American elm, and tamarack saplings are occasionally present in the shrub layer.
- The forb cover is variable, with tufted loosestrife (*Lysimachia thyrsiflora*), marsh bellflower (*Campanula aparinoides*), marsh bellflower (*Campanula aparinoides*), marsh skullcap (*Scutellaria galericulata*), and great water dock (*Rumex orbiculatus*) are all common species. Northern marsh fern (*Thelypteris palustris*), willow-herb (*Epilobium spp.*), water smartweed (*Persicaria amphibia*), and bulb-bearing water hemlock (*Cicuta bulbifera*) are occasional.
- Graminoid layer consists of dense stands of mostly broad-leaved graminoids, including Canada bluejoint (*Calamagrostis canadensis*), lake sedge (*Carex lacustris*), tussock sedge (*Carex stricta*), and beaked sedge (*Carex utriculata*).
- Non-native and invasive species are not present.

Detailed information about the Northern Wet Meadow/Carr native plant community can be found at the link below:

https://files.dnr.state.mn.us/natural_resources/npc/wet_meadow_carr/wmn82.pdf

Priority management concerns within the WMn82 management unit include invasive species management and monitoring. Herbicide application for reed canary grass should take place in late summer throughout the fall, as well as early spring. Avoid management during the growing season to not affect actively growing native vegetation. Invasive species should be monitored once during the early part of the season (May/June) and again later in the season (late July/August) and treated to manage the populations and prevent further spread. Equipment should be cleaned after each use to prevent spread or colonization of new invasive species.

Table 4: Management options for Northern Wet Meadow/Carr. Current EO-rank is N/A.

Management Effort	Management Options	Management Activities	Trajectory
Low	Mow mapped wet meadow unit to 6 inches or less	Mowing	During the end of August or beginning of September (August 20 th -September 10 th), or in mid-June before seed set, conduct a mowing of the entire wet meadow areas. Equipment should be equipped for aquatic use as soil may be saturated.
Medium	Herbicide on Regrowth	Herbicide	Spraying 2 weeks after mowing with Clethodim will existing reed canary grass and seedlings, while opening the area up for new seed to be broadcasted.
Medium	Seed with custom Anoka Sandplain Wet Meadow Mix	Seeding	After spraying is completed, broadcast seed with custom mix that is heavy in native sedges and forbs

Native Plant Community Profile: Southern Dry-Mesic Oak (Maple) Woodland Plant Community (FDs37)



Figure 10 Southern Dry-Mesic Oak (Maple) Woodland (FDs37) near the central area of the Protected Property between wetland areas

General Description and Current Conditions

Southern Dry-Mesic Oak (Maple) Woodland is present on the upland islands of the Protected Property. This community is situated on a topographic complex island, with differences in relations to the water table. The soil is fine sand, further suggesting that this land cover type would be best conditioned to transition the plant community into a Southern Dry-Mesic Oak (Maple) Woodland. The current EO-rank for this community is BC due to the prevalence of non-native pasture grasses and low abundance of herbaceous species. This ranking is also given because it does not currently meet the high-quality criteria of a FDs37 forest without future management.

This community consisted of a mixture of mature trees, large shrubs, grasses, and forbs. The dominant trees include red oak (*Quercus rubra*), red maple (*Acer rubrum*), basswood (*Tilia americana*) and bur oak (*Quercus macrocarpa*). Smooth brome grass (*Bromus inermis*), an invasive species, was observed in small quantities as well, especially on the wooded island on the western side of the Protected Property. Notable shrub strata species include prickly ash (*Zanthoxylum americanum*) and black cherry (*Prunus serotina*). A diverse mixture of native forbs and graminoids was present across the community. Herbaceous plants include Dewey's sedge (*Carex deweyana*), Pennsylvania sedge (*Carex pensylvanica*), Clayton's sweet cicely (*Osmorhiza claytonii*), and white snakeroot (*Ageratina altissima*), among others.

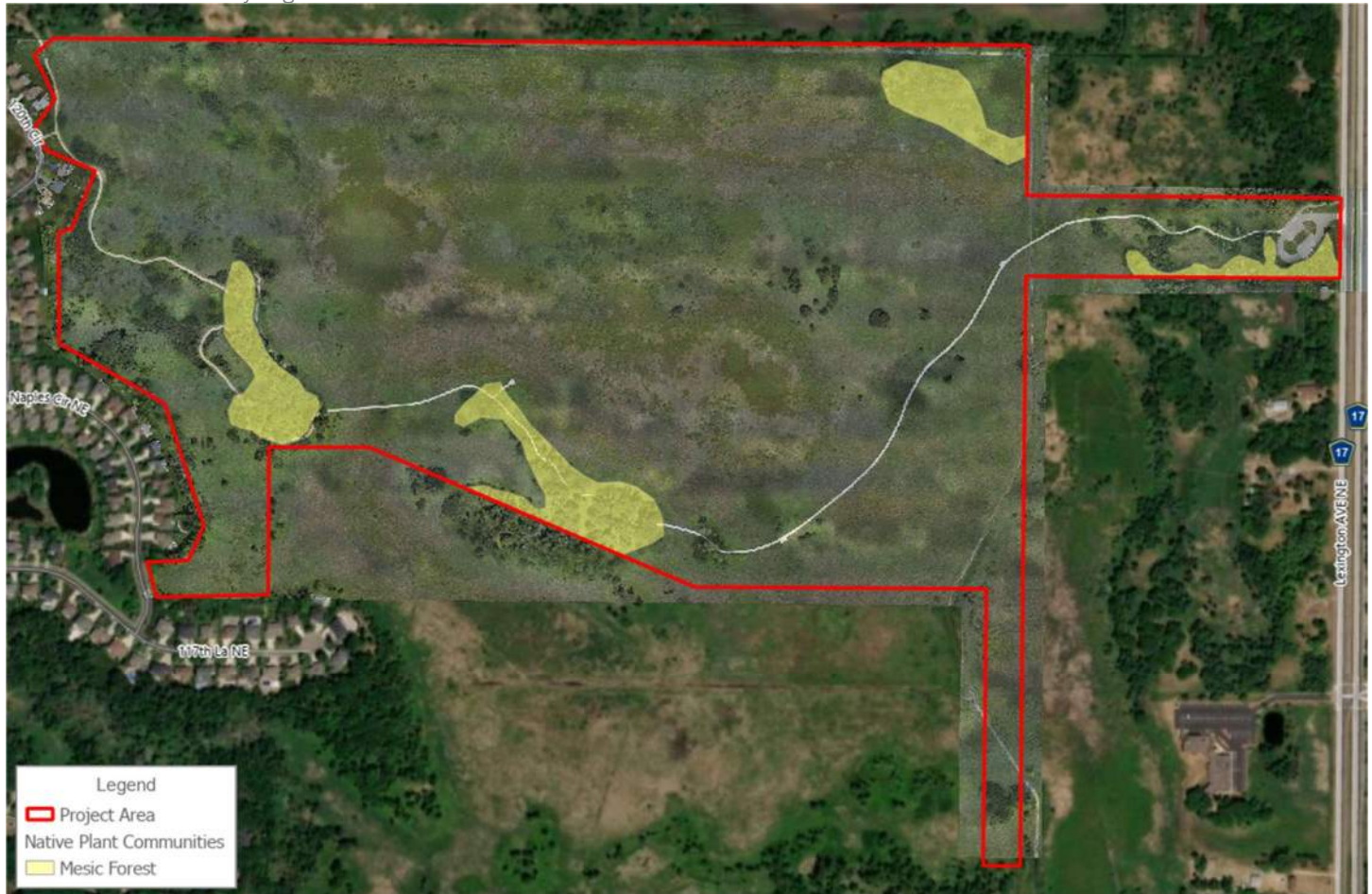


Figure 11. Southern Dry-Mesic Oak (Maple) Woodland (FDs37) management unit

Desired Conditions for Southern Dry-Mesic Oak (Maple) Woodland

- The ground cover will remain patchy to continuous (25%-100%) dominated primarily by graminoids and forbs. Pointed-leaved tick trefoil (*Desmodium glutinosum*), Clayton's sweet cicely (*Osmorhiza claytonii*), hog peanut (*Amphicarpaea bracteata*), Canada mayflower (*Maianthemum canadense*), and wild geranium (*Geranium maculatum*) are commonly present. Pennsylvania sedge (*Carex pensylvanica*) is the most abundant graminoid. Dewey's sedge (*Carex deweyana*) and starry sedge (*Carex rosea*) may also be present.
- The shrub layer will remain prominent (25-100%) with common species including black cherry (*Prunus serotina*), red maple (*Acer rubrum*), chokecherry (*Prunus virginiana*), American hazelnut (*Corylus americana*), gray dogwood (*Cornus racemosa*), prickly ash (*Zanthoxylum americanum*), Virginia creeper (*Parthenocissus* spp.), and poison ivy (*Toxicodendron rydbergii*).
- Subcanopy cover is patchy to interrupted (25–75%). The most common species are black cherry, red maple, and bur oak.
- Canopy cover is usually interrupted to continuous (50–100%). Bur oak and northern pin oak are the most common species. Northern red oak, white oak, and red maple are occasionally present. Older trees are often open grown, indicating previously more open conditions on the site.
- Invasive species such as Kentucky bluegrass and smooth brome grass will be small percentages of the overall community, but ideally absent.

- Fire will occur on an average 9-year cycle to maintain woodland structure and species composition.

Detailed information about Southern Dry-Mesic Oak (Maple) Woodland can be found at the link below:

https://files.dnr.state.mn.us/natural_resources/npc/fire_dependent_forest/fds37.pdf

Priority management concerns within the FDC25a management unit include restoration and invasive species monitoring/management. Invasive species such as buckthorn, smooth brome grass, and Kentucky bluegrass should be prioritized for removal, and treated to manage their populations and prevent further spread to the surrounding native plant communities. Monitoring should occur once during the early part of the season (May/June) and again later in the season (late July/August). Herbicide should be applied to smooth brome grass and Kentucky bluegrass in the fall following a hard freeze. Re-seeding of native species may be required. Equipment should be cleaned after each use to prevent spread or colonization of new invasive species.

Table 5. Management options for Southern Dry-Mesic Oak (Maple) Woodland. Current EO-rank BC.

Management Effort	Management Options	Management Activities	Trajectory
High	Removal of mapped buckthorn	Buckthorn removal	Remove all buckthorn throughout the Protected Property. Use stump cut treatment during the dormant season and reseed areas that were densely infested with a custom made Southern Dry-Mesic Oak Woodland mix.
High	Prescribed dormant season burn to the upland island buffers.	Prescribed Burn	Conduct a dormant season burn to remove built up thatch. This will also prepare the site for herbicide applications in the spring to control smooth brome and Kentucky blue grass.
Medium	Broadcast seeding	Seeding	Seed areas with custom Southern Dry-Mesic Oak Woodland seed mix to the areas that were managed for buckthorn, and areas that will be sprayed in the early spring for brome and bluegrass control.
Medium	Spraying grass specific herbicide for smooth brome grass and Kentucky blue grass after prescribed burn	Spraying	Spray early in the season with Clethodim, most species are dormant and reed canary grass is actively growing. Only spray with Clethodim while reed canary grass is 3-12 inches tall (typically early May to mid-June, can be done earlier).

MANAGEMENT ACTIVITIES ACTION PLAN 2025-2027

Successful development of the Project relies solely on the vegetation enhancement and vegetation performance, and long-term maintenance of three target plant community types and one upland buffer area. A map of the proposed management boundaries is provided.

Rich and Poor Fen Plant Communities, Vegetation Enhancement and Management Approach

Vegetation

The Rich and Poor Fen plant communities are the highest quality areas within the Project Site. The approach in these areas will be to utilize known restoration methods to stimulate the existing native seed bank and promote the proliferation of high-quality vegetation that is suppressed within this management area. Initial work in this area will begin during the winter months and avoid work during the growing seasons to not harm existing high-quality vegetation. Any track machinery will be used in the dormant season to prevent harm to native vegetation. Woody vegetation will be removed by prescribed fire, similar to removal methods conducted in 2020. Removal of accumulated biomass by prescribed fire will release the underlying seed bank and allow native seeds, propagules, and rhizomes to germinate within the Rich and Poor Fen Plant communities.

Northern Wet Meadow/Carr Plant Community, Vegetation Enhancement and Management Approach

Vegetation

The Northern Wet Meadow/Carr plant community will require the most intensive management compared to the Rich and Poor Fen native plant communities on the Project site to meet vegetation performance standards of the approved wetland bank plan. An adaptive management plan will be necessary to reach vegetation goals. The goal of this management zone is to restore the Anoka Sand Plain Wet Meadow plant community from a low-quality system to a botanically diverse, high-quality system.

The management in this community will begin as soon as possible, with the goal of reducing the abundance of reed canary grass and Canada thistle as the main priorities while establishing native species dominance. Late June of 2026 will require mowing stands of flowering Canada thistle, as this will weaken the perennial plants and reduce numbers for the 2027 growing season. Throughout the mapped wet meadow community, reed canary grass is prevalent. This will be managed using Clethodim, a grass specific herbicide that will not harm forbs and sedges but rather kill only species in the Poaceae (grass) family. Both invasive species will see reductions if prescribed fire is used during the winter/spring of 2025-2026.

Upland Buffer/Island Wooded Plant Communities, Vegetation Enhancement and Management Approach

Management of the upland island areas will include control and management of non-native invasive woody species (common buckthorn, *Rhamnus cathartica*) and some areas of invasive graminoids (mainly smooth brome, *Bromus inermis*). This will be followed by the reintroduction and enhancement of a native understory, an herbaceous plant community. This management unit will require minimal effort for restoration. Management of the upland areas can begin late fall 2025 and continue through spring green-up with cutting and chemical treatment of buckthorn. Buckthorn plants will be cut, stacked or removed from site. Stumps will be treated with Triclopyr after they are cut to prevent resprout. In areas where buckthorn plants are smaller, brush mowing may be used. During the following growing season, and following a prescribed burn, from early May to mid-June, spraying of smooth brome will take place with Clethodim. This will ensure no forbs or sedges are harmed that currently exist in this management area. A custom designed Southern Dry-Mesic Oak (Maple) Woodland Plant Community seed mix will be sown two weeks after herbicide application. This will be a graminoid heavy mix to replace the lost plant guild in the areas that received herbicidal applications.

INVASIVE SPECIES PROFILES

This wetland bank is relying on the decrease of invasive species to meet vegetation standards. This section will break down the three main invasive species present at the Protected Property that need the most control.

Buckthorn (*Rhamnus cathartica*, *Frangula alnus*)

Buckthorn is present at low densities within the Blaine Wetland Sanctuary, with infestations mapped for targeted control. Although limited in extent, early intervention is critical to prevent further spread, avoid future management costs, and protect the integrity of the site's native plant communities.

Treatment is recommended throughout the winter of 2025–2026. Conducting work during the dormant season provides several advantages: buckthorn is easier to identify once native shrubs have dropped leaves, frozen soils minimize site disturbance, and winter access allows crews to reach wetland edges and interior areas that may be inaccessible during the growing season. Control should focus on mechanical removal of stems using loppers or hand saws, followed immediately by cut-stump herbicide application (20–40% triclopyr solution). Cutting stems at or near ground level and promptly treating with herbicide will reduce resprouting potential and prevent re-establishment. Larger stems requiring saw cuts should be flagged during initial passes and treated during follow-up sweeps to ensure no mature seed-bearing plants remain.

Long-term persistence will be essential. Buckthorn seed remains viable in the soil for 5–7 years, and seedlings are likely to continue emerging in treated areas. Annual re-entry and monitoring are recommended to detect and treat new recruitment while plants are still small and manageable. Early, consistent treatment will keep infestations localized, maintain the Sanctuary's native woodland and wetland communities, and prevent the degradation commonly observed in sites where buckthorn has become well established.

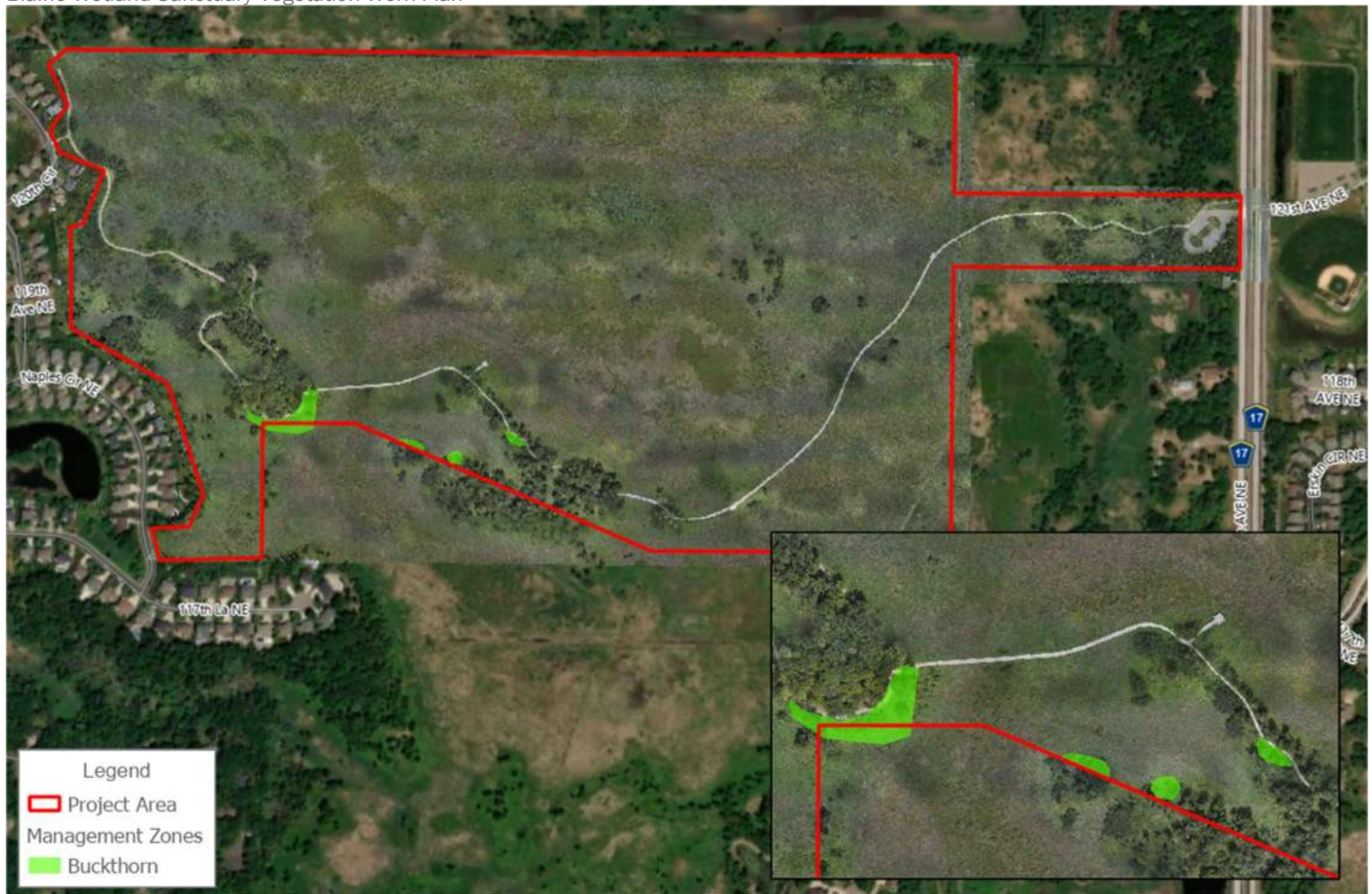


Figure 12: Buckthorn Management Zones

Canada Thistle (*Cirsium arvense*)

Canada thistle is concentrated along the northern property boundary of the Blaine Wetland Sanctuary, with several areas supporting dense, well-established populations. Due to its extensive root system and high seed production, management will require multiple, sustained control methods over several years.

For the 2026 growing season, management will emphasize mechanical control through mowing and hand-pulling. Mowing should be conducted multiple times during the growing season, timed to prevent flowering and seed set. Repeated cutting will reduce the plant's ability to replenish root reserves, gradually weakening infestations. In less accessible or smaller patches, hand-pulling can be effective, particularly where soils are moist enough to allow removal of root fragments. All pulled plants should be disposed of off-site of the Protected Property.

Herbicide applications should be deferred until Fall 2026. At that time, targeted herbicide use can be more effective after a year of mechanical suppression, when plants are stressed and root reserves are depleted. Fall application also provides optimal translocation of herbicide to root systems, improving long-term control while reducing non-target impacts. Follow-up monitoring will be critical. Canada thistle patches will be mapped annually to document reductions and identify areas requiring continued treatment. Over time, integrating mechanical control with well-timed herbicide application will reduce infestation density, limit seed production, and promote recovery of native wetland and upland plant communities along the northern boundary.

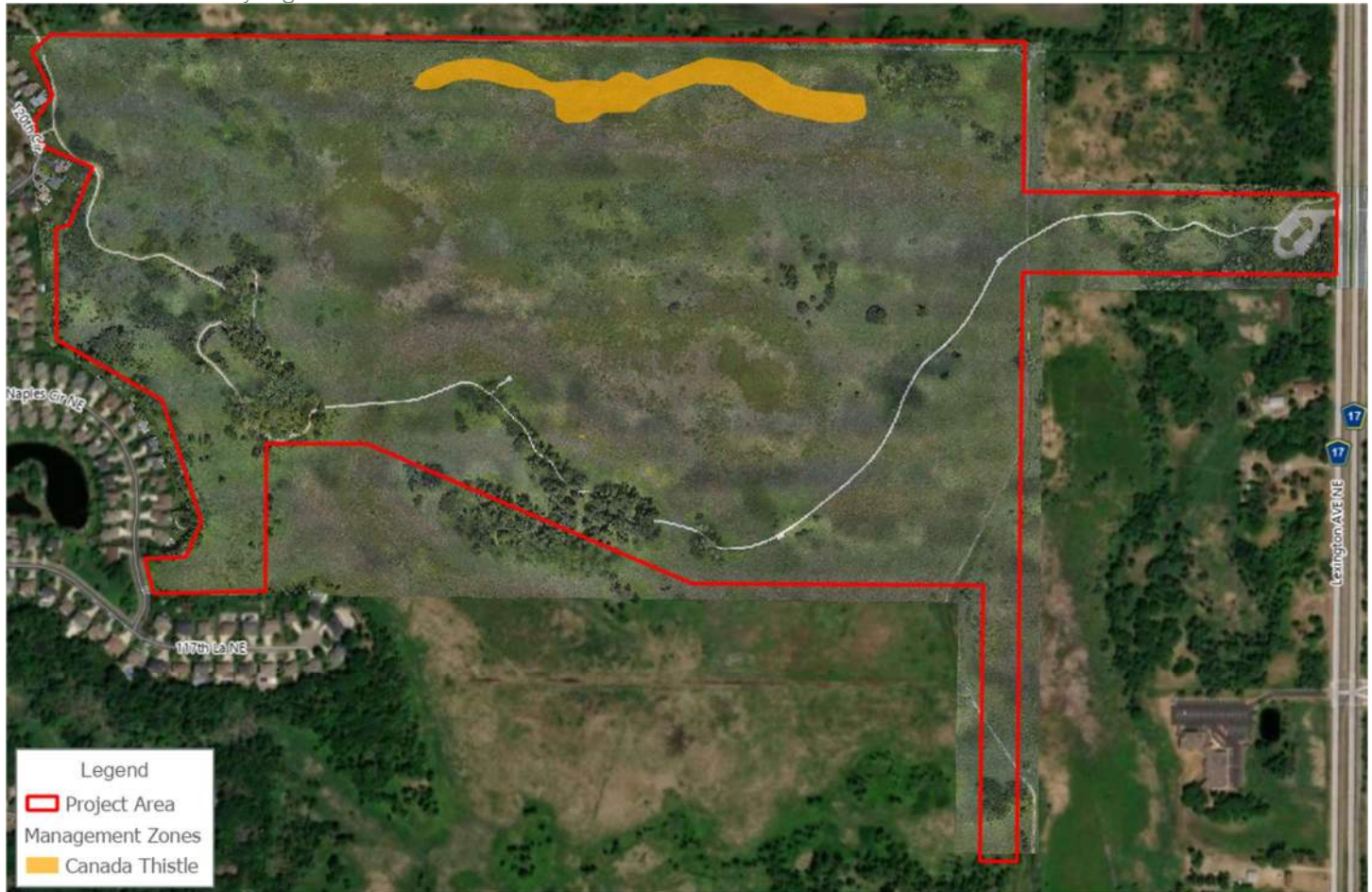


Figure 13: Canada Thistle Management Zone

Reed Canary Grass (*Phalaris arundinacea*)

Reed canary grass is widespread across the Blaine Wetland Sanctuary, occurring throughout the site except within high-quality rich and poor fen wetland communities. Given its extensive coverage and competitive dominance, management will require a staged and adaptive approach.

A prescribed burn is scheduled for winter/early spring 2025–2026, with an emphasis on conducting the burn in early May. This timing is expected to stress reed canary grass during its active growth phase, reducing vigor while promoting opportunities for native seed bank response. Fire will also serve as a site preparation tool, removing accumulated litter and improving conditions for follow-up management.

In spring 2026, a targeted herbicide trial will be conducted using Clethodim on the mapped southeastern infestation area, which is located furthest from the high-quality native plant communities. This zone will serve as a test plot to evaluate chemical efficacy, assess impacts to reed canary grass, and monitor potential regeneration from the native seed bank. Observations from this pilot treatment will inform whether broader application is warranted in subsequent management cycles. Because grass-specific herbicides often require multiple applications, supplemental management will include overseeding treated areas with a diverse native seed mix heavy in sedges and forbs (Anoka Sandplain Wet Meadow Mix). This strategy will help occupy open niches, reduce reed canary grass recolonization, and accelerate native recovery.

For the remainder of the site, prescribed fire will remain the primary management tool through 2026. Continued burning will help suppress reed canary grass dominance and create conditions favorable for native species recovery. If follow-up surveys indicate additional control is necessary, particularly in areas adjacent to high-quality wetlands, supplemental herbicide applications may be scheduled in fall 2026 when reed canary grass is actively growing. Annual monitoring will be essential to track reed canary grass response, evaluate native vegetation establishment, and guide adaptive management decisions beyond 2026.

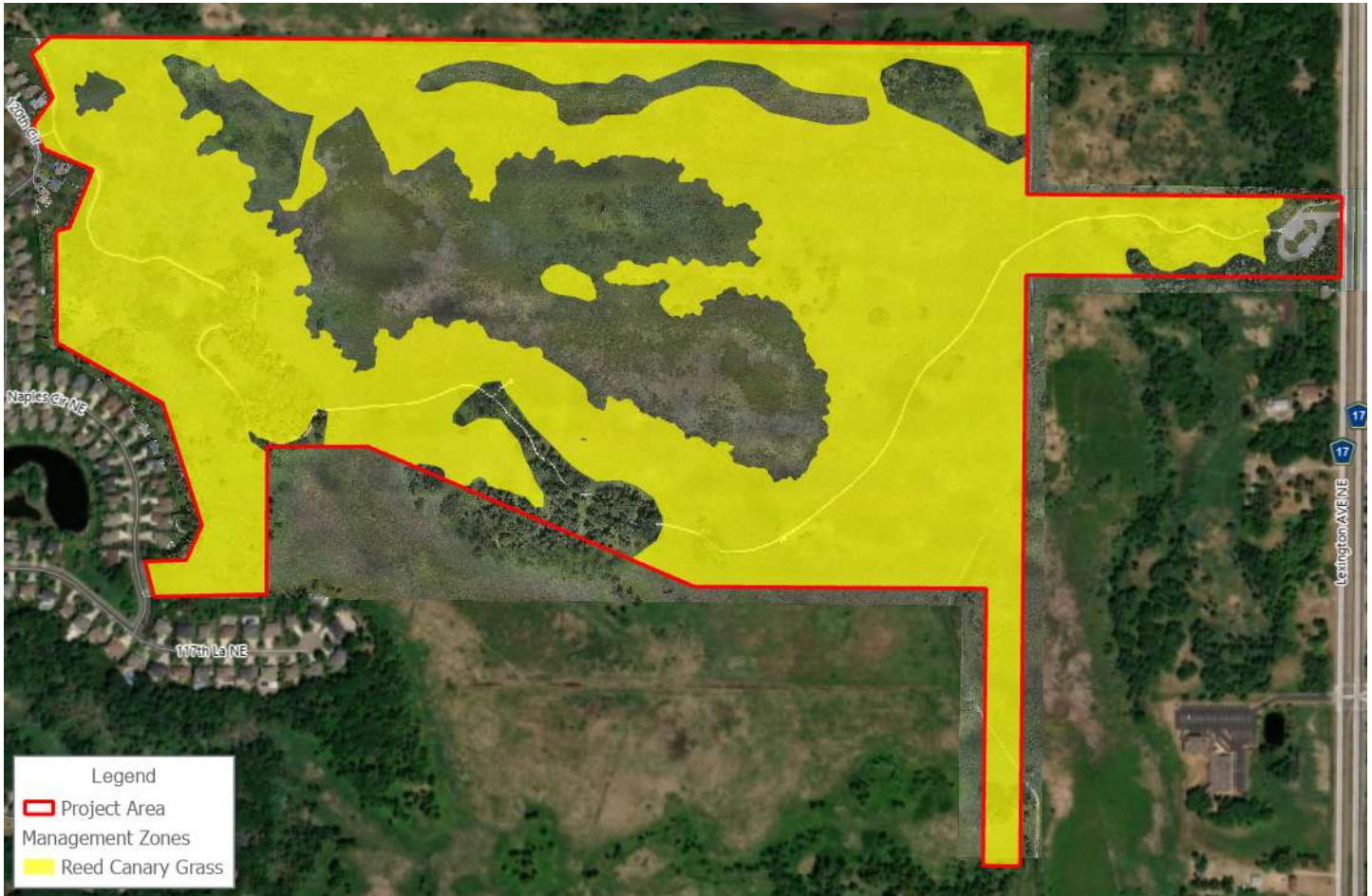


Figure 14: Reed Canary grass Management Zones

SIMPLIFIED TIMELINE OF MANAGEMENT ACTIVITIES

Restoration Timeline: September 2025 – August 2026

October 2025 – May 2026

- **Prescribed Fire**
 - Conduct a light-intensity prescribed burn across the site (fen, wet meadow, upland buffer).
 - Objective: Reduce litter, suppress woody encroachment, and prepare seedbed.
 - Conditions: saturated/firm soils, wind <10 mph, RH 25–45%. Avoid peat ignition in fen areas.

October 2025–April 2026

- **Buckthorn Removal**
 - Remove all mapped buckthorn stands.
 - Cut-stump treat using oil-based herbicide (e.g., Garlon 4).

Late April – Early May 2026

- **Reed Canary Grass Treatment**
 - Spray mapped reed canary grass zones with grass-specific herbicide (e.g., clethodim).
 - Timing: Apply when reed canary is actively growing.
 - Note: This would be most effective following a prescribed fire.
- **Wet Meadow Seeding (Follow-up)**
 - One week after herbicide, broadcast custom wet meadow mix into treated reed canary zones.

June – July 2026

- **Canada Thistle Control**
 - Mow flowering patches of Canada thistle in mapped zones.
 - Target when plants are bolting or flowering.
 - Follow up in late August and use a broadleaf specific herbicide to target basal rosettes of the thistle.
- **Reed Canary Grass Re-Evaluation**
 - Monitor treated reed canary zones.
 - Spot reapply herbicide to persistent patches in mapped herbicide zones.

August 2026

- **Canada Thistle Suppression**
 - Mow all thistle regrowth before seed production.
 - Cutting height: Maintain 6+ inches to protect fen graminoids.

CONSIDERATIONS

For this project, it is essential to hire a reputable contractor with demonstrated experience in managing high-quality habitats, including expertise in plant identification and invasive species control. Given the complexity of the site, careful ecological consideration will be critical to achieving successful outcomes. For prescribed burning, recommended contractors include Midwest Native Landscapes: Red Rock Fire, which has prior experience with this site, and Prairie Restorations, which also brings strong qualifications for this type of work.

SEED MIXES FOR MANAGEMENT UNITS**ISG Custom Anoka Sandplains Wet Meadow Mix**

Botanical Name	Common Name	PLS Ounces	Seeds per Square Foot	Percentage by Weight
<i>Acorus americanus</i>	Sweet Flag	2	0.30	1.2%
<i>Anemone canadensis</i>	Canada Anemone	2	0.37	1.2%
<i>Asclepias incarnata</i>	Rose Milkweed	4	0.44	2.4%
<i>Bidens cernua</i>	Nodding Bur Marigold	1	0.48	0.6%
<i>Bidens frondosa</i>	Common Beggarticks	2	0.23	1.2%
<i>Caltha palustris</i>	Marsh Marigold	0.25	0.15	0.1%
<i>Chelone glabra</i>	Turtlehead	1	2.11	0.6%
<i>Cicuta maculata</i>	Water Hemlock	3	0.83	1.8%
<i>Cirsium muticum</i>	Swamp Thistle	3	0.48	1.8%
<i>Doellingeria umbellata</i>	Flat-topped Aster	1	1.54	0.6%
<i>Epilobium coloratum</i>	Cinnamon Willow Herb	0.25	1.43	0.1%
<i>Epilobium glandulosum</i>	Northern Willow Herb	1	1.38	0.6%
<i>Eupatorium perfoliatum</i>	Boneset	0.25	0.92	0.1%
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	0.25	2.01	0.1%
<i>Eutrochium maculatum</i>	Joe Pye Weed	2	4.36	1.2%
<i>Galium boreale</i>	Northern Bedstraw	0.5	0.80	0.3%
<i>Gentiana andrewsii</i>	Bottle Gentian	1	6.43	0.6%
<i>Helenium autumnale</i>	Sneezeweed	1	2.98	0.6%
<i>Hypericum majus</i>	Greater Canada St. John's Wort	0.1	4.59	0.1%
<i>Iris versicolor</i>	Northern Blue Flag	6	0.12	3.6%
<i>Liatris pycnostachya</i>	Prairie Blazing Star	8	2.02	4.8%
<i>Lobelia siphilitica</i>	Great Blue Lobelia	0.5	5.74	0.3%
<i>Lobelia spicata</i>	Pale Spiked Lobelia	0.25	5.17	0.1%
<i>Lycopus americanus</i>	Water Horehound	1	2.98	0.6%
<i>Lythrum alatum</i>	Winged Loosestrife	0.1	6.89	0.1%
<i>Mentha arvensis</i>	Wild Mint	0.5	3.44	0.3%
<i>Mimulus ringens</i>	Monkey Flower	0.25	1.26	0.1%
<i>Pedicularis lanceolata</i>	Marsh Betony	2	2.02	1.2%
<i>Persicaria amphibia</i>	Marsh Smartweed	3	0.31	1.8%
<i>Pycnanthemum virginianum</i>	Mountain Mint	0.5	2.53	0.3%
<i>Rumex orbiculatus</i>	Great Water Dock	2	0.55	1.2%
<i>Sagittaria latifolia</i>	Common Arrowhead	2	2.80	1.2%
<i>Scutellaria lateriflora</i>	Mad-dog Skullcap	0.5	0.75	0.3%
<i>Symphyotrichum lanceolatum</i>	Panicled Aster	0.5	1.79	0.3%
<i>Symphyotrichum puniceum</i>	Swamp Aster	0.5	0.92	0.3%
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	4	1.01	2.4%
<i>Verbena hastata</i>	Blue Vervain	3	6.40	1.8%
<i>Zizia aurea</i>	Golden Alexanders	4	1.01	2.4%

Botanical Name	Common Name	PLS Ounces	Seeds per Square Foot	Percentage by Weight
Forb Subtotal		64.2	79.54	38%
<i>Andropogon gerardii</i>	Big Bluestem	6	1.38	3.7%
<i>Bromus ciliatus</i>	Fringed Brome	8	1.84	5.0%
<i>Calamagrostis canadensis</i>	Blue Joint Grass	1	6.43	0.6%
<i>Elymus virginicus</i>	Virginia Wild Rye	4	0.39	2.5%
<i>Glyceria canadensis</i>	Rattlesnake Grass	1	1.70	0.6%
<i>Glyceria grandis</i>	Reed Manna Grass	2	3.21	1.2%
<i>Glyceria striata</i>	Fowl Manna Grass	2	4.13	1.2%
<i>Leersia oryzoides</i>	Rice Cut Grass	1	0.78	0.6%
<i>Poa palustris</i>	Fowl Bluegrass	2	5.97	1.2%
<i>Spartina pectinata</i>	Cord Grass	10	1.52	6.2%
Grass Subtotal		37	27.34	23%
<i>Eleocharis palustris</i>	Great Spike Rush	2	2.34	1.2%
<i>Juncus balticus</i>	Baltic Rush	0.5	3.93	0.3%
<i>Scirpus acutus</i>	Hardstem Bulrush	2	0.92	1.2%
<i>Scirpus atrovirens</i>	Dark-green Bulrush	2	21.12	1.2%
<i>Scirpus cyperinus</i>	Wool Grass	2	78.05	1.2%
<i>Scirpus validus</i>	Great Bulrush	2	1.42	1.2%
<i>Carex aquatilis</i>	Water Sedge	2	1.97	1.2%
<i>Carex bebbii</i>	Bebb's Oval Sedge	2	1.56	1.2%
<i>Carex brevior</i>	Plains Oval Sedge	3	2.00	1.9%
<i>Carex buxbaumii</i>	Buxbaum's Sedge	1	0.33	0.6%
<i>Carex canescens</i>	Gray Bog Sedge	3	7.02	1.9%
<i>Carex comosa</i>	Bristly Sedge	4	2.75	2.5%
<i>Carex cryptolepis</i>	Northeastern Sedge	1	0.83	0.6%
<i>Carex echinata</i>	Large-fruited Star Sedge	1	1.12	0.6%
<i>Carex hystericina</i>	Porcupine Sedge	6	4.13	3.7%
<i>Carex lacustris</i>	Common Lake Sedge	4	1.01	2.5%
<i>Carex lasiocarpa</i>	Narrow-leaved Woolly Sedge	2	0.51	1.2%
<i>Carex pellita</i>	Broad-leaved Woolly Sedge	1	0.64	0.6%
<i>Carex prairea</i>	Fen Panicked Sedge	3	5.79	1.9%
<i>Carex scoparia</i>	Lance-fruited Oval Sedge	4	7.71	2.5%
<i>Carex stricta</i>	Common Tussock Sedge	3	3.65	1.9%
<i>Carex utriculata</i>	Common Yellow Lake Sedge	3	0.69	1.9%
<i>Carex vulpinoidea</i>	Brown Fox Sedge	4	9.18	2.5%
<i>Dulichium arundinaceum</i>	Three-way Sedge	1	0.90	0.6%
Sedge Subtotal		58.5	159.58	36%
<i>Spiraea tomentosa</i>	Steeplebush	1	6.89	0.6%
Woody Subtotal		1	6.89	0.6%
Grand Total		160.7	273.35	98%

LIST OF FIGURES

Figure 1: Project Area Map Figure 2: Overview of land cover and Native Plant Communities on the Protected Property

Figure 3: Overview of management priorities on the Protected Property

Figure 4. Poor Fen – Northern Poor Fen [APn91a] management unit view from monitoring plot 15

Figure 5. Poor Fen community near the north-central side of the Protected Property

Figure 6. Rich Fen community near the center of the Protected Property, dominated by encroaching woody plants

Figure 7. Rich Fen – Graminoid Rich Fen [OPn92a] management unit

Figure 8. Small inclusion of native species within the Northern Wet Meadow near the center of the Protected Property

Figure 9. Northern Wet Meadow/Carr [WMn82b] management unit view from monitoring plot 15

Figure 10 Southern Dry-Mesic Oak (Maple) Woodland (FDs37) near the central area of the Protected Property between wetland areas

Figure 11. Southern Dry-Mesic Oak (Maple) Woodland (FDs37) management unit

Figure 12: Buckthorn Management Zones

Figure 13: Canada Thistle Management Zone

Figure 14: Reed Canary grass Management Zones

LIST OF TABLES

Table 1: NPCs within the Protected Property

Table 2: Management options for Poor Fen. Current EO-rank is AB.

Table 3: Management options for Northern Rich Fen (Basin). Current EO-rank is AB.

Table 4: Management options for Northern Wet Meadow/Carr. Current EO-rank is N/A.

Table 5. Management options for Southern Dry-Mesic Oak (Maple) Woodland. Current EO-rank BC.



City of Blaine Staff Report

File Number: 2026-027

Agenda Date

January 21, 2026

Status

In Control

City Council

File Type

Workshop Item

New Business

- Erik Thorvig, City Manager

Agenda Item # 3.3

Open Forum Procedure

Background

Staff and Council will discuss the open forum process and determine if changes are necessary to convey information to the public when questions and concerns are raised at the open forum.

Staff Recommendation

Questions for Council

Attachment List

None