

CENTURY PONDS

ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW)

CITY: MAPLEWOOD

COUNTY: RAMSEY

Responsible Governmental Unit (RGU)

City of Maplewood

1830 County Road B

Maplewood, MN 55109

[City of Maplewood, MN](http://www.cityofmaplewood.com)

June 2025

Prepared by:



ALLIANT

Table of Contents

Table of Contents	i
Tables.....	ii
Figures	ii
Appendices.....	ii
Environmental Assessment Worksheet	1
1. Project Title:.....	1
2. Proposer:	1
3. RGU:	1
4. Reason for EAW Preparation: (Check One).....	1
5. Project Location	2
6. Project Description.....	2
7. Climate Adaptation and Resilience.....	4
8. Cover Types.....	8
9. Permits and Approvals Required	10
10. Land Use	11
11. Geology, Soils and Topography/Land Forms.....	13
12. Water Resources	15
13. Contamination/Hazardous Materials/Wastes.....	23
14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features).....	27
15. Historic Properties.....	32
16. Visual	33
17. Air.....	34
18. Greenhouse Gas (GHG) Emissions Carbon Footprint	34
19. Noise.....	39
20. Transportation	40
21. Cumulative Potential Effects.....	41
22. Other Potential Environmental Effects.....	43
RGU CERTIFICATION.....	43
References	44

Tables

Table 1. Parcels Within the Project Site for Residential Development	2
Table 2. Project Magnitude Data	3
Table 3. Project Changes in Climate Parameters.....	7
Table 4. Climate Adaptation and Resilience	7
Table 5. Land Cover of the Project Site Before and After the Proposed Development	8
Table 6. Green Infrastructure of the Project Site Before and After the Proposed Development..	9
Table 7. Required Permits and Approvals for the Proposed Project.....	10
Table 8. Soil Classifications on the Project Site	14
Table 9. Wetlands Located Within the Project Site	15
Table 10. Domestic Water Wells Located 500 feet from the Project Site.....	16
Table 11. What’s in My Neighborhood Sites within 0.5 Miles of the Project Site	23
Table 12. Federal Rare Wildlife and Plant Species Potentially in the Project Vicinity.....	28
Table 13. Sources and Quantification of GHG emissions	35

Figures

Figure 1: Project Location
Figure 2: Concept Plan
Figure 3: Pre-Development Land Cover
Figure 4: Post-Development Land Cover
Figure 5: 2040 Future Land Use Map
Figure 6: Ramsey County Soil Survey
Figure 7: Public Waters Inventory and Floodplains
Figure 8: Geology and County Well Index
Figure 9: National Wetland Inventory
Figure 10: Contaminated Sites/Environmental Permits and Registrations

Appendices

Appendix A. Figures
Appendix B. Wetland Delineation Report
Appendix C. Minnesota Department of Health Well Index Log
Appendix D. MN DNR Natural Heritage Information System (NHIS) Concurrence Letter
Appendix E. Century Ponds 2024 Ecological Survey – Alliant Engineering
Appendix F. Minnesota State Historic Preservation Office (SHPO) Database Review
Appendix G. Century Ponds Traffic Impact Study



ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board’s website at: <http://www.egb.state.mn.us/EnvRevGuidanceDocuments.htm>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 21.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the EQB Monitor. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project Title:

Century Ponds

2. Proposer:

Contact Person:	Mike Suel – DR Horton, Inc. - MN
Title:	Land Development Manager
Address:	20860 Kenbridge Ct
City, State, ZIP:	Lakeville, MN 55044
Phone:	952-985-7823
Fax:	N/A
Email:	msuel@drhorton.com

3. RGU:

Contact Person:	Michael Martin, City of Maplewood
Title:	Assistant Community Development Director
Address:	1830 County Road B
City, State, ZIP:	Maplewood, MN 55109
Phone:	651-249-2303
Fax:	N/A
Email:	michael.martin@maplewoodmn.gov

4. Reason for EAW Preparation: (Check One)

Required	Discretionary
<input type="checkbox"/> EIS Scoping	<input type="checkbox"/> Citizen petition
<input checked="" type="checkbox"/> Mandatory EAW	<input type="checkbox"/> RGU discretion
	<input type="checkbox"/> Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):
4410.4300 Subp 19. Residential Development

5. Project Location

County: Ramsey

City/Township: Maplewood

PLS Location (¼, ¼, Section, Township, Range): N½ of the SE¼ of Section 12, Township 28 N, Range 22 W

Watershed (81 major watershed scale): Mississippi River – Twin Cities (20)

GPS Coordinates: 44.9246345, -92.9871686

Tax Parcel Number: 122822440002, 122822110002

6. Project Description

- a. Provide the brief project summary to be published in the EQB Monitor, (approximately 50 words).

The Century Ponds project is a proposed low-density development consisting of single-family homes and townhomes on a 92.25 acre former golf course in the City of Maplewood, Ramsey County, Minnesota. It is located in the southwest quadrant of Lower Afton Rd E (CSAH 39) and Century Ave S (CSAH 25) and will include internal roads and connection to municipal utilities (Appendix A, Figure 1).

- b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

There is currently an abandoned clubhouse and parking lot located in the southeastern portion of the parcel that will be demolished as a part of the new construction (Appendix A, Figure 1). The proposed project includes the construction of new single-family residential housing and townhomes. This includes approximately 78 (55' wide lot) single-family unattached homes and 56 (65' wide lots) single-family unattached homes, and 73 townhomes. The project will include a new internal roadway network, connection to municipal sanitary sewer and water systems, public parks, and trails (Appendix A, Figure 4).

The project site is comprised of two parcels which are summarized below (Table 1).

Table 1. Parcels Within the Project Site for Residential Development

Parcel ID	Parcel Size (Acres)	Current Use	Project Details
122822440002	140.5	Park	Correction facility located in the northern parcel, located off the project site. Clubhouse and parking lot located in the southeastern portion of the parcel. Pre-existing trails from the golf course throughout the parcel.
122822110002	37.44	Park	Pre-existing trails from the golf course throughout the parcel.

Roadway access into the development will occur through Ramsey County CSAH 39 (Lower Afton Rd), Ramsey County CSAH 25 (Century Ave), and Linwood Ave E.

Mass grading is anticipated to begin in Summer of 2025. Construction of homes will begin in Winter 2025. Construction will last approximately four years depending on market conditions.

The developer will be responsible for site grading, utilities, sanitary sewer, water supply, roadway infrastructure, stormwater, and erosion control during construction. Management of the site will fall to the individual homeowners, the designated HOA, and the City of Maplewood for various portions of the site after construction is completed.

c. *Project magnitude:*

Table 2. Project Magnitude Data

Total Project Acreage: 92.25 acres	
Linear project length	Public roadway: 5,838 linear feet Private roadway: 7,465 linear feet
Number and type of residential units:	78 – 55’ wide lots 56 – 65’ wide lots 73 – townhome units
Residential building area (in square feet)	2,059,516 sq. ft
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	1-2 stories for homes and 2 story townhomes.

d. *Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.*

The purpose of the proposed project is to provide residential development in the City of Maplewood that includes single-family homes and townhomes. This proposed residential development will meet the City’s need to provide residential housing options to meet the demands of current and future residents. The project is being carried out by a private entity and not a government unit.

e. *Are future stages of this development including development on any other property planned or likely to happen? Yes No*

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

There are no future stages of this development that are planned or likely to occur.

f. *Is this project a subsequent stage of an earlier project? Yes No*

If yes, briefly describe the past development, timeline and any past environmental review.

The project is not a subsequent stage of an earlier project.

7. Climate Adaptation and Resilience

- a. Describe the climate trends in the general location of the project (see guidance: Climate Adaptation and Resilience) and how climate change is anticipated to affect that location during the life of the project.

Observed climate trends for Ramsey County were taken from the Minnesota Climate Trends website (MnDNR 2023b). Trends from 1895 to 2025 were displayed graphically for average annual temperature, total annual precipitation, and the Palmer Drought Severity Index (PDSI). The graphs show raw data as a smoothed time series and average over the entire reporting period. The trend over the past 50 years, 1975-2025, was also displayed. The PDSI synthesizes temperature and precipitation data to create an index of relative dryness that ranges from -10 (very dry) to +10 (very wet). It is used to describe effects of climate change on long-term drought (> 12 months) through the mechanism of potential evapotranspiration.

Historic Climate Trends

Historic Annual Average Temperature for Ramsey County

Average annual temperature for the entire reporting period was 44.09 °F and the average for the 21st Century, 2000-2025 was 45.3 °F. The trend for the past 50 years is an increase of 0.56 °F per decade. See Figure 1 below.

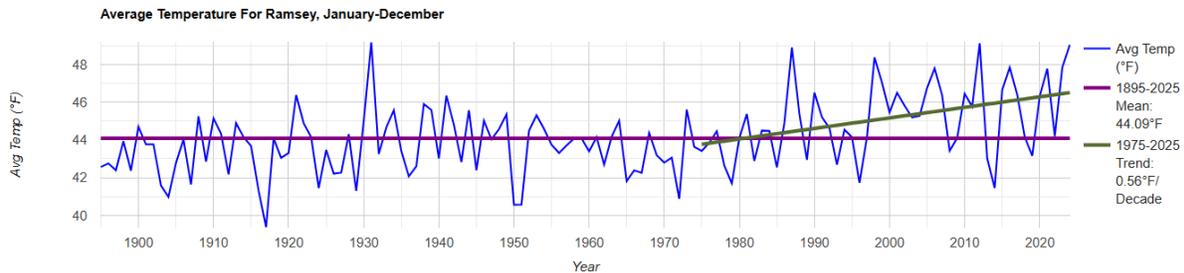


Figure 1. Historic Annual Average Temperature for Ramsey County (1895-2025)

Source: Minnesota Department of Natural Resources, Minnesota Climate Trends (state.mn.us)

Historic Annual Average Precipitation for Ramsey County

Total annual precipitation for the entire reporting period averaged 29.42 inches, and the average for the 21st Century was 30.53 inches. The trend for the past 50 years is an increase of 0.08 inches per decade. See Figure 2 below.

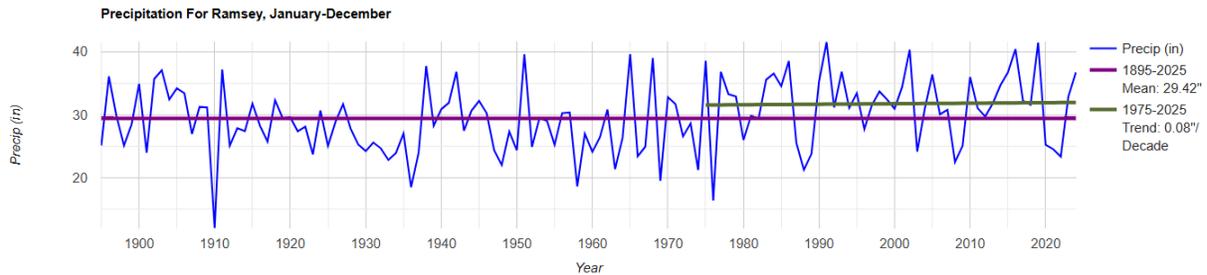


Figure 2. Historic Annual Average Precipitation for Ramsey County (1895-2025)

Source: Minnesota Department of Natural Resources, [Minnesota Climate Trends \(state.mn.us\)](https://state.mn.us)

Historic PDSI Values for Ramsey County

The average PDSI for the entire reporting period was 0.35, and the average for the 21st Century was 1.67. The trend for the past 50 years is an increase of 0.11 per decade. See Figure 3 below.

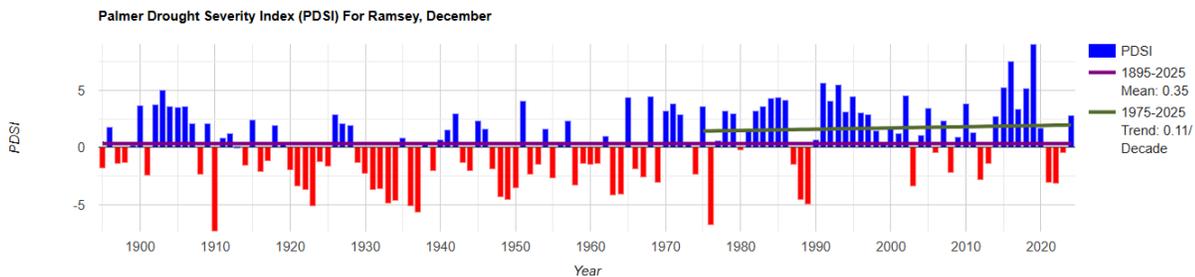


Figure 3. Historic PDSI Values for Ramsey County (1895-2025)

Source: Minnesota Department of Natural Resources, [Minnesota Climate Trends \(state.mn.us\)](https://state.mn.us)

These three parameters, average annual temperature, total annual precipitation, and PDSI, show general trends consistent with climate change predictions for eastern Minnesota: warmer temperatures, less precipitation, and more variable and extreme conditions, such as higher maximum temperature and more variable precipitation that could lead to more drought periods. With an increase in more variable and extreme conditions, it is expected that more precipitation will be delivered in both large quantities in intense storm events, accompanied with periods of long drought conditions. This has the effect of creating more flood events, increased runoff, and potentially, less infiltration of precipitation into the groundwater. Higher temperatures will result in more evapotranspiration, and when combined with more variable precipitation, and will lead to more intense droughts.

Future Climate Trends

The MN DNR Minnesota Climate Explorer was used to project trends in temperature and precipitation using Ramsey County as the target area (MnDNR 2023c). The climate explorer website utilizes eight different climate projection models to estimate a projected average annual temperature and precipitation ranges. The

tool then calculates an average from all eight models. The tool estimates average historical temperature and precipitation and three future projections that include:

- 1) Mid-century (2040-2059), RCP 4.5;
- 2) Late century (2080-2099), RCP 4.5; and
- 3) Late century (2080-2099), RCP 8.5

The RCP values are defined as Relative Concentration Pathways (RCP) of 4.5 watts/m² or 8.5 watts/m² of energy through radiative forcing per unit land area. These values roughly correspond to carbon dioxide (CO₂) concentrations of 650 ppm or 1,000 ppm (lower or higher emissions scenarios). Current atmospheric CO₂ concentration is around 410 ppm. Projections for future average annual temperature and total annual precipitation are shown in Figures 4 and 5 below.

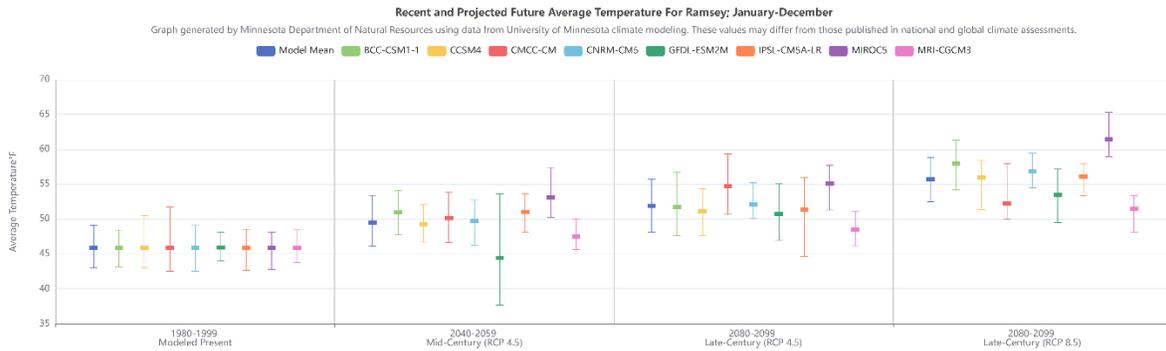


Figure 4. Project Temperatures in Ramsey County

Source: Minnesota Department of Natural Resources, Minnesota Climate Trends (state.mn.us)

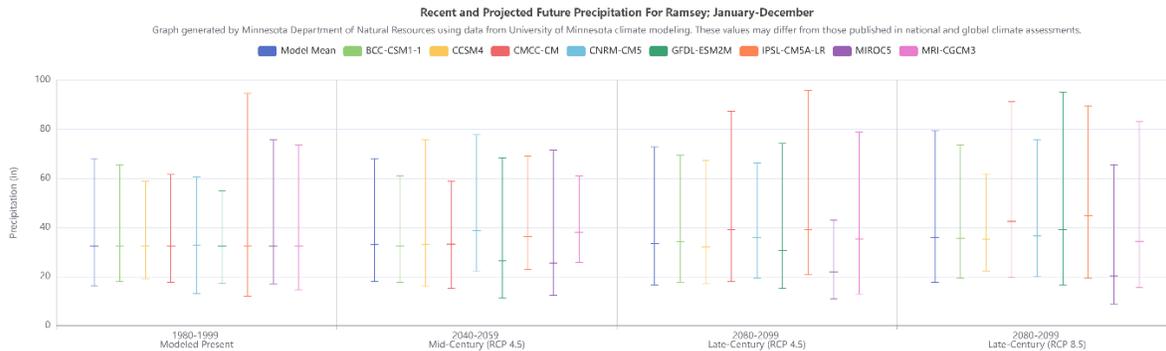


Figure 5. Projected Precipitation in Ramsey County

Source: Minnesota Department of Natural Resources, Minnesota Climate Trends (state.mn.us). Definitions of the models included in this analysis can be found at Climate Explorer Metadata | Minnesota DNR (state.mn.us).

There is a large amount of variability in projections, reflecting uncertainty in modeling and predictions. Overall, the models suggest continued increases in average temperature and total precipitation.

Two additional tools were used to project climate trends for Ramsey County: Climate Mapping for Resilience and Adaptation (CMRA, 2025) and Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities (EPA 2025). These tools were used to estimate several parameters in 2035 and 2060 using low and high emissions scenarios (roughly corresponding to the RCP 4.5 and RCP 8.5 scenarios above). The estimated parameters were increase in average temperature, the number of days with extreme

temperatures (>90 °F) annually, total annual precipitation, and increased intensity of 100 year storm events (expressed as a percentage). These projections are shown in Table 3 below.

Table 3. Project Changes in Climate Parameters

Parameter	Date	Lower Emission Scenario	Higher Emission Scenario
Increase in Average Temperature ¹	2035	2.7 °F	3.8 °F
	2060	5.3 °F	7.5 °F
Extreme Temperature (Days Over 90 °F; historical trend 1976-2005: 10 days/year) ²	2035	31 days	40 days
	2070	42 days	69 days
Annual Precipitation (historical trend 1976-2005: 31 inches/year) ²	2035	31 inches	31 inches
	2070	31 inches	32 inches
Increased Intensity of 100 Year Storm Events ¹	2035	2.5%	13.7%
	2060	4.9%	26.6%

Source: ¹EPA 2025, ²CMRA 2025

The projected changes from these models are fairly consistent with that described above from the MN DNR Minnesota Climate Explorer. In particular, these models predict higher average temperatures, an increase in extreme heat, and slightly higher precipitation than was observed historically. The largest increases occur later in the 21st Century and under higher emission scenarios. The models also predict increased severity of large storm events. Both tools show a slight increase in precipitation. This is likely due to an increase in climate variability. Overall, precipitation may not significantly increase, but the likelihood of extreme weather is likely. It is assumed that more extreme storms will occur, followed by longer periods of drought conditions.

- b. For each Resource Category in the table below: Describe how the project’s proposed activities and how the project’s design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.

Table 4. Climate Adaptation and Resilience

Resource Category	Climate Considerations	Project Information	Adaptations
Project Design	Aspects of the building architecture/materials choices and site design may negatively affect urban heat island conditions in the area considering changing climate zones, temperature trends, and potential for extended heat waves	Climate change risks and vulnerabilities identified include: Higher temperatures, heat waves, drought, urban heat island	Project will use energy efficient building materials that reduce needs for home heating and cooling. The project will be compliant with the City’s landscape ordinance and landscaping will include over 453 newly planted trees which will help ameliorate urban heat islands and extreme temperatures. 98% of the site will be enhanced open/natural area, further ameliorating urban heat islands and extreme temperatures.
Land Use	Land use change will increase the amount of impervious surfaces that may negatively affect urban heat island	Climate change risks and vulnerabilities identified include:	Project will incorporate over 453 newly planted trees to break up impervious areas and

	<p>conditions in areas considering changing climate zones, temperatures trends, and potential for extended heat waves.</p> <p>Land use change will increase the amount of impervious surfaces that may negatively affect localized flooding considering changing precipitation and event intensity.</p>	<p>Dark impervious surfaces can increase urban heat island effect and amplify warming temperatures of climate change</p> <p>Impervious surfaces generate stormwater runoff, and paired with increased storm intensity could generate higher volumes of stormwater runoff more rapidly leading to localized flooding.</p>	<p>provide shade over the impervious surfaces.</p> <p>Incidental wetland will be converted to stormwater ponds in the northern part of the project site. Non-incident wetlands will remain undisturbed. Stormwater ponds and wetlands will reduce the likelihood of localized flooding and reduce the urban heat island effect.</p>
Water Resources	Addressed in item 12		
Contamination/Hazardous Materials/Wastes	Protection of water resources from soil and water contamination	There is low risk of the project introducing hazardous materials or waste to the project site.	N/A
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Addressed in item 14.		

8. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development:

The total amount of land cover before and after development is described below in Table 5. See Appendix A Figures 3 and 4 for the existing cover and proposed cover conditions.

Table 5. Land Cover of the Project Site Before and After the Proposed Development

Land Cover Type ¹	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	10	10
Deep lakes (>2 meters deep)	0	0
Wooded/forest ²	6	6
Rivers/streams	0	0
Brush/Grassland	63	0
Cropland	0	0
Livestock rangeland/pastureland	0	0
Lawn/landscaping	0	0
Green infrastructure TOTAL (from table below*)	11	30
Impervious surface ³	2	5



Stormwater Pond (wet sedimentation basin) ⁴	0	2
Residential ⁵	0	39
Other (describe)	0	0
TOTAL	92	92

Notes:

¹The total land cover acreage is reported as the sum of the unrounded values.

²There are pockets of trees throughout the project site. Along the west and east boundaries are the densest forest cover which will remain undisturbed.

³These numbers do not include current and proposed trails, sidewalks, and driveways.

⁴Detention ponds.

⁵These numbers include residential properties and lawn/landscaping.

Table 6. Green Infrastructure of the Project Site Before and After the Proposed Development

Green Infrastructure	Before (acres)	After (acres)
Constructed infiltration systems (infiltration basins/infiltration trenches/rainwater gardens/bioretention areas without undergrains/swales with impermeable check dams) ¹	0	2
Constructed tree trenches and tree boxes	0	0
Constructed wetlands	2	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0
Other (describe) ²	9	28
TOTAL	11	30

¹Filtration basins

²Other represents existing habitat areas and proposed enhanced areas.

Trees	Number
Number of mature trees removed during ¹ development	~ 170
Number of new trees planted ²	~ 453

¹The majority of the site is brush/grassland with individual pockets of trees scattered throughout the project site. The densest tree coverage is along the east and west boundaries. The exact number of trees that will be removed is not known at this time. An estimate is provided.

²The number of trees to be planted is an estimate based on the most recent tree removal list.

9. Permits and Approvals Required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.

The permits listed below in Table 7 are the permits required for the proposed project.

Table 7. Required Permits and Approvals for the Proposed Project

Unit of Government	Types of Application	Status
Federal		
U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404 Permit Approved Jurisdictional Determination	To be submitted
State		
Minnesota Department of Health (MDH)	Watermain Extension Permit	To be submitted
Minnesota Department of Natural Resources (MN DNR)	Water Appropriation Permit (Construction Dewatering) Incidental Take Permit	To be submitted, if necessary To be submitted, if necessary
Minnesota Pollution Control Agency (MPCA)	National Pollution Discharge Elimination System (NPDES)/State Disposal System (SDS) General Permit	To be submitted
Minnesota Pollution Control Agency (MPCA)	Sanitary Sewer Extension Approval Section 401 Water Quality Certification or Waiver 10-day Demolition Notification	To be submitted To be submitted, if necessary If needed
Metropolitan Council	Sewer Permit	To be submitted
Local		
City of Maplewood	Stormwater Management Plan	To be submitted
	Erosion and Sediment Control Plan	To be submitted
	Comprehensive Plan Amendment	Submitted
	Rezoning	Received
	Preliminary Plat	Received
	Final Plat Approval	To be submitted
	General Development Plan	To be submitted
	Grading Permit	To be submitted
Ramsey County	Building Permit	To be submitted
	Right-of-Way Permit	To be submitted
Ramsey County	Access Permit (s)	To be submitted
	Right-of-Way Permit	To be submitted
Washington County	Right-of-Way Permit	To be submitted
Ramsey-Washington Metro Watershed District	Watershed District Permit	To be submitted



Unit of Government	Types of Application	Status
Federal		
Ramsey-Washington Metro Watershed District	Wetland Boundary/Type Approval	Approved

10. Land Use

a. Describe:

- i. Existing land use of the site as well as areas adjacent to and near the site, including parks and open space, cemeteries, trails, prime or unique farmlands.

The project site was formerly a golf course called the Ponds at Battle Creek that closed in September 2021. The project site is currently zoned as Farm Residential. The majority of land cover is brush, grassland, and wetlands with an abandoned club house and parking lot located towards the center of the project site. There are numerous cart trails located throughout the project site. The land has remained undisturbed since the golf course closed, aside from mowing activity completed by Ramsey County.

Current and historic land use adjacent to the site is primarily residential. The immediate surrounding land use includes the following:

- *Land use north:* Ramsey County Correctional Facility.
- *Land use west of the site:* Residential development was created after 1974.
- *Land use southwest of the site:* There are wetlands located to the southwest.
- *Land use south of the site:* Residential development was created after 1974.
- *Land use east of the site.* Residential development was created after 1991.

Parks near the project site:

- *Northeast:* Odawa Park and Potawatomi Park
- *Northwest:* Battle Creek Regional Park
- *South:* Applewood Park

Most soils on the project site are categorized as prime farmland soils or farmland of statewide importance soils (Appendix A, Figure 6). There are three soils classified as not farmland with map unit symbols: 342E (Kingsley sandy loam), 504D (Duluth silt loam), and 540 (Seelyville Muck). See Section 11 for a further discussion about soils within the project site.

- ii. *Plans. Describe planned land use as identified in comprehensive plan (if available) and another applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.*

The City of Maplewood Comprehensive Plan 2040 (City of Maplewood, 2019) identifies areas for growth of developing neighborhoods and commercial use. The project site is currently designated as a park in the City's Comprehensive Plan (Figure 4-35 of City of Maplewood, 2019). A Comprehensive Plan Amendment to reclassify the property as a park into residential development in the City's Comprehensive Plan was applied for by DR Horton, Inc. (developer) and signed by Ramsey County (current owner) in February 2025. The amendment is currently pending approval from the City of Maplewood. The proposed Century Ponds Project is consistent with the envisioned growth of the adjacent land use in the area (City of Maplewood, 2019).

- iii. *Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.*

Proposed zoning of the site includes approximately 47 acres of small lot single dwelling (R-1s) in the form of one to two-story homes and multiple dwellings (R-3) in the form of two-story townhomes. The proposed unit count on the site falls within the City of Maplewood's lot minimum and zoning requirements.

There are no special zoning areas identified such as shoreland, floodplain, wild and scenic rivers, critical area, or agricultural preserves on or adjacent to the site. Per the Met Council's Local Planning handbook, approximately 44 acres of the project site will be dedicated to wetlands, trails, a park, and conservation. The nearest floodplain is approximately one mile north of the project site adjacent to CSAH 25. The nearest DNR PWI watercourse is located approximately one mile north of the project site. (Appendix A, Figure 6).

- iv. *If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding, describe the risk potential considering changing precipitation and event intensity.*

There are no critical facilities planned for floodplains or other areas at risk of flooding.

- b. *Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.*

The proposed project of low and medium-density residential housing is compatible with the City's zoning and designation of the area for growth of new neighborhoods. Surrounding parcels are mostly zoned as low and medium-density residential housing which will likely remain unchanged in the future. The proposed development will incorporate mitigation measures to minimize environmental impacts as discussed in the following sections of this EAW.

- c. *Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 10b above and any risk potential.*

No incompatibilities have been identified.

11. Geology, Soils and Topography/Land Forms

- a. *Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.*

Bedrock at the site is Ordovician-middle and upper; Decorah, Plattville, Glenwood, St Peter. Surficial geology consists of till, loess over till, silty lacustrine deposits, alluvium over outwash, loess and/or silty glaciofluvial deposits over loamy glaciofluvial deposits over stratified sandy and gravelly outwash, and organic matter. No known karst features are mapped on or in the immediate vicinity of the site. The nearest mapped karst features are sinkholes approximately 4 miles west and 5 miles east of the site. Depth to bedrock is mapped as 51-150 feet below ground surface (Jirsa et al., 2010). The stratigraphy report from the only well within the site, reported a depth to bedrock of 64 feet where Decorah shale bedrock was encountered (MDH, 2025).

- b. *Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12.b.ii.*

The USDA NRCS Web Soil Survey for Ramsey County shows that 12 soil series are mapped within the site. Based on the NRCS Web Soil Survey Hydric Rating, there is one hydric soil. The percent hydric soil in Table 8 indicates what percent of the soils major and minor components are hydric. All soils series mapped on the site, and the project area, range from not prime farmland, prime farmland soils, and farmland of statewide importance (Appendix A, Figure 6).



Table 8. Soil Classifications on the Project Site

Symbol	Soil Name	% of Project Site	% Hydric	Hydric Category	Farmland Category	Hydrologic Soil Group
153B	Santiago silt loam, 2 to 6 percent slopes	25.3%	0.0%	Nonhydric	Prime farmland	B
342E	Kingsley sandy loam, 18 to 30 percent slopes	14.5%	0.0%	Nonhydric	Not prime farmland	C
504C	Duluth silt loam, 6 to 12 percent slopes	12.4%	3.0%	Predominantly Nonhydric	Farmland of statewide importance	C
504B	Duluth silt loam, 1 to 6 percent slopes	12.1%	3.0%	Predominantly Nonhydric	Prime farmland	C
504D	Duluth silt loam, 12 to 25 percent slopes	8.7%	3.0%	Predominantly Nonhydric	Not prime farmland	C
452	Comstock silt loam, 0 to 3 percent slopes	8.1%	5.0%	Predominantly Nonhydric	Prime farmland if drained	B/D
507	Poskin silt loam	5.6%	3.0%	Predominantly Nonhydric	Prime farmland if drained	B/D
342C	Kingsley sandy loam, 6 to 12 percent slopes	4.4%	0.0%	Nonhydric	Farmland of statewide importance	C
49C	Antigo silt loam, 6 to 15 percent slopes	1.60%	0.0%	Nonhydric	Farmland of statewide importance	B
540	Seelyeville muck	1.50%	100.0%	Hydric	Not prime farmland	A/D
342B	Kingsley sandy loam, 2 to 6 percent slopes	0.40%	3.00%	Predominantly Nonhydric	Prime farmland	C
166	Ronneby fine sandy loam	0.20%	5.00%	Predominantly Nonhydric	Prime farmland if drained	B/D
W	Water	5.40%	0.00%	Nonhydric	Not prime farmland	None

Elevations on the project site range from a high of 1,080 feet above sea level in the west portion of the site to a low of 1,016 in the northwest corner. Topography is primarily flat.

Site grading during construction is expected to require an average of 11 feet of cut over 92.25 acres. This yields an estimate of 300,000 cubic yards of soil movement. An MPCA Construction SWPPP will be required prior to the initiation of earthwork since the area will disturb more than once acre of land. In compliance with the General NPDES Permit for construction activities, the project proponent and construction contractor will implement Best Management Practices (BMPs) to reduce erosion and sedimentation and stabilize exposed soils after construction. During construction, appropriate sediment and stormwater best management practices will be utilized to prevent erosion and runoff from the site. The project will construct buildings, roads, sidewalks, driveways, turfgrass, and stormwater facilities. All of which will stabilize the soil to minimize erosion. The stormwater facilities will regulate surface water runoff to minimize the potential to transport sediment offsite.

12. Water Resources

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

- i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive species and the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

Kjolhaug Environmental Services completed a wetland delineation in November 2023 of the site. 14 wetlands were delineated onsite (Appendix A, Figure 9). The Ramsey-Washington Metro Watershed District (RWMWD) approved the wetland delineation and issued a Notice of Decision in May 2024 (Appendix B). RWMWD approved that Wetlands 1, 2, 3, 4, 7, and 8 are considered incidental wetlands since they are excavated in historic upland areas. These wetland areas were created as part of the development of the the Ponds at Battle Creek golf course in 2002. Incidental wetlands, as defined under the Wetland Conservation Act, are wetlands that were created in non-wetland areas and impacts to these features are not regulated. .

Table 9. Wetlands Located Within the Project Site

Wetland ID	Size (ac) ¹	Circular 39 ²	Wetland Type	
			Cowardin ²	Eggers and Reed ²
WTL 1*	0.04	3/1	PEM1Cx/Ax	Excavated shallow marsh with a seasonally flooded portion connected via excavated drainageway #1
WTL 2*	0.78	5	PUBGx	Excavated shallow open water
WTL 3*	0.77	5	PUBGx	Excavated shallow open water
WTL 4*	0.81	5/3/1	PABGx/PEM1Cx/ PEM1Ax	Excavated shallow open water wetland with a shallow marsh fringe and an excavated seasonally flooded drainageway (#2)
WTL 5	0.33	3/1	PEM1C/A	Shallow marsh with a seasonally flooded fringe
WTL 6	0.65	5/2/1	PABG/PEM1A	Shallow open water wetland with a wet meadow fringe and a seasonally flooded portion
WTL 7*	0.03	1	PEM1Ax	Excavated wet meadow
WTL 8*	0.23	5/3	PEM1Fx/Cx	Excavated shallow open water wetland with a shallow marsh fringe
WTL 9	0.08	5/2	PEM1F/B	Shallow open water with a wet meadow fringe
WTL 10	0.91	5/3/2	PEM1F/C/B	Shallow open water with a shallow marsh and wet meadow fringe
WTL 11	2.76	5/3/2	PEM1F/C/B	Shallow open water with a shallow marsh and wet meadow fringe
WTL 12 ³	5.22	5/3/2/1	PEM1F/C/B/A	Shallow open water with a shallow marsh and wet meadow fringe and shallow marsh and seasonally flooded portions
WTL 13**	0.07	1	PEM1A	Seasonally flooded basin
WTL 14	0.52	5/2	PEM1Fx/B	Excavated shallow open water with wet meadow fringe

¹Approximate size of wetlands. Size includes the wetland size within the project site only.

²See **Appendix B** for further explanation on wetland classifications.

³WTL 12 is a MN DNR Public Water Wetland 62-248 W (unnamed)

*Incidental Wetlands, **Partially Incidental Wetland.

The DNR Public Waters Inventory identified DNR Public Water Wetland 62-248 W (unnamed) within the review area.

MPCA 303d Impaired Waters List

There are no MPCA 303d Impaired Waters within one mile of the project site.

Special Waters

The project site does not overlap with any trout stream/lake, wildlife lake, migratory waterfowl feeding/resting lake, or outstanding resource value water.

- ii. *Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.*

No springs, seeps, or aquifers are documented on the site. None were observed during an onsite wetland delineation. The nearest mapped springs are 1-2 miles away, both northwest and southwest of the site (MnDNR, 2025). There is one documented well on project site, well number 668484, and 12 wells within 500 feet of the site as determined using the Minnesota Department of Health’s County Well Index (MDH, 2025; Appendix 1, Figure 8). Water levels recorded in wells around the site were recorded at elevations between 718 and 995 feet above sea level, which correspond to depths below ground surface of 52 – 309 feet. Additional information about these wells is listed in Table 10 below.

The site is not within the Minnesota Department of Health wellhead protection area (MDH,2025). The Prairie Du Chien-Jordan Aquifer is the closest well to the site and is not a part of a drinking water supply management area (DWSMA, 2025).

Table 10. Domestic Water Wells Located 500 feet from the Project Site

Well No.	Aptos Narrow Surface Elevation(ft)	Use	Depth (ft)	Cased Depth (ft)	Depth to Static Water Level (ft)	Aquifer	Estimated Distance to Project Site (ft)
668484	1025	Irrigation	550	378	232	Prairie Du Chien Jordan	0
670759	1043	Domestic	350	332	280	Prairie Du Chien Group	80
110433	1040	Domestic	141	112	71	Decorah-Platteville	240
531419	1040	Domestic	345	306	245	Prairie Du Chien Group	151
142328	1037	Domestic	155	140	65	Platteville	94
133503	1027	Domestic	315	286	245	St. Peter	73
401868	1049	Domestic	325	270	265	St. Peter	356
110412	1047	Other	141	114	52	Decorah	222
1000020437	1026	Domestic	NA	NA	NA	NA	244



Well No.	Aptos Narrow Surface Elevation(ft)	Use	Depth (ft)	Cased Depth (ft)	Depth to Static Water Level (ft)	Aquifer	Estimated Distance to Project Site (ft)
1000023260	1039	Domestic	NA	NA	NA	NA	112
1000025204	1037	Domestic	181	140	NA	NA	94
850408	1037	Domestic	360	325	251	St. Peter	85
852523	1027	Domestic	360	230	309	Prairie Du Chien Group	69

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

MCES provides wastewater treatment for the City of Maplewood sanitary sewer flows. Treatment systems include the biological or chemical treatment to remove targeted contaminants from the wastewater.

The project is expected to produce domestic wastewater that is typical of a residential development. In the City of Maplewood 2040 Comprehensive Sanitary Sewer Plan several trunk sanitary sewer improvements have been identified to meet future needs of growth areas, address public health issues or to eliminate the need for existing lift stations. The schedule for a number of these improvements will be directly related to development activity in the area. Many of these improvements include sewer extensions along Carter Ave, Century Ave S, Henry Lane and Sterling Street to connect to MCES Carver Lake Interceptor.

There will be several internal sanitary sewer lines extending throughout the project site that connect and flow to the main trunk sewer. The project is proposed to be connected to the existing stub in the northwest corner of the property to serve the entire site. An additional option being explored is connecting into the City of Woodbury's sanitary stub located in the southeast corner (off Century Ave) to serve the townhomes. By splitting the sanitary sewer into north and south service areas, it will lead to less construction activities around the central wetland area, allowing for shallower sanitary sewer in the north portion of the site. It will also help with future maintenance.

The City's sanitary sewer system is broken up into 74 sewer districts. These districts consist of only a collection system, which connects and discharges to MCES interceptors. The collection systems include sewer services, trunk sewer pipe, lateral sewer pipe, manholes, and lift stations which collect the sewer flow from private residential, commercial, and industrial properties within the City. In addition to public systems that discharge into the regional wastewater treatment system, there are 102 subsurface sewage treatment systems

(SSTS) in the City of Maplewood. The number of SSTS continues to decline as the City is able to phase them out and connect those properties to the public sanitary sewer system. (City of Maplewood, 2019). The project is expected to add approximately 145 pounds per day to the sanitary sewer which equates to approximately 17 gallons per day, which is within the capacity of the MCES Metro Plant.

MCES owns and operates the system of sewer interceptors that conveys wastewater across City boundaries to regional treatment facilities. The site connects to the MCES system at the MCES Woodbury Interceptor (I-MW-410). The connection point is located at junction of Lower Afton Road east and Century Ave S. The MCES Metro Plant currently serves 1.8 million people and has the capacity to treat 251 million gallons per day. Treated water is then discharged to the Mississippi River ([Metropolitan Council](#)).

- 2) *If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.*

Wastewater will not be discharged to a subsurface sewage treatment system.

- 3) *If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.*

Wastewater will be treated at the MCES Metro Plant in St. Paul which discharges treated water into the Mississippi River.

- ii. *Stormwater - Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.*

Runoff

Eastern Minnesota climate trends project less precipitation, and more variable and extreme conditions, such as more variable precipitation that could lead to more drought periods. It is expected that more precipitation will be delivered in both large quantities in intense storm events,



accompanied with periods of long drought conditions. This has the effect of creating more flood events, increased runoff, and potentially, less infiltration of precipitation into the groundwater. Due to the nature of the site, most runoff will remain on-site by traveling to the wetlands or into the constructed stormwater ponds which will be connected to a storm sewer line in the north, along Afton Rd.

Pre-Construction Site Runoff

The existing runoff from the project site likely contains sediments typical of an area dominated by grasses and brush. Stormwater runoff drains into incidental wetlands that act as stormwater ponds. Runoff also drains to wetlands and waterbodies on site and the surrounding area. Ultimately, the combined runoff drains to the Mississippi River.

Construction Site Runoff

During construction, there will likely be an increase in suspended solids in the stormwater runoff, along with a possible increase in oil/grease. Stormwater and erosion control BMPs will be installed on the project site prior to construction to reduce erosion and sediment loading into stormwater runoff. Spill kits and drip trays are used to minimize oil/grease during construction vehicle fueling and maintenance operations. See details on these BMPs that will be used on site below.

Stormwater and Erosion Control BMPs

The entire 92 acres of the project site will be altered by grading. Prior to construction, the project proposer will submit an application to the MPCA for coverage under the NPDES/SDS General Permit. Best management practices (BMPs) will be installed prior to and maintained throughout construction to reduce erosion and sediment loading into stormwater runoff. This will ensure that potential adverse effects from construction-related sediment and erosion will be reduced in the surrounding area. To confirm that the BMPs are effectively reducing erosion and sediment loading, the BMPs will be inspected once a week or within 24 hours after each rainfall event that exceeds 0.5 inches. Some of the main BMPs that will be implemented on the construction site include:

- Installation and maintenance of silt fence and other perimeter controls prior to initiation of earthwork. These BMPs filter and slow construction stormwater and stay in place until ground cover has been established on exposed areas.
- Periodic street cleaning and installation of a rock construction entrance to reduce tracking of dirt onto public streets.
- Stabilization of exposed soils within the time limits specified in the General NPDES permit.
- Inlet protection around any stormwater inlets on site.
- Energy dissipation, such as riprap, installed at storm sewer outfalls.
- Use of cover crops, native seed mixes, sod, and landscaping to stabilize exposed surface soils after final grading.
- Use of drip trays and spill kits during construction vehicle fueling and maintenance operations.

A complete list of BMPs will be described in the Storm Water Pollution Prevention Plan (SWPPP) prepared for this project as part of the NPDES permit.

Post-Construction Site Runoff

The primary land use of the project site will change from brush/grassland to residential use. After construction, stormwater runoff from the site may contain fertilizers and chemicals from residential lawns. Runoff onsite will drain to the multiple wetlands onsite and to the incidental wetlands that will be converted to stormwater ponds. All Wetland Conservation Act, WCA, regulated wetlands will have



a natural buffer to filter runoff from impervious surfaces and residential lawns. The natural wetlands and stormwater ponds will provide a mechanism to filter some of those chemical constituents onsite, thus reducing movement of pollutants to downstream waters.

Development of the site will create approximately 5 acres of new roads and driveways. To mitigate for the increase of impervious surface, approximately 43 acres of disturbed soils around wetlands, ponds, and natural areas will be stabilized with native vegetation.

The stormwater basins were sized using the precipitation models in Atlas 14, which incorporates increased rainfall density due to projected climate change. The principle used in project design is to provide adequate freeboard space to floors or grade adjacent to the building of a minimum of 1 foot above the outlet elevation of the stormwater basins and at least 2 feet above any pond's 100-year water level, whichever is greater. For this site, the stormwater basins designed meet the stormwater requirements of the City of Maplewood, Ramsey Washington Metro Watershed District, and the MPCA.

Since the proposed project will include stormwater ponds, it is expected that peak stormwater flows off site will decrease in favor of more gradual flows from basin overflow points to wetlands since these features will slow and store water allowing for groundwater infiltration. The majority of the previous golf course site drained directly into the existing wetlands with no stormwater pretreatment.

Stormwater runoff quality and quantity will be designed to meet the City of Maplewood, Ramsey Washington Metro Watershed District, and the MPCA's National Pollutant Discharge and State Disposal System (NPDES/SDS).

- iii. *Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.*

Water Appropriation

Temporary groundwater appropriation may be necessary during construction for mass grading and to install utilities. Temporary construction dewatering greater than 10,000 gallons per day or 1 million gallons per year and less than 50 million gallons per year will require authorization under DNR General Permit 1997-0005.

Well Abandonment

Based on MDH's Minnesota County Well Index, there was one irrigation well found on site with an ID of 668484. Thus, there will be need for well abandonment. It is recommended that any wells be sealed prior to redevelopment and a survey of the property, prior to redevelopment, to identify any undocumented wells. If unidentified wells are found, the Department of Health Well division will be notified and determine if the well is in service or not. Wells will be sealed per the MDH well sealing requirements by a licensed well driller.

Connection to Existing Municipal Water Supply



Century Ponds will be connected to St. Paul Regional Water Services. Saint Paul Regional Water Services (SPRWS) currently uses the Mississippi River as its primary source water. As a secondary source of drinking water, SPRWS operates ten groundwater wells. These wells are available for pumping in an emergency where the surface water supply is not available. Groundwater can be pulled from the Prairie Du Chien—Jordan Aquifer at well depths ranging from 420-465 feet below the ground. To protect the groundwater supply from contamination, SPRWS has developed a wellhead protection (WHP) plan.

As of 2023, SPRWS serves approximately 450,000 customers, second only to Minneapolis as the largest water utility in the state. In order to meet this demand for reliable, high-quality drinking water, an average of about 39 million gallons of water per day is pumped through the distribution system. The distribution system is composed of more than 1,100 miles of water main, 10,000 hydrants, and 95,000 service lines (SPRWS, 2023). The city of Maplewood is projected to grow from 17,000 households in 2020 to 18,900 in 2030 (City of Maplewood, 2019). At this rate of growth, the SPRWS will be able to adequately accommodate new customers, such as the future residence of Century Ponds.

Water quality is an ongoing issue for SPRWS, though is not affected by the project. SPRWS tests water for more than 100 regulated contaminants. Some of the more notable contaminants are lead and PFAS. In 2018, SPRWS found higher than the maximum 15 parts per billion levels of lead in 2 out of 50 homes. Water coming treated by SPRWS treatment is below the regulated safe levels for lead. The problem comes from aging infrastructure and plumbing. With new infrastructure being put in place, this issue will not impact residents of Century Ponds. The project is expecting to increase water usage by 58,995 gallons per day.

iv. *Surface Waters*

- a) *Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.*

Wetlands within the project site area are regulated at the state level by the Wetland Conservation Act (WCA) which is administered by the Minnesota Board of Water and Soil Resources (BWSR). The Ramsey Washington Metro Watershed District aides in the administration of WCA where the project site is located. At the federal level, wetlands are regulated under Section 404 of the Clean Water Act (CWA) that is administered by the U.S. Army Corps of Engineers (COE) if these features are determined jurisdictional. There is one MN DNR public waters wetland within the project site. However, there is no planned work that will take place below the ordinary high water mark of the wetland. Thus, an MN DNR public waters permit will not be necessary for this project.

Impacts to Wetlands on Site

Based on the concept design for the site, it is not anticipated that the proposed residential development will impact any WCA regulated wetlands on site. WCA incidental wetlands will be filled and graded for residential purposes or repurposed into stormwater ponds. The WCA incidental wetlands are wetlands that have been created in historic upland areas to create ponding areas for the golf course.



Additionally, the wetlands on site are not likely regulated by the COE since there is no continuous surface water connection to regulated waters of the U.S. A COE approved jurisdictional determination will be obtained to confirm the regulatory status of these wetlands.

Wetland Buffer

Wetlands that will be preserved on site will need to comply with the City of Maplewood's buffer requirements. The City of Maplewood classifies wetlands into three categories, Manage A, Manage B, and Manage C, based on the quality of the wetland. Based on the wetland classification, the City of Maplewood has buffer requirements associated with each wetland category. The WCA regulated wetlands on site include both Manage B and Manage C wetlands. Manage B wetlands require a minimum buffer width of 50 feet and Manage C wetlands require a minimum buffer width of 75 feet (Code of Ordinances City of Maplewood, Minnesota, 2024).

- b) *Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.*

No lakes, streams, intermittent channels, or county/judicial ditches were identified on the project site from the wetland delineation (Appendix A, Figure 6).

Surface water flow paths will be created through use of new curb and gutter construction, stormwater drains, and stormwater ponds. As discussed above, stormwater ponds are sized to accommodate anticipated rainfalls projected by Atlas 14.

13. Contamination/Hazardous Materials/Wastes

- a. *Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.*

The Minnesota Pollution Control Agency’s (MPCA) “What’s in my Neighborhood” (WIMN) search indicated that there is one known or documented existing contamination hazard in the project site boundaries – an active and permitted hazardous waste generator, very small quantity, though the business (The Ponds Golf Course) is no longer active. The generator will be removed prior to the construction grading and disposed of at an approved waste facility. Within 0.5 miles of the project, there are 41 known or documented contamination hazards. See information on these sites below in Table 11.

Table 11. What’s in My Neighborhood Sites within 0.5 Miles of the Project Site

Site ID	Type	Name	Status	Within Project Site
120546	Hazardous Waste, Very small quantity generator	Ponds at Battle Creek	Active	Yes
124641	Construction Stormwater	Ramsey County Correctional Facility	Inactive	No
49903	Hazardous Waste, Minimal quantity generator	HealthEast Woodbury Clinic-Nurse Midwifery	Active	No
121067	Hazardous Waste, Very small quantity generator	Minnesota Urology Cornerstone Medical	Active	No
2699	Construction Stormwater	Woodwinds Health Campus	Inactive	No
157789	Hazardous Waste	HealthPartners Woodbury Plastics	Active	No
59328	Hazardous Waste	Central Regional Pathology Lab Corp	Active	No
139866	Hazardous Waste	Metro OB GYN - Woodbury	Active	No
258253	Construction Stormwater	M Health Woodwinds Hospital MRI Replacement	Active	No
90368	Construction Stormwater	Valley View Estates	Inactive	No
124776	Hazardous Waste, Very small quantity generator	Midwest Surgery Center	Active	No
224752	Construction Stormwater	Aris Pediatric Health Services	Active	No
61343	Multiple Activities	HealthEast Woodwinds Health Campus	Active	No
7397	Construction Stormwater	Carver Lake Business Park	Inactive	No
193769	Integrated Remediation	Williams Pipeline Spill	Active	No
137150	Hazardous Waste, Very small quantity generator	Twin Cities Orthopedics	Active	No

Site ID	Type	Name	Status	Within Project Site
8254	Construction Stormwater	Lakeview Townhomes 2nd Addition	Inactive	No
185994	Petroleum Remediation, Leak Site	Ramsey Co Workhouse	Active	No
137523	Hazardous Waste, Very small quantity generator	Summit Orthopedics - Woodbury	Active	No
223234	Hazardous Waste, Very small quantity generator	Metropolitan Obstetrics & Gynecology	Active	No
133562	Construction Stormwater	Woodwinds Campus North Phase I	Inactive	No
147520	Hazardous Waste, Very small quantity generator	Saint Paul Eye Clinic Woodbury PA	Active	No
251600	Solid Waste	Maplewood Fire Station 4	Active	No
37122	Hazardous Waste, Very small quantity generator	Nsp - Maplewood Propane Plant	Active	No
124598	Hazardous Waste, Very small quantity generator	MN Oncology Hematology - Lake Rd	Active	No
84277	Hazardous Waste	MN Oncology Hematology PA - Woodbury	Inactive	No
136435	Hazardous Waste	RocheFord Plastic Surgery	Active	No
157461	Hazardous Waste	Red Rock Senior Living	Active	No
136942	Hazardous Waste, Small quantity generator	Midwest ENT Specialists	Active	No
103040	Industrial Stormwater	Ramsey County Corrections Site	Inactive	No
213329	Hazardous Waste, Very small quantity generator	HealthEast Clinics-Woodwinds	Active	No
119782	Hazardous Waste, Very small quantity generator	Center for Diagnostic Imaging & CDI ASC	Active	No
125813	Construction Stormwater	Ramsey Co. Corrections Dr	Inactive	No
141418	Construction Stormwater	Edgewood Vista	Active	No
249811	Multiple Activities	Lower Afton Apartments	Active	No
232233	Construction Stormwater	Wooddale Office Flex Space	Active	No
155351	Construction Stormwater	Oak Center Expansion and Remodel	Active	No
194632	Petroleum Remediation, Leak Site	Blasjo Residence	Active	No
250749	Construction Stormwater	Lower Afton Apartments	Active	No
97927	Hazardous Waste, Very small quantity generator	Reproductive Med & Infert Association	Active	No
236450	Hazardous Waste, Very small quantity generator	ResCare	Active	No

Source: MPCA's "What's in My Neighborhood" Database
<https://pca-gis02.pca.state.mn.us/wimn2/index.html>

- b. *Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.*

The proposed project is a residential subdivision. Waste material and debris associated with construction will be contained on site and disposed of in a manner consistent with State Laws and City of Maplewood Ordinances. Once constructed, the project should only generate municipal solid waste and household hazardous waste.

Construction debris will be stored in dumpsters on site that will be hauled to a permitted MPCA solid waste facility. Where practical, construction debris will be recycled to avoid and minimize adverse effects from the generation/storage of solid waste. Trees and brush cut down prior to construction will likely be chipped, composted, and/or reused. Any regulated construction materials will be properly disposed of in accordance with MPCA and Minnesota Department of Health (MDH) regulatory requirements. It is anticipated that the site grading will balance cut/fill of soil on site and avoid the need for excess soil disposal.

Once constructed, the project will generate municipal solid waste and very small quantities of hazardous waste. Most solid waste is expected to include organics, paper, other waste, and plastic. Residents will follow a routine disposal plan using solid waste haulers licensed by the City of Maplewood, contracted individually.

The Ramsey County Solid Waste Management Plan estimated that 762,506 tons of Municipal Solid waste was generated in 2016. (Ramsey County, 2017). Dividing this value by the population of 533,677 in 2015 and converting to lbs., the value of 8.6 lbs. of municipal waste generated per person per day was found (US Census Bureau, n.d). The following analysis provides a calculation based on the number of units as established in the site plan:

Land Use	Residential Units	Rate (lbs/person/day)	Rate (tons/person/yr)	Persons per household	Total (tons/yr)
Low, Medium, Density Residential	207	8.6	1.4	2.41	698

- c. *Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

During construction, the proposer will follow the MPCA's (National Pollutant Discharge Elimination System) NPDES permit requirements and City ordinances to avoid and minimize effects from the use or storage of hazardous materials/chemicals. Refueling of construction equipment will follow best management practices such as using drip trays when possible and having a spill kit on hand. The contractor will be required to clean up all fuel spills and report spills of over 5 gallons to the Minnesota State Duty Officer. The contractor will also contain any washout operations (including concrete, paint, etc.) The containment area will be posted with signs and inspected so that it does not generate any contaminated runoff.

- d. *Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling*

During construction, the project will follow the NPDES permit requirements and city ordinances to avoid and minimize effects from the storage of hazardous waste. Generation of small quantities of household hazardous waste will occur when residents are living on the property. Ramsey County provides free recycling and disposal of hazardous wastes at the Household Hazardous Waste Facility located in the nearby city of Saint Paul.

14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

- a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The habitats and vegetation present on site are primarily brush/grassland and wetlands with no mapped Minnesota Biological Survey (MBS) sites or Minnesota DNR Native Plant Communities (NPC). In addition to brush/grassland and wetlands, some native and non-native flowering plants are located near the abandoned clubhouse, around wetlands, and sporadically throughout the entire site. There are some trees located along the western and southeastern boundary of the project site.

The mature trees could provide roosting habitat for bats and birds. Due to the presence of native and non-native flowering plants, the site can be classified as a suitable habitat for various small mammals and pollinating insects. The presence of small fish within the wetlands is unknown at this time.

- b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (N/A) and/or correspondence number (MCE-2025-00184) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

State

A MN DNR Natural Heritage Information System (NHIS) database request was sent through the Minnesota Conservation Explorer to determine whether known locations of state rare plant, animal species, or other significant features are known to occur within a one-mile radius of the project site (MnDNR, 2023d.) Additionally, a natural resource study was conducted by Midwest Natural Resources on behalf of Ramsey County in 2021. The MN DNR issued an NHIS review letter stating their findings (Appendix D). Their findings are summarized below:

- Henslow's sparrows (*Centronyx henslowii*) are a state-listed endangered bird and were documented by Midwest Natural Resources north of the project site in 2021. Suitable nesting habitat for this species includes uncultivated and unmowed grasslands and old fields with standing, dead vegetation, and a substantial litter layer.
- Sullivan's milkweed (*Asclepias sullivantii*) is a state-listed threatened plant species and was documented within the project area by Midwest Natural Resources in 2021 as likely having been planted.
- Several plant species of special concern were documented by Midwest Natural Resources in 2021 and include white wild indigo (*Baptisia lactea var. lactea*), rattlesnake master (*Eryngium yuccifolium*), Kentucky coffee tree (*Gymnocladus dioica*), creeping juniper (*Juniperus horizontalis*), and swamp white oak (*Quercus bicolor*). These were identified as occurring in the sporadic native plantings throughout the site.
- During the active season (approximately April-November), bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying

roosting habitat, especially during pup rearing season when females are forming maternity roosting colonies and pups cannot fly yet.

Federal

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online tool was used to obtain information on federally listed threatened and endangered species habitat areas that overlap with the project site (USFWS, 2025a). The species from the IPaC tool are listed below in Table 12. Additionally, there is one critical habitat listed to occur throughout the project site.

Table 12. Federal Rare Wildlife and Plant Species Potentially in the Project Vicinity

Common Name	Scientific Name	Status		Key Habitats	Potential Suitable Habitat ²
		Federal ¹	State		
Mammals					
Northern long-eared bat	<i>Myotis septentrionalis</i>	E	SC	Forests during spring and summer, caves and mines during winter	Roosting location in trees located on the west boundary of project site
Birds					
Whooping crane	<i>Grus americana</i>	EXPN	NE	Migrating birds may stop in wetlands, along lakes, meadows, swales, pastures, or agricultural fields	Migrating birds may stop at wetlands throughout the project site
Clams					
Higgins Eye	<i>Lampsilis higginsii</i>	E	--	Large rivers, usually found in areas with deep water and moderate currents	N
Salamander Mussel	<i>Simpsonaias ambigua</i>	PE	--	Rivers, streams, and in some lakes with natural flow regimes	N
Insects					
Monarch butterfly	<i>Danaus plexippus</i>	PT	W	Fields and parks where milkweed and native plants are common	Pockets of suitable habitat located around wetland areas and near the abandoned clubhouse
Rusty patched bumble bee	<i>Bombus affinis</i>	E	SC	Grasslands and tallgrass prairie, flowering plants	Documented sightings in 2019 and 2021 in southern portion of site. Additional documented sighting in July 2024 in the northwestern pond area.
Critical Habitat					
Rusty patched bumble bee	<i>Bombus affinis</i>	E	SC	Grasslands and tallgrass prairie, flowering plants	Project site overlaps the critical habitat.

¹ Federal and State Status Codes: E = Endangered; T = Threatened; PE = Proposed endangered; PT = Proposed threatened; C = Candidate; SC = Special Concern; EXPN = Experimental Population, Non-Essential; W = Watchlist

²Habitat Codes: N = No, no records of species within project site and no suitable habitat is present

Northern long-eared bat: The northern long-eared bat hibernates in caves and mines during the winter and spends the summer roosting in cavities and crevices of both live trees and snags (dead trees). At dusk, the bats usually fly through the understory of forested areas and feed on a variety of

insect species (USFWS, 2020). As of February 2025, MN DNR does not show documented maternity roost trees or hibernacula entrances of northern long-eared bats occurring within the project or within the immediate project vicinity (MN DNR & USFWS, 2025).

Whooping cranes: The whooping crane breeds, migrates, winters, and forages in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, pastures and agricultural fields (USFWS). The USFWS notes that any whooping cranes that would be present are part of an experimental, non-essential population. This means a population that has been established within its historical range to aid recovery of the species. As such those individuals are not protected under the Federal Endangered Species Act.

Monarch butterfly: The monarch butterfly prefers field and park habitat where milkweed (*Asclepias*) and native plants are common. This is a common insect in Minnesota that is seen throughout the summer (MN DNR, 2022).

Rusty patched bumble bee: The USFWS Rusty Patched Bumble Bee Map indicates that the project site falls within the High Potential Zone. The high potential zones are areas the bumble bee will likely be present. The rusty patched bumble bee occupies grassland and tallgrass prairie areas and feeds on a variety of flowering plants throughout the spring to fall until it goes into hibernation in the winter (USFWS, 2017). In 2019 and 2021, the rusty patched bumble bee was observed on the southwestern portion of the site. Additionally, in July 2024, the Friends of Maplewood Nature documented the presence of the rusty patched bumble bee in the northwestern pond area.

Critical habitat: The project site overlaps the critical habitat of the rusty patched bumble bee. The rusty patched bumble bee can be found in a variety of habitats. They require nectar and pollen from diverse and abundant flowers. There have been several documented sights of the rusty patched bumble bee on site.

- c. *Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.*

Impacts to protected or sensitive resources may occur where there is suitable habitat present on the project site.

- There is some potential suitable habitat for the Henslow's sparrow when the site is unmowed and not maintained. Since the golf course closed in 2021, Ramsey County mows the curb areas along Century Ave, Lower Afton Rd, and Linwood Ave every week and the entire site twice a year. During the unmaintained durations, there may be suitable habitat for the Henslow's sparrow.
- Sullivant's milkweed, a state listed threatened plant species, may potentially be impacted as part of the development. As stated in the 2021 Ramsey County Natural Resources Report, Sullivant's milkweed was found in the native plantings on site and was likely planted instead of occurring naturally.
- Plant species of special concern including white wild indigo, rattlesnake master, Kentucky coffee tree, creeping juniper, and swamp white oak habitats may be impacted by the development through ground disturbance and tree clearing activities.

- There are no known maternity roosts or hibernacula for the northern long eared bat in the project vicinity (MN DNR & USFWS, 2021). Construction of the project will result in the removal of approximately 169 trees that may be used by bats and migratory birds. The loss of tree habitat will result in migratory birds, bald/golden eagles, and any potential bat species to relocate to nearby adjacent habitat. Tree clearing is not expected to substantially impact NLEB behavioral patterns such as breeding, feeding, or sheltering.
- The whooping crane would only be a rare mobile visitor to the site during migration. They would likely be deterred by the project construction activities and mobilize to other suitable habitat in the surrounding area.
- In the existing native planting areas on site predominately near the wetland areas, there are some pockets of milkweed habitat for the monarch butterfly.
- The rusty patched bumble bee will likely be encountered during construction in areas around wetlands and near the abandoned clubhouse where there is suitable foraging habitat present. Since the existing trees are mostly small landscape trees and not a large contiguous patch of trees, there is likely minimal overwintering habitat for the rusty patched bumble bee on site.

During construction, the mobile wildlife present on the project site will likely disperse to adjacent and/or similar habitats. However, less mobile species may likely experience more adverse effects from construction. During the final stages of the proposed project, graded soils will be stabilized with turf grass, planted trees, and native vegetation. Areas previously designated with native and non-native flowering plants may be disturbed during construction, but additional areas containing native herbaceous plants will be planted throughout the site which will provide suitable habitat and resources for small birds, mammals, and insects, including pollinators. The native seed mixtures in the wetland buffers and native enhancement areas will include BWSR-developed native seed mixtures appropriate for those areas. These seed mixtures will provide a diversity of native grasses and forbs that will create habitat for small birds, mammals, and insects. The establishment of these native seed mixtures will create perennial vegetation that is adapted to the regional climate and will likely be resilient to changes in the climate. Although a small portion of the preexisting plant habitat will be removed during construction, the proposed project will replace approximately three times the amount of plant habitat.

BMPs consisting of erosion control measures, listed under Item ii in the Water Resources section, will be installed on the project site prior to construction to control invasive species and weeds to the extent practicable. Since the project site is currently in an abandoned golf course, most of the site has been manipulated to reduce weedy and invasive species. After construction and grading are complete, the exposed soil will be planted with turf grass (for residential units) or approved native seed mixes designed to establish desirable vegetation to mitigate for the risk of invasive species.

- d. *Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources.*

The project proposer is aware of the following guidelines for the protected species listed above. These guidelines will ensure that impacts to protected species are avoided or minimized to the extent possible.

- Henslow's sparrow: Based on the MN DNR's guidance for the site, initial disturbance of the site in areas with suitable nesting habitat should be avoided during the breeding season between May 15 and July 15 per MN DNR guidance. If avoidance during the breeding

season is not feasible, areas that will be disturbed that contain suitable nesting habitat will first need to be surveyed for active nests.

- Sullivant's milkweed: Per the MN DNR's guidance, if the project is planning to avoid the Sullivant's milkweed, documentation of avoidance will be sent to the DNR. If the project cannot avoid impacts to Sullivant's milkweed, a permit to take with mitigation will be provided to the DNR.
- Northern long-eared bat: The project proposer is aware of the USFWS recommended winter tree clearing timeframe of November 15th to March 31st. Additionally, the project is aware of the pup rearing season and the recommended MN DNR tree removal avoidance dates of June 1st to August 15th.

In addition to the guidelines outlined above, the project proposer has identified measures to avoid, minimize, and mitigate impacts to protected species found on site.

- Rusty patched bumble bee and monarch butterfly: The development will include 21 acres of enhancement areas throughout the site. These areas will be seeded with native seed mix and provide a larger contiguous area of native foraging habitat for wildlife and pollinator species. The site will minimize the use of herbicides throughout these native planting areas and avoid the application of insecticides and fungicides.
 - The USFWS has been contacted throughout the planning stages of this project. The USFWS has stated that since the project does not have a federal nexus, the project proposer is not federally subject to the Endangered Species Act requirements. The USFWS is aware that the rusty patched bumble bee has been seen on the site and recommended that voluntary foraging enhancement on the site could help mitigate potential impacts to pollinator species. Additionally, though the rusty patched bumble bee is not a MN DNR protected species, the MN DNR did recommend reseeded disturbed soils with native species of grasses and forbs using BWSR Seed Mixes and MnDOT Seed Mixes. As stated above, the project is committed to enhancing a large contiguous area of native habitat to provide an abundance of foraging and nesting habitat for pollinator and wildlife species.
- Plant species of special concern:
 - 8 swamp white oaks will be removed and 4 swamp white oaks will be preserved. The proposed project intends to plant an additional 20 swamp white oaks throughout the property.
 - One Kentucky coffee tree was documented on the project site and will remain undisturbed.
 - White wild indigo, rattlesnake master, and creeping juniper are present in the sporadic native plantings on site. Impacts to some of these sporadic plantings will occur; however, other native plantings will be preserved and included in a larger contiguous native planting area.
- Impacts to natural wetlands and their surrounding buffers will be avoided. The wetland buffers will be enhanced with native vegetation.
- Any slopes requiring erosion control blanket will use biodegradable fabrics (natural netting) to mitigate impacts to wildlife.
- Trees that will be cleared during construction will be replaced throughout the site per the City's tree ordinance.

- There is minimal available overwintering habitat for the rusty patched bumble bee since the majority of the trees on site are landscaped trees. The planted and preserved trees will provide similar overwintering habitat to what is currently available for the bee today.

15. Historic Properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

An environmental review was requested from the Minnesota State Historic Preservation Office (SHPO) on March 1, 2025, to determine if there were any historical or archaeological sites identified on site. SHPO states that project reviews are currently taking between 45-60 days to complete. A public review was completed on 4/16/2025, using the Statewide Historic Inventory Portal (MnSHIP). MnSHIP is an inventory of more than 120,000 historic and architectural properties that is maintained by SHPO (MnSHIP, 2025). MnSHIP was reviewed for potential historic resources present on or near the project site. There were no resources identified on the project site. The closest MnSHIP point is located about 0.75 miles southeast of the project site and is a bridge along I-494.

In addition to MnSHIP, the Office of the State Archaeologist (OSA) maintains official archaeological site inventory for Minnesota. The inventory contains archaeological sites and Minnesota Indian Affairs Council areas of interest. OSA was reviewed for potential archaeological sites and Minnesota Indians Affairs Council (MIAC). There is one MIAC site located 0.75 miles to the west (Figure 7), and four OSA sites located 0.75 miles to the west and one OSA site located 0.5 miles to the northeast (Figure 8).

At this time, there are no anticipated effects to historic properties that are within a mile of the project site.

Review of historic aerials (ranging from 1937-1964) from the University of Minnesota's John R. Borchert Map Library has shown the northern portion of the site was used for agricultural purposes. Based on aerials between 1937 and 1953 the southwest portion of the site was also used for agriculture with a small farmstead property located in this area. An aerial from 1964 shows that the farmstead had decreased in size and land cover in the southwest portion no longer resembling that of Agriculture, which implies that agricultural activity ceased in this area.

On April 23, 2025, the SHPO response was received (Appendix F). It was determined that there are no properties listed in the National or State Registers of Historic Places, or within the Historic Sites Network, located within the proposed project area. Additionally, a Phase I archeological survey was recommended due to archaeological sites being in the vicinity, but the survey is not required.

16. Visual

- a. *Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.*

The current views from the site include brush and grassland, wetlands the St. Paul Police Training Facility and lower density residential to the west and south, Lower Afton Road and the Ramsey County Correctional Facility to the north, and Century Avenue & high-density residential uses within Woodbury city limits to the east. Unique scenic views include several natural wetlands with native vegetation and wildlife on site.

Century Ponds will not create any unusual visual impacts. The visual effect will transition views from predominately open brush and grassland to single family homes, townhomes, public access roads, and stormwater basins. Views near the 43 acres of wetlands and natural area will be preserved.

The project will not include intense lighting that will cause glare that could potentially impacted the vehicular traffic on Century Ave S and Lower Afton Rd. The outdoor lighting along the residential streets will be strategically placed to benefit residents as they navigate the development, and the streetlights will not direct any light towards sensitive areas. Additionally, the development will not produce any vapor plumes that could cause a negative visual impact on the surrounding landscape.

The proposed Century Ponds development includes a plan to protect, enhance and create new native areas. In all, the site will contain about 27 acres of natural areas in addition to the 16 acres of wetlands and ponds. After construction, close to 50% of the site will include native habitat. This conservation of natural areas will create a natural aesthetic for the future residents of Century Ponds to enjoy.

Landscape plantings will be included in the development per the City of Maplewood landscape ordinance. Overstory trees are required at regular intervals along the road to help define the road edge, to buffer pedestrians from vehicles, and to provide shade. The overstory trees shall be located in a planting strip at least five feet wide between curb and sidewalk, or in a planting structure of design acceptable to the city. All areas of land not occupied by buildings, parking, driveways, sidewalks or other hard surface shall be sodded or mulched and landscaped with approved ground cover, flowers, shrubbery, and trees.

17. Air

- a. *Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.*

The proposed residential subdivision will generate small sources of stationary source emissions through home through natural gas/electricity used in heating and cooling. This will result in direct and indirect sources of stationary greenhouse gas emissions (GHG) at a small quantity. Emissions are expected to be similar to those of the single-family and multi-family residential units near the site. Mitigation measures are not being considered.

- b. *Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.*

The proposed residential subdivision will generate a small increase in carbon monoxide levels associated with an increase in residential passenger vehicle trips. The project does not require an indirect source permit. No baseline air quality monitoring or modeling is proposed and no measures to mitigate for the increase in vehicle related emissions are being considered.

- c. *Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.*

Dust will be generated during the construction process on the site. The contractors will be required to control dust by using watering trucks. The adjacent single family residential homes, apartment complexes, retirement community, St. Paul Police shooting range, and correctional facility are the nearest receptors of the dust. Mitigation of the short-term dust and odors impacts will be managed through proper coordination and construction planning.

18. Greenhouse Gas (GHG) Emissions Carbon Footprint

- a. *GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.*

Greenhouse gases (GHGs) are emitted by multiple sources during the project’s lifetime. These sources include:

- **Construction vehicles:** This emission is from medium- and heavy-duty construction equipment powered by diesel.
- **Land use conversion:** This is an emission due to the changes in carbon fluxes from the conversion of fallow golf course grasses to residential development.
- **Off-site utilities:** Purchased electricity, natural gas, and municipal water are all associated with greenhouse gas emissions.
- **Residential vehicle usage:** This emission is associated with personal vehicle usage of residents of the proposed development. This source directly emits CO₂, CH₄, and N₂O.
- **Off-site waste management:** Solid waste in Maplewood is primarily disposed of through recycling, incineration, and landfill all of which are associated with emissions of greenhouse gases.

The June 2024 “Environmental assessment worksheet (EAW) guidance” document from the EQB guided the process of quantifying the GHG emissions from each of these sources (MN EQB, 2024). Analysis results are below in Table 13. The majority of GHG emissions for the project were associated with the operations project phase. There are no existing GHG emissions.

Table 13. Sources and Quantification of GHG emissions

ID	Category	Scope	Project Phase	Type of Emission	CO ₂ e Emissions (short tons/year)
Source 1	Direct Emissions	Scope 1	Construction	Combustion (mobile source)	10
Source 2	Direct Emissions	Scope 1	Construction	Land Use (area)	22
Source 3	Indirect Emissions	Scope 2	Operations	Off-site utilities (grid-based)	3,102
Source 4	Direct Emissions	Scope 1	Operations	Combustion (mobile source)	2,521
Source 5	Indirect emissions	Scope 3	Operations	Off-site waste management (area)	201
TOTAL					5,856

Note: The total tons CO₂e/year is reported as the sum of unrounded values.

The values in Table 13 were calculated using the procedures described below.

- Source 1: Construction Vehicle Use

Mobile emissions for construction equipment (medium- and heavy-duty vehicles, diesel) were modeled. The project was assumed to have a typical construction season of 30 weeks and schedule of 6 workdays per week. Research on typical construction vehicle usage and emissions is sparse and thus engineering judgement was used to assume there would be an average of 5 medium/heavy duty vehicles per day and that these vehicles would operate for 9 hours/day. Typical fuel usage values were found online for excavators (assumed to represent typical construction equipment) (Caterpillar, 2016). An estimated annual fuel volume of 24,300 gal/year was calculated and then the EPA Simplified GHG Emissions Calculator was used to calculate the yearly emissions (US EPA, 2023a). The calculated yearly emissions were then multiplied by the expected construction period of 2 years and divided by the project lifetime to get an annualized emission. A project lifetime of 50 years was assumed based on common lifetimes used in residential building life cycle assessments (Ghattas et al., 2013). There is uncertainty in this calculation due to the number of assumptions that were used, so it is best to view the reported value as an order of magnitude estimate.

- Source 2: Land Use Conversion

As is specified in the EQB guidance document (MN EQB, 2024), the EPA's *Inventory of Sources and Sinks of Greenhouse Gases* (US EPA, 2024c) was used to calculate the emissions due to land use changes. Table 4 reports the change in cover types for the proposed development. The project can be conceptualized as a change of 92.25 acres of brush/grassland to 92.25 acres of settlements. An emissions factor of 0.24 tons CO₂e/ac was calculated and then used to determine the total emissions due to land use conversion.

- Source 3: Residential Off-Site Utilities

The CoolClimate Network Household Calculator was used to calculate the emissions associated with residential utilities (water, natural gas, electricity) (CoolClimate Network, n.d.). This tool is based on research that used household surveys to develop a national model for average household carbon footprints (Jones & Kammen, 2013).

The tool was run for a zip code of 55119. Census data for Maplewood, MN found an average of 2.59 people per household and median household income of \$88,534 (US Census Bureau, n.d). The Household Calculator only takes inputs of rounded values, so the tool was run for a household of 2.5 people with an annual income of \$40,000. The resulting values of electricity, natural gas, and water emissions were summed together. This sum was multiplied by the proposed number of housing units to find the total emissions from off-site utilities, which was then converted from metric tons to short tons.

- Source 4: Residential Vehicle Use

The Cool Climate Network’s Household Calculator (see Source 3) also provided an estimate of emissions due to car fuel. Census data found that the average number of cars per household in Maplewood was 2 (US Census Bureau, n.d.). The calculated value was multiplied by the number of households to determine the total annual emissions due to residential vehicles.

- Source 5: Residential Off-site Waste Management

A yearly rate of solid waste generation was calculated in Section 13b. of this document. The Ramsey County Solid Waste Master plan reported a recycling rate of 55% in 2016 (Ramsey County, 2024). The EPA’s CCL Emission Factor Hub was used to find the emissions factors for recycling Mixed Recyclables, combusting Mixed MSW, and Landfill Mixed MSW (US EPA, 2025b).

There are additional sources of emissions that were outside of the scope of the analysis. These sources include:

- Construction solid waste: Management of construction solid waste would be a Scope 3, indirect emission. There is not a composite value reported in the CCL Emission Factor Hub (US EPA, 2023b) for construction waste. The complexity of accurately estimating the composition and quantity of construction solid waste is outside of the scope of this analysis since the expected quantity of construction solid waste would be significantly less than the waste produced by operational use, particularly when reported as an annualized value.
- Construction materials: The emissions due to construction materials would be a Scope 2, indirect emission. A literature review of Life Cycle Assessments for residential buildings reported a range of values for embodied energy and noted that results were often specific to geography and building design (Ghattas et al., 2013). There was not a methodology for calculating the embodied energy (which would be associated with emissions) for this project that was readily available and specific enough to the geography/building design to be reasonably accurate.
- Consumer choices: The emissions calculations in Table 13 did not account for the emissions due to consumer choices such as air travel, food, goods, and services. As is calculated by the CoolClimate Network’s Household Calculator (n.d.), the combined emission from these categories is 21.1 short tons CO₂e/year per household, corresponding to a total emissions rate of approximately 4347 short tons CO₂e/year for the development. This value was not included in Table 13 because it is largely outside the influence of the developer.

b. *GHG Assessment*

i. *Describe any mitigation considered to reduce the project’s GHG emissions.*

Mitigation measures can help reduce the project’s GHG emissions and should be considered where feasible. The following measures that may be incorporated into the design of the development include:

- Use energy efficient building materials that reduce needs to heating and cooling
- Low or no VOC paints, adhesives, and solvents
- Reduce and recycle construction waste
- Use environmentally friendly flooring products

- Utilize native species and water efficient landscape irrigation
- Efficient heating, ventilation, and air conditioning (HVAC) systems
- Reduce lighting power density
- Water sense showerheads
- Programmable thermostats
- Encourage residents to sign up for utility-sponsored renewable energy programs
- Pre-wired electric vehicle charging stations and or/battery storage.

- ii. *Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.*

The proposed mitigation measures described in Item 18.b.i. includes best management practices for new residential construction to implement in order to help offset GHG emissions from the project. However, since no specific mitigation is being proposed during the construction of the project, these mitigation measures were not quantified as part of this analysis.

- iii. *Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.*

The proposed projects predicted net lifetime GHG emissions is 288,300 short tons of CO₂e with the assumption of a 50-year lifecycle for the single and multi-family homes. This includes both the construction and operation phases.

The Next Generation Energy Act requires the state to reduce greenhouse gas emissions by 80% between 2005 and 2050, while supporting clean energy, energy efficiency, and supplementing other renewable energy standards in Minnesota. In the Greenhouse gas emissions in Minnesota 2005-2020 Biennial report, relative to 2005, net emissions from the residential sector rose by 14%, but in recent years, it has begun to experience some emission reductions (MPCA, 2023). The biggest emission sources in the residential section include:

- Fossil-fuel combustion for heating and in-home appliances, such as furnaces that run on natural gas
- Home-product use
- Food additives
- Refrigerant leakage from air conditions and refrigerators
- Fertilizer use

If the development is able to implement some of the measures stated above in 18.b.i, this will allow the development to help achieve the goals outlined for residential developments in the Next Generation Energy Act.



19. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The existing noise levels and sources in the area are roadway noise and the St. Paul Police Outdoor shooting range. The nearest receptors to the site are single family residential homes, apartment complexes, a retirement community, and a correctional facility. These nearest noise receptors will experience noise levels during construction that are elevated in comparison to existing noise levels. Grading and excavation activities on site will require heavy construction equipment.

Noise levels will temporarily increase during construction of the site then stay consistent with the residential development adjacent to the property when construction is completed. Noise levels on site will vary during construction depending on where construction is occurring on site, time of operation, and distance between receptors and construction equipment.

Construction noise can be mitigated by restricting construction work to daytime hours. Contractors will be required to minimize noise impacts by maintaining equipment properly, including noise controls as specified by manufacturers. The project will adhere to the Maplewood noise rules and standards that indicates noise should occur within specified levels depending on land use and time of day.

After construction, noise levels are expected to be at or near existing levels for a typical residential development. A combination of berms and landscaping will be used to provide noise mitigation for the surrounding single family residential homes, apartment complexes, a retirement community, and correctional facility. Similar to construction noise, the residential use of the property will adhere to the City's noise rules and standards. The St. Paul gun range will continue to be a source of noise once construction is completed. Based on a sound study performed on site, it was recommended that windows on townhomes on the south side of the site, facing the range, be doubled paned to mitigate noise.

20. Transportation

- a. *Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternativetransportation modes.*
- The proposed Century Ponds residential development is located on a 92.25-acre site, formerly The Ponds at Battle Creek Town golf course in Maplewood, Minnesota. The proposed development consists of 134 detached single-family homes and 73 attached single-family homes (townhomes) for a total of 207 dwelling units.
 - Each proposed dwelling unit will have off-street parking. In addition to off-street parking, 28 additional parking stalls are included throughout the 73 townhomes for guest parking.
 - Results of the trip generation estimates indicate that the current development plan is expected to generate approximately 129 a.m. peak hour, 168 p.m. peak hour, and 1,790 daily trips. These estimates did not include internal capture or pass-by trip reductions.
 - The maximum peak hour traffic for the development is 168 trips, which would occur during a single hour between 4:00 and 6:00 p.m.
 - The ITE Trip Generation Manual, 11th Edition was utilized to generate trip generation rates for the various land uses. Applicable land uses were determined to be 210: Single-Family Detached Housing and 215: Single-Family Attached Housing.
 - Local bus route 323 passes through the project area along Century Avenue between Pouliot Parkway and Lower Afton Road/Valley Creek Road with stops at the intersection of Lower Afton Road/Valley Creek Road (EB and WB) and at Parkwood Drive (NB only). Route 323 runs between the Sun Ray Transit Center at I-94 and McKnight Road and the City of Woodbury (near Queens Drive and Currell Boulevard). The Sun Ray Transit Center offers transfers to several other transit lines.
 - An existing multi-use trail along the north side of Lower Afton Road/Valley Creek Drive provides several multimodal connections, including to the Battle Creek Bike Trail and facilities along Hwy 10, McKnight Road, and Century Avenue.
- b. *Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance*
- Based on the traffic operations analysis of existing conditions, all study intersections operate adequately under existing AM and PM peak hours. The signalized intersections (Century Avenue and Lower Afton Road/Valley Creek Road, Century Avenue/Lake Road and Century Avenue/Apartments) operate at overall intersection LOS B or better. Through/stop intersections (Century Avenue with Parkwood Drive, Pouliot Parkway, and Linwood Avenue) operate acceptably with overall intersection LOS A and minimal

- side-street delay (LOS A).
- Overall, the proposed development is expected to have minimal impact to the existing transportation system. All unsignalized intersections, including the proposed access locations, are expected to continue operating at LOS A with minimal side-street delay under the Build scenario. The signalized intersection at Century Avenue/Lake Road and Century Avenue/Apartments is expected to operate at LOS B in the AM and PM peak hours with side-street LOS B. The signalized intersection at Century Avenue and Lower Afton Road/Valley Creek Road is expected to operate acceptably with LOS B and LOS C in the AM and PM peak hours, respectively.
- c. *Identify measures that will be taken to minimize or mitigate project related transportation effects.*
- Although the existing transportation network is expected to operate acceptably with the new development trips, turn lane recommendations were made based upon a review of Ramsey County, Washington County, and MnDOT Access Management policies. No modifications are recommended at the signalized intersections. A summary of the turn lane evaluation and any recommendations are listed below:
 - Lower Afton Road Access
 - A westbound left-turn lane is recommended based on conversations with Ramsey County staff. Modifications to the westbound taper/merge area and shifting the lane drop location further west may be sufficient in lieu of a dedicated left-turn lane and require less widening, however, this was not the preference of the County even on a short-term basis.
 - An eastbound right-turn lane was not recommended. Conversations with Ramsey County staff did not indicate one would be needed at this time.
 - Century Avenue S (North) & Parkwood Drive Access
 - Only a northbound left-turn lane is recommended, which is consistent with other unsignalized intersections along the corridor and would follow the Washington County Development Code and input from Washington County staff.
 - Linwood Avenue E Access
 - A westbound right-turn lane could be considered but is not formally recommended at this time, with or without a secondary connection to Century Avenue (considered in a previous site plan iteration but removed in the current site plan).

21. Cumulative Potential Effects

- a. *Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.*

Potential effects are addressed under the applicable EAW items.

- b. *Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.*

There are no other developments in the area in the foreseeable future.

- c. *Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.*

The potential cumulative effects on public infrastructure would include municipal water supply systems, sanitary sewer conveyance and treatment systems, stormwater management systems, traffic and transportation systems. The development will be connected to the watermain, which is proposed to be extended from the existing service stubs on Lower Afton Road, Mailand Road right-of-way and Linwood Avenue to create a looped system. Sanitary sewer is proposed to be connected to the existing stub in the northwest corner of the property to serve the entire site. An additional option being explored is connecting into the City of Woodbury's sanitary stub located in the southeast corner (off Century Ave) to serve the townhomes. It is the client's understanding that these utilities have capacity and pressure adequate to meet the needs of the developer. This southern service area would drain to the same Metropolitan Council treatment facility in Saint Paul as the rest of the project drains to.

Stormwater runoff from projects within the City of Maplewood will ultimately drain into the Mississippi River. The federal, state, and local stormwater regulations for development projects combined with the implementation of BMPs to control erosion and sedimentation during construction are anticipated to minimize cumulative effects of pre- and post-development runoff into downstream surface waters.

The effects on traffic and transportation for this project include three entry points to the site: one on Century Ave S, one on lower Afton Rd, and one Linwood Ave E. These changes will allow access to the site, while having no significant impact on traffic flow of the surrounding area. The city of Maplewood has the capacity to support the public infrastructure needed to support this project; cumulative effects on public infrastructure are not anticipated.

The cumulative effects of suburban development can affect natural resources such as groundwater, and waterbodies. It can also result in loss of wetlands and fragmentation of wildlife habitat. For the proposed project, drinking water will be supplied from the Mississippi River via the Saint Paul Water Utility. Individual lots within the development have minor potential to affect groundwater through building foundations. State, watershed and city rules require infiltration of the first inch of water falling on new impervious surfaces. This will mitigate most of the groundwater recharge loss when converting the land use from golf course to residential.

Eight wetlands were delineated in November 2023. These could be affected by construction stormwater discharges and will be protected with perimeter controls and vegetated buffers per the NPDES construction stormwater from the MPCA. None of the delineated wetlands will be impacted, but seven incidental wetlands consisting of golf course water features will be converted to residential or stormwater uses. The proposed project resides on unmaintained golf course grasses that includes fragmented wildlife habitat and low-quality wetland habitat. Therefore, it is unlikely that significant changes to existing natural resource habitat will occur as a result of this development. Overall, the cumulative effects on natural resources are expected to be minimal.

22. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

All potential effects have been addressed in Items 1 through 21. No other additional environmental effects are anticipated from this development.

RGU CERTIFICATION

*(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature

Danette Parr

Date June 23, 2025

Title Community Development Director

References

Alliant Engineering. (2024). *Century Ponds – Ecological Study*

Caterpillar. (January 2016). *Caterpillar Performance Handbook*. Retrieved from <https://www.williamadams.com.au/media/1769/caterpillar-performance-handbook-46.pdf>

City of Maplewood. City of Maplewood 2040 Comprehensive Plan. (September 9, 2019). Retrieved from <2040MaplewoodComprehensivePlan-ReducedRes-PDF>

“CODE OF ORDINANCES CITY OF MAPLEWOOD, MINNESOTA (This Content Was Modified in This Version of the Code.)” (2024). *Municode Library*. Retrieved from https://library.municode.com/mn/maplewood/codes/code_of_ordinances?nodeId=COORMAMI

CoolClimate Network. (n.d.). *Household Calculator*. Retrieved from <https://coolclimate.berkeley.edu/calculator>

Climate Mapping for Resilience and Adaptation (CMRA). (2023). Retrieved from <https://resilience.climate.gov/>

Environmental Protection Agency. (2023). Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities. Retrieved from <https://www.epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool-creat-risk-assessment-application-water>

Ghattas, R., Gregory, J., Olivetti, E., Greene, S. (March 12, 2013). *Life Cycle Assessment for Residential Buildings: A Literature Review and Gap Analysis*. Retrieved from <https://cshub.mit.edu/sites/default/files/documents/LCAforResidentialBuildings.pdf>

Jirsa, M.A.; Bauer, E.J.; Boerboom, T.J.; Chandler, V.W.; Lively, R.S.; Mossler, J.H.; Runkel, A.C.; Setterholm, D.R. (2010). OFR10-02, Preliminary Bedrock Geologic Map of Minnesota. Minnesota Geological Survey. Retrieved from the University of Minnesota Digital Conservancy, Retrieved from <https://hdl.handle.net/11299/98043>.

Johnson, Lucinda, Will Bartsch, George Hudak, Mae Davenport, Kris Johnson, Kristi Nixon, Jane Reed and Atlas Team. (2022). Minnesota Natural Resource Atlas: Online mapping tools and data for natural resource planning, management, and research in Minnesota. Natural Resources Research Institute, University of Minnesota Duluth. Retrieved from <https://mnatlas.org/>

Jones, C. & Kammen, D. M. (2013). Spatial Distribution of U.S. Household Carbon Footprints Reveals Suburbanization Undermines Greenhouse Gas Benefits of Urban Population Density. *Environ. Sci. Technol.*, 48(2), 895-902. Retrieved from <https://doi.org/10.1021/es4034364>

Kjolhaug Environmental Services Company, Inc. (November 17, 2023). Lower Afton Road Wetland Delineation Report.

Minnesota Department of Administration: State Historic Preservation Office. (2025). Retrieved from <Minnesota Statewide Historic Inventory / Minnesota State Historic Preservation Office>

Minnesota Department of Health. (2025). Minnesota Well Index. Retrieved from <https://mnwellindex.web.health.state.mn.us/>

MPCA. (2020). Future wastewater infrastructure needs and capital costs – fiscal year 2020 biennial survey of wastewater collection and treatment. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lrwq-wwtp-1sy20.pdf>

MPCA. (2021). Greenhouse gas emissions inventory 2005-2018. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lraq-1sy21.pdf>

MPCA. (2023). Greenhouse gas emissions in Minnesota 2005-2020. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lraq-2sy23.pdf>

Minnesota Pollution Control Agency (MPCA). (2024). Impaired Waters List. Retrieved from <https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list>

Minnesota Department of Natural Resources (MN DNR). (2025a). Springs, Springsheds, and Karst. Retrieved from https://www.dnr.state.mn.us/waters/groundwater_section/mapping/springs.html

MN DNR. (2025b). Minnesota Climate Trends. Retrieved from <https://arcgis.dnr.state.mn.us/ewr/climatetrends/>

MN DNR. (2025c). Minnesota Climate Explorer. Retrieved from <https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

Minnesota Department of Natural Resources (MN DNR). (2023d). Minnesota Conservation Explorer.

MN DNR & U.S. Fish and Wildlife Service (USFWS). (2021). Townships Containing Documented Northern Long-Eared Bat (NLEB) Maternity Roost Trees and/or Hibernacula Entrances in Minnesota. Retrieved from https://files.dnr.state.mn.us/eco/ereview/minnesota_nleb_township_list_and_map.pdf

MN Environmental Quality Board (EQB). (2024). Environmental assessment worksheet (EAW) guidance: Developing a carbon footprint and incorporating climate adaptation and resilience. Retrieved from [Revised Environmental Assessment Worksheet \(EAW\) Guidance](#)

Natural Resources Research Institute (NRRI). (2025). Minnesota Natural Resource Atlas. Retrieved from <https://mnatlas.org/gis-tool/>

National Oceanic and Atmospheric Administration. (2013). NOAA Atlas 14. Precipitation-Frequency Atlas of the United States. Volume 8 Version 2.0: Midwestern States (Colorado, Iowa Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Wisconsin). Retrieved from https://www.weather.gov/media/owp/hdsc_documents/Atlas14_Volume8.pdf

Ramsey County. Solid Waste Management Master Plan 2018-2038. (2017). Retrieved from [RAMSEY COUNTY SOLID WASTE MANAGEMENT MASTER PLAN | 2018 - 2038.](#)

Saint Paul Regional Water Services. (2025). Retrieved from [Saint Paul Regional Water Services | Saint Paul Minnesota](#)

U.S. Census Bureau. (2024). Quickfacts: Maplewood City, Minnesota, 2024. Retrieved from [U.S. Census Bureau QuickFacts: United States](#)

US EPA. (May, 2023a). Simplified GHG Emissions Calculator. Retrieved from <https://www.epa.gov/climateleadership/simplified-ghg-emissions-calculator>

US EPA. (2023b). GHG Emission Factors Hub. Retrieved from <https://www.epa.gov/climateleadership/ghg-emission-factors-hub>

US EPA. (2023c). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Retrieved from <https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf>

United States Fish and Wildlife Service (USFWS). (2017). Fact Sheet: Rusty patched bumble bee (*Bombus affinis*). Retrieved from <https://www.fws.gov/midwest/endangered/insects/rpbb/factsheetrpbb.html>

USFWS. (2023a). Information for Planning and Consultation (IPaC). Retrieved from <https://ecos.fws.gov/ipa>

USFWS. (2023b). Northern Long-Eared Bat (*Myotis septentrionalis*). Retrieved from <https://www.fws.gov/Midwest/endangered/mammals/nleb/nlebFactSheet.html>

USFWS. (2023c). Rusty Patched Bumble Bee Map. Retrieved from <https://www.arcgis.com/home/webmap/viewer.html?webmap=2716d871f88042a2a56b8001a1f1acae&extent=-100.6667,29.7389,-48.8551,50.9676>

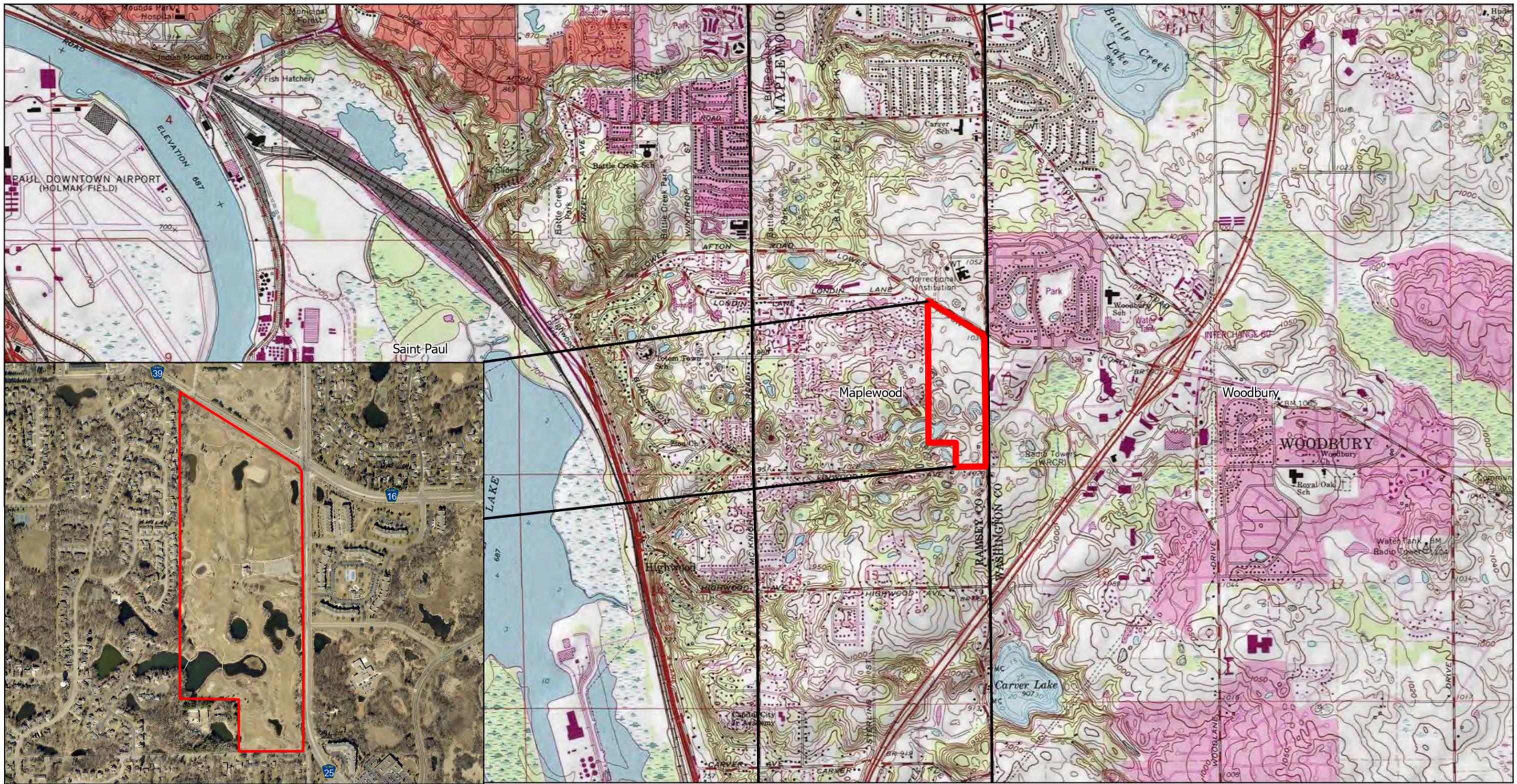
US Geological Survey. (2023). The National Hydrography Dataset. Retrieved from <https://www.usgs.gov/national-hydrography>

Web Soil Survey, websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed 21 Feb. 2025. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Appendix A

FIGURES





Century Ponds

Legend

 Study Area

**Figure 1. Project Location
Maplewood, Ramsey County, MN**



0 0.5 1 Miles

Date Exported: 2/21/25
Source: Ramsey County Aerial 2024



ALLIANT

733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
www.alliant-inc.com

CENTURY PONDS

MAPLEWOOD, MN

PRELIMINARY PLAT

SITE PLAN OVERVIEW

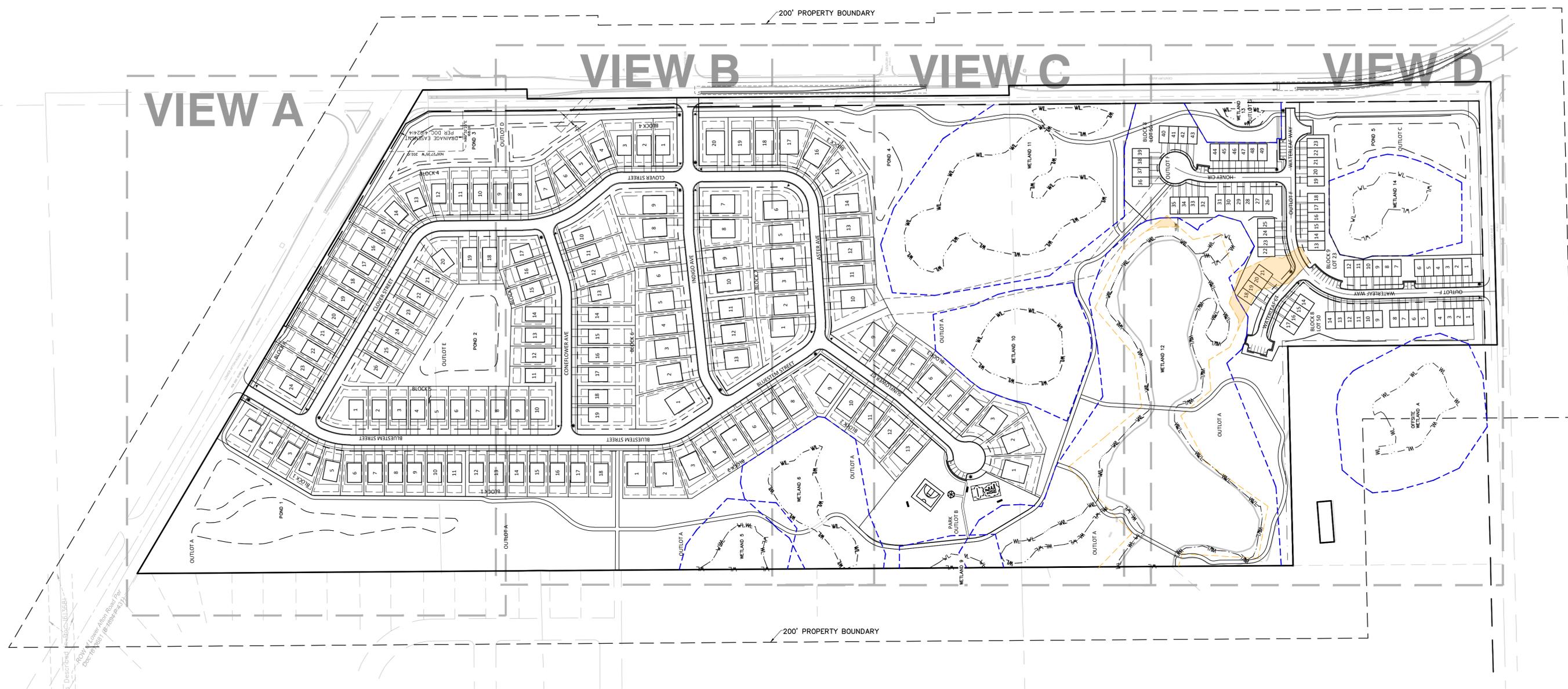
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

Dave Nash
DAVE NASH, PE
2/5/2025 21836
Date License No.

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
2/5/2025	CITY SUBMITTAL

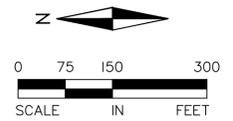
PROJECT TEAM DATA
DESIGNED: JP
DRAWN: JP
PROJECT NO: 4000041



LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- WETLAND BUFFER
- STREET LIGHT
- STOP SIGN
- RETAINING WALL

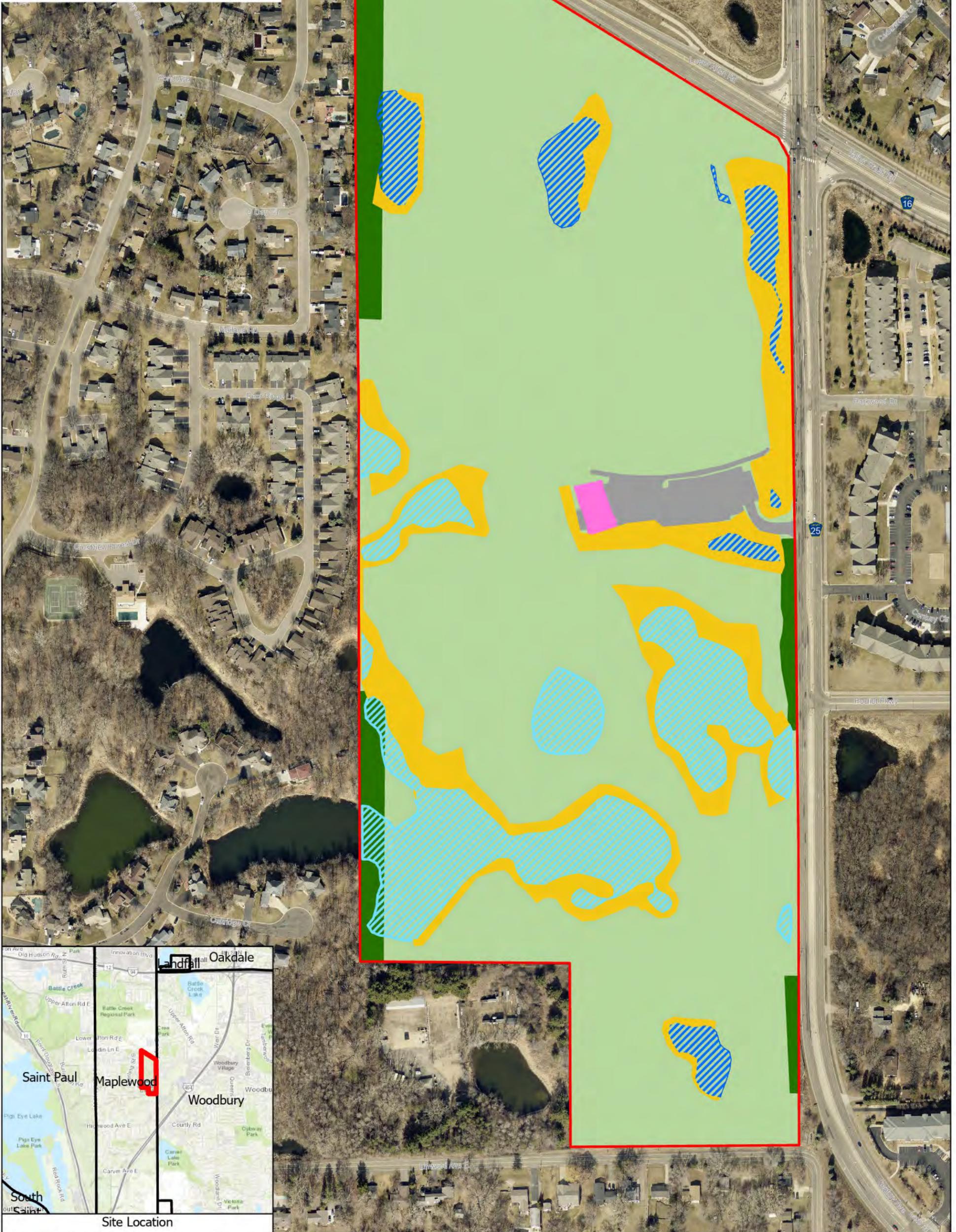
FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION



Drawing name: X:\2023\4000041-00 - Century Ponds\plan_sheets\4000041\site.dwg Mar 12, 2025 - 3:00pm

Legend

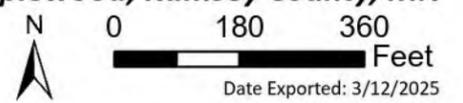
- Study Area
- Brush/Grassland
- Abandoned Club House - Impervious Surface
- Impervious Surface
- Tree Cover
- Wetland
- Incidental Wetland
- Ecological Study (2024) - Native and Non-Native Flowering Plants



Century Ponds



**Figure 3. Pre-Development Cover Type
Maplewood, Ramsey County, MN**

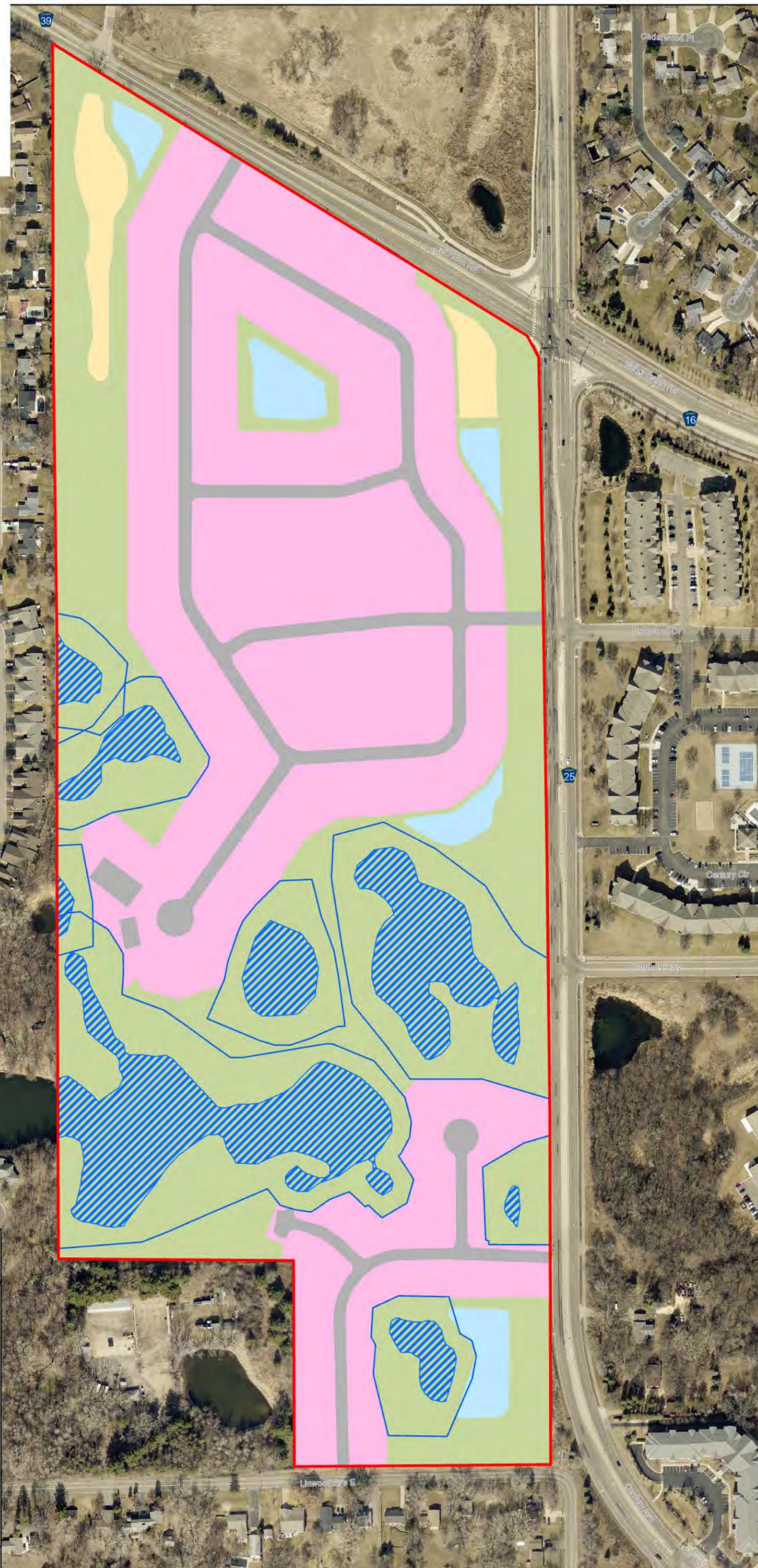
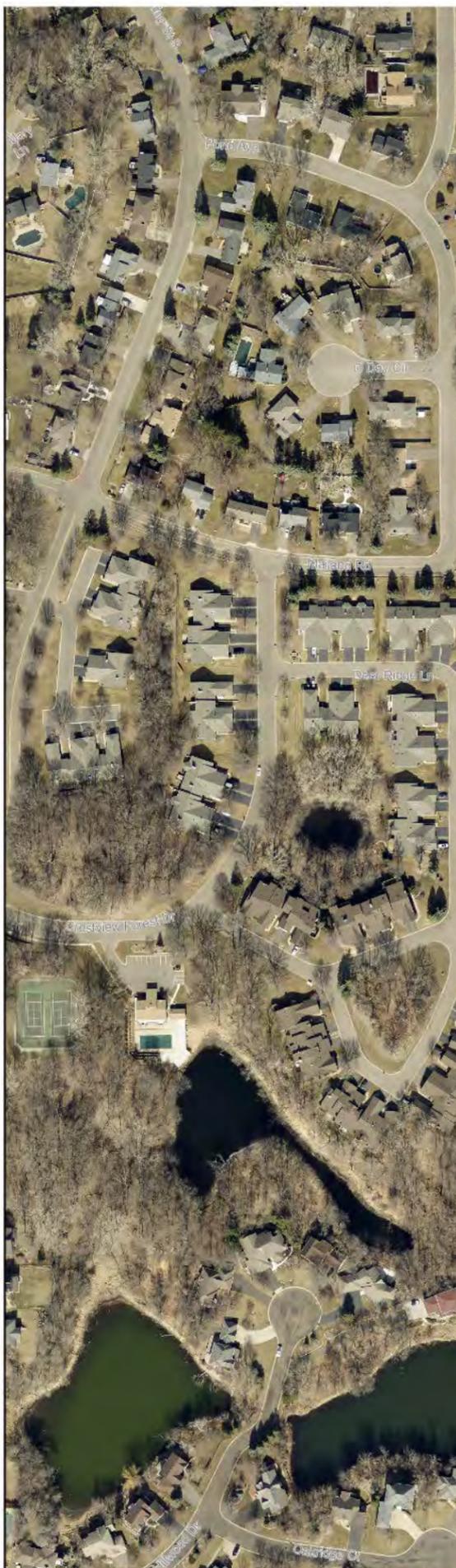


Date Exported: 3/12/2025

Source: Ramsey County 2024 Aerial

Legend

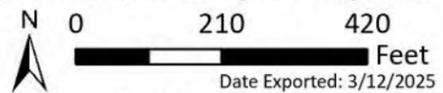
- Study Area
- Enhanced Habitat
- Residential
- Detention Pond
- Filtration Basin
- Impervious Surface
- Wetland
- Wetland Buffer



Century Ponds

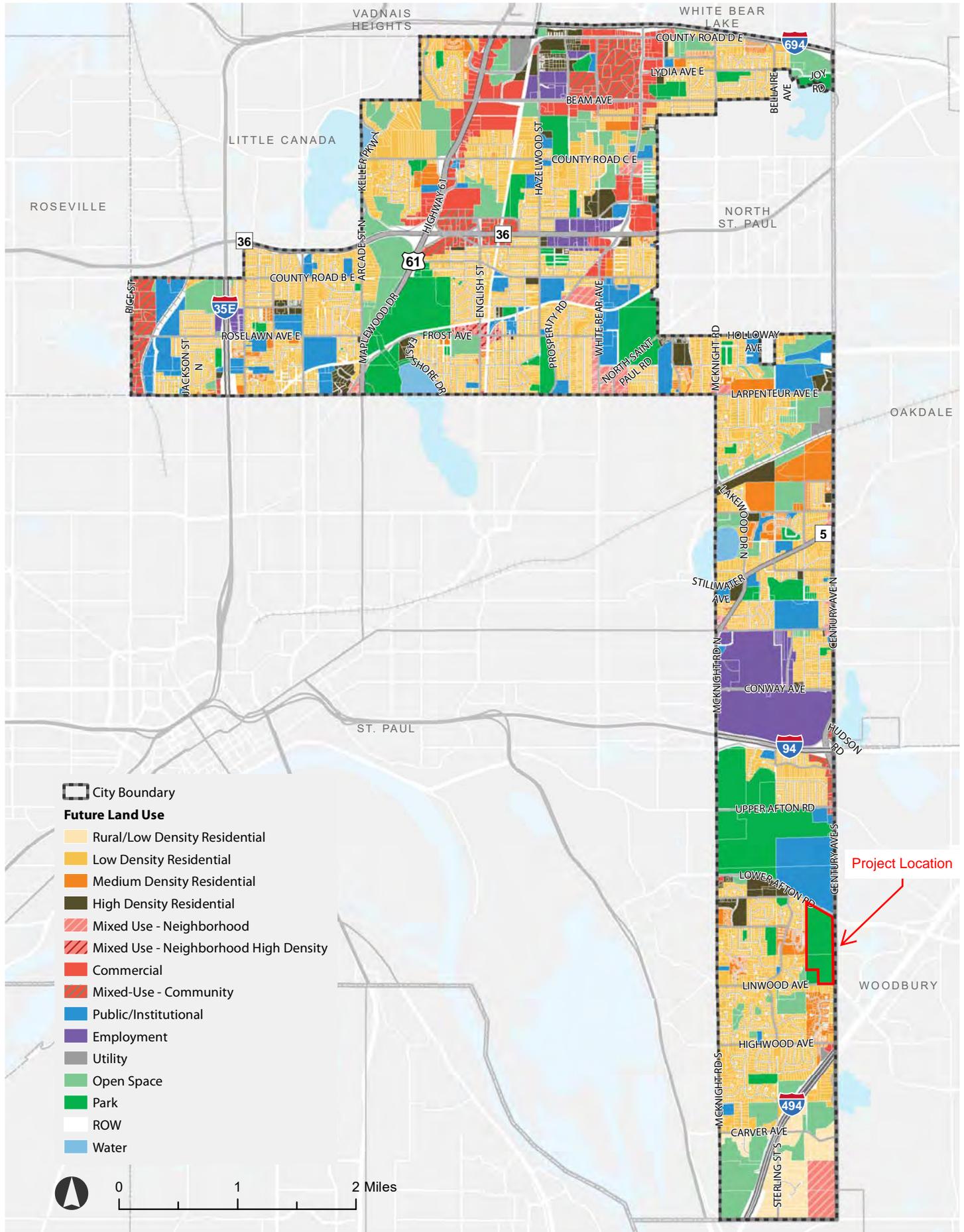


**Figure 4. Post Development Cover Type
Maplewood, Ramsey County, MN**

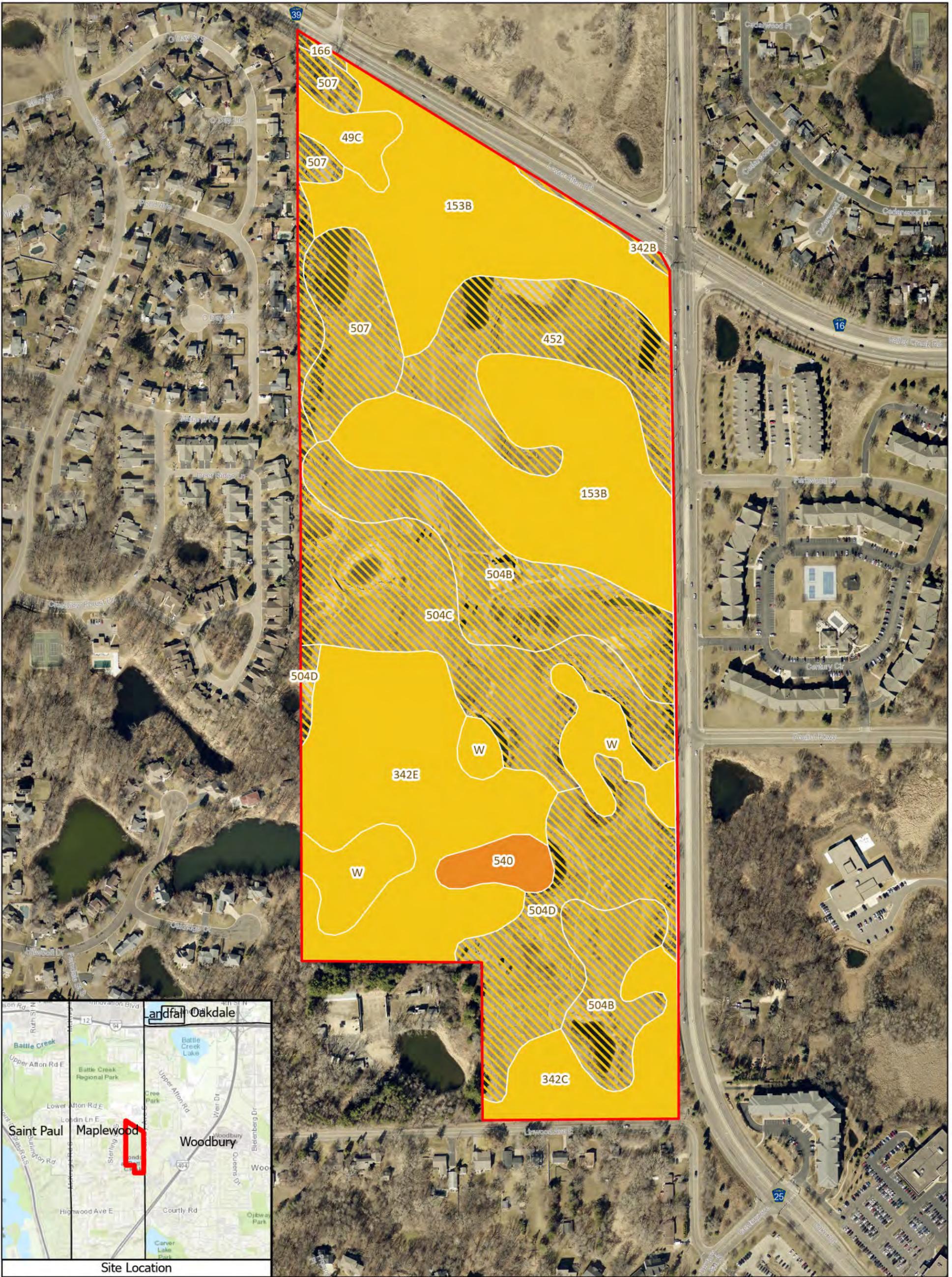


Date Exported: 3/12/2025
Source: Ramsey County Aerial 2024

FIGURE 5. FUTURE LAND USE (FIGURE 4-2 IN CITY OF MAPLEWOOD COMPREHENSIVE PLAN)



LAND USE



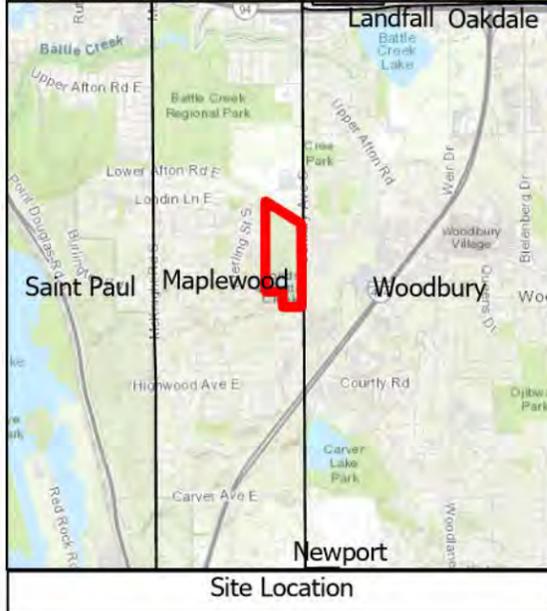
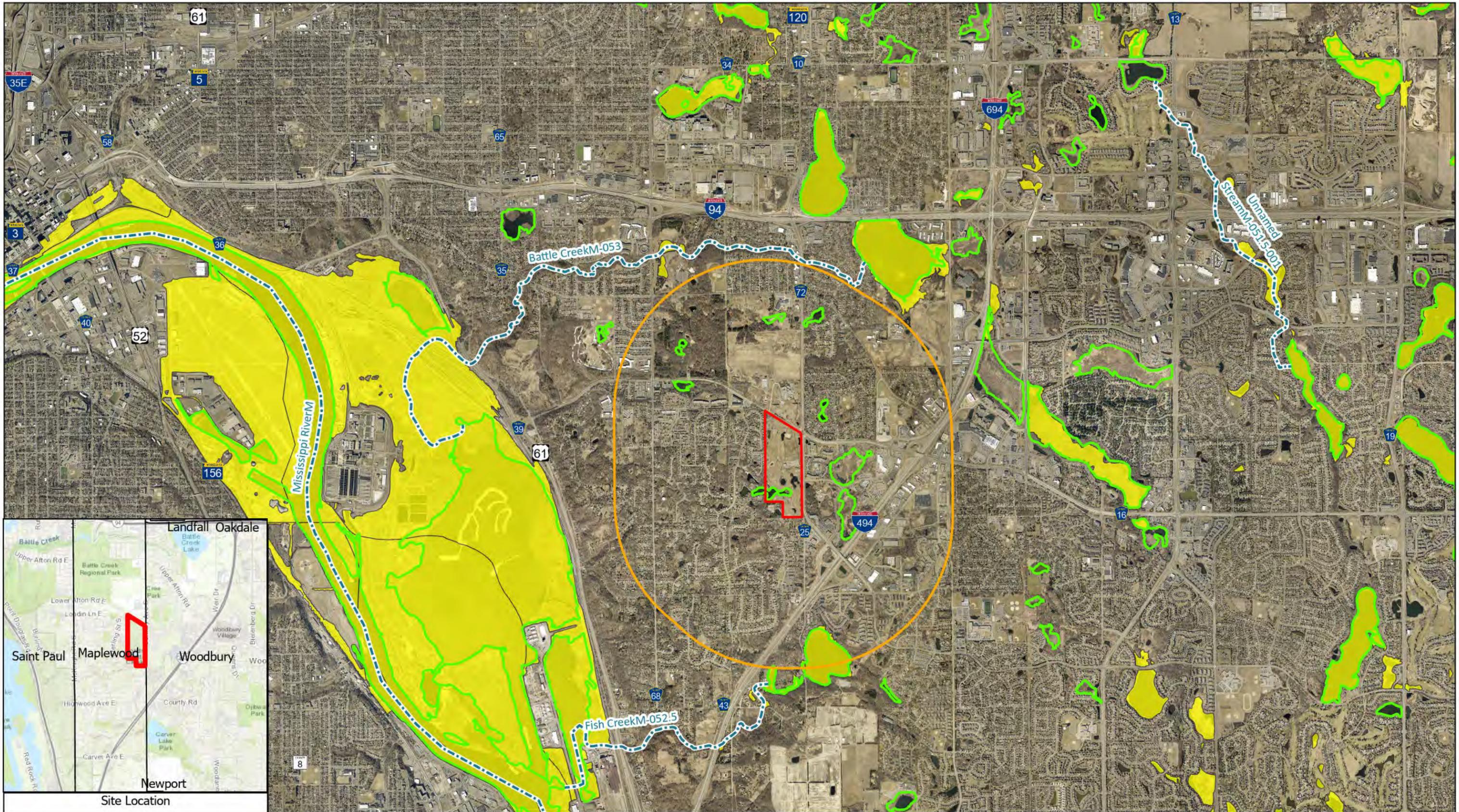
Century Ponds

- Legend**
- Study Area
 - Hydric Rating**
 - Hydric
 - Nonhydric
 - Predominantly Nonhydric

Figure 6. Ramsey County Soils Survey
Maplewood, Ramsey County, MN

0 250 500
US Feet



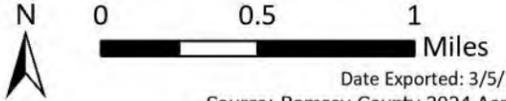


Century Ponds

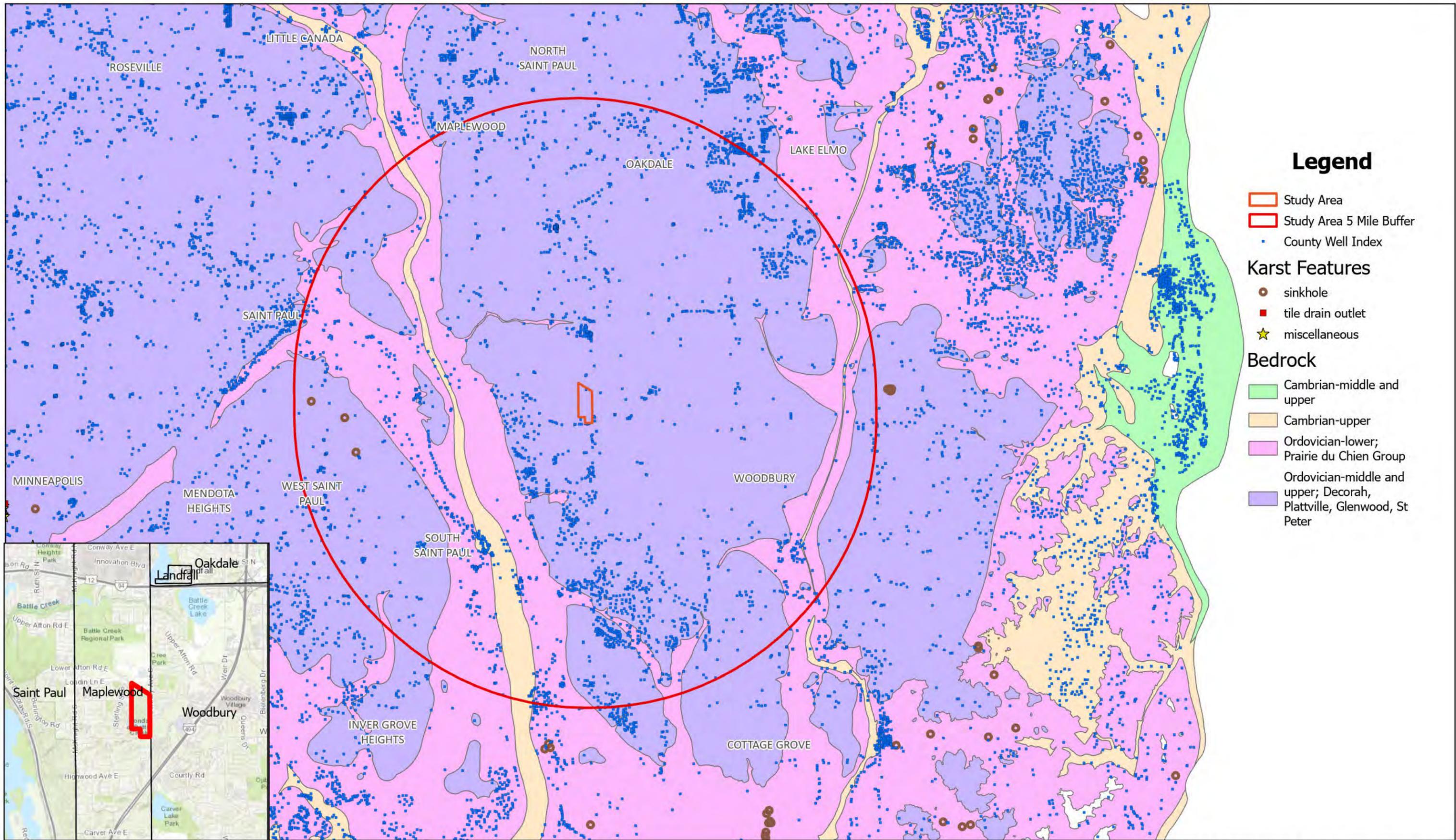


- Legend**
- Study Area
 - Study Area 1 Mile Buffer
 - Public Water Inventory - Basins
 - Public Water Inventory - Watercourses
- FEMA**
- 100 Year Floodplain

**Figure 7. Public Waters & Floodplains
Maplewood, Ramsey County, MN**



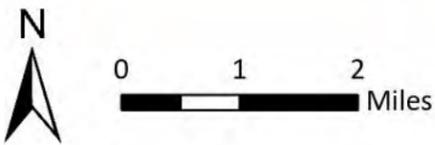
Date Exported: 3/5/25
Source: Ramsey County 2024 Aerial



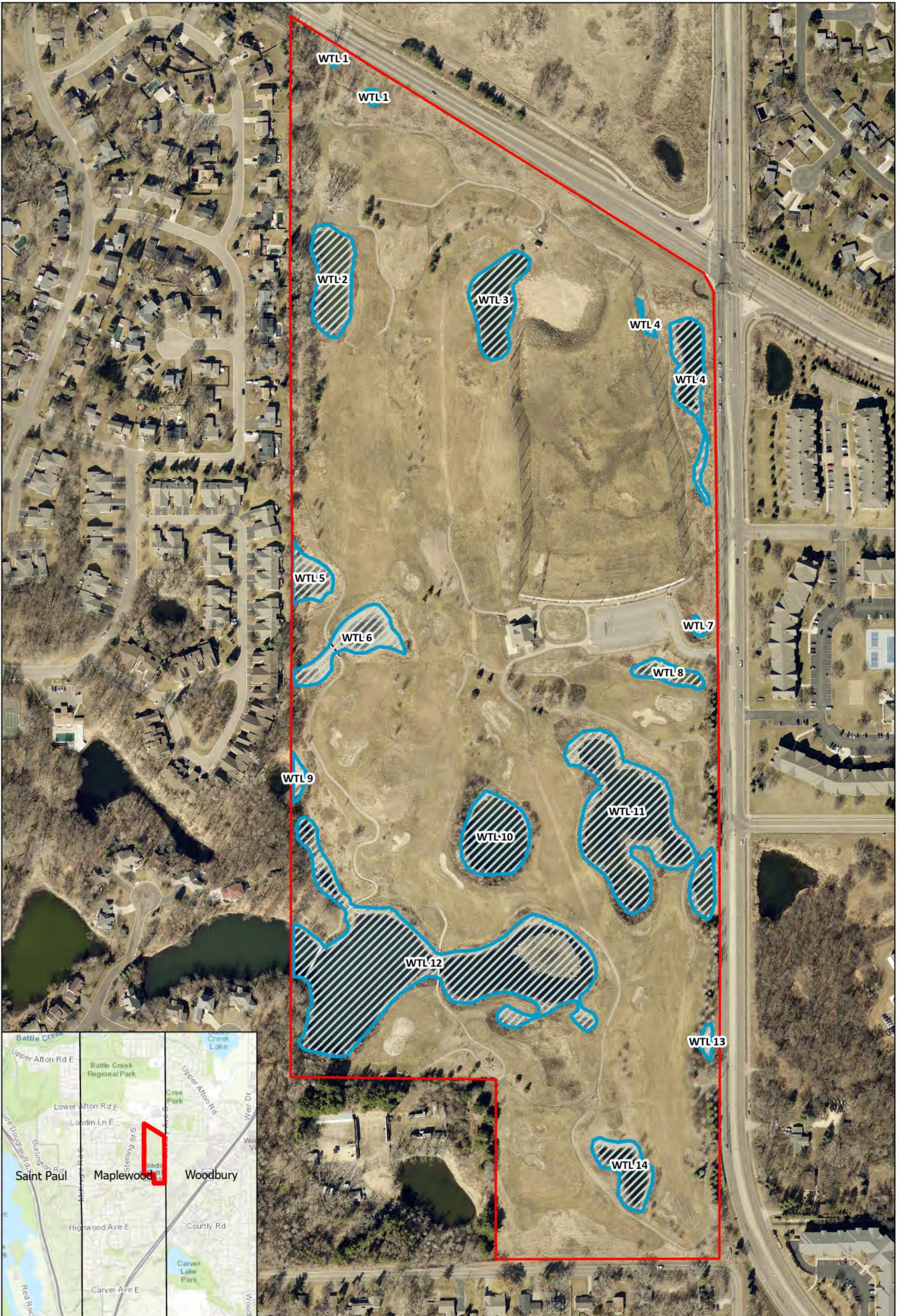
Legend

- Study Area
 - Study Area 5 Mile Buffer
 - County Well Index
- Karst Features**
- sinkhole
 - tile drain outlet
 - ★ miscellaneous
- Bedrock**
- Cambrian-middle and upper
 - Cambrian-upper
 - Ordovician-lower; Prairie du Chien Group
 - Ordovician-middle and upper; Decorah, Plattville, Glenwood, St Peter

Century Ponds



**Figure 8. Geology and County Well Index
Maplewood, Ramsey County, MN**



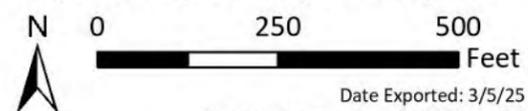
Century Ponds



Legend

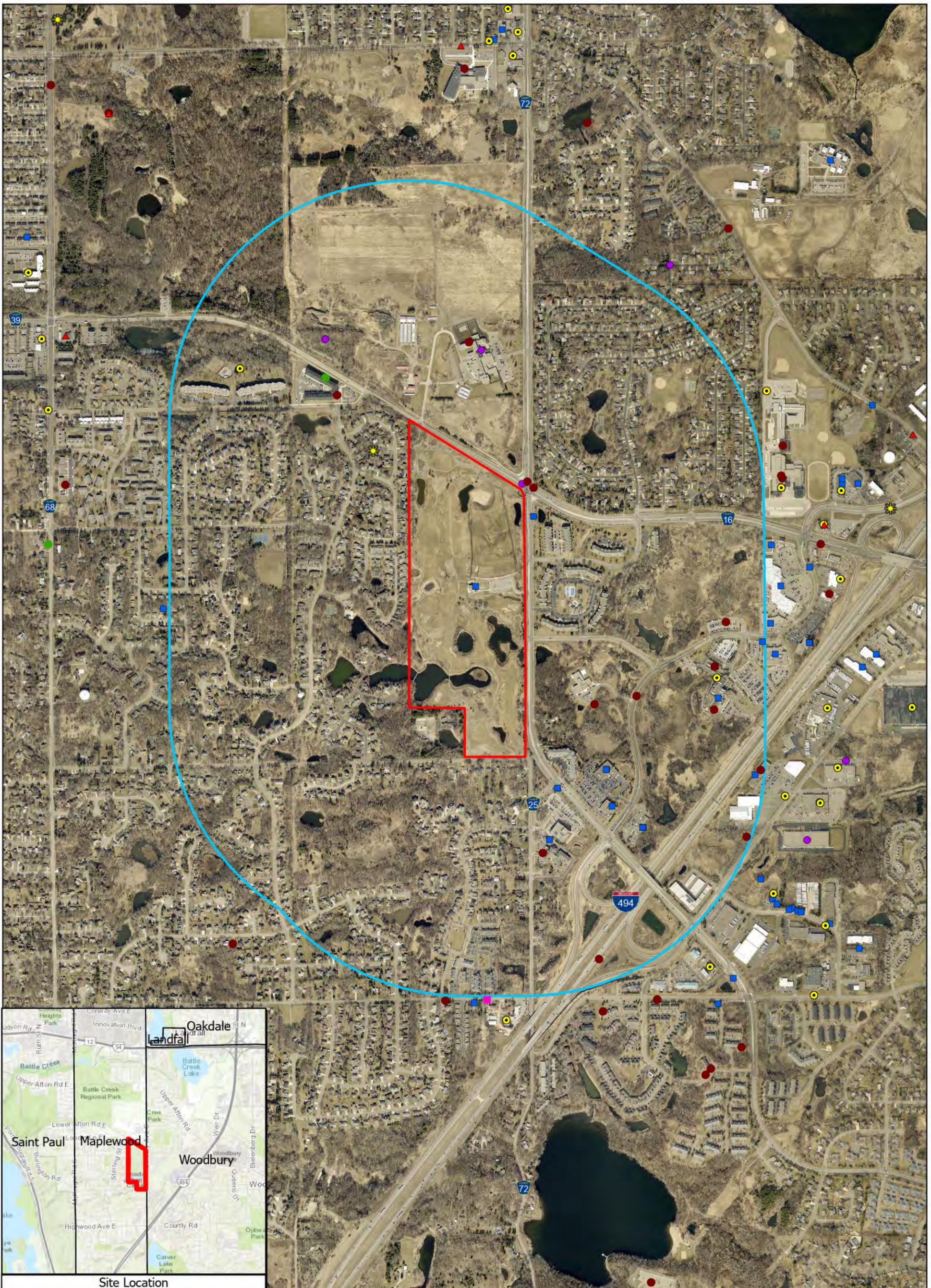
- Wetland
- Study Area

**Figure 9. Wetlands
Maplewood, Ramsey County, MN**



**NOTE: WETLAND BOUNDARIES
WERE CREATED BY KJOLHAUG**

Date Exported: 3/5/25
Source: Ramsey County 2024 Aerials



Century Ponds

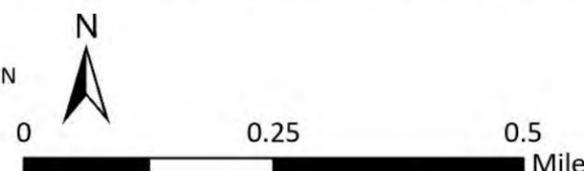


Legend

- Study Area
- Study Area 0.5 Mile buffer
- MPCA *WIMN Sites**
- Air Quality
- Hazardous Waste
- Investigation and Cleanup
- Multiple Programs
- SSTS
- Solid Waste
- NPDES Construction Permits
- ▲ Tanks
- ▲ Water Quality
- MN Department of Agriculture - *WIMN**
- ★ Old Emergency Incidents
- ★ Small Spills & Investigation

*WIMN: What's In My Neighborhood

**Figure 10. Contaminated Sites
Maplewood, Ramsey County, MN**



Appendix B

WETLAND DELINEATION INFORMATION



Lower Afton Road

Maplewood, Ramsey County, Minnesota

Wetland Delineation Report

Prepared for

D. R. Horton

by

Kjolhaug Environmental Services Company, Inc.

(KES Project No. 2023-160)

November 17th, 2023

Lower Afton Road

Maplewood, Ramsey County, Minnesota

Wetland Delineation Report

TABLE OF CONTENTS

Title	Page
1. WETLAND DELINEATION SUMMARY	2
2. OVERVIEW	2
3. METHODS	3
3.1 Wetland Delineation	3
4. RESULTS	4
4.1 Review of NWI, Soils, Public Waters, and NHD Information	4
4.2 Wetland Determinations and Delineations.....	5
4.3 Historic Aerial Review.....	8
4.4 Other Areas	8
4.5 Request for Wetland Boundary and Jurisdictional Determination	8
5. CERTIFICATION OF DELINEATION.....	9

FIGURES

1. Site Location
- 2A. Existing Conditions North
- 2B. Existing Conditions South
3. National Wetlands Inventory
4. Soil Survey
5. DNR Public Waters Inventory
6. National Hydrography Dataset

APPENDICES

- A. Joint Application Form for Activities Affecting Water Resources in Minnesota
- B. Wetland Delineation Data Forms
- C. Precipitation Data
- D. Historic Aerial Photo Review

Lower Afton Road

Maplewood, Ramsey County, Minnesota

Wetland Delineation Report

1. WETLAND DELINEATION SUMMARY

- The 88.53-acre Lower Afton Road site was inspected on November 1st and 2nd, 2023 for the presence and extent of wetland.
- The National Wetlands Inventory (NWI) map showed several excavated open water wetlands (PUBGx/PABGx/PUBFx), a large open water wetland (PABG/PEM1F/PEM1C), and several depressional wetlands (PEM1A) within the review area.
- The soil survey showed Seelyeville muck as the mapped hydric soil type within the review area.
- The DNR Public Waters Inventory identified DNR Public Water Wetland 62-248 W (unnamed) within the review area, two unnamed DNR Public Water Wetlands (62-439 W and 82-440 W) within 1,000 sf of the review area boundaries, and an unnamed DNR Public Water Wetland within 1,200 sf of the eastern review area boundary.
- The National Hydrography Dataset showed five Lake/Pond surface water features within the review area.
- Fourteen (14) wetlands were delineated onsite, as summarized on **Page 6 and 7** of this report. Wetlands 1, 2, 3, 4, 7, 8, and a portion of 14 were incidentally created based on the historic aerial review.

2. OVERVIEW

The 88.53-acre Lower Afton Road site was inspected on November 1st and 2nd, 2023 for the presence and extent of wetland. The property was located in Section 12, Township 28 North, Range 22 West, City of Maplewood, Ramsey County, Minnesota. The site was south of Lower Afton Road and north of Linwood Avenue East, along Century Avenue South (CH 25/72) (**Figure 1**). The review area corresponded to portions of Ramsey County PIDs: 122822110002 (297 Century Avenue South; 141.04 acres) and 122822440002 (2621 Linwood Avenue East; 37.06 acres).

The site consisted of an abandoned golf course, associated paved trails, parking lots, and buildings. The site contained several historic and excavated wetlands. The previously managed greenways were dominated by planted turfgrass and several volunteer species, such as common mullein, Canada thistle, crown vetch, and common tansy. Several portions of the site appeared to

have been planted with a native seed mix containing wild bergamot, cup plant, little bluestem, big bluestem, side-oats grama, and Indian grass. Topography on the site peaked in the southwestern portion of the site (1080 ft MSL) and gradually sloped towards to the northwest corner (1010 ft MSL).

Fourteen (14) wetlands were delineated within the site boundaries. The delineated wetland boundaries and existing conditions are shown on **Figures 2, 2A, and 2B**.

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in a request for a wetland boundary and type determination approval from the Ramsey-Washington Metro Watershed District under the Minnesota Wetland Conservation Act (WCA). This report also requests incidental determination approval for Wetlands 1, 2, 3, 4, 7, 8, and a portion of 14.

3. METHODS

3.1 Wetland Delineation

Wetlands were identified using the Routine Determination method described in the Corps of Engineers Wetlands Delineation Manual (Waterways Experiment Station, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act.

Wetland boundaries were identified as the upper-most extent of wetland that met criteria for hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were marked with pin flags that were located with handheld GPS units with sub-meter accuracy.

Soils, vegetation, and hydrology were documented at a representative location along the wetland-upland boundary. Plant species dominance was estimated based on the percent aerial or basal coverage visually estimated within a 30-foot radius for trees and vines, a 15-foot radius for the shrub layer, and a 5-foot radius for the herbaceous layer within the community type sampled.

Soils were characterized to a minimum depth of 24 inches (unless otherwise noted) using a Munsell Soil Color Book and standard soil texturing methodology. Hydric soil indicators used are from Field Indicators of Hydric Soils in the United States (USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Technical Committee for Hydric Soils, Version 8.1, 2017).

Mapped soils are separated into five classes based on the composition of hydric components and the Hydric Rating by Map Unit color classes utilized on Web Soil Survey. The five classes include Hydric (100 percent hydric components), Predominantly Hydric (66 to 99 percent hydric components), Partially Hydric (33 to 65 percent hydric components), Predominantly Non-Hydric (1 to 32 percent hydric components), and Non-Hydric (less than one percent hydric components).

Plants were identified using standard regional plant keys. Taxonomy and indicator status of plant species was taken from the 2018 National Wetland Plant List (U.S. Army Corps of Engineers 2018. National Wetland Plant List, version 3.3, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH).

4. RESULTS

4.1 Review of NWI, Soils, Public Waters, and NHD Information

The National Wetlands Inventory (NWI) (Minnesota Geospatial Commons 2009-2014 and U.S. Fish and Wildlife Service showed several excavated open water wetlands (PUBGx/PABGx/PUBFx), a large open water wetland (PABG/PEM1F/PEM1C), and several depressional wetlands (PEM1A) within the review area (**Figure 3**).

The Soil Survey (USDA NRCS 2015) showed Seelyeville muck as the mapped hydric soil type within the review area. Soil types mapped on the property are listed in **Table 1**, and a map showing soil types is included in **Figure 4**.

Table 1. Soil types mapped within the Lower Afton Road review area.

Symbol	Map unit name	Acres in AOI	Percent of AOI	Rating	Hydric Category
540	Seelyeville muck	1.3	1.5%	100%	Hydric
166	Ronneby fine sandy loam	0	0.0%	5%	Predominantly Non-Hydric
452	Comstock silt loam, 0 to 3 percent slopes	7.2	8.1%	5%	Predominantly Non-Hydric
342B	Kingsley sandy loam, 2 to 6 percent slopes	0.2	0.2%	3%	Predominantly Non-Hydric
504B	Duluth silt loam, 1 to 6 percent slopes	10.9	12.2%	3%	Predominantly Non-Hydric
504C	Duluth silt loam, 6 to 12 percent slopes	10.9	12.3%	3%	Predominantly Non-Hydric
504D	Duluth silt loam, 12 to 25 percent slopes	7.9	8.9%	3%	Predominantly Non-Hydric
507	Poskin silt loam	5	5.6%	3%	Predominantly Non-Hydric
49C	Antigo silt loam, 6 to 15 percent slopes	1.4	1.6%	0%	Non-Hydric
153B	Santiago silt loam, 2 to 6 percent slopes	22.3	25.2%	0%	Non-Hydric
342C	Kingsley sandy loam, 6 to 12 percent slopes	4	4.5%	0%	Non-Hydric
342E	Kingsley sandy loam, 18 to 30 percent slopes	12.9	14.5%	0%	Non-Hydric
W	Water	4.8	5.4%	0%	Non-Hydric

The Minnesota DNR Public Waters Inventory (Minnesota Department of Natural Resources 2015) identified DNR Public Water Wetland 62-248 W (unnamed) within the review area, two unnamed DNR Public Water Wetlands (62-439 W and 82-440 W) within 1,000 sf of the review area boundaries, and an unnamed DNR Public Water Wetland within 1,200 sf of the eastern review area boundary (**Figure 5**).

The National Hydrography Dataset (U.S. Geological Survey 2015) showed five Lake/Pond surface water features within the review area (**Figure 6**).

4.2 Wetland Determinations and Delineations

Potential wetlands were evaluated during field observations on November 1st and 2nd, 2023. Fourteen (14) wetlands were identified and delineated on the property (**Figure 2**). Corresponding data forms are included in **Appendix B**. The following description of the wetlands and their adjacent upland reflects conditions observed at the time of the field visit. At that time, some vegetation was still growing, while some had senesced. Precipitation conditions were normal (typical) based on the three-month antecedent precipitation data for a date of November 1st, 2023, and above the normal range based on the 30-day rolling total. In the two weeks leading up to the site visit, 1.85” of precipitation fell (**Appendix C**). Delineated wetland characteristics are summarized in **Table 2** (see **pages 6 and 7**).

Table 2. Summary of Delineated Wetlands - Lower Afton Road

WL ID	Onsite Acreage	Circular 39	Cowardin	Eggers and Reed	Vegetation	Adjacent Upland Vegetation	Observed Drainage Features	Observed Hydrology Indicator/s	Mapped WTL	Mapped Soil Type & Observed Hydric Indicator	Incidental Status **
1	0.04	Type 3/1	PEM1Cx/Ax	Excavated shallow marsh with a seasonally flooded portion connected via excavated drainageway #1	Dominated by sandbar willow saplings with lesser amounts of cattails, reed canary grass, giant goldenrod.	Common buckthorn trees/shrubs, Allegheny blackberry, bush clover, Canada thistle, wild bergamot, cup plant, Kentucky bluegrass, and crown vetch.	A culvert inlet to the shallow marsh portion and two culverts on the NW boundary drained the excavated seasonally flooded portion.	Geomorphic Position & FAC-Neutral Test	None	Poskin silt loam (Predominantly Non-Hydric) & Santiago silt loam (Non-Hydric); Redox Dark Surface (F6)	Incidentally Created-Excavated in historic upland
2	0.78	Type 5	PUBGx	Excavated shallow open water	Narrow fringe of narrowleaf cattail, woolgrass, blue vervain, and sandbar willow.	Kentucky bluegrass, knapweed, wild bergamot, side oats grama, little bluestem, and Canada goldenrod.	None. No inlets or outlets observed.	Geomorphic Position & FAC-Neutral Test	PUBGx	Poskin silt loam (Predominantly Non-Hydric) & Santiago silt loam (Non-Hydric); Redox Dark Surface (F6)	Incidentally Created-Excavated in historic upland
3	0.77									Poskin silt loam (Predominantly Non-Hydric) & Comstock silt loam (Predominantly Non-Hydric); Redox Dark Surface (F6)	
4	0.81	Type 5/3/1	PABGx/PEM1Cx/PEM1Ax	Excavated shallow open water wetland with a shallow marsh fringe and an excavated seasonally flooded drainageway (#2)	Dominated by sandbar willow shrubs and narrowleaf cattails with lesser amounts of reed canary grass, woolgrass, purple loosestrife, northern bugleweed, and blue vervain.	Crown vetch, Canada thistle, cup plant, Canada goldenrod, Indian grass, common tansy, wild bergamot, ground ivy, New England aster, common mullein, little bluestem, and bush clover.	A culvert along the northern wetland boundary allows hydrology to outlet.	High Water Table, Saturation, Dry-Season Water Table, and FAC-Neutral Test	PABGx	Comstock silt loam (Predominantly Non-Hydric) & Santiago silt loam (Non-Hydric); 2cm Muck (A10), Depleted Below Dark Surface (A11), and Redox Dark Surface (F6)	Incidentally Created-Excavated in historic upland
5	0.33	Type 3/1	PEM1C/A	Shallow marsh with a seasonally flooded fringe	Dominated by river bulrush with lesser amounts of reed canary grass, narrowleaf cattail, and Pennsylvania smartweed.	Red-osier dogwood shrubs, grass-leaved goldenrod, Canada goldenrod, and curly dock.	Wetland 5 continued slightly offsite to the west.	Geomorphic Position & FAC-Neutral Test	PEM1C/A	Duluth silt loam (Predominantly Non-Hydric); Depleted Below Dark Surface (A11) and Depleted Matrix (F3)	Historic Wetland
6	0.65	Type 5/2/1	PABG/PEM1A	Shallow open water wetland with a wet meadow fringe and a seasonally flooded portion	Primarily open water with a fringe of reed canary grass, devil's beggarticks, river bulrush, and swamp milkweed. The seasonally flooded portion was dominated by reed canary grass.	Kentucky bluegrass, Canada thistle, common tansy, knapweed, and common mullein.	None. No inlets or outlets observed.	Geomorphic Position & FAC-Neutral Test	PUBF/PEM1A	Duluth silt loam (Predominantly Non-Hydric); Depleted Below Dark Surface (A11)	Historic Wetland
7	0.03	Type 1	PEM1Ax	Excavated wet meadow	Dominated by reed canary grass, pennsylvania smartweed, and woolgrass.	Kentucky bluegrass, common burdock, witchgrass, red-osier dogwood, big bluestem, sandbar willow, Virginia mountain mint, and Canada goldenrod.	None. No inlets or outlets observed.	High Water Table, Saturation, Dry-Season Water Table, Geomorphie Position & FAC-Neutral Test	None	Santiago silt loam (Non-Hydric); Depleted Matrix (F3)	Incidentally Created-Excavated in historic upland
8	0.23	Type 5/3	PEM1Fx/Cx	Excavated shallow open water wetland with a shallow marsh fringe	Primarily open water with a fringe of narrowleaf cattail, sandbar willow, eastern cottonwood saplings, reed canary grass, purple loosestrife, and woolgrass.	Kentucky bluegrass, crown vetch, big bluestem, wild bergamot, Canada goldenrod, and paper birch trees.	None. No inlets or outlets observed.	Geomorphie Position & FAC-Neutral Test	PUBGFx	Duluth silt loam (Predominantly Non-Hydric) & Santiago silt loam (Non-Hydric); 2cm Muck (A10) and Depleted Matrix (F3)	Incidentally Created-Excavated in historic upland

** Based on historic aerial review

Table 2. Summary of Delineated Wetlands - Lower Afton Road

WL ID	Onsite Acreage	Circular 39	Cowardin	Eggers and Reed	Vegetation	Adjacent Upland Vegetation	Observed Drainage Features	Observed Hydrology Indicator/s	Mapped NWI WTL	Mapped Soil Type & Observed Hydric Indicator	Incidental Status **
9	0.08	Type 5/2	PEM1F/B	Shallow open water with a wet meadow fringe	Primarily open water wetland with a fringe of reed canary grass, narrowleaf cattail, blue vervain, and devil's beggartick.	Quaking aspen and northern red oak trees, common buckthorn shrubs, kentucky bluegrass, and reed canary grass.	Wetland 9 continues offsite to the west.	Dry-Season Water Table, Geomorphic Position, and FAC-Neutral Test	PUBF/ PEM1A	Duluth silt loam (Predominantly Non-Hydric) & Kingsley sandy loam (Non-Hydric); 2 cm Muck (A10) and Thick Dark Surface (A12)	Historic Wetland
10	0.91	Type 5/3/2	PEM1F/C/B	Shallow open water with a shallow marsh and wet meadow fringe	Primarily open water with fringe of narrowleaf cattails, smartweed, blue vervain, and reed canary grass.	Red maple and northern red oak trees, common buckthorn shrubs, Kentucky bluegrass, Canada goldenrod, common mullein, curly dock, Canada thistle, and red-osier dogwood saplings.	None. No inlets or outlets observed.	Dry-Season Water Table, Geomorphic position, and FAC-Neutral Test	PUBGx	Duluth silt loam (Predominantly Non-Hydric) & Kingsley sand loam (Non-Hydric); Depleted Below Dark Surface (A11)	Historic Wetland
11	2.76	Type 5/3/2	PEM1F/C/B	Shallow open water with a shallow marsh and wet meadow fringe	Primarily open water with a fringe of narrowleaf cattail, river bulrush, devil's beggarticks, soft-stem bulrush, woolgrass, spotted joe-pye weed, blue lobelia, smartweed, blue vervain, sensitive fern, purple loosestrife, red-osier dogwood shrubs, and reed canary grass.	Kentucky bluegrass, smooth brome, common milkweed, New England aster, allegheny blackberry, virginia mountain mint, riverbank grape, common buckthorn shrubs, quaking aspen and paper birch trees.	None. No inlets or outlets observed.	Geomorphic Position and FAC-Neutral Test	PUBGx/ PEM1C/ PEM1A	Duluth silt loam (Predominantly Non-Hydric); 2 cm Muck (A10) and Thick Dark Surface (A12)	Historic Wetland
12	5.22	Type 5/3/2/1	PEM1F/C/B/ A	Shallow open water with a shallow marsh and wet meadow fringe and shallow marsh and seasonally flooded portions	Primarily open water with a fringe of narrowleaf cattail, devil's beggarticks, woolgrass, river bulrush, blue vervain, northern bugleweed, reed canary grass, and purple loosetrife.	Quaking aspen, northern red oak, and paper birch trees, common buckthorn, smooth sumac, riverbank grape, Kentucky bluegrass, <i>Rubus sp.</i> , Canada goldenrod, and big bluestem.	Wetland 12 continues offsite to the west.	Dry-Season Water Table, Geomorphic Position, and FAC-Neutral Test	PABG/ PEM1F/ PEM1C/ PEM1A DNR Public Water Wetland 62-248 W	Kingsley sandy loam (Non-Hydric), Duluth silt loam (Predominantly Non-Hydric); Depleted Below Dark Surface (A11) and Redox Dark Surface (F6)	Historic Wetland
13	0.07	Type 1	PEM1A	Seasonally flooded basin	Dominated by reed canary grass with lesser amounts of Pennsylvania smartweed, curly dock, and Canada thistle.	Red maple trees, common buckthorn shrubs, Kentucky bluegrass, common tansy, and Canada goldenrod.	None. No inlets or outlets observed.	Geomorphic Position and FAC-Neutral Test	PEM1A	Duluth silt loam (Predominantly Non-Hydric) and Kingley sandy loam (Non-Hydric); Redox Dark Surface (F6)	Historic Wetland
14	0.52	Type 5/2	PEM1Fx/B	Excavated shallow open water with wet meadow fringe	Primarily open water with a fringe of river bulrush, reed canary grass, northern bugleweed, Canada thistle, blue flag iris, and devil's beggarticks.	Paper birch and quaking aspen trees, Kentucky bluegrass, Canada goldenrod, and big bluestem.	None. No inlets or outlets observed.	Geomorphic Position and FAC-Neutral Test	PABGX	Duluth silt loam (Predominantly Non-Hydric); Depleted Matrix (F3)	Partially Incidentally Created- Partial Excavation in Upland

** Based on historic aerial review

4.3 Historic Aerial Review

A historic aerial review was conducted to determine if any of the fourteen wetlands delineated onsite were excavated in historic upland. Five Ramsey County historic aerial photographs were reviewed (2003, 1991, 1985, 1953, and 1940) (**Appendix D**). The 1991 and prior photographs represent the site before it was developed into a golf course. No wet signatures (soil saturation, standing water, crop stress, etc.) were observed in the current location of Wetlands 1, 2, 3, 4, 7, 8, and a portion of 14. The northwestern portion of Wetland 14 does not exhibit any wet signatures on the historic aerials as shown in **Appendix D**. These wetlands were determined to be incidental and not regulated by the Wetland Conservation Act.

4.4 Other Areas

Drainageway #1 is located in the northwest corner of the review area and connects the excavated shallow marsh portion to the excavated seasonally flooded portion of Wetland 1 and then outlets under Lower Afton Road. The channel was unvegetated with a rock bottom and uniform slopes.

Drainageway #2 is an ephemeral drainageway along the eastern boundary. The channel was dominated by reed canary grass with lesser amounts of Canada bluejoint and woolgrass. Riprap was placed intermittently. The drainageway sloped gradually downhill to the excavated shallow open water portion of Wetland 4.

No other depressional areas with hydrophytic vegetation or wetland hydrology were observed on the site. No other areas were shown as hydric soil on the soil survey or as wetland on the NWI map.

4.5 Request for Wetland Boundary and Jurisdictional Determination

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in a request for a wetland boundary and type determination approval from the Ramsey-Washington Metro Watershed District under the Minnesota Wetland Conservation Act (WCA). This report also requests incidental determinations approval for Wetlands 1, 2, 3, 4, 7, 8, and a portion of 14.

5. CERTIFICATION OF DELINEATION

The procedures utilized in the described delineation are based on the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. This wetland delineation and report were prepared in compliance with the regulatory standards in place at the time the work was performed. Site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation completed by: Mary Clare McAleer, Wetland/Soil Specialist
Minnesota Certified Wetland Professional In-Training No. 5466

Michael Gurrieri, Wetland Professional In-Training

Report prepared by: Mary Clare McAleer, Wetland/Soil Specialist
Minnesota Certified Wetland Professional In-Training No. 5466

Report reviewed by:  _____ Date: November 17th, 2023

Mark Kjolhaug, Professional Wetland Scientist No. 000845

Lower Afton Road

Wetland Delineation Report

FIGURES

1. Site Location
- 2A. Existing Conditions
- 2B. Existing Conditions North
- 2C. Existing Conditions South
3. National Wetlands Inventory
4. Soil Survey
5. DNR Protected Waters Inventory
6. National Hydrography Dataset
7. Offsite Hydrology Assessment Areas

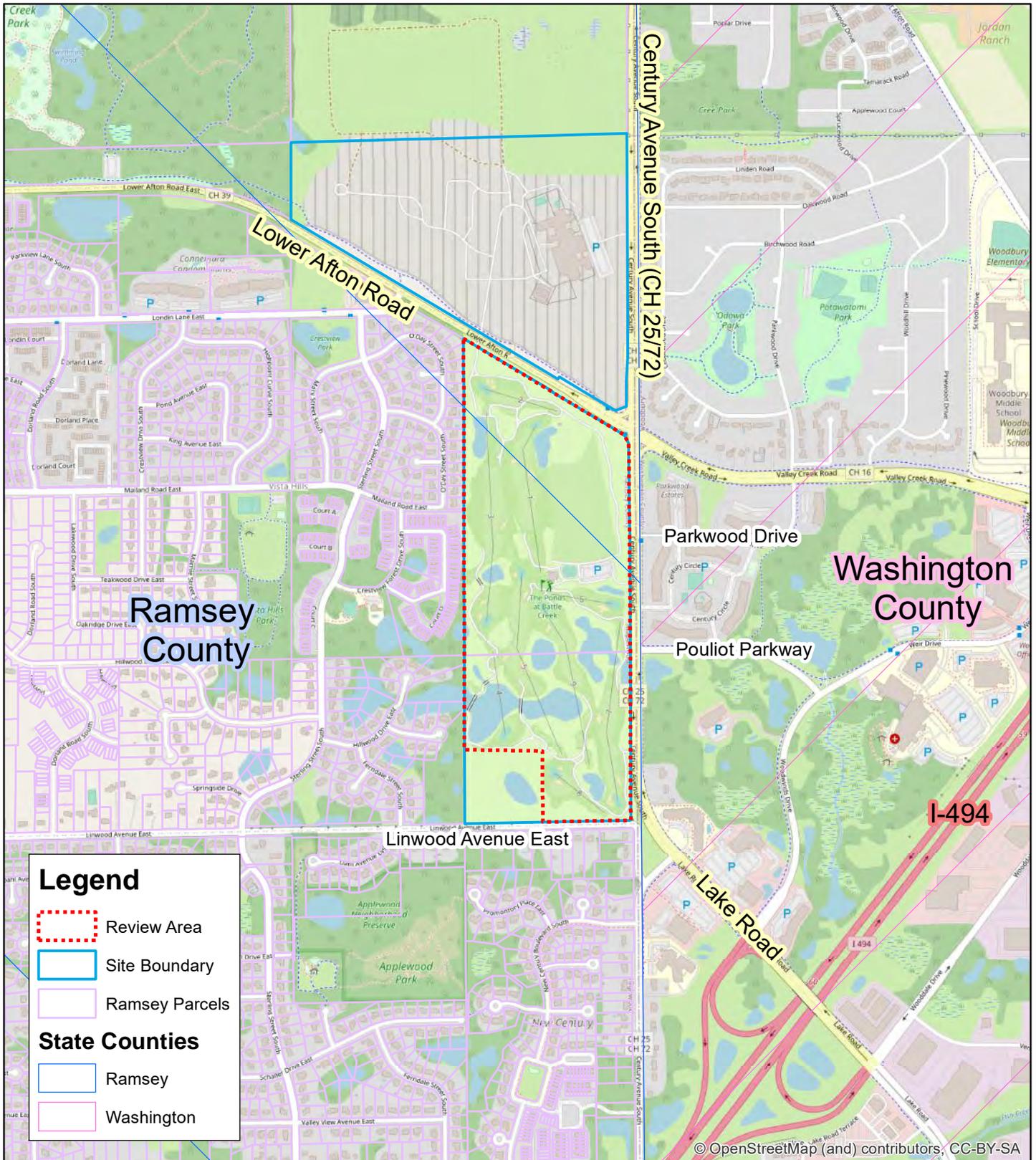


Figure 1 - Site Location

0 2,000 Feet

Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

KJØLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: OpenStreets Map

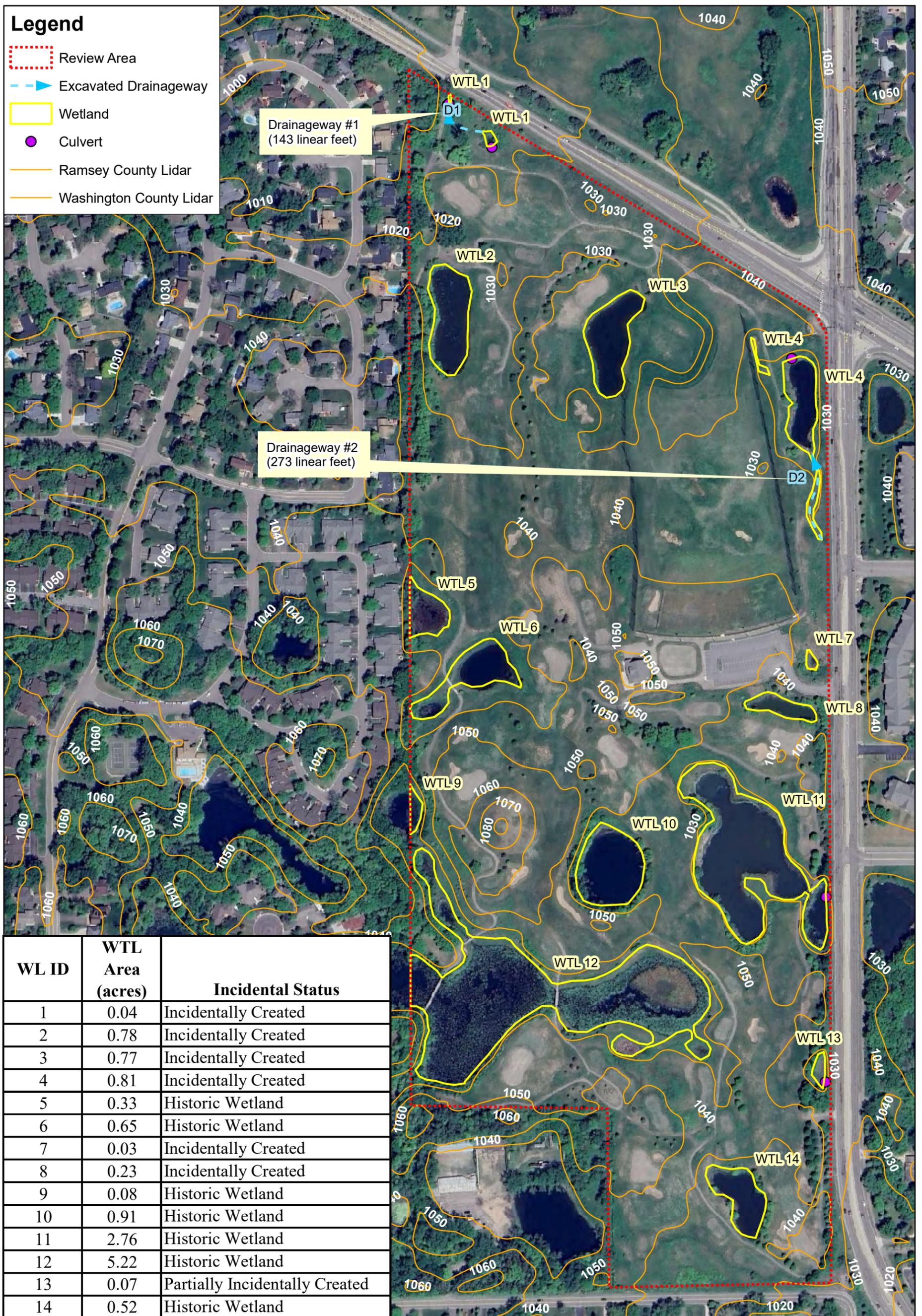
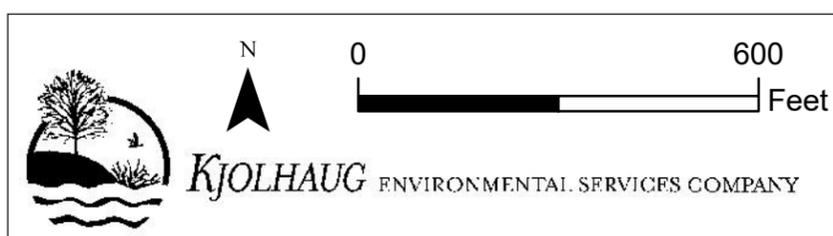


Figure 2A - Existing Conditions (5/25/2023 Google Earth Photo)



**Lower Afton Road (KES 2023-160)
Maplewood, Minnesota**

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

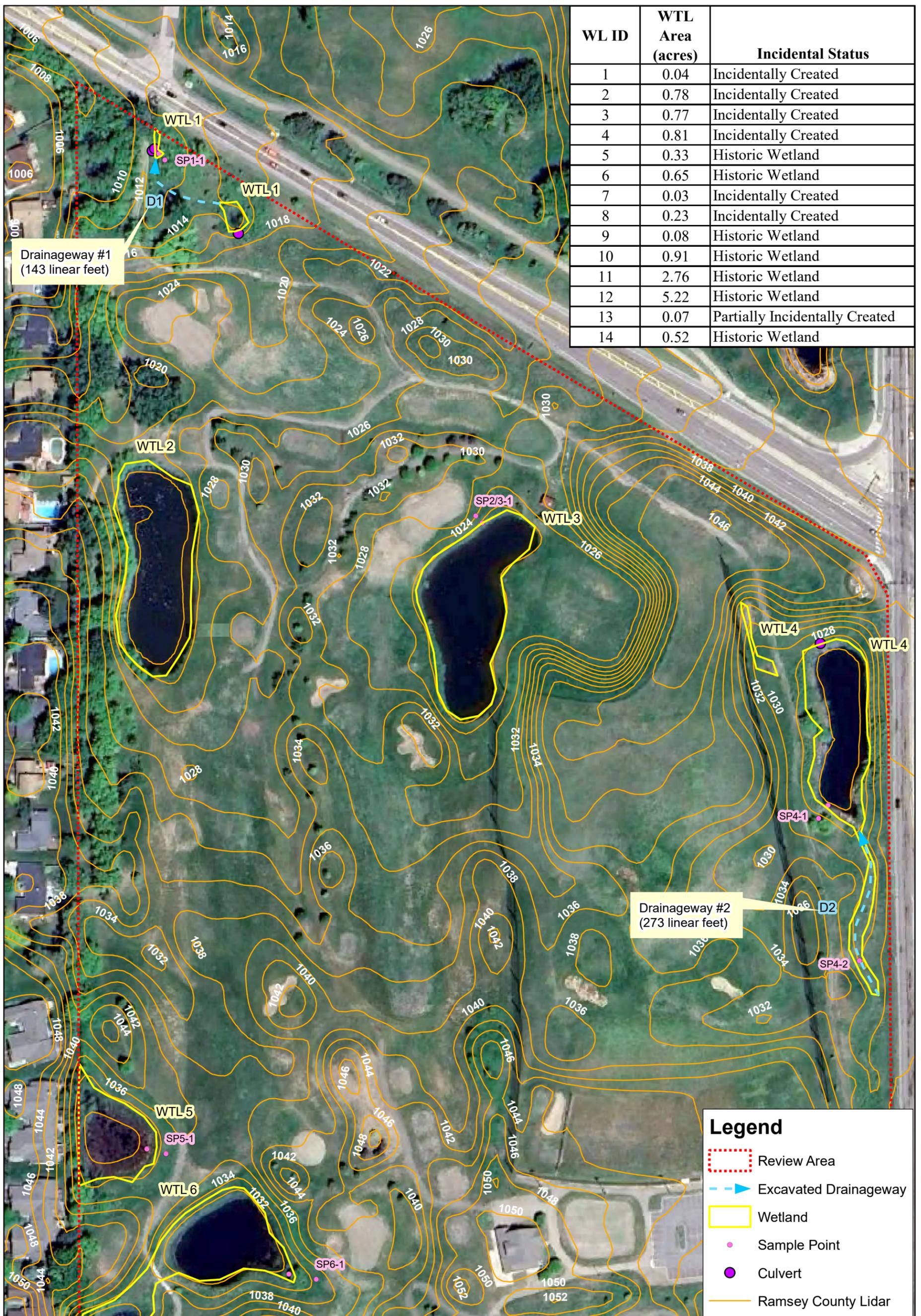


Figure 2B - Existing Conditions North (5/25/2023 Google Earth Photo)

0 600 Feet

Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

KJØLHAUG ENVIRONMENTAL SERVICES COMPANY



Figure 2C - Existing Conditions South (5/25/2023 Google Earth Photo)

Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Figure 2C - Existing Conditions South (5/25/2023 Google Earth Photo)

Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

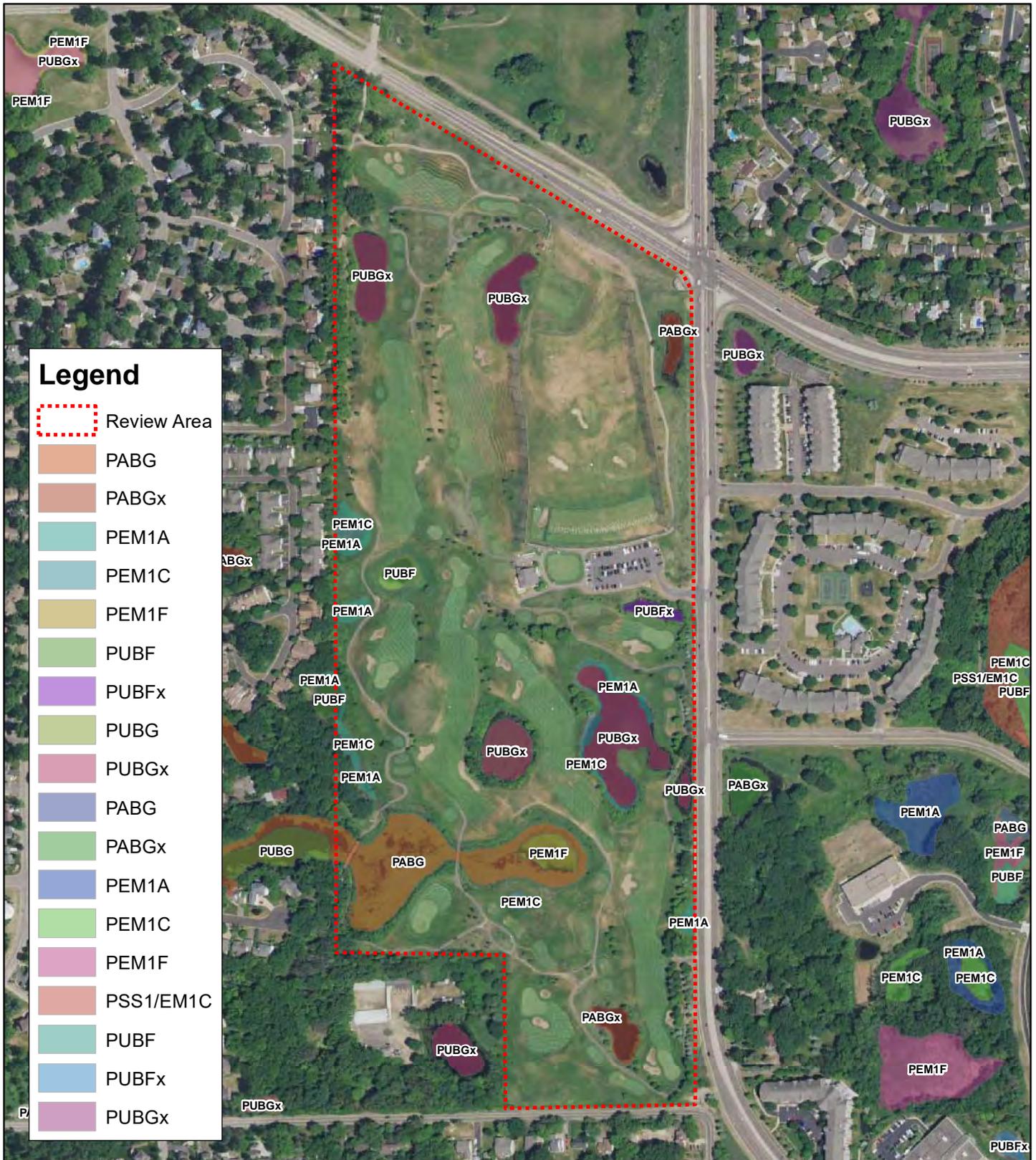


Figure 3 - National Wetlands Inventory



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USFWS

0 1,000



Feet

Lower Afton Road (KES 2023 -160)
Maplewood, Minnesota

N


Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

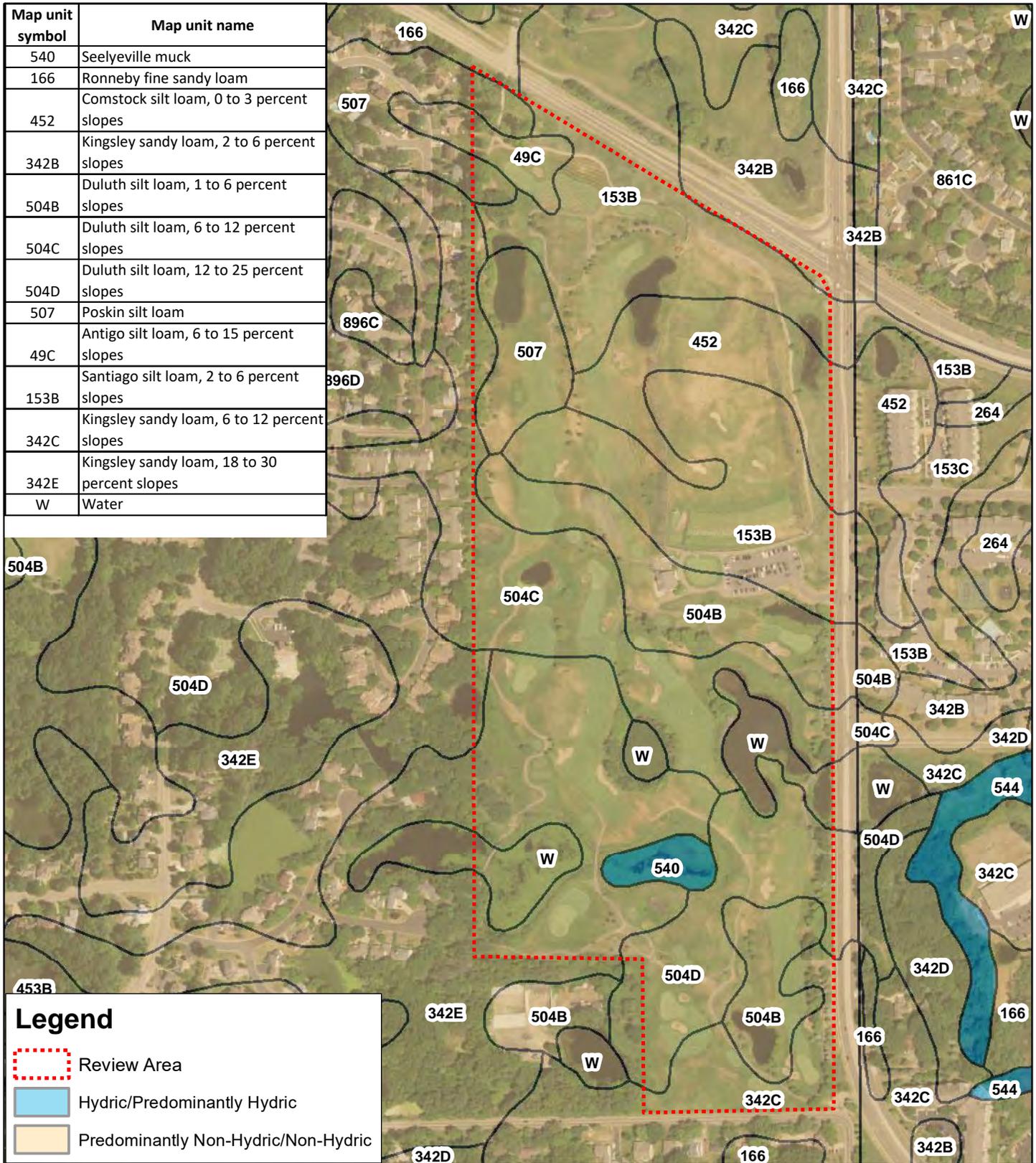


Figure 4 - Soil Survey



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
Source: MNGEO Spatial Commons, USDA, NRCS

0 1,000 Feet



Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Figure 5 - DNR Public Waters Inventory

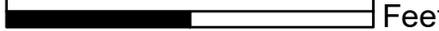


KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
Source: MNGEO Spatial Commons, MN DNR

N

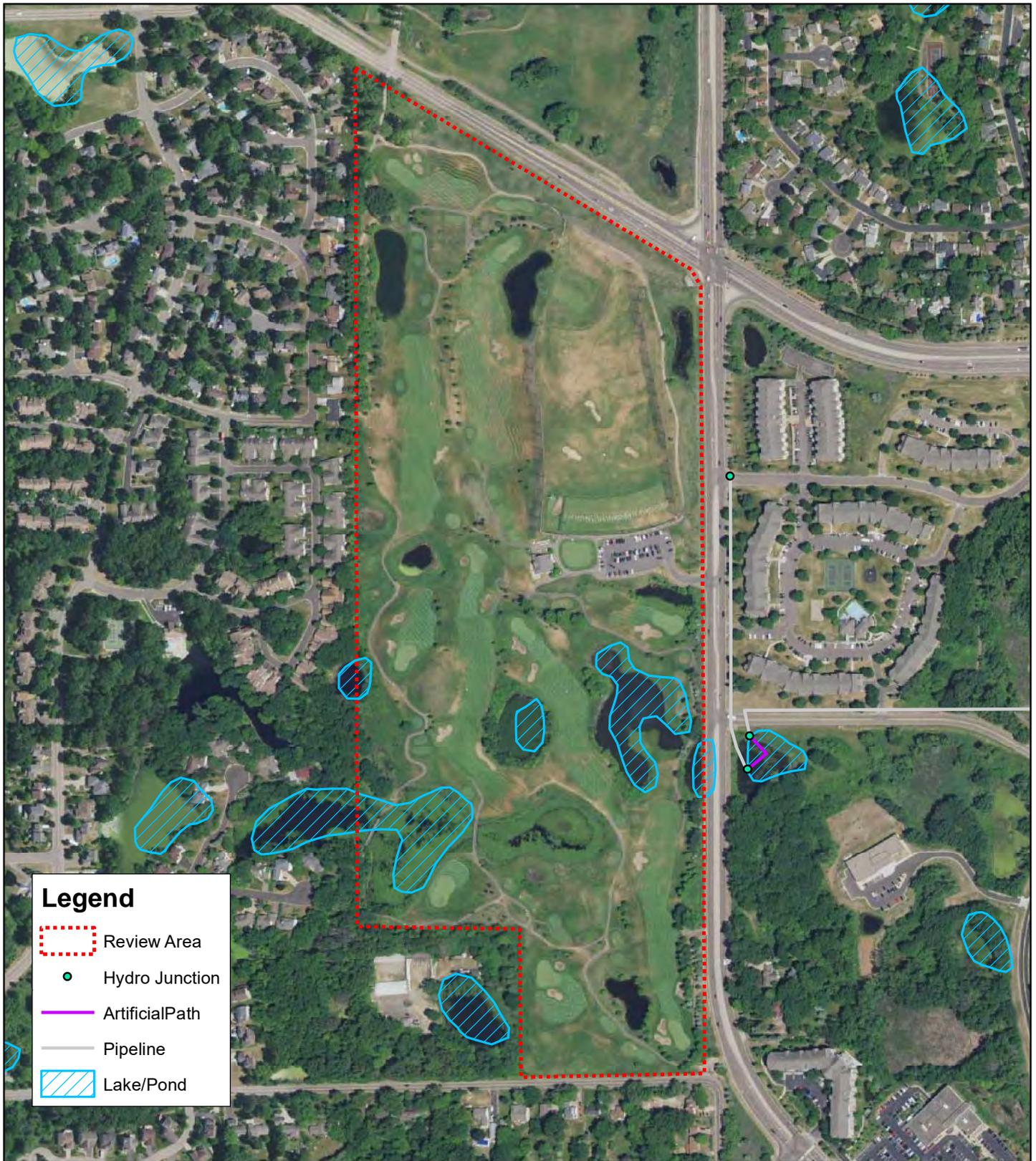


0 2,000 Feet



Lower Afton Road (KES 2023-160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Legend

- Review Area
- Hydro Junction
- Artificial Path
- Pipeline
- Lake/Pond

Figure 6 - National Hydrography Dataset

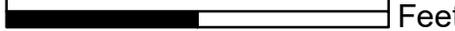


KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
Source: MNGEO Spatial Commons, USGS

N



0 1,000 Feet



Lower Afton Road (2023 - 160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Lower Afton Road

Wetland Delineation Report

APPENDIX A

Joint Application Form for Activities Affecting Water Resources in Minnesota

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: D. R. Horton, Deb Ridgeway
Mailing Address: 20860 Kenbridge Court, Suite 100, Lakeville, MN 55044
Phone: (952) 985-7864
E-mail Address: dridgeway@drhorton.com

Authorized Contact (do not complete if same as above):

Mailing Address:
Phone:
E-mail Address:

Agent Name: Kjolhaug Environmental Services; c/o Mary Clare McAleer
Mailing Address: 2500 Shadywood Road Excelsior, MN 55331
Phone: (224) 456-7944
E-mail Address: maryclare@kjolhaugenv.com

PART TWO: Site Location Information

County: Ramsey **City/Township:** Maplewood
Parcel ID and/or Address: 122822110002 (297 Century Avenue S) and 122822440002 (2621 Linwood Ave E)
Legal Description (Section, Township, Range): S: 12, T: 28N, R: 22W
Lat/Long (decimal degrees): (44.928513, -92.987635)
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 177.79 acres

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

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

PART THREE: General Project/Site Information

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

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

Wetland delineation concurrence/approval. Concurrence on incidental determination for Wetland 1, 2, 3, 4, 7, 8, and portions of 14.

PART FOUR: Aquatic Resource Impact¹ Summary

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

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

¹If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

²Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

³This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

⁴Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

⁵Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

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

PART FIVE: Applicant Signature

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

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

Signature:  Date: 11/6/2023

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

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

Attachment A

Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

Wetland Type Confirmation

Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

Wetland delineation concurrence/approval. Concurrence on incidental determination for Wetland 1, 2, 3, 4, 7, 8, and portions of 14.

Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).

<http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx>

Attachment B

Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part *if* you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR *if* you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

Chapter 8420.0105 Subp. 2 D states, "his chapter does not regulate impacts to incidental wetlands. "Incidental wetlands" are wetland areas that the landowner can demonstrate, to the satisfaction of the local government unit, were created in nonwetland areas solely by actions, the purpose of which was not to create the wetland. Incidental wetlands include drainage ditches, impoundments, or excavations constructed in nonwetlands solely for the purpose of effluent treatment, containment of waste material, storm water retention or detention, drainage, soil and water conservation practices, and water quality improvements and not as part of a wetland replacement process that may, over time, take on wetland characteristics."

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

See report. Based on the historical aerial review, the current locations of Wetlands 1, 2, 3, 4, 7, 8, and the northwestern portion of Wetland 14 were upland based on the 1940, 1953, 1985, and 1991 Ramsey County Aerial Photography.

Lower Afton Road

Wetland Delineation Report

APPENDIX B

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP1-1UP
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex
 Slope (%): 2-4% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Poskin silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 <u>Rhamnus cathartica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4 _____	_____	_____	_____	FAC species <u>25</u> x 3 = <u>75</u>	
5 _____	_____	_____	_____	FACU species <u>45</u> x 4 = <u>180</u>	
<u>15</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>	
				Column totals <u>70</u> (A) <u>255</u> (B)	
				Prevalence Index = B/A = <u>3.64</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Solidago canadensis</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	____ Rapid test for hydrophytic vegetation	
2 <u>Rhamnus cathartica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	____ Dominance test is >50%	
3 <u>Cirsium arvense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	____ Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____	____	
7 _____	_____	_____	_____	____	
8 _____	_____	_____	_____	____	
9 _____	_____	_____	_____	____	
10 _____	_____	_____	_____	____	
<u>55</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP1-1UP

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 3/3	100					Loam	
12-24	10YR 3/3	95	10YR 4/6	5	C	M	Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
---	--	---

<p>Field Observations:</p> <p>Surface water present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>Water table present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>Saturation present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP1-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Poskin silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology X significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 1</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database. The hydrology has been disturbed by the excavated portion that drains the shallow marsh portion of Wetland 1. The excavation now represent normal circumstances.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>5</u> x 1 = <u>5</u>
3 _____	_____	_____	_____	FACW species <u>80</u> x 2 = <u>160</u>
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
5 _____	_____	_____	_____	FACU species <u>15</u> x 4 = <u>60</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>100</u> (A) <u>225</u> (B)
				Prevalence Index = B/A = <u>2.25</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Phalaris arundinacea</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Solidago canadensis</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
3 <u>Lycopus uniflorus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP1-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 2/2	85	10YR 4/6	15	C	M	Silty Loam	
8-16	10YR 2/1	95	10YR 4/6	5	C	M	Clay Loam	
16-24	10YR 2/2	100					Silty Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface. The shallow marsh portion had approximately 3 inches of surface water.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP2/3-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 2-6% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Santiago silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>50</u> x 3 = <u>150</u>
5 _____	_____	_____	_____	FACU species <u>50</u> x 4 = <u>200</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>100</u> (A) <u>350</u> (B)
				Prevalence Index = B/A = <u>3.50</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Poa pratensis</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Solidago canadensis</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3 <u>Monarda fistulosa</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4 <u>Schizachyrium scoparium</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5 <u>Bouteloua dactyloides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP2/3-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 2/2	100					Clay loam	
12-24	10YR 2/2	90	10YR 4/6	10	C	M	Sandy loam	Gravel inclusions

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes No X Depth (inches): _____
 Water table present? Yes No X Depth (inches): _____
 Saturation present? Yes No X Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of the soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP2/3-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1 to 3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Santiago silt loam NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 2/3</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>90</u> (A) <u>180</u> (B) Prevalence Index = B/A = <u>2.00</u>
Sapling/Shrub stratum (Plot size: <u>15 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb stratum (Plot size: <u>5 ft.</u>)				
1 <i>Phalaris arundinacea</i>	80	Y	FACW	
2 <i>Salix interior</i>	10	N	FACW	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>90</u> = Total Cover				
Woody vine stratum (Plot size: <u>30 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				
Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic				
Hydrophytic vegetation present? <u>Y</u>				

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

SOIL

Sampling Point: SP2/3-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/2	100					Loam	
6-16	10YR 2/2	95	10YR 4/6	5	C	M	Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input checked="" type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u></p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Free water observed within 12 inches of the soil surface. Surface water was observed within the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP4-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 2 to 4% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Comstock silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u>Betula papyrifera</u>	10	Y	FACU	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
	10 = Total Cover			
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index Worksheet
1 _____	_____	_____	_____	Total % Cover of:
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>3</u> x 2 = <u>6</u>
4 _____	_____	_____	_____	FAC species <u>60</u> x 3 = <u>180</u>
5 _____	_____	_____	_____	FACU species <u>60</u> x 4 = <u>240</u>
	0 = Total Cover			UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>123</u> (A) <u>426</u> (B)
				Prevalence Index = B/A = <u>3.46</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	60	Y	FAC	____ Rapid test for hydrophytic vegetation
2 <u>Lotus corniculatus</u>	30	Y	FACU	____ Dominance test is >50%
3 <u>Schizachyrium scoparium</u>	15	N	FACU	____ Prevalence index is ≤3.0*
4 <u>Solidago canadensis</u>	5	N	FACU	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 <u>Symphotrichum novae-angliae</u>	3	N	FACW	____ Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
	113 = Total Cover			
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				Hydrophytic vegetation present? <u>N</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
	0 = Total Cover			

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

SOIL

Sampling Point: SP4-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 3/1	100					Silty loam	
12-24	10YR 3/3	95	10Y/R 4/6	5	C	M	Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p>		
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP4-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1-3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Comstock silt loam NWI Classification: PABGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 4</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>5</u> x 1 = <u>5</u>
3 _____	_____	_____	_____	FACW species <u>103</u> x 2 = <u>206</u>
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
_____	_____	_____	_____	Column totals <u>108</u> (A) <u>211</u> (B)
_____	_____	_____	_____	Prevalence Index = B/A = <u>1.95</u>
<u>0</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Phalaris arundinacea</u>	<u>70</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Salix interior</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	
3 <u>Cornus sericea</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4 <u>Typha angustifolia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5 <u>Symphotrichum novae-angliae</u>	<u>3</u>	<u>N</u>	<u>FACW</u>	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>108</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP4-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	10YR 2/1	100					Muck	
4-18	10YR 4/2	90	10Y/R 4/6	10	C	M	Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input checked="" type="checkbox"/> 2 cm Muck (A10)</p> <p><input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input checked="" type="checkbox"/> Surface Water (A1)</p> <p><input checked="" type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input checked="" type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
--	--	---	--

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u></p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Free water observed 8 inches from the soil surface. Surface water present in the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP4-2W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1-3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Comstock silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 4</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>14</u> x 1 = <u>14</u>	
3 _____	_____	_____	_____	FACW species <u>80</u> x 2 = <u>160</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>	
<u>0</u> = Total Cover				Column totals <u>94</u> (A) <u>174</u> (B)	
<u>94</u> = Total Cover				Prevalence Index = B/A = <u>1.85</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Phalaris arundinacea</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	____ Rapid test for hydrophytic vegetation	
2 <u>Scirpus cyperinus</u>	<u>7</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3 <u>Calamagrostis canadensis</u>	<u>7</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____	____	
7 _____	_____	_____	_____	____	
8 _____	_____	_____	_____	____	
9 _____	_____	_____	_____	____	
10 _____	_____	_____	_____	____	
<u>94</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP4-2W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/2	100					Clay loam	
6-18	10YR 3/2	95	10YR 4/6	5	C	M	Clay loam	
18-24	10YR 3/2	70	10YR 4/6	30	C	M	Clay	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP5-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 5-8% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft.</u>)				Prevalence Index Worksheet
1					Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>3.40</u>
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators:
1	<u>Solidago canadensis</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	<u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft.</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP5-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 3/2	100					Loam	
14-24	10YR 4/1	95	10YR 4/4	5	C	M	Clay loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p>		
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP5-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Duluth silt loam NWI Classification: PEM1C/A

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 5</u>
--	---

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index Worksheet Total % Cover of: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>105</u> (A) <u>205</u> (B) Prevalence Index = B/A = <u>1.95</u>
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)				
1 <u>Phalaris arundinacea</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Bolboschoenus fluviatilis</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>105</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

Hydrophytic Vegetation Indicators:
 _____ Rapid test for hydrophytic vegetation
 Dominance test is >50%
 Prevalence index is ≤3.0*
 _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 _____ Problematic hydrophytic vegetation* (explain)
 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: SP5-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-7	10YR 2/1	100					Loam	
7-14	10YR 5/1	100					Sandy clay loam	
14-24	10YR 5/1	85	10YR 4/6	15	C	M	Sandy clay loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
---	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of the soil surface. About 3 inches of surface water present in the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP6-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 4 to 7% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1	_____	_____	_____	_____	Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>20</u> x 5 = <u>100</u> Column totals <u>110</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>3.18</u>
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1	<u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	<u>Cirsium arvense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3	<u>Tanacetum vulgare</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
4	<u>Solidago canadensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5	<u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
6	<u>Centaurea stoebe</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
7	_____	_____	_____	_____	
8	_____	_____	_____	_____	
9	_____	_____	_____	_____	
10	_____	_____	_____	_____	
		<u>110</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP6-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	10YR 3/2	100					Loam	
4-12	10YR 4/4	100					Loam	Restricted= Compaction

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: <u>Compacted</u></p> <p>Depth (inches): <u>12</u></p>	<p>Hydric soil present? <u>N</u></p>
---	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>		<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>	
---	--	---	--	---	--

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>N</u></p>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 12 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP6-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 4 to 7% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Duluth silt loam NWI Classification: PEM1A

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 6</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____	_____	_____	_____	FACW species <u>85</u> x 2 = <u>170</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>15</u> x 4 = <u>60</u>	
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>	
<u>0</u> = Total Cover				Column totals <u>100</u> (A) <u>230</u> (B)	
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>2.30</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Phalaris arundinacea</u>	<u>75</u>	<u>Y</u>	<u>FACW</u>	____ Rapid test for hydrophytic vegetation	
2 <u>Cirsium arvense</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	<u>X</u> Dominance test is >50%	
3 <u>Verbena hastata</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<u>X</u> Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____	____	
7 _____	_____	_____	_____	____	
8 _____	_____	_____	_____	____	
9 _____	_____	_____	_____	____	
10 _____	_____	_____	_____	____	
<u>100</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP6-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	10YR 3/2	100					Loam	
4-10	10YR 4/2	80	10YR 4/6	20	C	M	Clay Loam	
10-14	10YR 4/2	70	10YR 4/6	30	C	M	Clay Loam	
14-22	10YR 2/1						Sandy Loam	Burried A Horizon
22-24	10YR 5/1	98	10YR 4/6	2	C	M	Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
---	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	--

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP7-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 3 to 8% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Santiago silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 <u>Salix interior</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>25</u> x 2 = <u>50</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
<u>15</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>105</u> (A) <u>290</u> (B)
				Prevalence Index = B/A = <u>2.76</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Andropogon gerardii</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	<u>X</u> Dominance test is >50%
3 <u>Pycnanthemum virginianum</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<u>X</u> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>90</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet)
 All but one species FAC or drier.

SOIL

Sampling Point: SP7-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 3/2	100					Loam	
10-24	10YR 4/6	100					Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP7-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Santiago silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 7</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1					Total % Cover of: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>105</u> (A) <u>205</u> (B) Prevalence Index = B/A = <u>1.95</u>
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1	<u><i>Phalaris arundinacea</i></u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	<u><i>Persicaria pensylvanica</i></u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3	<u><i>Scirpus cyperinus</i></u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4					
5					
6					
7					
8					
9					
10					
		<u>105</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present?
1					<u>Y</u>
2					
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP7-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 4/2	85	10YR 4/6	15	C	M	Clay loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 8
 Saturation present? Yes No Depth (inches): 8
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water table present at 8 inches below soil surface. About 2" of surface water present in the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP8-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 3-5% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____		Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across all Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 _____	_____	_____	_____		
3 _____	_____	_____	_____		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover				Prevalence Index Worksheet	
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)					Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>110</u> (A) <u>320</u> (B) Prevalence Index = B/A = <u>2.91</u>
1 <u>Cornus alba</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>		
2 _____	_____	_____	_____		
3 _____	_____	_____	_____		
4 _____	_____	_____	_____		
<u>30</u> = Total Cover				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)					
1 <u>Poa pratensis</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>		
2 <u>Andropogon gerardii</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>		
3 <u>Solidago canadensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>		
4 <u>Monarda fistulosa</u>	<u>10</u>	<u>N</u>	<u>FACU</u>		
5 _____	_____	_____	_____		
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
<u>80</u> = Total Cover					
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

Remarks: (Include photo numbers here or on a separate sheet)
 All but one species FAC or drier.

SOIL

Sampling Point: SP8-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 3/2						Loam	
14-24	10YR 4/4						Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes _____ No X Depth (inches): _____
 Saturation present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP8-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1-3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PUBFx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 8</u>
--	---

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>80</u> (A) <u>140</u> (B) Prevalence Index = B/A = <u>1.75</u>
Sapling/Shrub stratum (Plot size: <u>15 ft.</u>)					
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum (Plot size: <u>5 ft.</u>)					Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<i>Phalaris arundinacea</i>	40	Y	FACW	
2	<i>Salix interior</i>	20	Y	FACW	
3	<i>Typha angustifolia</i>	15	N	OBL	
4	<i>Scirpus cyperinus</i>	5	N	OBL	
5					
6					
7					
8					
9					
10					
		<u>80</u>	= Total Cover		
Woody vine stratum (Plot size: <u>30 ft.</u>)					
1					
2					
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP8-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-2	10YR 3/1	100					Muck	
2-12	10YR 4/2	70	10YR 4/6	20	C	M	Clay Loam	
			10YR 4/1	10	D	M	Clay Loam	
12-24	10YR 4/1	80	10YR 4/6	20	C	M	Clay Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input checked="" type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
---	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP9-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 10-12% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>66.67%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 <u>Rhamnus cathartica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>10</u> x 2 = <u>20</u>
4 _____	_____	_____	_____	FAC species <u>30</u> x 3 = <u>90</u>
5 _____	_____	_____	_____	FACU species <u>60</u> x 4 = <u>240</u>
<u>10</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>100</u> (A) <u>350</u> (B)
				Prevalence Index = B/A = <u>3.50</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Solidago canadensis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Poa pratensis</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	<u>X</u> Dominance test is >50%
3 <u>Glechoma hederacea</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	_____ Prevalence index is ≤3.0*
4 <u>Phalaris arundinacea</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	_____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>90</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet)
 All but one species FAC or drier. PI > 3

SOIL

Sampling Point: SP9-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/2	100					Loam	
6-15	10YR 3/3	95	10YR 4/6	5	C	M	Loamy Sand	
15-24	10YR 3/3	82	10YR 4/6	15	C	M	Sandy Loam	Gravel Inclusions
			10YR 4/1	3	D	M	Sandy Loam	Gravel Inclusions

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>Water table present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>Saturation present? Yes _____ No <u> X </u> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP9-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PEM1A

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 9</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>5</u> x 1 = <u>5</u>
3 _____	_____	_____	_____	FACW species <u>95</u> x 2 = <u>190</u>
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
_____	_____	_____	_____	Column totals <u>100</u> (A) <u>195</u> (B)
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>1.95</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Phalaris arundinacea</u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Lycopus uniflorus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP9-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Muck	
6-26	10YR 2/1	100					Clay Loam	Sand Inclusions

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input checked="" type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input checked="" type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:
Assumed depleted at some depth based on vegetation and water table observed in the sample borehole.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>22</u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>22</u></p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Free water present at 22 inches below soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP10-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 4 to 7% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u>Acer rubrum</u>	5	Y	FAC	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
	<u>5</u> = Total Cover			
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index Worksheet
1 _____	_____	_____	_____	Total % Cover of:
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>105</u> x 3 = <u>315</u>
5 _____	_____	_____	_____	FACU species <u>5</u> x 4 = <u>20</u>
	<u>0</u> = Total Cover			UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>110</u> (A) <u>335</u> (B)
				Prevalence Index = B/A = <u>3.05</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	100	Y	FAC	____ Rapid test for hydrophytic vegetation
2 <u>Solidago canadensis</u>	5	N	FACU	<u>X</u> Dominance test is >50%
3 _____	_____	_____	_____	____ Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
	<u>105</u> = Total Cover			
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				<small>*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>
1 _____	_____	_____	_____	Hydrophytic vegetation present? <u>Y</u>
2 _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Remarks: (Include photo numbers here or on a separate sheet)
 All species FAC or drier. PI > 3

SOIL

Sampling Point: SP10-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 3/2	100					Loam	
8-18	10YR 4/4	100					Loam	Gravel Inclusions
18+								Restricted

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: <u>Rock</u></p> <p>Depth (inches): <u>18</u></p>	<p>Hydric soil present? <u>N</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>N</u></p>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 18 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP10-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 10</u>
--	--

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are atypical (dry) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index Worksheet Total % Cover of: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>80</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>1.50</u>
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)				
1 <u>Typha angustifolia</u>	40	Y	OBL	
2 <u>Verbena hastata</u>	15	N	FACW	
3 <u>Persicaria pensylvanica</u>	15	N	FACW	
4 <u>Phalaris arundinacea</u>	10	N	FACW	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>80</u> = Total Cover				Hydrophytic vegetation present? <u>Y</u>
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP10-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 2/1	100					Loam	
8-16	10YR 5/1	60	10YR 4/6	40	C	M	Clay Loam	
16-24	10YR 6/2	70	10YR 4/6	30	C	M	Clay Loam	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
---	--------------------------------------

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9)	
	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Stunted or Stressed Plants (D1)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>18</u> Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>18</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Free water present at 18 inches below the soil surface. Surface water present in the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP11-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 5 to 8% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4 _____	_____	_____	_____	FAC species <u>90</u> x 3 = <u>270</u>	
5 _____	_____	_____	_____	FACU species <u>5</u> x 4 = <u>20</u>	
_____	_____	_____	_____	UPL species <u>10</u> x 5 = <u>50</u>	
_____	_____	_____	_____	Column totals <u>105</u> (A) <u>340</u> (B)	
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>3.24</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Poa pratensis</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	____ Rapid test for hydrophytic vegetation	
2 <u>Verbascum thapsus</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	<u>X</u> Dominance test is >50%	
3 <u>Cirsium arvense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	____ Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>105</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

Remarks: (Include photo numbers here or on a separate sheet)
 All species FAC or drier. PI > 3

SOIL

Sampling Point: SP11-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 3/2	100					Loam	
10-24	10YR 4/4	100					Clay Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p>		
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP11-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 11</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 <u>Cornus alba</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of:	
2 _____	_____	_____	_____	OBL species	<u>60</u> x 1 = <u>60</u>
3 _____	_____	_____	_____	FACW species	<u>40</u> x 2 = <u>80</u>
4 _____	_____	_____	_____	FAC species	<u>0</u> x 3 = <u>0</u>
5 _____	_____	_____	_____	FACU species	<u>5</u> x 4 = <u>20</u>
<u>10</u> = Total Cover				UPL species	<u>0</u> x 5 = <u>0</u>
				Column totals	<u>105</u> (A) <u>160</u> (B)
				Prevalence Index = B/A = <u>1.52</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Typha angustifolia</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	<u> </u> Rapid test for hydrophytic vegetation	
2 <u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	<u>X</u> Dominance test is >50%	
3 <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	<u>X</u> Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	<u> </u> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	<u> </u> Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>95</u> = Total Cover					
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP11-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Muck	
6-18	10YR 2/1	100					Clay Loam	
18-24	10YR 6/1	100					Sandy Clay Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input checked="" type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input checked="" type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	--	--

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes _____ No <u>X</u> Depth (inches): _____</p> <p>Water table present? Yes _____ No <u>X</u> Depth (inches): _____</p> <p>Saturation present? Yes _____ No <u>X</u> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP12-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 10 to 14% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Kingsley sandy loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>10</u> x 2 = <u>20</u>
4 _____	_____	_____	_____	FAC species <u>20</u> x 3 = <u>60</u>
5 _____	_____	_____	_____	FACU species <u>65</u> x 4 = <u>260</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>95</u> (A) <u>340</u> (B)
				Prevalence Index = B/A = <u>3.58</u>
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Solidago canadensis</u>	<u>65</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Poa pratensis</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
3 <u>Cornus alba</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4 <u>Andropogon gerardii</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP12-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 3/2	100					Loam	
8-24	10YR 4/4	100					Sandy Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP12-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Kingsley sandy loam NWI Classification: PABG

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 12</u>
--	--

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

	Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1	_____	_____	_____	_____	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		
	<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>42</u> x 1 = <u>42</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>107</u> (A) <u>172</u> (B) Prevalence Index = B/A = <u>1.61</u>
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		
	<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Phalaris arundinacea</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	
2	<u>Lythrum salicaria</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
3	<u>Bolboschoenus fluviatilis</u>	<u>7</u>	<u>N</u>	<u>OBL</u>	
4	<u>Bidens frondosa</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5	<u>Lycopus uniflorus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
6	_____	_____	_____	_____	
7	_____	_____	_____	_____	
8	_____	_____	_____	_____	
9	_____	_____	_____	_____	
10	_____	_____	_____	_____	
		<u>107</u>	= Total Cover		
	<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)				Hydrophytic vegetation present? <u>Y</u>
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP12-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-5	10YR 2/2	95	10YR 4/6	5	C	M	Clay Loam	
5-24	10YR 5/2	90	10YR 4/6	10	C	M	Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 14
 Saturation present? Yes No Depth (inches): 14
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Free water present at 14 inches below soil surface. Surface water present within the center of the basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP12-2W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Kingsley sandy loam NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 12</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____		Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____		Total % Cover of:
2 _____	_____	_____	_____	OBL species <u>55</u> x 1 = <u>55</u>	
3 _____	_____	_____	_____	FACW species <u>50</u> x 2 = <u>100</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>5</u> x 4 = <u>20</u>	
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>	
_____	_____	_____	_____	Column totals <u>110</u> (A) <u>175</u> (B)	
_____	_____	_____	_____	Prevalence Index = B/A = <u>1.59</u>	
<u>0</u> = Total Cover					
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Bolboschoenus fluviatilis</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>		<u> </u> Rapid test for hydrophytic vegetation
2 <u>Phalaris arundinacea</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>		<u>X</u> Dominance test is >50%
3 <u>Solidago gigantea</u>	<u>10</u>	<u>N</u>	<u>FACW</u>		<u>X</u> Prevalence index is ≤3.0*
4 <u>Lythrum salicaria</u>	<u>5</u>	<u>N</u>	<u>OBL</u>		Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 <u>Cirsium arvense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>110</u> = Total Cover					
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status		
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP12-2W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 2/1	95	10YR 4/6	5	C	M	Loam	
10-24	10YR 4/1	85	10YR 4/6	15	C	M	Clay Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
---	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of the soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP13-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1-6% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> if yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u>Acer rubrum</u>	10	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across all Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>10</u> = Total Cover				Prevalence Index Worksheet
Total % Cover of:				
OBL species <u>0</u> x 1 = <u>0</u>				
FACW species <u>0</u> x 2 = <u>0</u>				
FAC species <u>110</u> x 3 = <u>330</u>				
FACU species <u>5</u> x 4 = <u>20</u>				
UPL species <u>0</u> x 5 = <u>0</u>				
Column totals <u>115</u> (A) <u>350</u> (B)				
Prevalence Index = B/A = <u>3.04</u>				
Hydrophytic Vegetation Indicators:				
____ Rapid test for hydrophytic vegetation				
<u>X</u> Dominance test is >50%				
____ Prevalence index is ≤3.0*				
____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)				
____ Problematic hydrophytic vegetation* (explain)				
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic				
Hydrophytic vegetation present? <u>Y</u>				
Herb stratum (Plot size: <u>5 ft.</u>)				
1 <u>Poa pratensis</u>	95	Y	FAC	
2 <u>Glechoma hederacea</u>	5	N	FACU	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody vine stratum (Plot size: <u>30 ft.</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet)
 All species FAC or drier. PI > 3

SOIL

Sampling Point: SP13-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 3/1	100					Silt Loam	
14-24	10YR 4/4	100					Silt Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	---	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p>		
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u> N </u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP13-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PEM1A

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 13</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>	
_____	_____	_____	_____	Column totals <u>100</u> (A) <u>200</u> (B)	
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>2.00</u>	
<u>Herb stratum</u> (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Phalaris arundinacea</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	____ Rapid test for hydrophytic vegetation	
2 _____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3 _____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4 _____	_____	_____	_____	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>100</u> = Total Cover					
<u>Woody vine stratum</u> (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status		
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: SP13-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	10YR 2/1	100					Loam	
4-12	10YR 2/1	93	10YR 4/6	7	C	M	Silt Loam	
12-24	10YR 2/1	90	10YR 4/6	10	C	M	Silt Loam	

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
--	--	---

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
--	--------------------------------------

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
---	--	---	---

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP14-1Up
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1-6% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u>Betula papyrifera</u>	15	Y	FACU	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
15 = Total Cover				
Sapling/Shrub stratum (Plot size: <u>15 ft.</u>)				
1 _____	_____	_____	_____	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>110</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>3.36</u>
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
0 = Total Cover				
Herb stratum (Plot size: <u>5 ft.</u>)				
1 <u>Poa pratensis</u>	60	Y	FAC	Hydrophytic Vegetation Indicators: ____ Rapid test for hydrophytic vegetation ____ Dominance test is >50% ____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2 <u>Solidago canadensis</u>	25	Y	FACU	
3 <u>Andropogon gerardii</u>	10	N	FAC	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
95 = Total Cover				
Woody vine stratum (Plot size: <u>30 ft.</u>)				
1 _____	_____	_____	_____	Hydrophytic vegetation present? <u>N</u>
2 _____	_____	_____	_____	
0 = Total Cover				

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

SOIL

Sampling Point: SP14-1Up

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 3/1	100					Silt Loam	
16-24	10YR 3/1	97	10YR 4/4	3	C	M	Silt Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes _____ No X Depth (inches): _____
 Saturation present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lower Afton Road City/County: Maplewood/Ramsey Sampling Date: 11/1/2023
 Applicant/Owner: D.R. Horton State: MN Sampling Point: SP14-1W
 Investigator(s): Mary Clare M. & Michael G. Section, Township, Range: S: 12, T:28N, R:22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Duluth silt loam NWI Classification: PABGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 14</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Climatic conditions are typical (normal) based on the gridded database.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u>	(Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
<u>Sapling/Shrub stratum</u>	(Plot size: <u>15 ft.</u>)				Prevalence Index Worksheet
1					Total % Cover of: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>70</u> x 2 = <u>140</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>170</u> (B) Prevalence Index = B/A = <u>1.70</u>
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
<u>Herb stratum</u>	(Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u><i>Phalaris arundinacea</i></u>	<u>70</u>	<u>Y</u>	<u>FACW</u>	
2	<u><i>Scirpus pedicellatus</i></u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	
3	<u><i>Lycopus uniflorus</i></u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
<u>Woody vine stratum</u>	(Plot size: <u>30 ft.</u>)				Hydrophytic vegetation present? <u>Y</u>
1					
2					
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP14-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 5/2	70	10YR 4/6	30	C	M	Loam	
12-24	10YR 4/6						Sandy Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes _____ No X Depth (inches): _____
 Saturation present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No free water or saturation observed within 24 inches of soil surface. Surface water present in the center of the basin.

Lower Afton Road

Wetland Delineation Report

APPENDIX C

Precipitation Data

Maplewood, Minnesota: Precipitation Summary

Source: Minnesota Climatology Working Group

Site Visit: November 1st and 2nd, 2023

Monthly Totals: 2023

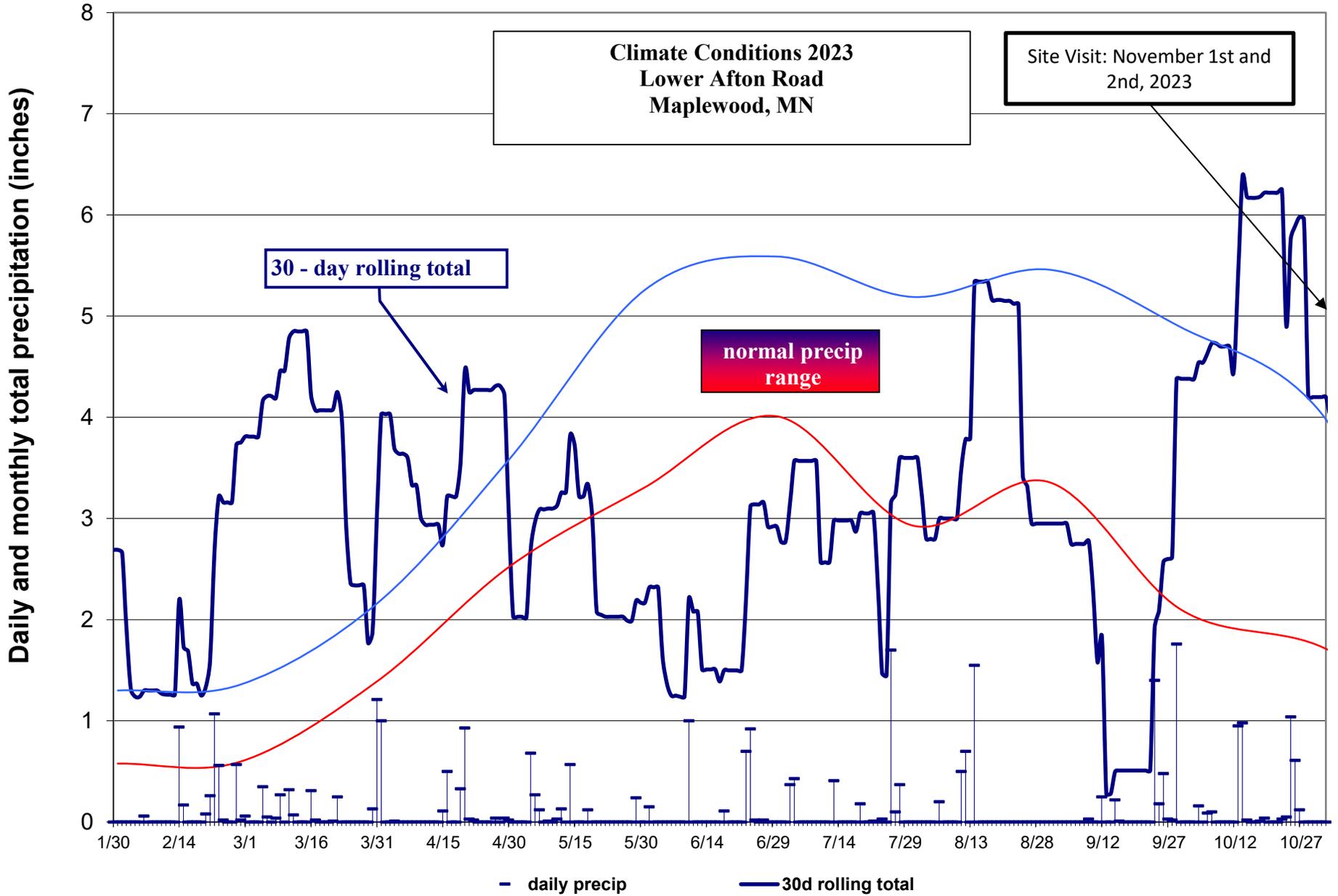
Target: T 28N R 22W S 12, Lat: 44.928513 Lon: -92.987635
 mon year cc tttN rrw ss nnnn oooooooooo pre
 Jan 2023 62 29N 22W 35 SWCD 2.69
 Feb 2023 62 29N 22W 35 SWCD 3.75
 Mar 2023 62 29N 22W 35 SWCD 3.09
 Apr 2023 82 28N 21W 18 SWCD 3.03
 May 2023 82 28N 21W 18 SWCD 2.17
 Jun 2023 82 28N 21W 18 SWCD 2.92
 Jul 2023 82 28N 21W 18 SWCD 3.60
 Aug 2023 82 28N 21W 18 SWCD 2.95
 Sep 2023 82 28N 21W 18 SWCD 4.38
 Oct 2023 82 28N 21W 16 SWCD 4.20
 Nov 2023 m

August/September/October/November Daily Records

Date	Precip.	Date	Precip.	Date	Precip.	Date	Precip.
Aug 1, 2023	0	Sep 1, 2023	0	Oct 1, 2023	m	Nov 1, 2023	0
Aug 2, 2023	0	Sep 2, 2023	0	Oct 2, 2023	0	Nov 2, 2023	0
Aug 3, 2023	0	Sep 3, 2023	0	Oct 3, 2023	T		
Aug 4, 2023	0	Sep 4, 2023	0	Oct 4, 2023	.16		
Aug 5, 2023	0	Sep 5, 2023	0	Oct 5, 2023	0		
Aug 6, 2023	.20	Sep 6, 2023	0	Oct 6, 2023	.09		
Aug 7, 2023	0	Sep 7, 2023	0	Oct 7, 2023	.10		
Aug 8, 2023	0	Sep 8, 2023	0	Oct 8, 2023	0		
Aug 9, 2023	0	Sep 9, 2023	.03	Oct 9, 2023	0		
Aug 10, 2023	0	Sep 10, 2023	0	Oct 10, 2023	0		
Aug 11, 2023	.50	Sep 11, 2023	0	Oct 11, 2023	0		
Aug 12, 2023	.70	Sep 12, 2023	.25	Oct 12, 2023	0		
Aug 13, 2023	-	Sep 13, 2023	0	Oct 13, 2023	.95		
Aug 14, 2023	1.55	Sep 14, 2023	0	Oct 14, 2023	.98		
Aug 15, 2023	0	Sep 15, 2023	.22	Oct 15, 2023	.02		
Aug 16, 2023	0	Sep 16, 2023	.01	Oct 16, 2023	0		
Aug 17, 2023	0	Sep 17, 2023	0	Oct 17, 2023	0		
Aug 18, 2023	0	Sep 18, 2023	0	Oct 18, 2023	.01		
Aug 19, 2023	0	Sep 19, 2023	0	Oct 19, 2023	.04		
Aug 20, 2023	0	Sep 20, 2023	0	Oct 20, 2023	0		
Aug 21, 2023	0	Sep 21, 2023	0	Oct 21, 2023	0		
Aug 22, 2023	0	Sep 22, 2023	0	Oct 22, 2023	0		
Aug 23, 2023	0	Sep 23, 2023	0	Oct 23, 2023	.03		
Aug 24, 2023	0	Sep 24, 2023	1.40	Oct 24, 2023	.05		
Aug 25, 2023	0	Sep 25, 2023	.18	Oct 25, 2023	1.04		
Aug 26, 2023	0	Sep 26, 2023	.48	Oct 26, 2023	.61		
Aug 27, 2023	0	Sep 27, 2023	.03	Oct 27, 2023	.12		
Aug 28, 2023	0	Sep 28, 2023	.02	Oct 28, 2023	0		
Aug 29, 2023	0	Sep 29, 2023	1.76	Oct 29, 2023	0		
Aug 30, 2023	0	Sep 30, 2023	0	Oct 30, 2023	0		
Aug 31, 2023	0			Oct 31, 2023	0		

1991-2020 Summary Statistics

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.58	0.60	1.39	2.52	3.31	4.01	2.93	3.36	2.10	1.75	1.04	0.84	19.59	31.67	31.37
70%	1.30	1.36	2.16	3.58	5.26	5.59	5.19	5.46	4.89	4.09	1.86	1.83	23.54	36.75	36.36
mean	0.98	1.00	1.85	3.10	4.33	5.03	4.25	4.47	3.37	2.98	1.73	1.43	21.46	34.53	34.46



Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

[home](#) | [current conditions](#) | [journal](#) | [past data](#) | [summaries](#) | [agriculture](#) | [other sites](#) | [about us](#) 

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Washington** township number: **28N**
township name: **unnamed** range number: **22W**
nearest community: **Highwood** section number: **12**

Aerial photograph or site visit date:

Wednesday, November 1, 2023

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: October 2023	second prior month: September 2023	third prior month: August 2023
estimated precipitation total for this location:	4.20	4.57R	3.23R
there is a 30% chance this location will have less than:	1.75	2.10	3.36
there is a 30% chance this location will have more than:	4.09	4.89	5.46
type of month: dry normal wet	wet	normal	dry
monthly score	3 * 3 = 9	2 * 2 = 4	1 * 1 = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	Normal (14)		

Other Resources:

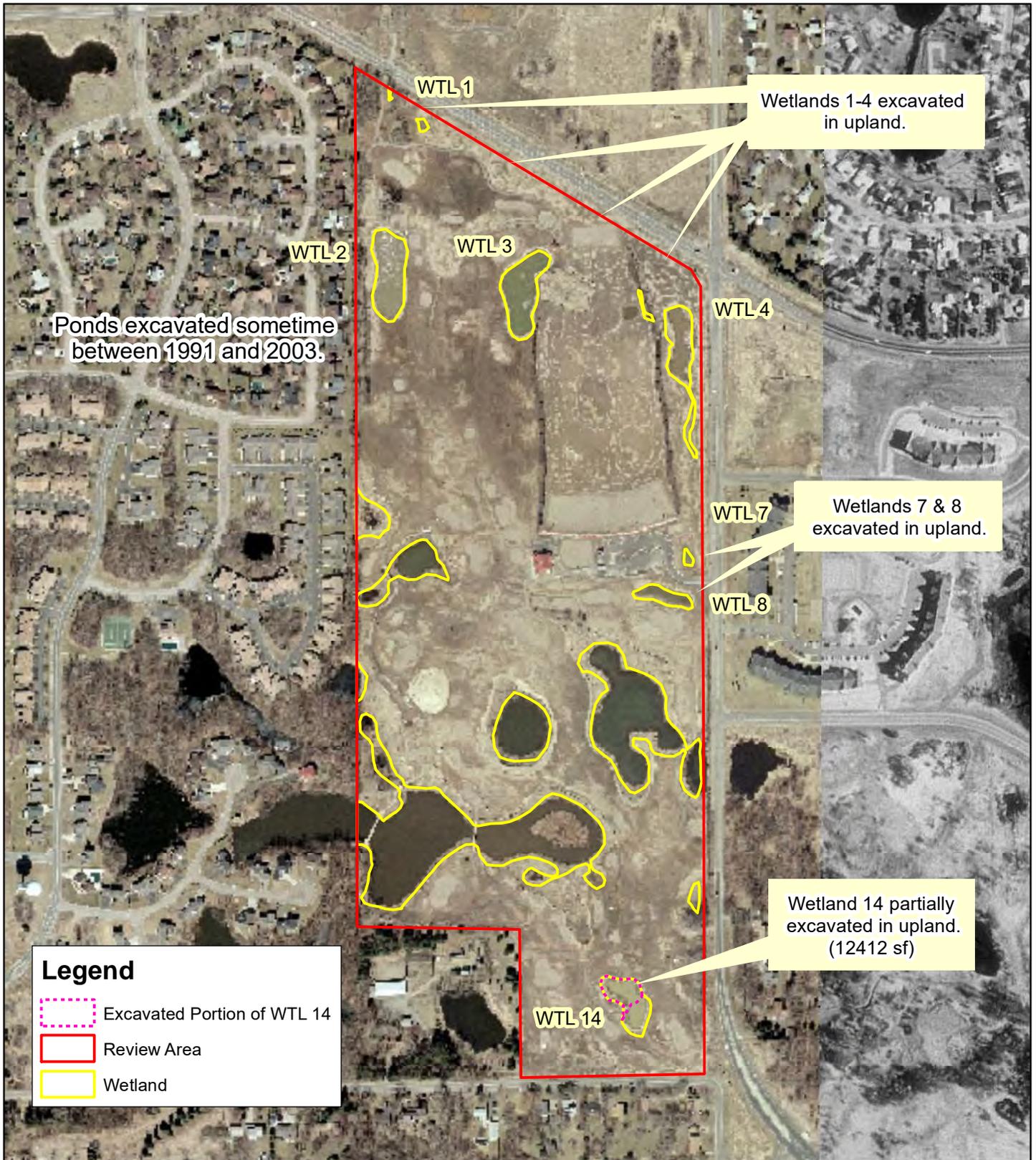
- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

Lower Afton Road

Wetland Delineation Report

APPENDIX D

Historic Aerial Review



Historic Aerial Review- 2003 Ramsey County Aerial Photo



N

0 1,000



Feet

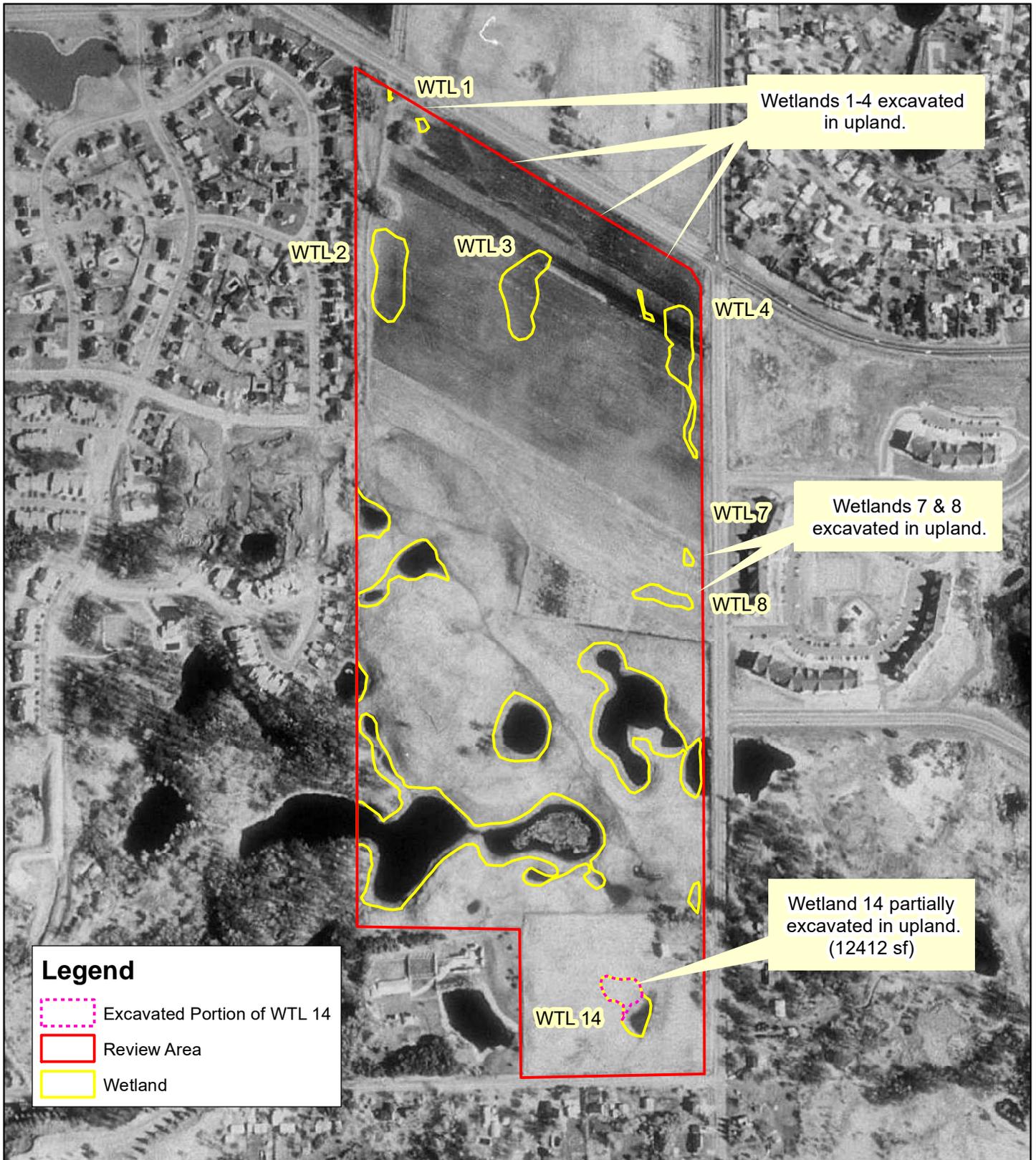
Lower Afton Road (2023 - 160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USGS



Historic Aerial Review- 1991 Ramsey County Aerial Photo



N

0 1,000



Feet

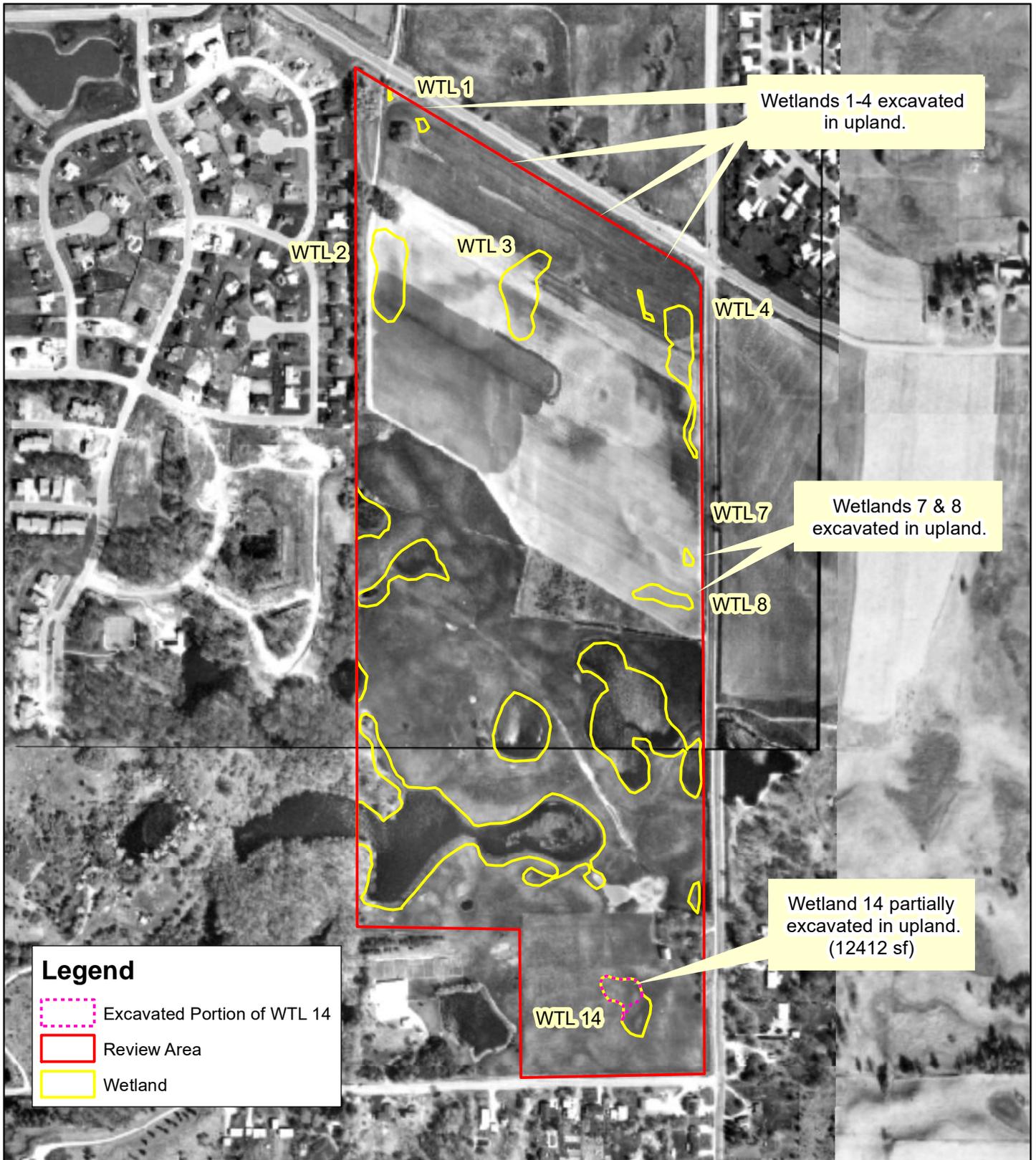
Lower Afton Road (2023 - 160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USGS



Historic Aerial Review- 1985 Ramsey County Aerial Photo



N

0 1,000



Feet

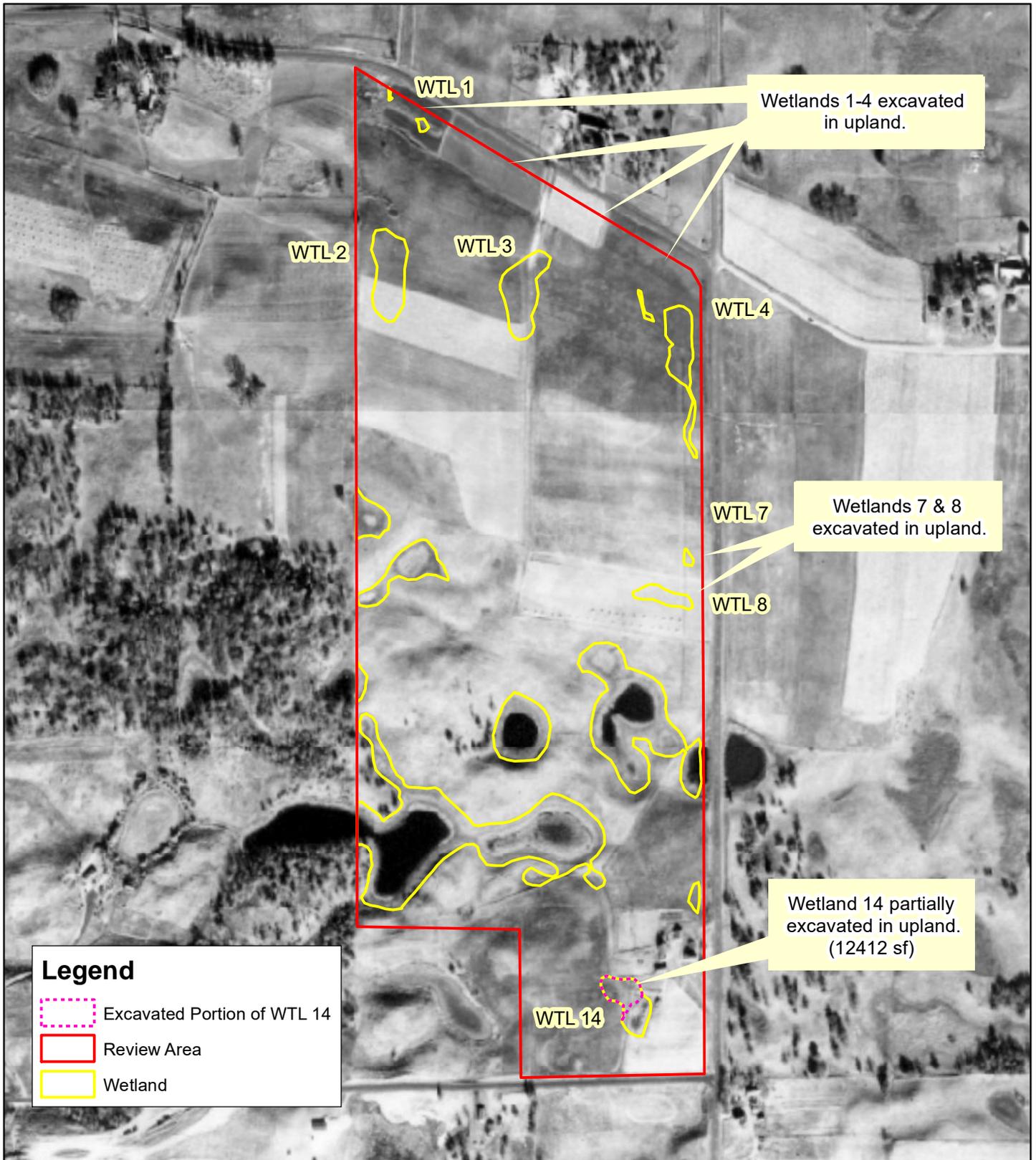
Lower Afton Road (2023 - 160)
Maplewood, Minnesota



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USGS

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Historic Aerial Review- 1953 Ramsey County Aerial Photo



N

0 1,000



Feet

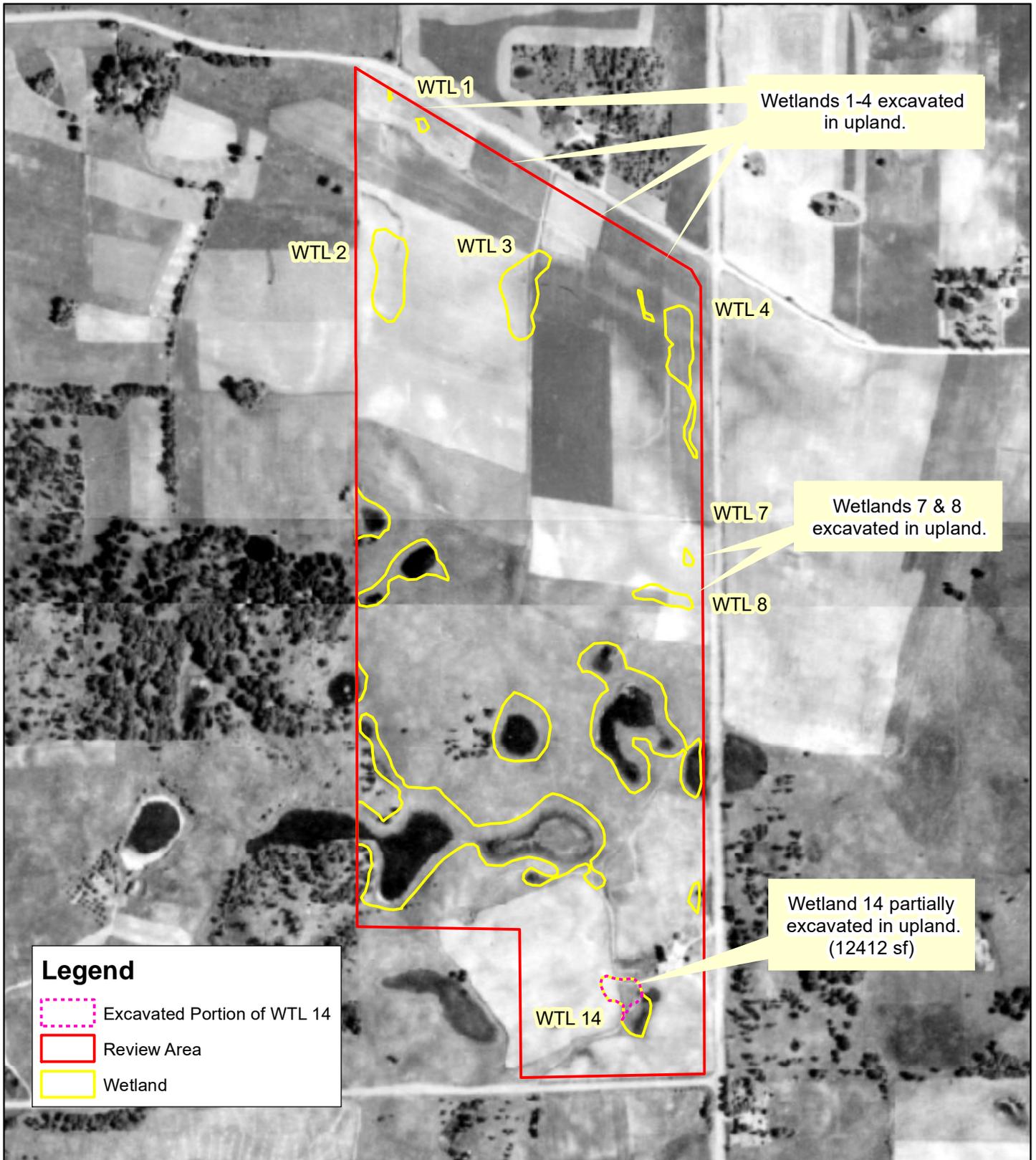
Lower Afton Road (2023 - 160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USGS



Historic Aerial Review- 1940 Ramsey County Aerial Photo



0 1,000
Feet



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
Source: MNGEO Spatial Commons, USGS

Lower Afton Road (2023 - 160)
Maplewood, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Minnesota Wetland Conservation Act Notice of Decision

Local Government Unit: Ramsey-Washington Metro Watershed District (RWMWD) County: Ramsey
Applicant Name: Deb Ridgeway (D.R. Horton) Applicant Representative: Mary Clare McAleer (Kjolhaug Environmental Services)
Project Name: Lower Afton Rd Golf Course Site LGU Project No. (if any): 24-02 WCA
Date Complete Application Received by LGU: 4/10/2024
Date of LGU Decision: 5/7/2024
Date this Notice was Sent: 5/7/2024

WCA Decision Type - check all that apply

<input checked="" type="checkbox"/> Wetland Boundary/Type <input type="checkbox"/> Sequencing <input type="checkbox"/> Replacement Plan <input type="checkbox"/> Bank Plan (not credit purchase) <input type="checkbox"/> No-Loss (8420.0415) <input type="checkbox"/> Exemption (8420.0420)
Part: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H Subpart: <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: <input type="checkbox"/> Project Specific Credits: <input type="checkbox"/> Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Approve w/Conditions <input type="checkbox"/> Deny <input type="checkbox"/> No TEP Recommendation
<p>A wetland delineation report and joint application was originally submitted by the applicant on 11/18/23, however was not ultimately accepted due to submittal outside of the growing season. The joint app included a boundary/type concurrence request and incidental request.</p> <p>At the applicant’s request, the TEP discussed the incidental portion of the application at a virtual meeting on 1/29/24. Based on TEP review and feedback, there was sufficient information available to conclude that Wetlands 1, 2, 3, 4, 7, and 8 are incidental. There was insufficient information available to conclude that the southeast lobe of Wetland 12 and the northwest lobe of Wetland 14 are incidental.</p> <p>The applicant resubmitted a revised joint application on 4/10/24 with a boundary/type concurrence request and incidental request for Wetlands 1, 2, 3, 4, 7, and 8 in accordance with TEP feedback. A field review was completed on 5/2/24. No changes are required to delineated boundaries/wetland types. Wetlands 1, 2, 3, 4, 7, and 8 are deemed incidental. Wetlands 5, 6, 9, 10, 11, 12, 13, and 14 are WCA jurisdictional.</p>

LGU Decision

<input checked="" type="checkbox"/> Approved with Conditions (specify below)¹ <input type="checkbox"/> Approved¹ <input type="checkbox"/> Denied List Conditions: - Submit GIS shapefile of wetland boundaries (including incidental wetlands for our record-keeping purposes).
Decision-Maker for this Application: <input checked="" type="checkbox"/> Staff <input type="checkbox"/> Governing Board/Council <input type="checkbox"/> Other:

Decision is valid for: 5 years (default) Other (specify):

¹ *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision¹.

- Attachment(s) (specify): **Figure 2A- Final Delineation Figure (Existing Conditions)**
- Summary: **See TEP Findings and Recommendations above.**

¹ *Findings must consider any TEP recommendations.*

Attached Project Documents

- Site Location Map Project Plan(s)/Descriptions/Reports (specify):

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

- Yes¹ No

¹*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

Required on all notices:

<input checked="" type="checkbox"/> SWCD TEP Member: Alexis Lipstein (Ramsey County) <input checked="" type="checkbox"/> BWSR TEP Member: Ben Meyer
<input type="checkbox"/> LGU TEP Member (if different than LGU contact):
<input checked="" type="checkbox"/> DNR Representative: Jim Levitt
<input checked="" type="checkbox"/> Watershed District or Watershed Mgmt. Org.:
<input checked="" type="checkbox"/> Applicant (notice only): <input checked="" type="checkbox"/> Agent/Consultant (notice only):

Optional or As Applicable:

<input checked="" type="checkbox"/> Corps of Engineers: Alex Meincke
<input type="checkbox"/> BWSR Wetland Mitigation Coordinator (required for bank plan applications only):

Members of the Public (notice only):
Finwall (City of Maplewood)

Other: **Mary Fitzgerald (RWMWD), Shann**

Signature: <i>Nicole Maras</i>	Date: 5/7/2024
--	-----------------------

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

Appendix C

MINNESOTA DEPARTMENT OF HEALTH
WELL INDEX LOG



110412

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/29/2020
 Received Date

Well Name ST. PAUL	Township 28	Range 22	Dir Section W 12	Subsection DDCCBB	Well Depth 141 ft.	Depth Completed 141 ft.	Date Well Completed 03/28/1975		
Elevation 1047	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Non-specified Rotary	Drill Fluid			
Address C/W 2621 LINWOOD AV E ST PAUL MN					Use other (specify in remarks)	Status	Active		
Stratigraphy Information					Well Hydrofractured?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
					Casing Type	Single casing	Joint	Threaded	
					Drive Shoe?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Above/Below	1 ft.
Geological Material					Casing Diameter	Weight	Hole Diameter		
From To (ft.) Color Hardness					4 in. To	114 ft. 11 lbs./ft.	4 in. To 141 ft.		
CLAY 0 2 BROWN SOFT									
SAND 2 27 LT. BRN SOFT									
CLAY & BOULDERS 27 85 BLU/GRN SOFT									
CLAY 85 92 DK. BRN MEDIUM									
SOAPSTONE 92 141 BLU/GRY SFT-HRD									
					Open Hole	From 114 ft.	To 141 ft.		
					Screen? <input type="checkbox"/>	Type	Make		
					Static Water Level				
					52 ft.	land surface	Measure 03/28/1975		
					Pumping Level (below land surface)				
					122 ft.	2 hrs.	Pumping at 20 g.p.m.		
					Wellhead Completion				
					Pitless adapter manufacturer	Model			
					<input type="checkbox"/> Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade			
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)				
					Grouting Information				
					Well Grouted?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Specified	
					Material	Amount	From To		
					bentonite	2 Cubic yards	0 ft. 114 ft.		
					Nearest Known Source of Contamination				
					80 feet	Northeas Direction	Septic tank/drain field Type		
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
					Pump <input checked="" type="checkbox"/> Not Installed Date Installed				
					Manufacturer's name				
					Model Number	HP 0	Volt		
					Length of drop pipe	ft Capacity	g.p. Typ		
					Abandoned				
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
					Variance				
					Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No				
					Miscellaneous				
					First Bedrock	Decorah Shale	Aquifer Decorah		
					Last Strat	Decorah Shale	Depth to Bedrock 92 ft		
					Located by Minnesota Geological Survey				
					Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table)				
					System	UTM - NAD83, Zone 15, Meters	X 500884 Y 4974140		
					Unique Number Verification	Address verification	Input Date 01/01/1990		
					Angled Drill Hole				
					Well Contractor				
					Mantyla Well Co.	82084	THRON, R.		
					Licensee Business	Lic. or Reg. No.	Name of Driller		

110433

County Washington
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 03/01/1989
 Update Date 02/14/2014
 Received Date

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Well Name</td> <td>Township</td> <td>Range</td> <td>Dir Section</td> <td>Subsection</td> </tr> <tr> <td>CADALBERT,</td> <td>28</td> <td>21</td> <td>W 7</td> <td>CCCBAD</td> </tr> <tr> <td>Elevation</td> <td>1040</td> <td>Elev. Method</td> <td colspan="2">7.5 minute topographic map (+/- 5 feet)</td> </tr> <tr> <td colspan="5">Address</td> </tr> <tr> <td colspan="5">C/W 486 CENTURY AV WOODBURY MN</td> </tr> <tr> <td colspan="5">Stratigraphy Information</td> </tr> <tr> <td>Geological Material</td> <td>From</td> <td>To (ft.)</td> <td>Color</td> <td>Hardness</td> </tr> <tr> <td>CLAY & GRAVEL</td> <td>0</td> <td>58</td> <td>RED</td> <td>SFT-HRD</td> </tr> <tr> <td>CLAY (SANDY)</td> <td>58</td> <td>77</td> <td>BROWN</td> <td>SOFT</td> </tr> <tr> <td>CLAY</td> <td>77</td> <td>86</td> <td>GRAY</td> <td>SOFT</td> </tr> <tr> <td>SOAPSTONE</td> <td>86</td> <td>141</td> <td>BLU/GRN</td> <td>MEDIUM</td> </tr> </table>	Well Name	Township	Range	Dir Section	Subsection	CADALBERT,	28	21	W 7	CCCBAD	Elevation	1040	Elev. Method	7.5 minute topographic map (+/- 5 feet)		Address					C/W 486 CENTURY AV WOODBURY MN					Stratigraphy Information					Geological Material	From	To (ft.)	Color	Hardness	CLAY & GRAVEL	0	58	RED	SFT-HRD	CLAY (SANDY)	58	77	BROWN	SOFT	CLAY	77	86	GRAY	SOFT	SOAPSTONE	86	141	BLU/GRN	MEDIUM	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Well Depth</td> <td>Depth Completed</td> <td>Date Well Completed</td> </tr> <tr> <td>141 ft.</td> <td>141 ft.</td> <td>06/30/1975</td> </tr> <tr> <td>Drill Method</td> <td>Non-specified Rotary</td> <td>Drill Fluid</td> </tr> <tr> <td>Use</td> <td>domestic</td> <td>Status</td> </tr> <tr> <td></td> <td></td> <td>Active</td> </tr> <tr> <td>Well Hydrofractured?</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>From To</td> </tr> <tr> <td>Casing Type</td> <td>Single casing</td> <td>Joint Threaded</td> </tr> <tr> <td>Drive Shoe?</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Above/Below 1 ft.</td> </tr> <tr> <td>Casing Diameter</td> <td>Weight</td> <td></td> </tr> <tr> <td>4 in. To 112 ft.</td> <td>11 lbs./ft.</td> <td></td> </tr> <tr> <td>Open Hole</td> <td>From 112 ft.</td> <td>To 141 ft.</td> </tr> <tr> <td>Screen? <input type="checkbox"/></td> <td>Type</td> <td>Make</td> </tr> <tr> <td>Static Water Level</td> <td>71 ft. land surface</td> <td>Measure 06/30/1975</td> </tr> <tr> <td>Pumping Level (below land surface)</td> <td>75 ft. 1.5 hrs. Pumping at</td> <td>15 g.p.m.</td> </tr> <tr> <td>Wellhead Completion</td> <td>Pitless adapter manufacturer</td> <td>Model</td> </tr> <tr> <td><input type="checkbox"/> Casing Protection</td> <td><input checked="" type="checkbox"/> 12 in. above grade</td> <td></td> </tr> <tr> <td><input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)</td> <td></td> <td></td> </tr> <tr> <td>Grouting Information</td> <td>Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified</td> <td></td> </tr> <tr> <td>Material</td> <td>Amount</td> <td>From To</td> </tr> <tr> <td>bentonite</td> <td>1.5 Cubic yards</td> <td>0 ft. 112 ft.</td> </tr> <tr> <td>Nearest Known Source of Contamination</td> <td>85 feet Southwes Direction</td> <td>Septic tank/drain field Type</td> </tr> <tr> <td>Well disinfected upon completion?</td> <td><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> <tr> <td>Pump <input type="checkbox"/> Not Installed</td> <td>Date Installed</td> <td>07/11/1975</td> </tr> <tr> <td>Manufacturer's name</td> <td colspan="2">REDA PUMP CO.</td> </tr> <tr> <td>Model Number</td> <td>12D9P071</td> <td>HP 0.75 Volt 230</td> </tr> <tr> <td>Length of drop pipe</td> <td>115 ft</td> <td>Capacity 14 g.p. Typ Submersible</td> </tr> <tr> <td>Abandoned</td> <td>Does property have any not in use and not sealed well(s)?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Variance</td> <td>Was a variance granted from the MDH for this well?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Miscellaneous</td> <td>First Bedrock Decorah-Platteville</td> <td>Aquifer Decorah-</td> </tr> <tr> <td>Last Strat</td> <td>Decorah-Platteville</td> <td>Depth to Bedrock 86 ft</td> </tr> <tr> <td>Located by</td> <td colspan="2">Minnesota Geological Survey</td> </tr> <tr> <td>Locate Method</td> <td colspan="2">Digitized - scale 1:24,000 or larger (Digitizing Table)</td> </tr> <tr> <td>System</td> <td>UTM - NAD83, Zone 15, Meters</td> <td>X 501286 Y 4974199</td> </tr> <tr> <td>Unique Number Verification</td> <td>Address verification</td> <td>Input Date 01/01/1990</td> </tr> <tr> <td>Angled Drill Hole</td> <td></td> <td></td> </tr> <tr> <td>Well Contractor</td> <td>Mantyla Well Co.</td> <td>82084 THRON, R.</td> </tr> <tr> <td></td> <td>Licensee Business</td> <td>Lic. or Reg. No. Name of Driller</td> </tr> </table>	Well Depth	Depth Completed	Date Well Completed	141 ft.	141 ft.	06/30/1975	Drill Method	Non-specified Rotary	Drill Fluid	Use	domestic	Status			Active	Well Hydrofractured?	Yes <input type="checkbox"/> No <input type="checkbox"/>	From To	Casing Type	Single casing	Joint Threaded	Drive Shoe?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below 1 ft.	Casing Diameter	Weight		4 in. To 112 ft.	11 lbs./ft.		Open Hole	From 112 ft.	To 141 ft.	Screen? <input type="checkbox"/>	Type	Make	Static Water Level	71 ft. land surface	Measure 06/30/1975	Pumping Level (below land surface)	75 ft. 1.5 hrs. Pumping at	15 g.p.m.	Wellhead Completion	Pitless adapter manufacturer	Model	<input type="checkbox"/> Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade		<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			Grouting Information	Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		Material	Amount	From To	bentonite	1.5 Cubic yards	0 ft. 112 ft.	Nearest Known Source of Contamination	85 feet Southwes Direction	Septic tank/drain field Type	Well disinfected upon completion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Pump <input type="checkbox"/> Not Installed	Date Installed	07/11/1975	Manufacturer's name	REDA PUMP CO.		Model Number	12D9P071	HP 0.75 Volt 230	Length of drop pipe	115 ft	Capacity 14 g.p. Typ Submersible	Abandoned	Does property have any not in use and not sealed well(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Variance	Was a variance granted from the MDH for this well?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Miscellaneous	First Bedrock Decorah-Platteville	Aquifer Decorah-	Last Strat	Decorah-Platteville	Depth to Bedrock 86 ft	Located by	Minnesota Geological Survey		Locate Method	Digitized - scale 1:24,000 or larger (Digitizing Table)		System	UTM - NAD83, Zone 15, Meters	X 501286 Y 4974199	Unique Number Verification	Address verification	Input Date 01/01/1990	Angled Drill Hole			Well Contractor	Mantyla Well Co.	82084 THRON, R.		Licensee Business	Lic. or Reg. No. Name of Driller
Well Name	Township	Range	Dir Section	Subsection																																																																																																																																																																			
CADALBERT,	28	21	W 7	CCCBAD																																																																																																																																																																			
Elevation	1040	Elev. Method	7.5 minute topographic map (+/- 5 feet)																																																																																																																																																																				
Address																																																																																																																																																																							
C/W 486 CENTURY AV WOODBURY MN																																																																																																																																																																							
Stratigraphy Information																																																																																																																																																																							
Geological Material	From	To (ft.)	Color	Hardness																																																																																																																																																																			
CLAY & GRAVEL	0	58	RED	SFT-HRD																																																																																																																																																																			
CLAY (SANDY)	58	77	BROWN	SOFT																																																																																																																																																																			
CLAY	77	86	GRAY	SOFT																																																																																																																																																																			
SOAPSTONE	86	141	BLU/GRN	MEDIUM																																																																																																																																																																			
Well Depth	Depth Completed	Date Well Completed																																																																																																																																																																					
141 ft.	141 ft.	06/30/1975																																																																																																																																																																					
Drill Method	Non-specified Rotary	Drill Fluid																																																																																																																																																																					
Use	domestic	Status																																																																																																																																																																					
		Active																																																																																																																																																																					
Well Hydrofractured?	Yes <input type="checkbox"/> No <input type="checkbox"/>	From To																																																																																																																																																																					
Casing Type	Single casing	Joint Threaded																																																																																																																																																																					
Drive Shoe?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below 1 ft.																																																																																																																																																																					
Casing Diameter	Weight																																																																																																																																																																						
4 in. To 112 ft.	11 lbs./ft.																																																																																																																																																																						
Open Hole	From 112 ft.	To 141 ft.																																																																																																																																																																					
Screen? <input type="checkbox"/>	Type	Make																																																																																																																																																																					
Static Water Level	71 ft. land surface	Measure 06/30/1975																																																																																																																																																																					
Pumping Level (below land surface)	75 ft. 1.5 hrs. Pumping at	15 g.p.m.																																																																																																																																																																					
Wellhead Completion	Pitless adapter manufacturer	Model																																																																																																																																																																					
<input type="checkbox"/> Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade																																																																																																																																																																						
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)																																																																																																																																																																							
Grouting Information	Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified																																																																																																																																																																						
Material	Amount	From To																																																																																																																																																																					
bentonite	1.5 Cubic yards	0 ft. 112 ft.																																																																																																																																																																					
Nearest Known Source of Contamination	85 feet Southwes Direction	Septic tank/drain field Type																																																																																																																																																																					
Well disinfected upon completion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																						
Pump <input type="checkbox"/> Not Installed	Date Installed	07/11/1975																																																																																																																																																																					
Manufacturer's name	REDA PUMP CO.																																																																																																																																																																						
Model Number	12D9P071	HP 0.75 Volt 230																																																																																																																																																																					
Length of drop pipe	115 ft	Capacity 14 g.p. Typ Submersible																																																																																																																																																																					
Abandoned	Does property have any not in use and not sealed well(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																					
Variance	Was a variance granted from the MDH for this well?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																					
Miscellaneous	First Bedrock Decorah-Platteville	Aquifer Decorah-																																																																																																																																																																					
Last Strat	Decorah-Platteville	Depth to Bedrock 86 ft																																																																																																																																																																					
Located by	Minnesota Geological Survey																																																																																																																																																																						
Locate Method	Digitized - scale 1:24,000 or larger (Digitizing Table)																																																																																																																																																																						
System	UTM - NAD83, Zone 15, Meters	X 501286 Y 4974199																																																																																																																																																																					
Unique Number Verification	Address verification	Input Date 01/01/1990																																																																																																																																																																					
Angled Drill Hole																																																																																																																																																																							
Well Contractor	Mantyla Well Co.	82084 THRON, R.																																																																																																																																																																					
	Licensee Business	Lic. or Reg. No. Name of Driller																																																																																																																																																																					

133503

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/29/2020
 Received Date

Well Name SELBITSHKA	Township 28	Range 22	Dir Section W 13	Subsection AAABAA	Well Depth 315 ft.	Depth Completed 315 ft.	Date Well Completed 06/02/1978																									
Elevation 1027	Elev. Method LiDAR 1m DEM (MNDNR)				Drill Method Non-specified Rotary	Drill Fluid																										
Address C/W 2710 LINWOOD AV E MAPLEWOOD MN					Use domestic	Status Active																										
Stratigraphy Information					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/>	From To																										
<table border="1"> <thead> <tr> <th>Geological Material</th> <th>From</th> <th>To (ft.)</th> <th>Color</th> <th>Hardness</th> </tr> </thead> <tbody> <tr> <td>CLAY & GRAVEL</td> <td>0</td> <td>80</td> <td>BROWN</td> <td>SFT-HRD</td> </tr> <tr> <td>CLAY</td> <td>80</td> <td>130</td> <td>GRAY</td> <td>MEDIUM</td> </tr> <tr> <td>LIMEROCK</td> <td>130</td> <td>160</td> <td>GRY/WHT</td> <td>HARD</td> </tr> <tr> <td>SANDROCK</td> <td>160</td> <td>315</td> <td>YEL/BRN</td> <td>MEDIUM</td> </tr> </tbody> </table>					Geological Material	From	To (ft.)	Color	Hardness	CLAY & GRAVEL	0	80	BROWN	SFT-HRD	CLAY	80	130	GRAY	MEDIUM	LIMEROCK	130	160	GRY/WHT	HARD	SANDROCK	160	315	YEL/BRN	MEDIUM	Casing Type Single casing	Joint Threaded	
Geological Material	From	To (ft.)	Color	Hardness																												
CLAY & GRAVEL	0	80	BROWN	SFT-HRD																												
CLAY	80	130	GRAY	MEDIUM																												
LIMEROCK	130	160	GRY/WHT	HARD																												
SANDROCK	160	315	YEL/BRN	MEDIUM																												
					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below 1 ft.																										
					Casing Diameter 4 in. To	Weight 286 ft. 11 lbs./ft.	Hole Diameter 4 in. To 315 ft.																									
					Open Hole From 286 ft. To 315 ft.																											
					Screen? <input type="checkbox"/>	Type Make																										
					Static Water Level 245 ft. land surface Measure 06/02/1978																											
					Pumping Level (below land surface) 247 ft. 1.5 hrs. Pumping at 15 g.p.m.																											
					Wellhead Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)																											
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified																											
					Material	Amount	From To																									
					cuttings	4.5 Cubic yards	10 ft. 286 ft.																									
					bentonite	4.5 Cubic yards	10 ft. 286 ft.																									
					Nearest Known Source of Contamination 52 feet Southeast Direction Sewer Type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																											
					Pump <input type="checkbox"/> Not Installed Date Installed 06/23/1978 Manufacturer's name GOULD PUMP CO. Model Number 7EH10 HP 1 Volt 230 Length of drop pipe 260 ft Capacity 12 g.p. Typ Submersible																											
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No																											
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No																											
					Miscellaneous First Bedrock Decorah Shale Aquifer St.Peter Last Strat St.Peter Sandstone Depth to Bedrock 80 ft Located by Minnesota Geological Survey Locate Method Digitization (Screen) - Map (1:24,000) (15 meters or System UTM - NAD83, Zone 15, Meters X 501118 Y 4974020 Unique Number Verification Address verification Input Date 01/01/1990																											
Remarks					Angled Drill Hole																											
					Well Contractor Mantyla Well Co. 82084 SANDERS, G. Licensee Business Lic. or Reg. No. Name of Driller																											
Minnesota Well Index Report					133503		Printed on 03/10/2025 HE-01205-15																									

142328

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/29/2020
 Received Date

Well Name THEISSEN,	Township 28	Range 22	Dir Section W 13	Subsection AAABAC	Well Depth 155 ft.	Depth Completed 155 ft.	Date Well Completed 01/17/1978
Elevation 1037	Elev. Method LiDAR 1m DEM (MNDNR)				Drill Method Non-specified Rotary	Drill Fluid	
Address C/W 2698 LINWOOD AV E ST PAUL MN					Use domestic	Status Active	
Stratigraphy Information					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/>	From	To
Geological Material From To (ft.) Color Hardness					Casing Type Single casing	Joint Threaded	
CLAY & BOULDERS 0 85 BROWN SFT-HRD					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below 1 ft.	
SOAPSTONE 85 155 BLU/GRY MEDIUM					Casing Diameter 4 in. To	Weight 140 ft. 11 lbs./ft.	Hole Diameter 4 in. To 155 ft.
					Open Hole From 140 ft. To 155 ft.		
					Screen? <input type="checkbox"/>	Type	Make
					Static Water Level 65 ft. land surface Measure 01/17/1978		
					Pumping Level (below land surface) 68 ft. 2 hrs. Pumping at 15 g.p.m.		
					Wellhead Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Nearest Known Source of Contamination 85 feet South Direction Septic tank/drain field Type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 01/20/1978 Manufacturer's name REDA-PUMP CO. Model Number 12D9P071 HP 0.75 Volt 230 Length of drop pipe 130 ft Capacity 12 g.p. Typ Submersible		
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous First Bedrock Decorah-Platteville Aquifer Platteville Last Strat Platteville Formation Depth to Bedrock 85 ft Located by Minnesota Geological Survey Locate Method Digitization (Screen) - Map (1:24,000) (15 meters or System UTM - NAD83, Zone 15, Meters X 501084 Y 4974014 Unique Number Verification Address verification Input Date 01/01/1990		
Remarks					Angled Drill Hole		
					Well Contractor Mantyla Well Co. 82084 SANDERS, G. Licensee Business Lic. or Reg. No. Name of Driller		
Minnesota Well Index Report					142328		Printed on 03/10/2025 HE-01205-15

401868

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 01/29/1990
 Update Date 12/29/2020
 Received Date

Well Name HANSON,	Township 28	Range 22	Dir Section W 13	Subsection AABBAA	Well Depth 325 ft.	Depth Completed 325 ft.	Date Well Completed 03/19/1984
Elevation 1049	Elev. Method	LiDAR 1m DEM (MNDNR)			Drill Method	Non-specified Rotary	Drill Fluid
Address C/W 2632 LINWOOD AV E MAPLEWOOD MN					Use	domestic	Status Active
Stratigraphy Information					Well Hydrofractured?	Yes <input type="checkbox"/> No <input type="checkbox"/>	From To
Geological Material	From	To (ft.)	Color	Hardness	Casing Type	Single casing	Joint Welded
CLAY	0	6	BROWN	SOFT	Drive Shoe?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below 1 ft.
SAND	6	105	BROWN	SOFT	Casing Diameter	4 in. To 270 ft.	Weight 10.7 lbs./ft.
SOAPSTONE	105	150	BLU/GRN	MEDIUM	Hole Diameter	8 in. To 270 ft.	4 in. To 325 ft.
LIMEROCK	150	179	GRAY	HARD	Open Hole From 270 ft. To 325 ft.		
SANDROCK VARIED TO	179	325		SFT-HRD	Screen? <input type="checkbox"/>	Type	Make
					Static Water Level 265 ft. land surface Measure 03/19/1984		
					Pumping Level (below land surface) 270 ft. 2 hrs. Pumping at 25 g.p.m.		
					Wellhead Completion Pitless adapter manufacturer WHITEWATER Model SU-4 <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified Material Amount From To neat cement 0 10 ft. 270 ft.		
					Nearest Known Source of Contamination 65 feet Northwes Direction Septic tank/drain field Type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 03/20/1984 Manufacturer's name STANDARD PUMP CO. Model Number 23D9P151 HP 1.5 Volt 230 Length of drop pipe 310 ft Capacity 10 g.p. Typ Submersible		
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous First Bedrock Decorah Shale Aquifer St.Peter Last Strat St.Peter Sandstone Depth to Bedrock 105 ft Located by Minnesota Geological Survey Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table) System UTM - NAD83, Zone 15, Meters X 500906 Y 4974008 Unique Number Verification Address verification Input Date 01/01/1990		
Remarks					Angled Drill Hole		
					Well Contractor Mantyla Well Co. 82084 MANTYLA, E. Licensee Business Lic. or Reg. No. Name of Driller		
Minnesota Well Index Report					401868		Printed on 03/10/2025 HE-01205-15

531419

County Washington
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 01/13/1997
 Update Date 03/25/2014
 Received Date

Well Name BRUNNER, MIKE 28	Township 21	Range W 7	Dir Section CCCBAB	Subsection CCCBAB	Well Depth 345 ft.	Depth Completed 345 ft.	Date Well Completed 03/11/1994
Elevation 1040	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Non-specified Rotary	Drill Fluid Bentonite	
Address C/W 1905 CENTURY AV S WOODBURY MN 55125					Use domestic	Status Active	
Stratigraphy Information					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/> From To		
Geological Material From To (ft.) Color Hardness					Casing Type Single casing Joint Welded		
CLAY & GRAVEL 0 50 BROWN MEDIUM					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Above/Below		
CLAY 50 127 GRAY MEDIUM					Casing Diameter Weight Hole Diameter		
LIMEROCK 127 158 GRAY HARD					4 in. To 306 ft. 10.7 lbs./ft. 8 in. To 306 ft.		
SANDROCK 158 274 WHITE MEDIUM					4 in. To 345 ft.		
LIMEROCK 274 296 YELLOW HARD					Open Hole From 306 ft. To 345 ft.		
SANDROCK 296 345 BROWN MED-HRD					Screen? <input type="checkbox"/> Type Make		
					Static Water Level 245 ft. land surface Measure 03/11/1994		
					Pumping Level (below land surface) 283 ft. 1 hrs. Pumping at 30 g.p.m.		
					Wellhead Completion Pitless adapter manufacturer MAASS Model 4J1 <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified Material Amount From To neat cement 74 Sacks 0 ft. 306 ft.		
					Nearest Known Source of Contamination 50 feet Northeast Direction Septic tank/drain field Type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 03/12/1994 Manufacturer's name GPM Model Number 10G1517 HP 1.5 Volt 230 Length of drop pipe 283 ft Capacity 10 g.p. Typ Submersible		
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous First Bedrock Platteville Formation Aquifer Prairie Du Chien Last Strat Prairie Du Chien Group Depth to Bedrock 127 ft Located by Minnesota Geological Survey Locate Method Digitized - scale 1:24,000 or larger - Irregular section System UTM - NAD83, Zone 15, Meters X 501259 Y 4974235 Unique Number Verification Address verification Input Date 07/02/1997		
Remarks					Angled Drill Hole		
					Well Contractor Mantyla Well Co. 82084 LYON, R. Licensee Business Lic. or Reg. No. Name of Driller		

668484

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 12/18/2002
 Update Date 12/29/2020
 Received Date

Well Name RAMSEY	Township 28	Range 22	Dir Section W 12	Subsection ADDBBC	Well Depth 550 ft.	Depth Completed 550 ft.	Date Well Completed 10/22/2002
Elevation 1025	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Non-specified Rotary	Drill Fluid Bentonite	
Address					Use irrigation Status Active		
Well 601 CENTURY AV S MAPLEWOOD MN					Well Hydrofractured? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> From To		
Contact 2015 VAN DYKE ST N MAPLEWOOD MN 55109					Casing Type Step down Joint Welded		
Stratigraphy Information					Drive Shoe? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Above/Below		
Geological Material	From	To (ft.)	Color	Hardness	Casing Diameter Weight Hole Diameter		
TOP SOIL	0	1			8 in. To 378 ft.	lbs./ft.	20 in. To 130 ft.
SANDY CLAY	1	5	RED/BRN		14 in. To 130 ft.	lbs./ft.	14 in. To 550 ft.
GRAVELS	5	9	RED				
SANDY CLAY	9	40	TAN				
SANDY CLAY	40	59					
CLAY	59	64	BLUE				
CLAY W/SHALE	64	122	GREEN				
ROCK	122	124	GRN/BLK				
SHALE	124	126	GREEN				
BEDROCK	126	128	GRY/GRN				
ROCK	128	150	GRAY	HARD			
PLATTEVILLE	150	153	GRAY				
GLENWOOD	153	159	BLU/GRY	SOFT			
ST PETER	159	272	WHITE	SOFT			
ST PETER	272	285	GRAY	HARD			
SANDSTONE	285	310	GRAY				
SANDSTONE	310	400	TAN	HARD			
SANDSTONE	400	457	LT. GRY	HARD			
JORDAN W/SEAMS OF	457	467	LT. GRY				
JORDAN W/SEAMS OF	467	545	LT. GRY				
SHALE	545	550	GREEN				
					Open Hole From 378 ft. To 550 ft.		
					Screen? <input type="checkbox"/> Type Make		
					Static Water Level		
					232 ft. land surface Measure 09/04/2002		
					Pumping Level (below land surface)		
					295. ft. 24 hrs. Pumping at 300 g.p.m.		
					Wellhead Completion		
					Pitless adapter manufacturer Model		
					<input checked="" type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade		
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Material Amount From To		
					neat cement 26 Cubic yards 0 ft. 378 ft.		
					Nearest Known Source of Contamination		
					50 feet Direction Septic tank/drain field Type		
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 09/25/2002		
					Manufacturer's name CROWN		
					Model Number S6-350-7 HP 40 Volt 460		
					Length of drop pipe 357 ft Capacity 350 g.p. Typ Submersible		
					Abandoned		
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Variance		
					Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Miscellaneous		
					First Bedrock Decorah Shale Aquifer Prairie Du Chien-		
					Last Strat Jordan Sandstone Depth to Bedrock 64 ft		
					Located by Minnesota Geological Survey		
					Locate Method Digitization (Screen) - Map (1:24,000) (15 meters or		
					System UTM - NAD83, Zone 15, Meters X 501042 Y 4974986		
					Unique Number Verification Tag on well Input Date 07/31/2002		
					Angled Drill Hole		
					Well Contractor		
					Thein Well Co. 34625 GRABOWSKI, D.		
					Licensee Business Lic. or Reg. No. Name of Driller		

Remarks
 GAMMA LOGGED 7/31/02. MGS #4179.

670759

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date
 Update Date 12/29/2020
 Received Date 04/28/2004

Well Name ANDERSON,	Township 28	Range 22	Dir Section W 13	Subsection AABAAA	Well Depth 350 ft.	Depth Completed 350 ft.	Date Well Completed 04/14/2004
Elevation 1043	Elev. Method	LiDAR 1m DEM (MNDNR)			Drill Method	Non-specified Rotary	Drill Fluid Additive (+ Bentonite)
Address Well 2670 LINWOOD AV MAPLEWOOD MN					Use	domestic	Status Active
Stratigraphy Information					Well Hydrofractured?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	From To
Geological Material From To (ft.) Color Hardness					Casing Type	Step down	Joint Welded
CLAY W/BOULDERS 0 140 BRN/GRY MEDIUM					Drive Shoe?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Above/Below
LIME ROCK 140 180 GRAY HARD					Casing Diameter	Weight	Hole Diameter
SAND ROCK 180 280 WHITE SFT-MED					4 in. To 332 ft.	10.7 lbs./ft.	12 in. To 140 ft.
SAND ROCK 280 350 YELLOW MEDIUM					8 in. To 140 ft.	28.5 lbs./ft.	8 in. To 332 ft.
							4 in. To 350 ft.
					Open Hole	From 332 ft.	To 350 ft.
					Screen? <input type="checkbox"/>	Type	Make
					Static Water Level	280 ft.	land surface Measure 04/14/2004
					Pumping Level (below land surface)	325 ft.	1 hrs. Pumping at 30 g.p.m.
					Wellhead Completion	Pitless adapter manufacturer MAASS Model 4J1	
					<input type="checkbox"/> Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade	
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information	Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified	
					Material	Amount	From To
					neat cement	87 Sacks	0 ft. 322 ft.
					Nearest Known Source of Contamination	50 feet South Direction Septic tank/drain field Type	
					Well disinfected upon completion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
					Pump <input type="checkbox"/> Not Installed	Date Installed	04/19/2004
					Manufacturer's name	GPM	
					Model Number	15P2019	HP 2 Volt 230
					Length of drop pipe	325 ft	Capacity 15 g.p. Typ Submersible
					Abandoned	Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
					Variance	Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
					Miscellaneous	First Bedrock Platteville Formation Aquifer Prairie Du Chien	
					Last Strat	Prairie Du Chien Group	Depth to Bedrock 140 ft
					Located by	Minnesota Geological Survey	
					Locate Method	Digitization (Screen) - Map (1:24,000) (15 meters or	
					System	UTM - NAD83, Zone 15, Meters	X 501012 Y 4974018
					Unique Number Verification	Address verification	Input Date 07/31/2008
					Angled Drill Hole		
					Well Contractor	Mantyla Well Co. 82084 THRON, R	
					Licensee Business	Lic. or Reg. No.	Name of Driller
Remarks					670759		
Minnesota Well Index Report					Printed on 03/10/2025 HE-01205-15		

850408

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 09/07/2020
 Update Date 12/29/2020
 Received Date 09/01/2020

Well Name BRINK, DOUG	Township 28	Range 22	Dir Section W 13	Subsection AAABAB	Well Depth 360 ft.	Depth Completed 360 ft.	Date Well Completed 07/24/2020
Elevation 1037	Elev. Method	LiDAR 1m DEM (MNDNR)			Drill Method	Non-specified Rotary	Drill Fluid Bentonite
Address					Use domestic	Status Active	
Well 2698 LINWOOD AV E MAPLEWOOD MN 55119					Well Hydrofractured?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	From To
Stratigraphy Information					Casing Type Step down	Joint Welded	
Geological Material	From	To (ft.)	Color	Hardness	Drive Shoe?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Above/Below
SOIL	0	3	BLACK	SOFT	Casing Diameter	Weight	Hole Diameter
CLAY & ROCKS	3	50	BROWN	MED-HRD	4 in. To 325 ft.	10.7 lbs./ft.	14 in. To 140 ft.
SAND & GRAVEL	50	56	GRAY	SOFT	8 in. To 140 ft.	28.5 lbs./ft.	8 in. To 320 ft.
CLAY & ROCKS	56	62	BROWN	MED-HRD	Open Hole From 325 ft. To 360 ft.		
DIRTY SAND	62	81	GRAY	SOFT	Screen? <input type="checkbox"/>	Type	Make
SHALE	81	137	BLUE	HARD	Static Water Level		
LIIMESTONE	137	175	GRAY	HARD	251 ft.	land surface	Measure 07/24/2020
SANDSTONE	175	300	WHITE	SOFT	Pumping Level (below land surface)		
SANDSTONE	300	360	WHITE	MED-HRD	260 ft.	2 hrs. Pumping at	15 g.p.m.
Wellhead Completion					Well Grouted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified	
Pitless adapter manufacturer MAASS Model 4JC1					Grouting Information		
<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade					Material	Amount	From To
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)					neat cement	4 Cubic yards	ft. 140 ft.
Nearest Known Source of Contamination					Pump		
52 feet North Direction <u>Septic tank/drain field</u> Type					<input type="checkbox"/> Not Installed	Date Installed	08/01/2020
Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					Manufacturer's name FLOWISE		
Abandoned					Model Number	P10S15	HP 1.5
Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Length of drop pipe	300 ft	Capacity 10 g.p.
Variance					Typ	Submersible	
Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Miscellaneous		
Remarks					First Bedrock	Decorah Shale	Aquifer St.Peter
					Last Strat	St.Peter Sandstone	Depth to Bedrock 81 ft
					Located by Minnesota Department of Health		
					Locate Method Digitization (Screen) - Map (1:12,000) (>15 meters)		
					System	UTM - NAD83, Zone 15, Meters	X 501081 Y 4974016
					Unique Number Verification	Info/GPS from data	Input Date 09/04/2020
					Angled Drill Hole		
					Well Contractor		
					Mark J Traut Wells, Inc.	1404	PERRY/PHIL
					Licensee Business	Lic. or Reg. No.	Name of Driller
Minnesota Well Index Report				850408	Printed on 03/10/2025 HE-01205-15		

852523

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 10/25/2021
 Update Date 01/12/2022
 Received Date

Well Name SELBITSCKA,	Township 28	Range 22	Dir Section W 13	Subsection AAABAA	Well Depth 360 ft.	Depth Completed 360 ft.	Date Well Completed 10/29/2021
Elevation 1027	Elev. Method LiDAR 1m DEM (MNDNR)	Drill Method Non-specified Rotary		Drill Fluid Additive (+ Bentonite)		Use domestic	
Address Well 2710 LINWOOD AV E MAPLEWOOD MN 55119				Status Active		Well Hydrofractured? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Stratigraphy Information				From 320 ft.		To 360 ft.	
Geological Material	From	To (ft.)	Color	Hardness	Casing Type Single casing		
DRIFT	0	79			Joint Welded		
SHALE	79	130			Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
LIMESTONE	130	155			Above/Below		
SHALE	155	161			Casing Diameter 4 in. To		
SANDROCK	161	311			Weight 230 ft. 10.7 lbs./ft.		
LIME	311	360			Hole Diameter 12 in. To 130 ft.		
						8 in. To 320 ft.	
						4 in. To 360 ft.	
				Open Hole			
				Screen? <input type="checkbox"/>		Type Make	
				Static Water Level			
				240 ft. land surface		Measure 10/26/2021	
				Pumping Level (below land surface)			
				280 ft. 2 hrs. Pumping at		30 g.p.m.	
				Wellhead Completion			
				Pitless adapter manufacturer		WHITEWATER Model 864X5.5	
				<input checked="" type="checkbox"/> Casing Protection		<input checked="" type="checkbox"/> 12 in. above grade	
				<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			
				Grouting Information		Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified	
				Material		Amount From To	
				pearock		2 Cubic yards ft. ft.	
				neat cement		7.5 Cubic yards ft. ft.	
				Nearest Known Source of Contamination			
				78 feet North Direction		Septic tank/drain field Type	
				Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
				Pump		Date Installed 10/29/2021	
				<input type="checkbox"/> Not Installed			
				Manufacturer's name		FLINT & WALLING	
				Model Number		4F10S07301 HP 1 Volt 240	
				Length of drop pipe		273 ft Capacity 10 g.p. Typ Submersible	
				Abandoned			
				Does property have any not in use and not sealed well(s)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
				Variance			
				Was a variance granted from the MDH for this well?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
				Miscellaneous			
				First Bedrock		Decorah Shale Aquifer Prairie Du Chien	
				Last Strat		Prairie Du Chien Group Depth to Bedrock 79 ft	
				Located by		Minnesota Geological Survey	
				Locate Method		Digitization (Screen) - Map (1:24,000) (15 meters or	
				System		UTM - NAD83, Zone 15, Meters X 501119 Y 4974021	
				Unique Number Verification		Information from Input Date 10/26/2021	
				Angled Drill Hole			
				Well Contractor			
				Kimmes Bauer Well Drilling,		1540	
				Licensee Business		Lic. or Reg. No. Name of Driller	

Remarks
 GAMMA LOGGED ON 10/26/2021 FOR RAMSEY CGA

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
Minnesota Statutes Chapter 1031

Entry Date 03/05/2020

Update Date 03/06/2020

Received Date

County Washington
 Quad Lake Elmo
 Quad ID 102B

1000020437

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Well Name</td> <td>Township</td> <td>Range</td> <td>Dir Section</td> <td>Subsection</td> </tr> <tr> <td>BROWN, MARY</td> <td>28</td> <td>21</td> <td>W 7</td> <td>CCCCAC</td> </tr> <tr> <td>Elevation</td> <td>1026.4</td> <td>Elev. Method</td> <td colspan="2">LiDAR 1m DEM (MNDNR)</td> </tr> <tr> <td colspan="5">Address</td> </tr> <tr> <td>C/W</td> <td colspan="4">1965 CENTURY AV S WOODBURY MN 55125</td> </tr> <tr> <td colspan="5">Stratigraphy Information</td> </tr> </table>	Well Name	Township	Range	Dir Section	Subsection	BROWN, MARY	28	21	W 7	CCCCAC	Elevation	1026.4	Elev. Method	LiDAR 1m DEM (MNDNR)		Address					C/W	1965 CENTURY AV S WOODBURY MN 55125				Stratigraphy Information					<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Well Depth</td> <td>Depth Completed</td> <td>Date Well Completed</td> </tr> <tr> <td>null</td> <td>null</td> <td></td> </tr> <tr> <td>Drill Method</td> <td colspan="2">Drill Fluid</td> </tr> <tr> <td>Use domestic</td> <td colspan="2">Status Active</td> </tr> <tr> <td>Well Hydrofractured?</td> <td>Yes <input type="checkbox"/></td> <td>No <input type="checkbox"/> From To</td> </tr> <tr> <td>Casing Type</td> <td colspan="2">Joint</td> </tr> <tr> <td>Drive Shoe?</td> <td>Yes <input type="checkbox"/></td> <td>No <input type="checkbox"/> Above/Below</td> </tr> <tr> <td colspan="3">Open Hole From _____ ft. To _____ ft.</td> </tr> <tr> <td>Screen? <input type="checkbox"/></td> <td>Type</td> <td>Make</td> </tr> <tr> <td colspan="3">Static Water Level</td> </tr> <tr> <td colspan="3">Pumping Level (below land surface)</td> </tr> <tr> <td colspan="3">Wellhead Completion</td> </tr> <tr> <td>Pitless adapter manufacturer</td> <td colspan="2">Model</td> </tr> <tr> <td><input type="checkbox"/> Casing Protection</td> <td colspan="2"><input type="checkbox"/> 12 in. above grade</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)</td> </tr> <tr> <td>Grouting Information</td> <td>Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input checked="" type="checkbox"/> Not Specified</td> </tr> <tr> <td colspan="3">Nearest Known Source of Contamination</td> </tr> <tr> <td>_____ feet</td> <td>Direction</td> <td>Type</td> </tr> <tr> <td>Well disinfected upon completion?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> <tr> <td>Pump <input type="checkbox"/> Not Installed</td> <td colspan="2">Date Installed</td> </tr> <tr> <td colspan="3">Manufacturer's name</td> </tr> <tr> <td>Model Number</td> <td>HP</td> <td>Volt</td> </tr> <tr> <td>Length of drop pipe</td> <td>ft Capacity</td> <td>g.p. Typ</td> </tr> <tr> <td colspan="3">Abandoned</td> </tr> <tr> <td colspan="3">Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td colspan="3">Variance</td> </tr> <tr> <td colspan="3">Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td colspan="3">Miscellaneous</td> </tr> <tr> <td>First Bedrock</td> <td colspan="2">Aquifer</td> </tr> <tr> <td>Last Strat</td> <td colspan="2">Depth to Bedrock _____ ft</td> </tr> <tr> <td colspan="3">Located by Minnesota Department of Health</td> </tr> <tr> <td>Locate Method</td> <td colspan="2">GPS SA Off (averaged) (15 meters)</td> </tr> <tr> <td>System</td> <td>UTM - NAD83, Zone 15, Meters</td> <td>X 501287 Y 4974102</td> </tr> <tr> <td>Unique Number Verification</td> <td>Info/GPS from data</td> <td>Input Date 03/05/2020</td> </tr> <tr> <td colspan="3">Angled Drill Hole</td> </tr> <tr> <td colspan="3">Well Contractor</td> </tr> <tr> <td>Licensee Business</td> <td>Lic. or Reg. No.</td> <td>Name of Driller</td> </tr> </table>	Well Depth	Depth Completed	Date Well Completed	null	null		Drill Method	Drill Fluid		Use domestic	Status Active		Well Hydrofractured?	Yes <input type="checkbox"/>	No <input type="checkbox"/> From To	Casing Type	Joint		Drive Shoe?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Above/Below	Open Hole From _____ ft. To _____ ft.			Screen? <input type="checkbox"/>	Type	Make	Static Water Level			Pumping Level (below land surface)			Wellhead Completion			Pitless adapter manufacturer	Model		<input type="checkbox"/> Casing Protection	<input type="checkbox"/> 12 in. above grade		<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			Grouting Information	Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Specified	Nearest Known Source of Contamination			_____ feet	Direction	Type	Well disinfected upon completion?	<input type="checkbox"/> Yes <input type="checkbox"/> No		Pump <input type="checkbox"/> Not Installed	Date Installed		Manufacturer's name			Model Number	HP	Volt	Length of drop pipe	ft Capacity	g.p. Typ	Abandoned			Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No			Variance			Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No			Miscellaneous			First Bedrock	Aquifer		Last Strat	Depth to Bedrock _____ ft		Located by Minnesota Department of Health			Locate Method	GPS SA Off (averaged) (15 meters)		System	UTM - NAD83, Zone 15, Meters	X 501287 Y 4974102	Unique Number Verification	Info/GPS from data	Input Date 03/05/2020	Angled Drill Hole			Well Contractor			Licensee Business	Lic. or Reg. No.	Name of Driller
Well Name	Township	Range	Dir Section	Subsection																																																																																																																																										
BROWN, MARY	28	21	W 7	CCCCAC																																																																																																																																										
Elevation	1026.4	Elev. Method	LiDAR 1m DEM (MNDNR)																																																																																																																																											
Address																																																																																																																																														
C/W	1965 CENTURY AV S WOODBURY MN 55125																																																																																																																																													
Stratigraphy Information																																																																																																																																														
Well Depth	Depth Completed	Date Well Completed																																																																																																																																												
null	null																																																																																																																																													
Drill Method	Drill Fluid																																																																																																																																													
Use domestic	Status Active																																																																																																																																													
Well Hydrofractured?	Yes <input type="checkbox"/>	No <input type="checkbox"/> From To																																																																																																																																												
Casing Type	Joint																																																																																																																																													
Drive Shoe?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Above/Below																																																																																																																																												
Open Hole From _____ ft. To _____ ft.																																																																																																																																														
Screen? <input type="checkbox"/>	Type	Make																																																																																																																																												
Static Water Level																																																																																																																																														
Pumping Level (below land surface)																																																																																																																																														
Wellhead Completion																																																																																																																																														
Pitless adapter manufacturer	Model																																																																																																																																													
<input type="checkbox"/> Casing Protection	<input type="checkbox"/> 12 in. above grade																																																																																																																																													
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)																																																																																																																																														
Grouting Information	Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Specified																																																																																																																																												
Nearest Known Source of Contamination																																																																																																																																														
_____ feet	Direction	Type																																																																																																																																												
Well disinfected upon completion?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																													
Pump <input type="checkbox"/> Not Installed	Date Installed																																																																																																																																													
Manufacturer's name																																																																																																																																														
Model Number	HP	Volt																																																																																																																																												
Length of drop pipe	ft Capacity	g.p. Typ																																																																																																																																												
Abandoned																																																																																																																																														
Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																														
Variance																																																																																																																																														
Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																														
Miscellaneous																																																																																																																																														
First Bedrock	Aquifer																																																																																																																																													
Last Strat	Depth to Bedrock _____ ft																																																																																																																																													
Located by Minnesota Department of Health																																																																																																																																														
Locate Method	GPS SA Off (averaged) (15 meters)																																																																																																																																													
System	UTM - NAD83, Zone 15, Meters	X 501287 Y 4974102																																																																																																																																												
Unique Number Verification	Info/GPS from data	Input Date 03/05/2020																																																																																																																																												
Angled Drill Hole																																																																																																																																														
Well Contractor																																																																																																																																														
Licensee Business	Lic. or Reg. No.	Name of Driller																																																																																																																																												

1000023260

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 03/05/2020
 Update Date 08/10/2021
 Received Date

Well Name YOST,	Township 28	Range 22	Dir Section W 13	Subsection AAABBD	Well Depth null	Depth Completed null	Date Well Completed			
Elevation 1039	Elev. Method	LiDAR 1m DEM (MNDNR)			Drill Method	Drill Fluid				
Address					Use domestic	Status Active				
C/W 2688 LINWOOD AV MAPLEWOOD MN 55119					Well Hydrofractured?	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Stratigraphy Information					Casing Type	Joint				
					Drive Shoe?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Above/Below		
					Open Hole	From _____ ft.	To _____ ft.			
					Screen?	<input type="checkbox"/>	Type	Make		
Static Water Level										
Pumping Level (below land surface)										
Wellhead Completion					Pitless adapter manufacturer _____ Model _____					
					<input type="checkbox"/>	Casing Protection	<input type="checkbox"/>	12 in. above grade		
					<input type="checkbox"/>	At-grade (Environmental Wells and Borings ONLY)				
Grouting Information					Well Grouted?	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<input checked="" type="checkbox"/>	Not Specified
Nearest Known Source of Contamination					feet	Direction	Type			
					Well disinfected upon completion?	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Pump					<input type="checkbox"/>	Not Installed	Date Installed			
					Manufacturer's name					
					Model Number	HP	Volt			
					Length of drop pipe	ft	Capacity	g.p.	Typ	
Abandoned					Does property have any not in use and not sealed well(s)?					
					<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Variance					Was a variance granted from the MDH for this well?					
					<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Miscellaneous					First Bedrock	Aquifer				
					Last Strat	Depth to Bedrock		ft		
					Located by Minnesota Department of Health					
					Locate Method GPS SA Off (averaged) (15 meters)					
					System	UTM - NAD83, Zone 15, Meters	X 501063	Y 4974008		
					Unique Number Verification	Info/GPS from data	Input Date	03/05/2020		
Angled Drill Hole										
Well Contractor										
					Licensee Business	Lic. or Reg. No.	Name of Driller			

1000025204

County Ramsey
 Quad Lake Elmo
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/17/2020
 Update Date 08/17/2020
 Received Date

Well Name BRINK, DOUG	Township 28	Range 22	Dir Section W 13	Subsection AAABAC	Well Depth 181 ft.	Depth Completed 181 ft.	Date Well Completed				
Elevation 1037	Elev. Method LiDAR 1m DEM (MNDNR)	Drill Method		Drill Fluid							
Address C/W 2698 LINWOOD AV E MAPLEWOOD MN 55119					Use domestic	Status Active					
Stratigraphy Information					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/> From To						
					Casing Type Single casing		Joint				
					Drive Shoe? Yes <input type="checkbox"/> No <input type="checkbox"/>		Above/Below				
					Casing Diameter 4 in. To 140 ft.		Weight lbs./ft.				
					Open Hole From 140 ft. To 181 ft.						
					Screen? <input type="checkbox"/>		Type Make				
					Static Water Level						
					Pumping Level (below land surface)						
					Wellhead Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)						
					Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Specified						
Nearest Known Source of Contamination feet Direction Type Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model Number HP Volt Length of drop pipe ft Capacity g.p. Typ											
Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Miscellaneous First Bedrock Aquifer Last Strat Depth to Bedrock ft Located by Minnesota Geological Survey Locate Method Digitization (Screen) - Map (1:24,000) (15 meters or System UTM - NAD83, Zone 15, Meters X 501082 Y 4974013 Unique Number Verification Information from Input Date 08/17/2020											
Angled Drill Hole											
Well Contractor Licensee Business Lic. or Reg. No. Name of Driller											
Remarks UNIQUE NUMBER GIVEN TO MDH (P. SARAFOLEAN) TO TRACK THIS WELL.											
Minnesota Well Index Report					1000025204		Printed on 03/10/2025 HE-01205-15				

Appendix D

MN DNR NATURAL HERITAGE INFORMATION
SYSTEM (NHIS) DETERMINATION LETTER





Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

April 22, 2025

David Bauer
Alliant Engineering

RE: Natural Heritage Review of the proposed **Century Ponds**,
T28N R22W Section 12; Ramsey County

Dear David Bauer,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2025-00184** in the email subject line.

As requested, the [Minnesota Natural Heritage Information System](#) has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

State-listed Species

- [Henslow's sparrows](#) (*Centronyx henslowii*), a state-listed endangered bird species, were documented north of the project area during a 2021 survey by Midwest Natural Resources. Suitable nesting habitat for this species includes uncultivated and unmowed grasslands and old fields with standing, dead vegetation, and a substantial litter layer.

As stated in the 2021 survey, the project area did not have suitable nesting habitat for Henslow's sparrow due to its consistent use by golfers and groundskeeping activities. However, as project details state, the golf course has been left fallow and unmaintained since 2021. Therefore, the project area may provide suitable nesting habitat for Henslow's sparrows. As such, initial disturbance in areas with suitable nesting habitat should not occur during their breeding season, between May 15 and July 15. **If avoidance during breeding season is not feasible, areas that will be disturbed that contain suitable nesting habitat will need to be surveyed for active nests prior to any project disturbance.**

Please contact Review.NHIS@state.mn.us to confirm that the above avoidance measure will be implemented or to inform us that avoidance is not feasible. If avoidance is not feasible, the project area will need to be surveyed for active nests prior to any project disturbance. Requirements for surveys and lists of DNR certified surveyors can be found at the [Natural Heritage Review website](#).

- [Sullivant's milkweed](#) (*Asclepias sullivantii*), a state-listed threatened plant species, was documented within the project area in 2021 during a survey conducted by Midwest Natural Resources. As noted in the survey, the Sullivant's milkweed was likely planted. Regardless of whether or not the individual(s) were planted, Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of endangered or threatened plants or animals, including their parts or seeds, without a permit.

If the project is planning to avoid the Sullivant's milkweed, please send documentation of avoidance to Reports.NHIS@state.mn.us. If the project is not planning to avoid the Sullivant's milkweed, apply for a [permit to take with mitigation](#). For more information on the permit to take process, please visit [Endangered and Threatened Species Permits](#).

- Several plant species of special concern were documented within the project area in 2021 during a survey conducted by Midwest Natural Resources including [white wild indigo](#) (*Baptisia lactea* var. *lactea*), [rattlesnake master](#) (*Eryngium yuccifolium*), [Kentucky coffee tree](#) (*Gymnocladus dioica*), [creeping juniper](#) (*Juniperus horizontalis*), and [swamp white oak](#) (*Quercus bicolor*). **We strongly recommend project alternatives that avoid or minimize impacts to known occurrences of these species.**
- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all of Minnesota's bats, including the federally endangered northern long-eared bat ([Myotis septentrionalis](#)), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**
- Please visit the [DNR Rare Species Guide](#) for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- The area of interest overlaps with a U.S Fish and Wildlife Service (USFWS) Rusty Patched Bumble Bee [High Potential Zone](#). The [rusty patched bumble bee](#) (*Bombus affinis*) is federally listed as endangered and is likely to be present in suitable habitat within High Potential Zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. If applicable, **the DNR recommends reseeding disturbed soils with native species of grasses and forbs using [BWSR Seed Mixes](#) or [MnDOT Seed Mixes](#).**

To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online [Information for Planning and Consultation \(IPaC\) tool](#). Please note that all

projects, regardless of whether there is a federal nexus, are subject to federal take prohibitions. The IPaC review will determine if prohibited take is likely to occur and, if not, will generate an automated letter. The [USFWS RPBB guidance](#) provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix.

Environmental Review and Permitting

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance. Sufficient information should be provided so the DNR can determine whether a permit to take will be needed for any of the above protected species.
- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available and is the most complete source of data on Minnesota's native plant communities, rare species, and other rare features. However, the NHIS is not an exhaustive inventory and does not contain the locations of all rare features in the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.** Resubmit by selecting *Clone Project as Draft* on the project page in MCE.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit [Natural Heritage Review](#) for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, please contact your [DNR Regional Environmental Assessment Ecologist](#).

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Molly Barrett Digitally signed by Molly Barrett
Date: 2025.04.22 13:43:38 -05'00'

Natural Heritage Review Specialist

molly.barrett@state.mn.us

Cc: [Melissa Collins](#), Regional Environmental Assessment Ecologist, Central (Region 3)

Appendix E

ALLIANT ENGINEERING 2024 ECOLOGICAL STUDY



Technical Memorandum

To: Michael Suel
D.R. Horton Homes
20860 Kenbridge Ct., Suite 100
Lakeville, MN 55044

From: Keara Fehr, Senior Environmental Specialist

Date: 8/2/2024

Subject: Century Ponds – Ecological Study

1. Project Description and Background

Alliant conducted a high level ecological review on behalf of D.R. Horton on a potential residential development site called Century Ponds located near Lower Afton Road and Century Ave South in Maplewood, Ramsey County, MN. The Century Ponds site is located at the former Ponds at Battle Creek Golf Course. The Ponds at Battle Creek was an approximately 88 acre county owned property that permanently closed in September 2021.

Based on Ramsey County’s historic aerial photo portal, the site appears to have been historically in agriculture production in the northern part of the site and potentially an open grassland grazing area in the southern part of the site that was surrounded by several wetland and pond areas. In 2003, the historic aerial imagery shows the construction of the Ponds at Battle Creek Golf Course. The golf course included a clubhouse, driving range, and a nine-hole course with fairways and greens. The site operated as a golf course for 17 years until it closed in September 2021. Since the closure of the golf course, the site has laid dormant for close to three years and the vegetation is now unmaintained and not heavily fertilized.

This technical memo provides a high level overview of rare species that are found near or around the project site based on federal and state databases, summarizes previous studies that have occurred on site, provides a review of vegetation communities currently present on site, and provides recommendations for promoting habitat on site for rare species.

2. Desktop Review

Before a field visit was conducted, data from rare species databases and previous site surveys was reviewed to gather background context on the site. The information from this review is summarized below.

2.1 DATABASE REVIEW

Desktop rare species databases were reviewed on the federal and state level. These included the U.S. Fish and Wildlife Service (USFWS) Information System for Planning and Consultation (IPaC) and the Minnesota Department of Natural Resources (DNR) Natural Heritage Information System (NHIS). The results of the database query are described below.

2.1.1 ***Federal: Section 7 Endangered Species Federal Review***

The USFWS IPaC database was reviewed to determine what federally rare species are located within Ramsey County. The results of the IPaC review are summarized below in **Table 1**.

Table 1. Federally Listed Endangered, Threatened, and Rare Species

Species	Listing Status
Mammals	
Northern long-eared bat (<i>Myotis septentrionalis</i>)	Endangered
Birds	
Whooping crane (<i>Grus americana</i>)	Experimental population
Clams	
Higgins Eye (pearlymussel) (<i>Lampsilis higginsii</i>)	Endangered
Salamander mussel (<i>Simpsonaias ambigua</i>)	Proposed endangered
Insects	
Monarch butterfly (<i>Danaus Plexippus</i>)	Candidate
Rusty Patched Bumble Bee (<i>Bombus affinis</i>)	Endangered

The USFWS habitat database was reviewed for each species to determine if their habitat type overlaps with the habitat types present on the project site.

- **Potential Suitable Habitat**
 - **Endangered**
 - Northern long-eared bat’s summer roosting and foraging habitat includes areas underneath bark, in cavities, or crevices of both live trees and snags, or dead trees. In some cases they may use caves or mines. In the winter, they spend time hibernating in caves and mines. There are small areas of planted trees on site that could potentially provide suitable habitat for bats. The USFWS Northern Long-Eared Bat determination key was filled out to use as guidance to see the potential for this site to impact the northern

long-eared bat and the key resulted in a may affect bat, not likely to adversely affect the species. See **Appendix C** for that determination letter.

- Rusty patched bumble bee’s nesting and foraging habitat usually occurs in upland grassland and shrublands that contain forage species and their nesting habitat is usually 1-4 feet underground in abandoned rodent nests or other mammal burrows. Though there is less information available on overwintering habitat, observations yield that the bee overwinters in upland forests and woodlands. Potential suitable habitat is available throughout areas of the site and the bee has been observed previously in 2019 and 2021 in the southwestern part of the site.
- Based on the USFWS model, the project area occurs within the high potential zone for the Rusty Patched Bumble Bee. The high potential zone is where presence of the bee should be presumed based on a model developed by the USFWS that considers factors such as foraging distance and land classification.
- **Experimental population**
 - The whooping crane breeds, migrates, winters, and forages in a variety of habitats that include coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, and pastures and agricultural fields. There are open water features and wet meadows present on the site that could provide potential habitat for the whooping crane.
- **Candidate**
 - The monarch butterfly needs milkweed and flowering plants for foraging habitat. For overwintering habitat, monarchs gravitate towards moderate temperature areas such as areas in California. There is potential suitable habitat on site for the monarch due to the presence of milkweed and flowering plant specie present on site.
- **Unsuitable Habitat**
 - Higgins eye pearlymussel is usually found in deep water with moderate currents, such as a river, that have stable substrate. There are no streams or rivers present on site; therefore, there is no suitable habitat present for the species.
- **Proposed Endangered**
 - The salamander mussel inhabits swift-flowing rivers and streams with areas of shelter under rocks or in crevices. Since there are no streams or rivers present on site, the site does not provide suitable habitat for the species.

2.1.2 **State: Minnesota DNR NHIS Review**

The Minnesota DNR NHIS was queried to determine whether State-listed endangered and threatened, rare species, and/or natural communities are located within 1 mile of the project area. The results of this review are summarized in **Table 2** below.

Table 2. State Listed Endangered, Threatened, and Rare Species

Species	Listing Status
Birds	
Henslow's sparrow (<i>Centronyx henslowii</i>)	Endangered
Lark sparrow (<i>Chondestes grammacus</i>)	Special Concern
Plants	
Kitten-tails (<i>Synthyris bullii</i>)	Threatened
Canada frostweed (<i>Crocanthemum canadense</i>)	Special Concern
Clinton's bulrush (<i>Trichophorum clintonii</i>)	Threatened

The Minnesota DNR's habitat description for each species was reviewed and compared to the habitat found on the project site to determine if potential suitable habitat was present on site.

- **Potential Suitable Habitat**
 - **Endangered Species**
 - Henslow's sparrow prefers uncultivated grasslands and old fields which this site has the potential to provide some habitat for.
- **Unsuitable Habitat**
 - **Threatened**
 - Kitten-tails primarily occur in oak savanna communities usually on bluffs or terraces of the St. Croix, Mississippi, and Minnesota River Valleys. This site is not located on an oak savanna community and is not located on a bluff of the Mississippi River, though the site is close to the river. Therefore, this site is not likely to provide potential suitable habitat for this species.
 - Clinton's bulrush usually occurs in sunny or partially shaded habitat and ranges from dry to moist. Typical habitats include prairie or savannah communities or sometimes openings or edges in fire-dependent forests of oak. Due to the disturbance history on site, it is not likely that there is potential suitable habitat for this species on site.
 - **Species Concern**
 - Lark sparrows typically occur in dry grasslands with short and or sparse native grasses in areas of sand and gravel soils. In addition they usually prefer some bare ground and widely scattered or patchy trees. Since the site contains dense

- patches of long grass with minimal bare ground, the site is not likely to provide potential suitable habitat for this species.
- Canada frostweed is primarily found in high quality remnant sand savannas, sand prairies, dunes, and barrens. These habitats are characteristically dry, sunny for all or most of the day, and sparsely vegetated. This site is not likely to provide potential suitable habitat for this species since the habitat on site is not high quality and the site has been managed in either agriculture production and a golf course for the decades.

In addition to the NHIS database, the Minnesota Biological Survey (MBS) sites of biodiversity significance database and the Minnesota DNR Native Plant Community (NPC) database were reviewed. Within the project site, there are no mapped sites of MBS biodiversity and no NPC sites. However, just north of Lower Afton Road at the Battle Creek Regional Park there is a mapped MBS site that is identified as moderate biodiversity significance. Moderate sites are defined as those that contain occurrences of rare species, moderately disturbed native plant communities, and/or landscapes that have strong potential for recovery of native plant communities and characteristic ecological processes. Additionally, the Battle Creek Regional Park overlaps the native plant community of Red Oak – White Oak Forest (MHs37a). This site has a state conservation ranking of S-3 which means the site is vulnerable to extirpation.

2.2 PREVIOUS STUDYS

2.2.1 Ramsey County Correctional Facility – Natural Resources Report

Midwest Natural Resources (MNR) conducted a natural resource survey in September 2021 for Ramsey County Property Management. MNR’s scope of their study included conducting field surveys for avian, bumble bee, and vascular plant species on two separate county-owned parcels. One of these parcels included the Ponds at Battle Creek Golf Course. At the time of the survey, the golf course had just permanently closed.

The results from the Ponds at Battle Creek Golf Course site are categorized by avian, bumble bee, and plant species survey results and the results are summarized below.

Avian Survey Results

There were two Species in Greatest Conservation Need (SGCN), chimney swift (*Chaeture pelagica*) and the brown thrasher (*Toxostoma rufum*), present on site. Both of these avian species are not listed as a state rare species. The survey noted that the golf course area includes a diverse assemblage of vegetative communities, but due to the consistent use by golfers and groundskeeping activities, it is less likely to be utilized as a nesting area by many species.

Bumble Bee Survey Results

Field efforts did not locate any populations of rusty patched bumble bee on the site. However, in August 2019 and July 2021, there were independent rusty patched bumble bee observations by a gardener at the golf course in the southern portion of the site. These observations show up in the DNR's NHIS database as well. The survey noted that the golf course's abundant plantings include a wide variety of flowering plants as nectar/pollen sources, along with semi-managed grassy spaces that could serve as appropriate sites for colonies to establish. At the time of survey, there was concern that the heavy chemical use, fertilizers, herbicides, pesticides, to maintain the plantings throughout the area could have an adverse effect on native pollinators.

Plant Survey Results

The vegetation on the golf course includes maintained fairways with native plantings that are focused on formal flower beds near the clubhouse and sporadic plantings around the golf course and a few remnant natural areas. There were six species within these native plantings that are listed rare in Minnesota; however, it was noted that it is clear that these species were planted and are not native to the site. Additionally, there are remanent natural areas including a small mesic hardwood component along with a floating mat feature and natural shoreline around various ponds throughout the property. The results of these three areas were summarized below.

- The **mesic hardwood community** is restricted to a linear area in the southwestern edge and extends off-site. Due the limited area within the site, this community could not be classified to a native plant community class or type.
- The **floating mat feature** would classify as a Northern Rich Fen – Graminoid – Sphagnum Rich Fen (Basin). The plant community has a native plant community ranking of S4 meaning that the community is apparently secure; uncommon but not rare.
- The **fringes surrounding the pond features** present in the southern half of the property appear natural in origin and could classify as the Inland Lake Clay/Mud Shore – Clay/Mud Shore (Inland Lake) community. The plant community has a native plant community ranking of S4 meaning that the community is apparently secure; uncommon but not rare.

2.2.2 Wetland Delineation

A wetland delineation was conducted by Kjolhaug Environmental Services Company, Inc. in November 2023 on behalf of D.R. Horton. The results of the delineation indicate that there are fourteen wetlands on site that include a combination of historic wetlands and incidental wetlands that were created in upland areas. The historic wetlands on site include seasonally flooded basins, fresh (wet) meadow, shallow marsh, open water. The wetland delineation survey was conducted two years after the golf course was permanently closed and includes several observations about vegetation within each wetland area and the surrounding upland vegetation. It was noted that some of the surrounding upland areas near the wetland were planted with native seed mix.

3. Field Review

Based on the database and previous study information, Alliant conducted a high level vegetation field review on June 19th, 2024 to identify potential suitable habitat for rare species. Due to the site occurring within the high potential zone for the rusty patched bumble bee and the fact that this species has been previously observed on site as early as 2021, the site focused on vegetation communities present on site and suitable pollinator habitat. The Xerces Society Habitat Assessment Form and Guide for the Rusty Patched Bumble Bee was used to guide observations on site. The tool is meant as a guide to help educate conservation planners and landowners, prioritize conservation actions, and quantify habitat or land management improvements for the rusty patched bee on a single site. Since some of the items in the tool were not relevant for the goal of this study, the tool was used primarily as a guide on the field observations.

3.1 SITE DESCRIPTION

The site consisted of an abandoned golf course that includes impervious surfaces of a clubhouse, parking lot, paved and gravel trails in addition to wetlands, fairway, greens, and roughs previously associated with the golf course. As previously mentioned, the golf course has been permanently closed since September 2021 and the grounds have not been maintained since then.

3.2 VEGETATION COMMUNITIES

There were four main plant communities observed throughout the site. The details of these communities are shown below.

3.2.1 Grassland

The planted grassland habitat is the predominant habitat throughout the site. This vegetation area is associated with the old fairway, green, and rough areas on the golf course. The dominant species throughout this area includes Kentucky blugrass (*Poa pratensis*), quakgrass (*Elymus repens*), and smooth brome (*Bromus inermis*). Other species interspersed throughout the landscape include Canada thistle (*Cirsium arvense*), dandelion (*Taraxacum officinale*), foxtail barley (*Hordeum jubatum*), common mullein (*Verbascum thapsus*), Canada horseweed (*Conyza canadensis*), wild timothy (*Phleum pratense*), daisy fleabane (*Erigeron annuus*), narrow-leaf hawksbeard (*Crepis tectorum*), crown vetch (*Securigera varia*), and bird's foot trefoil (*Lotus corniculatus*). There are some flowering species dispersed throughout this habitat; however, the predominant vegetation species is grass species that were planted as part of the golf course development. Therefore, there is low suitable foraging, nesting, and overwintering habitat on site for pollinator species.

3.2.2 Wetlands

Fourteen wetlands were recently delineated on site in November 2023. The dominant vegetation in the historic wetlands or along the fringe of open water wetlands includes reed canary grass (*Phalaris arundinacea*), river bulrush (*Schoenoplectus fluviatilis*), swamp milkweed (*Asclepias incarnata*), devil's beggartick (*Bidens frondosa*), blue vervain (*Verbena hastata*), narrowleaf cattail (*Typha angustifolia*), smartweed (*Persicaria sp.*), soft-stem bulrush (*Schoenoplectus tebernaemontani*), woolgrass (*Scirpus cyperinus*), spotted joe-pye weed (*Eutrochium maculatum*), sensitive fern (*Onoclea sensibilis*), purple loosestrife (*Lythrum salicaria*), northern bugleweed (*Lycopus uniflorus*), and blue flag iris (*Iris versicolor*). Some of the wetlands that have been dug in historic upland areas are dominated by sandbar willow (*Salix exigua*). There is some potential foraging habitat in the wetland areas; however, the better potential suitable habitat is in the adjacent upland areas near the wetlands for pollinator species. As observed in the MNR study, there are natural remanent plant communities in the southern part of the site particularly around Wetland 12.

3.2.3 Native and Non-Native Flowering Plants

There are pockets of native flowering plants that appear to have been planted throughout the site that are mixed in with non-native flowering plants. These areas are located adjacent to the abandoned clubhouse and in the adjacent upland areas surrounding some of the wetlands. The species observed include cup plant (*Silphium perfoliatum*), hoary alyssum (*Berteroa incana*), prairie coreopsis (*Coreopsis palmata*), white wild indigo (*Baptisia alba*), wild bergamot (*Monarda fistulosa*), pale gentian (*Gentiana alba*), purple prairie clover (*Dalea purpurea*), cone flower (*Echinacea sp.*), little bluestem (*Schizachrium scoparium*), big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), Canada thistle, common mullein, Kentucky bluegrass, crown vetch, and Canada goldenrod (*Solidago canadensis*). These areas contain native and non-native flowering vegetation that can be potentially suitable foraging habitat for pollinator species.

3.2.4 Landscaped Trees

There are landscaped trees throughout the site particularly near old walking paths. Some of the tree species include species of Oak (*Quercus sp.*) and maple (*Acer sp.*). The specific species includes swamp white oak (*Quercus bicolor*), bur oak (*Quercus macrocarpa*), northern red oak (*Quercus rubra*), box elder (*Acer negundo*), red maple (*Acer rubrum*), and sugar maple (*Acer saccharinum*). Additionally, there were planted spruce (*Picea sp.*) and pine (*Pinus sp.*) throughout the site. Some of these trees may provide potential suitable habitat for song birds and bat species; however, the tree habitat is very fragmented on site and does not provide a cohesive forested unit for these species.

4. Correspondence with USFWS

Alliant contacted the USFWS Rusty Patched Bumble Bee National Species Lead, Tamara Smith, to confirm the regulatory authority of the USFWS for any rare species found on this site. Tamara communicated via email on July 22, 2024 that if there is no federal nexus (e.g. funded, authorized, or carries out by a Federal agency) the USFWS has no regulatory authority under Section 7 (a) (2) of the Endangered Species Act to act on this project. At this time, since the project does not have a federal permit associated with it and no federal funding, the project is not required to consult with the USFWS. See email correspondence in **Appendix D**.

Alliant followed up with Tamara on the phone to discuss her email and discuss voluntary mitigation strategies the site could implement to mitigate any potential impacts to threatened and endangered species potentially present on site. The USFWS referenced the Conservation Management Guidelines for the Rusty Patched Bumble Bee (*Bombus affinis*) to review for mitigation strategy recommendations. Tamara also emphasized for this site, enhancing the turf grass areas with native seed mix that has abundant floral resources that bloom from spring to fall where appropriate is a good voluntary mitigation strategy to enhance pollinator habitat on site.

5. Conclusion

The predominant vegetation throughout the site is planted grass species that were once maintained and associated with the golf course's fairways, greens, and roughs. Throughout the site, there are small pockets of potential suitable foraging habitat for pollinator species particularly adjacent to wetland areas and near the abandoned clubhouse. The southern portion of the site contains some natural remnant areas that could classify as a native plant community. Additionally, some of the landscaped trees throughout the site have the potential to provide bird and bat habitat; though the tree habitat is fragmented and planted instead of more naturally occurring.

Based on the field results, there are a few recommendations D.R. Horton should consider when planning their development. These include:

- Enhance the wetland buffer areas with native pollinator species as part of the development and add native seed mix to the area adjacent to any potential stormwater basin that is included in the development for the site. The USFWS Conservation Management Guidelines for the Rusty Patched Bumble Bee can be used as a guidance document to provide suggestions for how to enhance these areas.
- Minimize the use of herbicides throughout the site where appropriate and avoid insecticides or fungicides.

- Avoid and minimize impacts to historic wetland features on site to preserve the remnant native plant communities particularly in the southern part of the project.
- If tree clearing needs to occur, be mindful of the bat inclusive dates of November 15th to March 31st and try to clear trees during this time. If this is not possible, reference the Northern Long-Eared Bat Determination letter that the site may affect, but is not likely to adversely affect the northern long-eared bat. This document serves as a due diligence record that potential impacts to the Northern Long-Eared Bat have been examined. See **Appendix D.**

Appendices

Appendix A. Vegetation Community Figure

Appendix B. Photo Log

Appendix C. Northern Long-Eared Bat Determination Letter

Appendix D. Correspondence with the USFWS - Tamara Smith



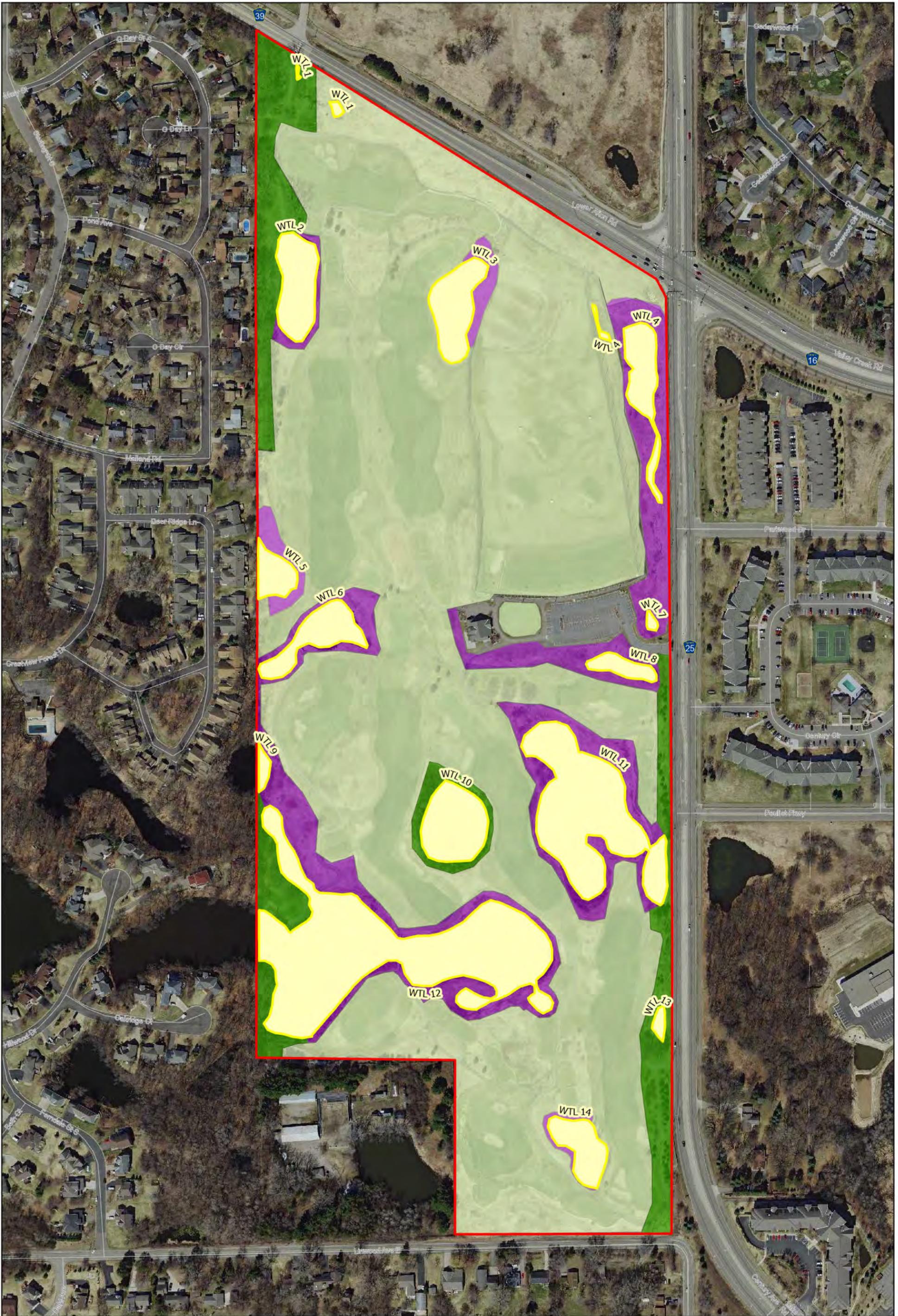
ALLIANT

Vegetation Communities Figure

APPENDIX A



ALLIANT



Century Ponds



Legend

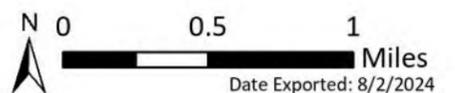
- Wetland
- Study Area

Vegetation Type

- Grassland
- Landscaped Trees
- Native/Non-Native Flowering Plants

*Vegetation areas are approximate. Landscape tree areas only include larger clumps of trees.

Vegetation Communities



Date Exported: 8/2/2024



ALLIANT

Photo Log

APPENDIX B



ALLIANT

Century Ponds – Ecological Study

Name of Document



**Century
Ponds**

6/19/2024

Photo 1. Old driving range facing north. This area is dominated by planted grass species.



**Century
Ponds**

6/19/2024

Photo 2. Area near Wetland 4 and drainageway 2. This area is dominated by non-native and native flowering plants. Photo taken facing north near drainageway 2.



**Century
Ponds**

6/19/2024

Photo 3. Photo represents the common planted grass species present adjacent to the path. Photo take in the northwestern part of the project facing southwest.



**Century
Ponds**

6/19/2024

Photo 4. Typical grassland conditions throughout the fairways.



**Century
Ponds**

6/19/2024

Photo 5. Some of the native and non-native flowering vegetation that surround some of the wetlands on site. Photo was taken facing west across Wetland 6.



**Century
Ponds**

6/19/2024

Photo 6. Areas of native and non-native flowering vegetation near the old clubhouse. Photo is taken south of the clubhouse facing northwest.



**Century
Ponds**

6/19/2024

Photo 7. Photo shows some of the landscaped trees mostly surrounding old walking paths on the golf course and near wetlands. This photo was taken in the southeastern corner of the property facing north



ALLIANT

Northern Long-Eared Bat Determination Letter

APPENDIX C



ALLIANT



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To:
Project code: 2024-0123628
Project Name: Century Ponds

07/30/2024 20:09:45 UTC

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Century Ponds'

Dear Keara Fehr:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 30, 2024, for 'Century Ponds' (here forward, Project). This project has been assigned Project Code 2024-0123628 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Higgins Eye (pearlymussel) *Lampsilis higginsii* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Rusty Patched Bumble Bee *Bombus affinis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Minnesota-Wisconsin Ecological Services Field Office and reference Project Code 2024-0123628 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Century Ponds

2. Description

The following description was provided for the project 'Century Ponds':

Proposed residential development on an abandoned golf course

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.92458135,-92.98706179523427,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Alliant Engineering

Name: Keara Fehr

Address: 733 Marquette Avenue, Suite 700

City: Minneapolis

State: MN

Zip: 55402-2340

Email: kfehr@alliant-inc.com

Phone: 6123153200



ALLIANT

Correspondence with the USFWS – Tamara Smith

APPENDIX D



ALLIANT

Keara Fehr

From: Smith, Tamara A <Tamara_Smith@fws.gov>
Sent: Monday, July 22, 2024 10:58 AM
To: Keara Fehr
Subject: Re: [EXTERNAL] RE: Rusty Patched Bumble Bee Protection Questions

Hi Keara - Thank you for reaching out about rusty-patched bumble bee. Apologies for the delay.

Section 7(a)(2) of the Endangered Species Act directs all Federal agencies to ensure that the actions they authorize, fund, or carry out within a project do not jeopardize the continued existence of endangered or threatened species or destroy or adversely modify critical habitat. The Section 7 implementing regulations (50 CFR Part 402) specify how Federal agencies are to fulfill their Section 7(a)(2) consultation requirements. You indicated that the projects you are considering do not have a Federal nexus (e.g. funded, authorized, or carried out by a Federal agency), therefore, you are not required to consult with us under Section 7. We can, however, provide voluntary guidance should you want recommendations for how to mitigate impacts to threatened and endangered species within your project action area, but there is no legal requirement for you to consult with us.

Thanks,
Tam

Tamara A. Smith | Fish and Wildlife Biologist
pronouns: she/they
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Ecological Services Field Office
3815 American Boulevard East, Bloomington, MN 55425
mobile: 612-600-1599

<https://www.fws.gov/species/rusty-patched-bumble-bee-bombus-affinis>
<https://www.fws.gov/species/poweshiek-skipperling-oarisma-poweshiek>

From: Keara Fehr <kfehr@alliant-inc.com>
Sent: Wednesday, July 17, 2024 8:58 AM
To: Smith, Tamara A <Tamara_Smith@fws.gov>
Subject: [EXTERNAL] RE: Rusty Patched Bumble Bee Protection Questions

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Tam,

I'm following up on my previous message in June. Would you have any availability to the rusty patched bumble bee and T&E procedures for non-federal projects?

Thank you!

Keara Fehr, CMWP
(she, her, hers)
SENIOR ENVIRONMENTAL SPECIALIST

Alliant Engineering, Inc.
733 Marquette Ave, Ste 700, Minneapolis, MN 55402
612.718.6880 CELL | 612.315.3200 DIRECT

Building better communities with excellence and passion.



ALLIANT

// An employee-owned company.

From: Keara Fehr
Sent: Wednesday, June 19, 2024 1:12 PM
To: tamara_smith@fws.gov
Subject: Rusty Patched Bumble Bee Protection Questions

Hi Tam,

I have a few questions about rusty patched bumble bee protections and procedures that need to be followed for areas that occur within mapped high potential zones. Please let me know if you have availability this week or early next week to set up a phone call to talk through this. I think the call would take 30 minutes or less.

Thanks,

Keara Fehr, CMWP

(she, her, hers)

SENIOR ENVIRONMENTAL SPECIALIST

Alliant Engineering, Inc.

733 Marquette Ave, Ste 700, Minneapolis, MN 55402

612.718.6880 CELL | 612.315.3200 DIRECT

Building better communities with excellence and passion.



ALLIANT

// An employee-owned company.

Any attached files are the property of Alliant Engineering, Inc. and are transmitted for your exclusive use and convenience. By accepting and using these files you assume all responsibility for the content. Hard copies, signed and dated, will govern over any electronic files furnished herein.

Appendix F

MnSHPO Review



April 23, 2025

David Bauer
Senior Environmental Specialist
Alliant Engineering
dbauer@alliant-inc.com

RE: Century Ponds Development
T28 R22 S12 SE, Maplewood, Ramsey County
SHPO Number: 2025-0755

Dear David Bauer:

Thank you for consulting with our office during the preparation of an Environmental Assessment Worksheet for the above-referenced project.

Due to the nature and location of the proposed project, we recommend that a Phase I archaeological survey be completed. There will clearly be some previous disturbance from the golf course, but archaeological sites have been found in the general vicinity of the proposed project in similar landscape settings.

The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified. For a list of consultants who have expressed an interest in undertaking such surveys, please visit the website preservationdirectory.mnhs.org, and select "Archaeologists" in the "Specialties" box.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Specialist, at 651-201-3285 or kelly.graggjohnson@state.mn.us.

Sincerely,



Amy Spong
Deputy State Historic Preservation Officer

Appendix G

Century Ponds Traffic Study





ALLIANT

Century Ponds

TRAFFIC IMPACT STUDY

FINAL REPORT

Prepared for:

Deb Ridgeway, DR Horton
20860 Kenbridge Court, #100
Lakeville, MN 55044

Prepared by:

Alliant Engineering
733 Marquette Avenue, Suite 700
Minneapolis, MN 55402

May 12th, 2025

4000041-00

Table of Contents

Table of Contents	i
List of Tables.....	ii
List of Figures	ii
1. Introduction.....	1
2. Existing Conditions	1
2.1 Study Area Intersections	1
2.2 Data Collection	1
2.2.1 Roadway and Intersection Characteristics	4
2.3 Roadway Access.....	5
2.4 Intersection Capacity Analysis	6
2.4.1 Intersection Capacity Analysis	7
3. Proposed Development.....	7
3.1 Access Locations	7
3.2 Proposed Parking.....	9
3.3 Multimodal Facilities	9
3.4 Trip generation.....	10
3.4.1 Trip Generation and Assignment	10
4. Future Traffic Operations	13
4.1 2025 Build Traffic Operations	13
4.2 Turn Lane Evaluation	14
4.3 2025 Build (w/ Improvements) Traffic Operations	16
5. Site Plan Review	16
6. Conclusions & Recommendations	17
Appendix A: Turning Movement Counts	A
Appendix B: Detailed Measures of Effectiveness	B

LIST OF TABLES

Table 1. Roadway Characteristics	4
Table 2. Intersection Characteristics	4
Table 3. Development Intersection Characteristics	5
Table 4. Access Spacing Guidelines	5
Table 5. Level of Service Criteria	6
Table 5. Existing Year 2025 Intersection Capacity Analysis	7
Table 6. Trip Generation Estimate	10
Table 7. 2025 Build Traffic Operations	13
Table 8. 2026 Build w/ Improvements Traffic Operations	16

LIST OF FIGURES

Figure 1. Project Location.....	2
Figure 2. Existing Volumes.....	3
Figure 3. Proposed Site Plan.....	8
Figure 4. Proposed Trip Distribution.....	11
Figure 5. Added Trips	12

1. Introduction

Alliant Engineering has completed a Traffic Impact Study (TIS) for a proposed development on a 92.25-acre site, formerly The Ponds at Battle Creek Town golf course, located in Maplewood, MN (see **Figure 1**) but along the border with the City of Woodbury. The development consists of residential land uses including 134 detached single-family homes and 73 attached single-family homes (townhomes) for a total of 207 dwelling units. The objectives of this study are to evaluate existing traffic operations within the study area, identify any potential traffic impacts to the adjacent roadway network due to the proposed development trips, and recommend improvements to address issues if necessary. The following provides the assumptions, analysis, and study conclusions/recommendations offered for consideration.

2. Existing Conditions

The existing conditions were reviewed to establish a baseline for identifying any future impacts associated with the proposed development. The evaluation of existing conditions includes various field observations and research, turning movement counts, and an intersection capacity analysis.

2.1 STUDY AREA INTERSECTIONS

The following study intersections were identified:

- Century Avenue & Lower Afton Road/Valley Creek Road
- Century Avenue & Parkwood Drive
- Century Avenue & Pouliot Parkway
- Century Avenue / Lake Road & Century Avenue / Apartments
- Century Avenue & Linwood Avenue

2.2 DATA COLLECTION

To document existing conditions, intersection turning movement counts (TMCs) were collected at the study intersections by Alliant Engineering on Wednesday, January 8th, 2025, and Tuesday, February 25th, 2025. TMCs were collected for four hours, defined as:

- AM Peak Period: 7:00 – 9:00 AM
- PM Peak Period: 4:00 – 6:00 PM

The peak hours were observed to be 7:15 to 8:15 AM and 4:30 to 5:30 PM during the data collection period. Existing traffic volumes are shown in **Figure 2**. Detailed intersection turning movement counts are included in **Appendix A**.



Figure 1. Project Location

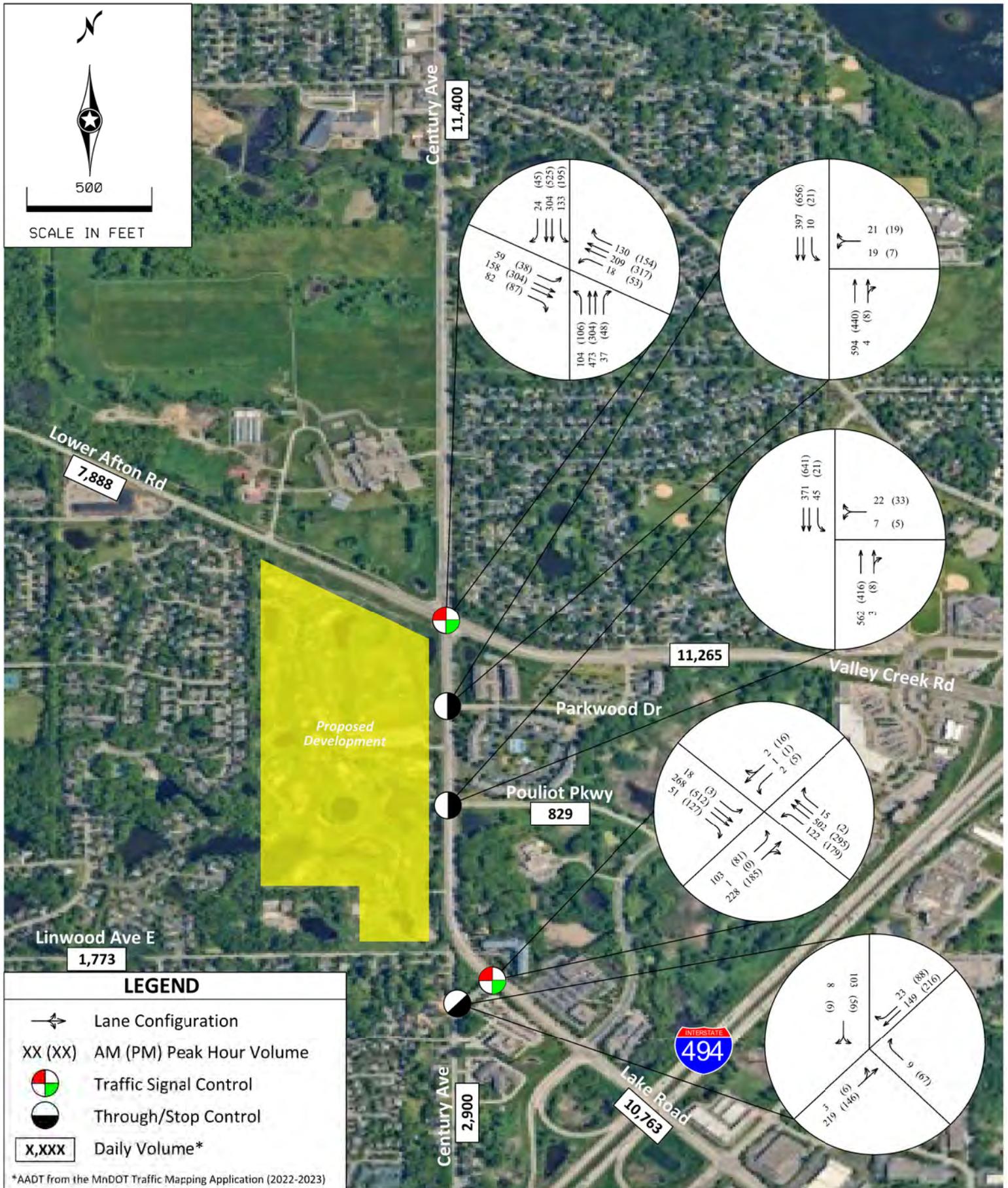


Figure 2
Existing Volumes

2.2.1 Roadway and Intersection Characteristics

In addition to traffic volume data collection, observations were completed to identify roadway/intersection characteristics within the study area (i.e. geometry, posted speed limits, and traffic control), which are summarized in **Table 1** and **Table 2**.

Table 1. Roadway Characteristics

Roadway	Cross-Section	Speed Limit	Functional Classification
Lower Afton Road (CSAH 39)	4-Lane Divided	50 MPH	A-Minor Augmenter
Valley Creek Road (CSAH 16)	4-Lane Divided	40 MPH	A-Minor Augmenter
Century Avenue (CSAH 25/CSAH 72)	4-Lane Divided (N of Lake Road)	50 MPH	A-Minor Reliever
Century Avenue (CSAH 25/CSAH 72)	2-Lane Undivided (S of Lake Road)	35 MPH	Other Arterial
Lake Road	4-Lane Divided	35 MPH	A-Minor Expander
Linwood Avenue	2-Lane Undivided	30 MPH	Major Collector

Table 2. Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach ¹²			
		NB	SB	EB	WB
Century Avenue & Lower Afton Road/Valley Creek Road	Traffic Signal	L/T/T/R	L/T/T/R	L/T/T/R	L/T/T/R
Century Avenue & Parkwood Drive	Through/Stop	T/TR	L/T/T	-	LR
Century Avenue & Pouliot Parkway	Through/Stop	T/TR	L/T/T	-	LR
Century Avenue / Lake Road & Century Avenue / Apartments	Traffic Signal	L/T/T/R	L/T/T/R	L/TR	L/TR
Century Avenue & Linwood Avenue	Through/Stop	R	LR	LT	T/R

¹L=Left-Turn, T=Through, R=Right-Turn

²Separate Lanes are Denoted by /

In addition to the existing study intersections, one access along Lower Afton Road, one access along Century Avenue, and one access along Linwood Avenue are proposed with the development. Proposed geometry and traffic control considered for these accesses are summarized in **Table 3**.

Table 3. Development Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach ¹²			
		NB	SB	EB	WB
Lower Afton Road & Bluestem Street	Through/Stop	LR	-	TR	LT
Century Avenue & Indigo Avenue / Parkwood Drive	Through/Stop	L/T/TR	L/T/TR	LTR	LTR
Linwood Avenue & Waterleaf Way	Through/Stop	-	LR	LT	TR

¹L=Left-Turn, T=Through, R=Right-Turn

²Separate Lanes are Denoted by /

2.3 ROADWAY ACCESS

Appropriate spacing and design of public street intersections and private access is key to access management strategies. Ramsey County guidelines (**Table 4**) are based on MnDOT access management guidelines, whereas Washington County has guidance in their Comprehensive Plan.

Table 4. Access Spacing Guidelines

Agency	Functional Classification	Full-Movement Intersection	Partial Movement Intersections	Private Driveways
Ramsey	Minor Arterial	1/8 to 1/4 mile	1/8 mile	Variable
	Collector	1/8 mile	1/16 mile	Variable
Washington	Minor Arterial	1/4 mile	1/4 mile	Variable
	Collector	1/8 mile	n/a	Variable

Both Lower Afton Road and Century Avenue are minor arterials. Ramsey County guidelines indicate that full-movement intersections should be spaced 1/8-to-1/4-mile apart. All three development accesses meet at least the 1/8-mile spacing. The Indigo Avenue / Parkwood Drive access does not meet the 1/4-mile Washington County spacing guidelines. However, Parkwood Drive is an existing full access intersection that does not have any operational or safety issues.

2.4 INTERSECTION CAPACITY ANALYSIS

An existing 2025 intersection capacity analysis was completed using Synchro/SimTraffic software to establish a baseline condition to which future traffic operations could be compared. Capacity analysis results identify a Level of Service (LOS), which indicates the quality of traffic flow through an intersection. Intersections are given a ranking from LOS A through LOS F. The LOS results are based on average delay per vehicle, which correspond to the delay threshold values shown in **Table 5**. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. The LOS D / E boundary for overall operations is often used as the indicator of congestion in an urban area, with local agencies adopting additional requirements as needed. For side-street stop-controlled intersections, a key measure of operational effectiveness is the side-street LOS. Lengthy delays and poor LOS can occur on side-street approaches even if the overall intersection delay and LOS are acceptable, making side-street LOS a valuable design criterion.

Table 5. Level of Service Criteria

Level of Service	Description	Delay per Vehicle (seconds)	
		Signalized Intersection	Unsignalized Intersection
A	Free Flow: Low volumes and no delays.	0 - 10	0 - 10
B	Stable Flow: Speeds restricted by travel conditions, minor delays.	> 10 - 20	> 10 - 15
C	Stable Flow: Speeds and maneuverability closely controlled due to higher volumes.	> 20 - 35	> 15 - 25
D	Stable Flow: Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.	> 35 - 55	> 25 - 35
E	Unstable Flow: Low speeds, considerable delay, volume at or slightly over capacity.	> 55 - 80	> 35 - 50
F	Forced Flow: Very low speeds, volume exceed capacity, long delays with stop and go traffic.	> 80	> 50

Source: Highway Capacity Manual, 7th Edition, Transportation Research Board, Exhibits 19-8, 20-2, 21-8, 22-8.

After LOS, the second component of the capacity analysis is a study of vehicular queuing, or the lineup of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable LOS, but if queues from the intersection block entrances to turn lanes or adjacent driveways, unsafe operating conditions could result. The 95th percentile queue, or the length of queue with only a five percent probability of being exceeded during an analysis period, is considered the standard to determine if vehicle queues are acceptable.

2.4.1 Intersection Capacity Analysis

The existing year 2025 intersection capacity analysis was performed for the study intersections during the weekday AM and PM peak hours as noted previously. A forecast year No Build analysis was not completed as background growth is minimal and operations would not be expected to change. Results of the analysis, presented in **Table 6**, indicate that all study intersections currently operate at overall intersection LOS B or better during the AM and PM peak hour traffic volumes. Minimal side-street delay was observed at the through / stop study intersections during the AM and PM peak hour with side-street LOS A. All queues were contained within existing storage bays where applicable. Detailed operations a queueing analysis results are presented in **Appendix B**.

Table 6. Existing Year 2025 Intersection Capacity Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.6 / 17.6	B / C	19.0 / 20.1
Century Ave & Parkwood Dr	A / A	1.8 / 7.4	A / A	2.4 / 5.5
Century Ave & Pouliot Pkwy	A / A	2.0 / 5.0	A / A	1.5 / 4.1
Century Ave / Lake Rd & Century Ave / Apartments	A / A	9.4 / 10.0	B / B	11.0 / 12.4
Century Ave & Linwood Ave	A / A	2.0 / 6.8	A / A	1.8 / 6.7

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

3. Proposed Development

Several concepts have been developed for the proposed Century Ponds site, with the current development plan shown in **Figure 3**. The concept shows the anticipated full build out of the site which includes 134 detached single-family properties and 73 attached single-family properties (townhomes) for a total of 207 units.

3.1 ACCESS LOCATIONS

The proposed development plan includes three proposed access points: one along Lower Afton Road (**A**), one along Linwood Avenue (**C**), and one along Century Avenue at the existing intersection with Parkwood Drive (**B**). However, the single-family properties are split from the townhome properties by a combination of existing and proposed wetland buffers. Therefore, the single-family properties have access along Lower Afton Road (**A**) and Century Avenue (**B**), whereas the townhome properties have access only along Linwood Avenue (**C**). There is no connections between the proposed development and the existing residential neighborhoods to the west.

Within each portion of the development the proposed residences are connected via proposed roadways. The single-family properties will include 60-foot roadways which will be built to City standards yet remain private. The townhome properties will utilize a 40-foot private drive.



Figure 3. Proposed Site Plan

3.2 PROPOSED PARKING

Each proposed dwelling unit will have off-street parking which is expected to meet the minimum requirements for each unit. In addition to off-street parking, 34 additional parking stalls are included throughout the development for guest parking. Of the 34 guest parking stalls, 28 are within the townhome area and 6 are located within the detached single-family home area.

3.3 MULTIMODAL FACILITIES

An existing multi-use trail along the north side of Lower Afton Road / Valley Creek Road provides several multimodal connections, including to the Battle Creek Bike Trail and facilities along Hwy 10, McKnight Road, and Century Avenue. The proposed development includes a 10-foot bituminous multi-use trail network that winds through the wetland, pond, and nature areas of the site, connecting to a proposed approximately 2.0-acre park and to both housing areas. A 5-foot concrete sidewalk network is proposed throughout both housing areas, connecting to the proposed multi-use trail and existing multimodal infrastructure as applicable. Initially, this appears to include multimodal facilities along the south side of Lower Afton Road and west side of Century Avenue.

Local bus route 323 passes through the project area along Century Avenue between Pouliot Parkway and Lower Afton Road / Valley Creek Road with stops at the intersection of Lower Afton Road / Valley Creek Road (EB and WB) and at Parkwood Drive (NB only). Route 323 runs between the Sun Ray Transit Center at I-94 and McKnight Road and the City of Woodbury (near Queens Drive and Currell Boulevard). The Sun Ray Transit Center offers transfers to several other transit lines.

3.4 TRIP GENERATION

To account for traffic impacts associated with the proposed development, trip generation estimates were developed for the weekday AM and PM peak hours. The trip generation estimates were developed using trip generation rates for similar land uses as documented in the *ITE Trip Generation Manual, 11th Edition*. The ITE Trip Generation Manual provides peak hour and daily trip generation rates based on studies of similar land uses. Estimated site generated traffic is detailed in **Table 7**. Results indicate the current development plan is expected to generate approximately 129 AM peak hour, 168 PM peak hour, and 1,790 daily trips. Based on the methodology described in the *ITE Trip Generation Manual* pass-by trips and multi-use reductions were not applicable.

Table 7. Trip Generation Estimate

Land Use (ITE Code)	Units	Size	AM			PM			Daily Trips
			Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	
Single-Family Detached Housing (210)	Dwelling Units	134	23	71	94	79	47	126	1,264
	<i>Multi-Use Reduction (N/A)²</i>		<i>Not Applicable</i>						
	<i>Pass-By Trips (N/A)²</i>		<i>Not Applicable</i>						
	Land Use Net Trips		23	71	94	79	47	126	1,264
Single-Family Attached Housing (215)	Dwelling Units	73	9	26	35	25	17	42	526
	<i>Multi-Use Reduction (N/A)²</i>		<i>Not Applicable</i>						
	<i>Pass-By Trips (N/A)²</i>		<i>Not Applicable</i>						
	Land Use Net Trips		9	26	35	25	17	42	526
Subtotal ITE Trips			32	97	129	104	64	168	1,790
<i>Multi-Use Reduction (N/A)²</i>		<i>Not Applicable</i>							
<i>Pass-By Trips²</i>		<i>Not Applicable</i>							
Project Net New Trips		32	97	129	104	64	168	1,790	

Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.

1: Trips generated for the a.m. and p.m. peak hour of the adjacent roadway network.

2: Internal capture rates and pass-by trips not applicable.

3.4.1 Trip Generation and Assignment

To understand impacts to the adjacent roadway network, AADTs documented in **Figure 4** and engineering judgment were utilized to develop a distribution of development trips. As noted, the single-family properties are provided access along Lower Afton Road (**A**) and Century Avenue (**B**) to the north and east, whereas the townhome properties have access along Linwood Avenue (**C**) to the south. Added peak hour trips for each of the study intersections are documented in **Figure 5**.



Century Ponds - Maplewood, MN

Figure 4
Proposed Trip Distribution

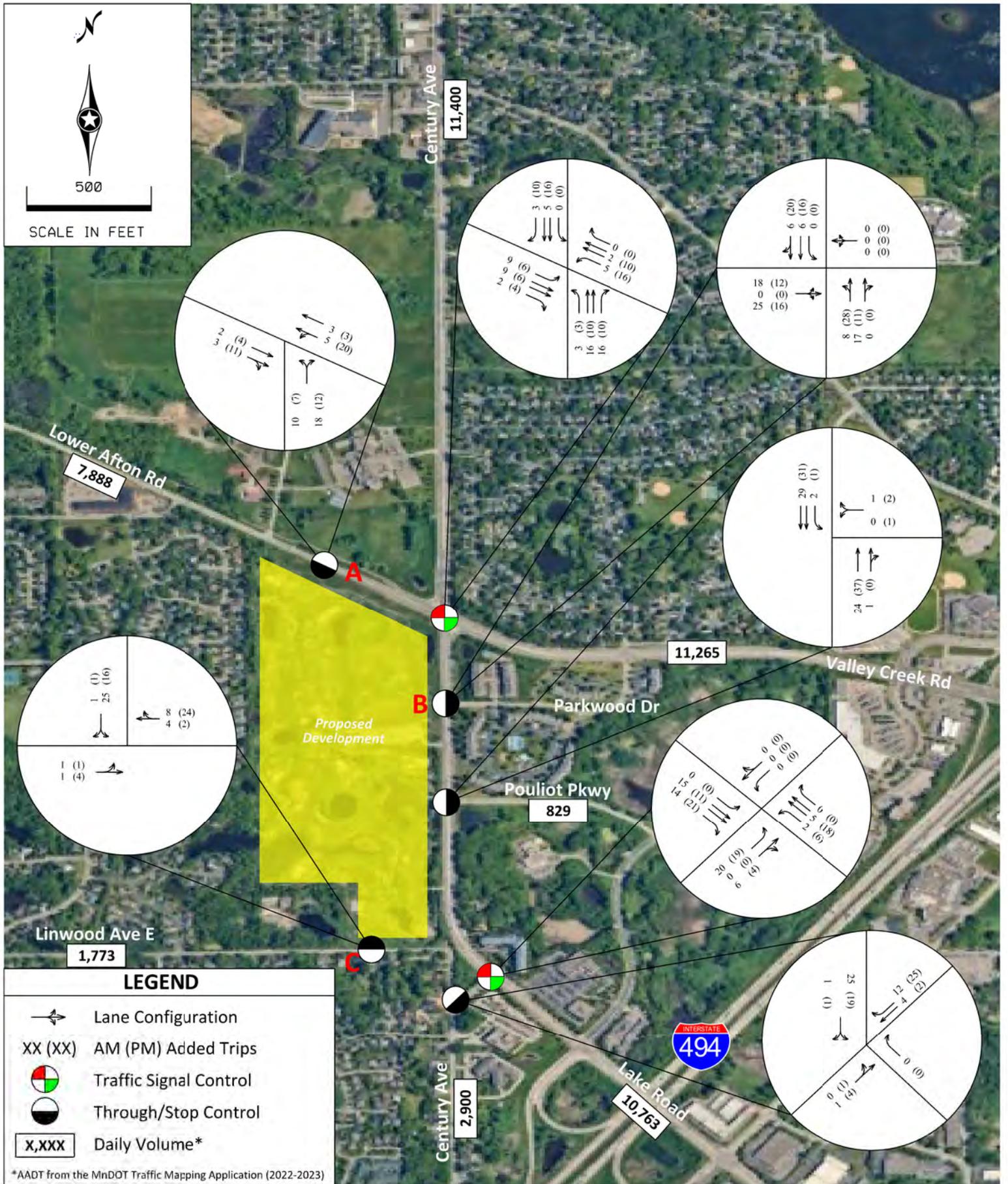


Figure 5
Added Trips

4. Future Traffic Operations

4.1 2025 BUILD TRAFFIC OPERATIONS

In lieu of a completion year forecast analysis, 2025 Build conditions were analyzed to understand the extent to which the proposed development impacts the study area roadway network. Results, presented in **Table 8**, indicate that all study intersections are expected to operate at overall intersection and side-street LOS B or better during the weekday AM and PM peak hours except for the Century Avenue and Lower Afton Road / Valley Creek Road intersection under the PM peak hour (LOS C). All queues were contained within existing storage bays where applicable. Added development trips are not expected to have a major operational impact on the existing network or intersections even without providing turn lanes.

Table 8. 2025 Build Traffic Operations

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.4 / 16.7	C / C	20.1 / 22.3
Century Avenue & Parkwood Dr / Access B	A / A	2.1 / 6.8	A / A	3.0 / 9.2
Century Ave & Pouliot Pkwy	A / A	2.3 / 5.3	A / A	1.6 / 4.4
Century Ave / Lake Rd & Century Ave / Apartments	B / B	10.4 / 11.5	B / B	10.9 / 11.5
Century Ave & Linwood Ave	A / A	2.4 / 7.4	A / A	1.9 / 7.2
Century Ave & Access A	A / A	3.5 / 3.6	A / A	2.8 / 5.4
Linwood Ave & Access D	A / A	0.8 / 4.1	A / A	0.8 / 6.4

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

4.2 TURN LANE EVALUATION

Although all existing and proposed intersections are expected to operate adequately with added trips from the proposed development, a turn lane evaluation was completed to determine whether turn lanes would be recommended at any of the development's proposed access locations. Ramsey County and Washington County guidelines were reviewed for the analysis. The Ramsey County 2040 Comprehensive Plan states that the goal of the Ramsey County Access Management Policy is to bring the county road system into closer compliance with MnDOT access spacing standards. However, it does not specifically state thresholds for constructing dedicated turn lanes. Therefore, the MnDOT Access Management Manual was also reviewed. Per the Washington County Development Code, residential developments with more than ten (10) dwelling units shall require turn or bypass lanes to be constructed on County State Aid Highways. Reviewing trips generated in the prior section, the PM peak hour generated a higher number of entering trips which would drive the need for turn lanes at the access locations. Turn lane volume estimates and turn lane recommendations for each of the four proposed access locations are below:

Access to Single-Family Properties

■ **Access A – Lower Afton Road**

- Eastbound Right-Turn (11 entering PM peak hour trips)
 - A right-turn lane could be provided, as volume thresholds identified in Warrant 9 of the MnDOT Access Management Manual are met. However, although dedicated right-turn lanes are provided at some intersections and/or driveways along Lower Afton Road they are not provided at all (Winthrop Street, Morningside Circle, Holiday Gas Station, Afton Ridge Townhomes, and Londin Lane). The access would likely operate safely and efficiently even without a dedicated right-turn lane, and an initial recommendation would be to not provide a dedicated right-turn lane unless safety issues arise.
- Westbound Left-Turn (20 entering PM peak hour trips)
 - Volume thresholds identified in Warrant 9 of the MnDOT Access Management Manual are met for this movement. Based on results of the warrant evaluation, as well as input from Ramsey County, the recommendation is that a left-turn lane should be provided.

■ **Access B** – Century Avenue

- Southbound Right-Turn (20 entering PM peak hour trips)
 - A right-turn lane should not be provided. Right-turn lanes are not provided at unsignalized intersections along the rest of Century Avenue as the four-lane cross section already provides additional lanes for motorists to bypass right-turning vehicles.
- Northbound Left-Turn (28 entering PM peak hour trips)
 - A left-turn lane should be provided to accommodate trips into the single-family properties and match existing intersection geometry at Parkwood Drive. Providing left-turn lanes is consistent with other unsignalized intersections along Century Avenue and would follow the Washington County Development Code.

Access to Townhome Properties

■ **Access C** – Linwood Avenue

- Eastbound Left-Turn (1 entering PM peak hour trip)
 - Volumes for this movement are expected to be low, and the access would operate safely and efficiently without a dedicated left-turn lane. The initial recommendation would be to not provide a dedicated left-turn lane unless safety issues arise.
- Westbound Right-Turn (24 entering PM peak hour trips)
 - Volume thresholds identified in Warrant 9 of the MnDOT Access Management Manual are met for this movement, therefore a right-turn lane could be provided. However, AADT along Linwood Avenue is low (1,773), and the access is expected to operate safely and efficiently without a dedicated right-turn lane. The initial recommendation would be to not provide a dedicated right-turn lane unless safety issues arise.

4.3 2025 BUILD (W/ IMPROVEMENTS) TRAFFIC OPERATIONS

To understand the benefit of the recommended turn lane locations, a 2025 Build w/ Improvements analysis was completed. Results of the analysis are summarized in **Table 9**, with all signalized intersections performing at LOS C or better and all unsignalized intersections performing at LOS A. Although recommended turn lanes at Access A and B provide minimal operational benefit, they will provide a safety benefit at these locations. All queues were contained within existing storage bays where applicable. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 9. 2026 Build w/ Improvements Traffic Operations

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.6 / 17.3	C / C	20.0 / 21.9
Century Avenue & Parkwood Dr / Access B	A / A	2.0 / 6.7	A / A	2.9 / 9.7
Century Ave & Pouliot Pkwy	A / A	2.1 / 4.9	A / A	1.6 / 4.5
Century Ave / Lake Rd & Century Ave / Apartments	B / B	10.3 / 10.7	B / B	11.5 / 12.8
Century Ave & Linwood Ave	A / A	2.5 / 7.3	A / A	1.9 / 6.8
Century Ave & Access A	A / A	3.4 / 3.5	A / A	2.8 / 5.7
Linwood Ave & Access D	A / A	0.9 / 4.2	A / A	0.7 / 6.2

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

5. Site Plan Review

A review of the proposed site plan was completed to identify issues and recommend improvements regarding vehicle ingress/egress and internal circulation. The following should be considered:

- The proposed internal roadways and parking layouts appear to adequately accommodate typical passenger vehicles. However, truck turning movements should be reviewed to ensure delivery and garbage trucks have adequate accommodations to negotiate internal roadways.
 - Appropriate traffic control and signing should be considered for internal roadways to ensure motorists understand which roadways have the right of way to reduce crash risks.
- Sidewalk and multi-use trail facilities are currently shown throughout the site plan with internal connections to a variety of land uses and site features (parks, nature areas, housing, etc.). Coordination with County staff should occur regarding external connections to existing multimodal facilities.

6. Conclusions & Recommendations

The following study conclusions / recommendations are offered for consideration:

- The proposed development would be expected to generate approximately 129 trips during the AM peak hour, 168 trips during the PM peak hour, and 1,790 daily trips based on the 11th Edition of the *ITE Trip Generation Manual*. No pass-by or mixed-use reductions were applicable.
- Results of the traffic operations analysis show that all intersections are expected to perform at a similar LOS despite the increase in trips as the roadways have sufficient capacity.
 - Signalized intersections are expected to operate at LOS C or better and unsignalized intersections are expected to operate at LOS A with minimal side-street delay.
- Two access are provided for the single-family properties along Lower Afton Road (**A**) and Century Avenue (**B**), whereas the townhome properties have access along Linwood Avenue (**C**).
 - Based on the proposed site plan, it does not appear that there will be any impediments to horizontal sight distance for exiting motorists at the access locations.
- Internal circulation appears to be adequate but should be reviewed to ensure that design vehicles associated with the development such as large delivery vehicles and garbage trucks have adequate accommodations to negotiate internal roadways.
- Based on a review of Ramsey County and Washington County guidelines, which were supplemented with MnDOT guidelines, dedicated turn lanes are recommended at the following locations based on the identified trip generation and proposed trip distribution:
 - **Access A** – Lower Afton Road
 - Only a westbound left-turn lane is recommended based on expected turning volume and input from Ramsey County staff.
 - **Access B** – Century Avenue
 - Only a northbound left-turn lane is recommended, which is consistent with other unsignalized intersections along the corridor and would follow the Washington County Development Code and input from Washington County staff.
 - **Access D** – Linwood Avenue
 - A westbound right-turn lane could be considered but is not formally recommended at this time, with or without a secondary connection to Century Avenue (considered in a previous site plan iteration but removed in the current site plan).

Appendix A: Turning Movement Counts

ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Valley Creek Road - Lower Afton Road
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 200
 Ref Pt: N/A
 Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Valley Creek Road Westbound						Century Avenue Northbound						Lower Afton Road Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:00	--	18	67	8	93	--	--	4	31	19	54	--	--	14	97	3	114	--	--	6	32	16	54	--	315	--
7:15	--	32	71	5	108	--	--	2	51	32	85	--	--	25	114	12	151	--	--	14	38	17	69	--	413	--
7:30	--	34	77	5	116	--	--	7	70	36	113	--	--	33	138	6	177	--	1	18	32	22	73	--	479	--
7:45	--	35	78	8	121	1	--	5	42	29	76	--	--	27	112	19	158	--	--	19	49	29	97	--	452	1
Hour Total	--	119	293	26	438	1	--	18	194	116	328	--	--	99	461	40	600	--	1	57	151	84	293	--	1659	1
8:00	--	32	78	6	116	--	--	4	46	33	83	--	--	19	109	--	128	--	--	7	39	14	60	--	387	--
8:15	--	30	64	2	96	--	--	5	57	32	94	--	1	23	91	12	127	--	--	14	53	15	82	--	399	--
8:30	--	17	61	5	83	--	--	6	56	39	101	--	--	17	90	3	110	--	--	3	42	16	61	--	355	--
8:45	--	30	44	6	80	--	--	6	41	34	81	--	--	18	97	12	127	--	--	7	62	18	87	--	375	--
Hour Total	--	109	247	19	375	--	--	21	200	138	359	--	1	77	387	27	492	--	--	31	196	63	290	--	1516	--
Break																										
16:00	--	46	138	25	209	1	--	13	83	35	131	--	--	25	76	9	110	--	--	4	59	23	86	--	536	1
16:15	--	66	104	15	185	2	--	9	78	25	112	2	--	34	59	11	104	--	--	8	63	24	95	--	496	4
16:30	--	45	131	14	190	1	1	12	71	51	135	--	--	26	82	14	122	--	--	9	68	23	100	--	547	1
16:45	1	58	141	10	210	1	--	11	69	29	109	1	--	33	76	3	112	--	--	14	72	26	112	--	543	2
Hour Total	1	215	514	64	794	5	1	45	301	140	487	3	--	118	293	37	448	--	--	35	262	96	393	--	2122	8
17:00	--	53	131	9	193	--	--	15	96	40	151	1	--	25	73	10	108	--	--	9	73	15	97	--	549	1
17:15	--	38	122	12	172	--	--	14	81	34	129	--	--	22	73	21	116	--	--	6	91	23	120	--	537	--
17:30	--	38	81	9	128	3	--	5	76	35	116	--	--	28	64	1	93	--	--	5	54	30	89	--	426	3
17:45	--	37	72	9	118	--	--	5	71	33	109	--	--	26	53	4	83	--	1	6	49	27	83	--	393	--
Hour Total	--	166	406	39	611	3	--	39	324	142	505	1	--	101	263	36	400	--	1	26	267	95	389	--	1905	4
Grand Total	1	609	1460	148	2218	9	1	123	1019	536	1679	4	1	395	1404	140	1940	--	2	149	876	338	1365	--	7202	13
% of App. % of Total	0.0%	27.5%	65.8%	6.7%	30.8%	69.2%	0.0%	1.7%	14.1%	7.4%	23.3%	30.8%	0.0%	5.5%	19.5%	1.9%	26.9%	0.0%	0.0%	2.1%	12.2%	4.7%	19.0%	0.0%		
Cars Total Cars % of Movement	1	605	1439	138	2183	7	1	116	1000	533	1650	2	1	384	1376	140	1901	--	2	139	862	323	1326	--	7060	9
Trucks Total Trucks % of Movement	--	4	21	10	35	2	--	7	19	3	29	2	--	11	28	--	39	--	--	10	14	15	39	--	142	4
	0.0%	0.7%	1.4%	6.8%	1.6%	50.0%	0.0%	5.7%	1.9%	0.6%	1.7%	50.0%	0.0%	2.8%	2.0%	0.0%	2.0%	0.0%	0.0%	6.7%	1.6%	4.4%	2.9%	0.0%	2.0%	

ALLIANT ENGINEERING, INC.

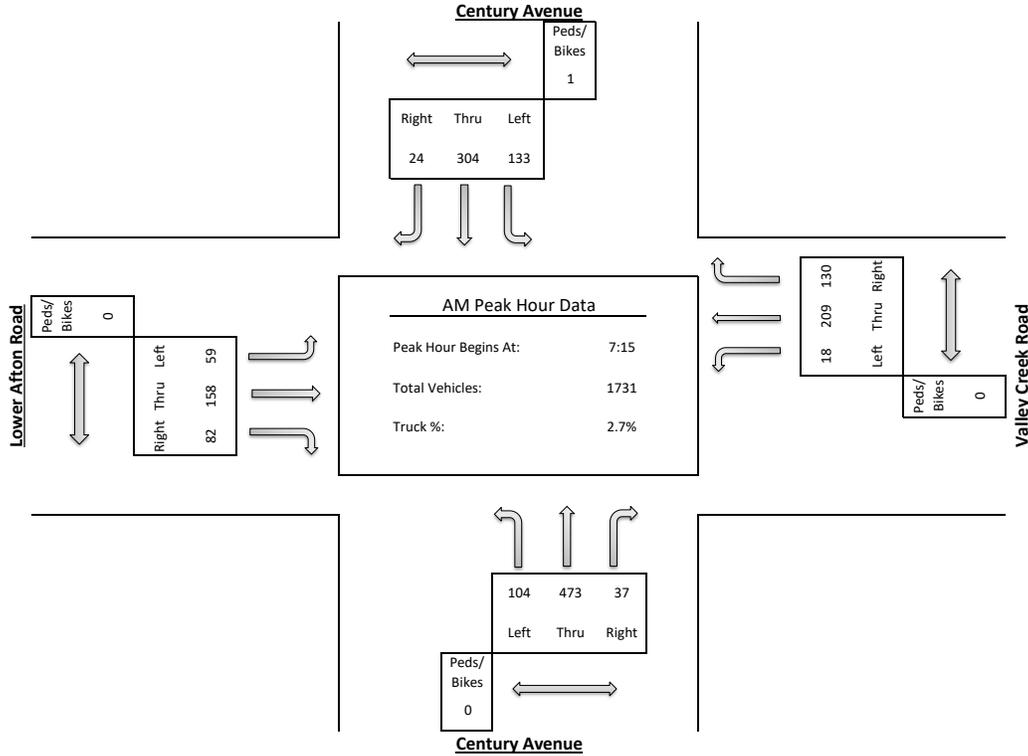
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Valley Creek Road - Lower Afton Road
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 200
 Ref Pt: N/A
 Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Valley Creek Road Westbound						Century Avenue Northbound						Lower Afton Road Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:15	--	32	71	5	108	--	--	2	51	32	85	--	--	25	114	12	151	--	--	14	38	17	69	--	413	--
7:30	--	34	77	5	116	--	--	7	70	36	113	--	--	33	138	6	177	--	1	18	32	22	73	--	479	--
7:45	--	35	78	8	121	1	--	5	42	29	76	--	--	27	112	19	158	--	--	19	49	29	97	--	452	1
8:00	--	32	78	6	116	--	--	4	46	33	83	--	--	19	109	--	128	--	--	7	39	14	60	--	387	--
Hour Total	--	133	304	24	461	1	--	18	209	130	357	--	--	104	473	37	614	--	1	58	158	82	299	--	1731	1
% of App.	0.0%	28.9%	65.9%	5.2%			0.0%	5.0%	58.5%	36.4%			0.0%	16.9%	77.0%	6.0%			0.3%	19.4%	52.8%	27.4%				
% of Total	0.0%	7.7%	17.6%	1.4%	26.6%	100.0%	0.0%	1.0%	12.1%	7.5%	20.6%	0.0%	0.0%	6.0%	27.3%	2.1%	35.5%	0.0%	0.1%	3.4%	9.1%	4.7%	17.3%	0.0%		
Cars Total	--	131	298	24	453	1	--	15	200	130	345	--	--	102	462	37	601	--	1	52	154	79	286	--	1685	1
Cars % of Movement	0.0%	98.5%	98.0%	100%	98.3%	100.0%	0.0%	83.3%	95.7%	100%	96.6%	0.0%	0.0%	98.1%	97.7%	100%	97.9%	0.0%	100%	89.7%	97.5%	96.3%	95.7%	0.0%	97.3%	
Trucks Total	--	2	6	--	8	--	--	3	9	--	12	--	--	2	11	--	13	--	--	6	4	3	13	--	46	--
Trucks % of Movement	0.0%	1.5%	2.0%	0.0%	1.7%	--	0.0%	16.7%	4.3%	0.0%	3.4%	--	0.0%	1.9%	2.3%	0.0%	2.1%	--	0.0%	10.3%	2.5%	3.7%	4.3%	--	2.7%	



ALLIANT ENGINEERING, INC.

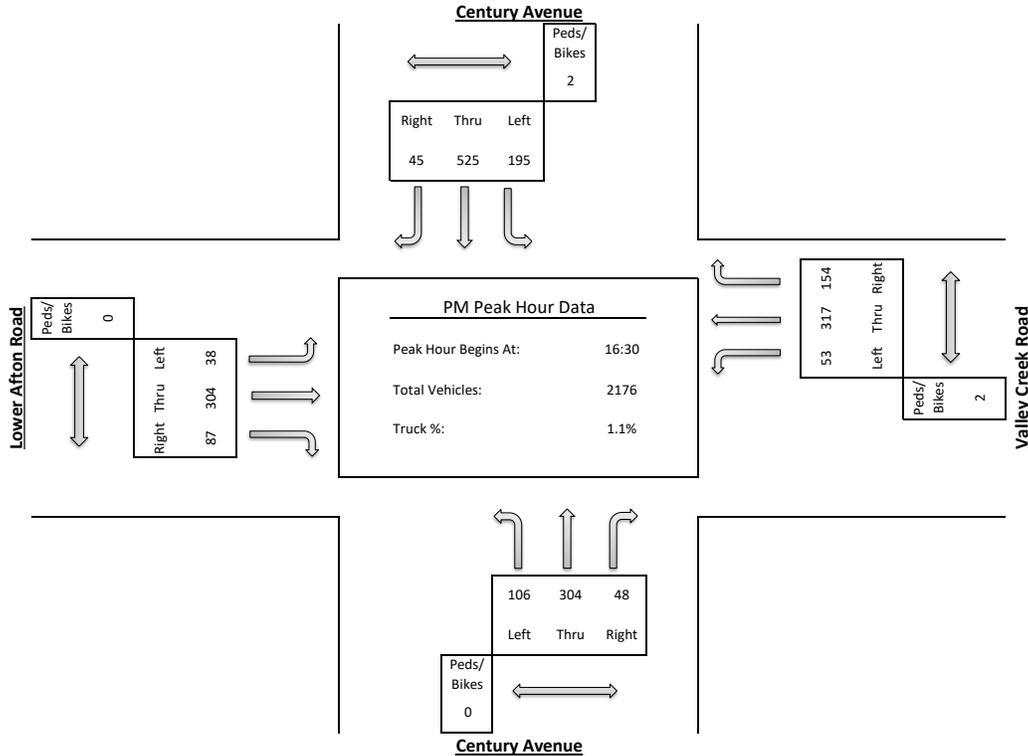
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Valley Creek Road - Lower Afton Road
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 200
 Ref Pt: N/A
 Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Valley Creek Road Westbound						Century Avenue Northbound						Lower Afton Road Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
16:30	--	45	131	14	190	1	1	12	71	51	135	--	--	26	82	14	122	--	--	9	68	23	100	--	547	1
16:45	1	58	141	10	210	1	--	11	69	29	109	1	--	33	76	3	112	--	--	14	72	26	112	--	543	2
17:00	--	53	131	9	193	--	--	15	96	40	151	1	--	25	73	10	108	--	--	9	73	15	97	--	549	1
17:15	--	38	122	12	172	--	--	14	81	34	129	--	--	22	73	21	116	--	--	6	91	23	120	--	537	--
Hour Total	1	194	525	45	765	2	1	52	317	154	524	2	--	106	304	48	458	--	--	38	304	87	429	--	2176	4
% of App.	0.1%	25.4%	68.6%	5.9%			0.2%	9.9%	60.5%	29.4%			0.0%	23.1%	66.4%	10.5%			0.0%	8.9%	70.9%	20.3%				
% of Total	0.0%	8.9%	24.1%	2.1%	35.2%	50.0%	0.0%	2.4%	14.6%	7.1%	24.1%	50.0%	0.0%	4.9%	14.0%	2.2%	21.0%	0.0%	0.0%	1.7%	14.0%	4.0%	19.7%	0.0%		
Cars Total	1	194	521	43	759	1	1	52	316	154	523	--	--	105	296	48	449	--	--	35	304	83	422	--	2153	1
Cars % of Movement	100%	100%	99.2%	95.6%	99.2%	100.0%	100%	100%	99.7%	100%	99.8%	0.0%	0.0%	99.1%	97.4%	100%	98.0%	0.0%	0.0%	92.1%	100%	95.4%	98.4%	0.0%	98.9%	
Trucks Total	--	--	4	2	6	1	--	--	1	--	1	2	--	1	8	--	9	--	--	3	--	4	7	--	23	3
Trucks % of Movement	0.0%	0.0%	0.8%	4.4%	0.8%	33.3%	0.0%	0.0%	0.3%	0.0%	0.2%	66.7%	0.0%	0.9%	2.6%	0.0%	2.0%	0.0%	0.0%	7.9%	0.0%	4.6%	1.6%	0.0%	1.1%	



ALLIANT ENGINEERING, INC.

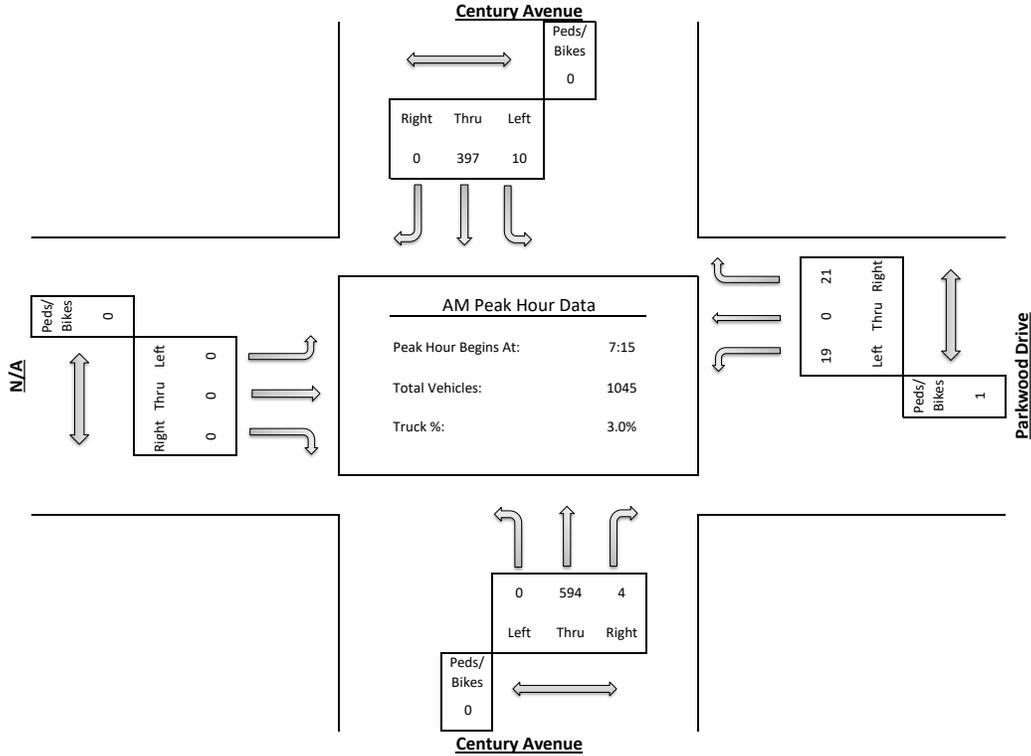
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Parkwood Drive
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 300
 Ref Pt: N/A
 Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Parkwood Drive Westbound						Century Avenue Northbound						N/A Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:15	--	3	90	--	93	--	--	3	--	7	10	--	--	--	146	2	148	--	--	--	--	--	0	--	251	--
7:30	--	2	102	--	104	--	--	6	--	5	11	--	--	--	173	1	174	--	--	--	--	--	0	--	289	--
7:45	--	2	110	--	112	--	--	5	--	4	9	--	--	--	154	--	154	--	--	--	--	--	0	--	275	--
8:00	--	3	95	--	98	--	--	5	--	5	10	1	--	--	121	1	122	--	--	--	--	--	0	--	230	1
Hour Total	--	10	397	--	407	--	--	19	--	21	40	1	--	--	594	4	598	--	--	--	--	--	--	--	1045	1
% of App.	0.0%	2.5%	97.5%	0.0%			0.0%	47.5%	0.0%	52.5%			0.0%	0.0%	99.3%	0.7%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
% of Total	0.0%	1.0%	38.0%	0.0%	38.9%	0.0%	0.0%	1.8%	0.0%	2.0%	3.8%	100.0%	0.0%	0.0%	56.8%	0.4%	57.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cars Total	--	10	385	--	395	--	--	19	--	18	37	--	--	--	580	2	582	--	--	--	--	--	0	--	1014	--
Cars % of Movement	0.0%	100%	97.0%	0.0%	97.1%	--	0.0%	100%	0.0%	85.7%	92.5%	--	0.0%	0.0%	97.6%	50.0%	97.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	97.0%	
Trucks Total	--	--	12	--	12	--	--	--	--	3	3	1	--	--	14	2	16	--	--	--	--	--	0	--	31	1
Trucks % of Movement	0.0%	0.0%	3.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	14.3%	7.5%	100.0%	0.0%	0.0%	2.4%	50.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	



ALLIANT ENGINEERING, INC.

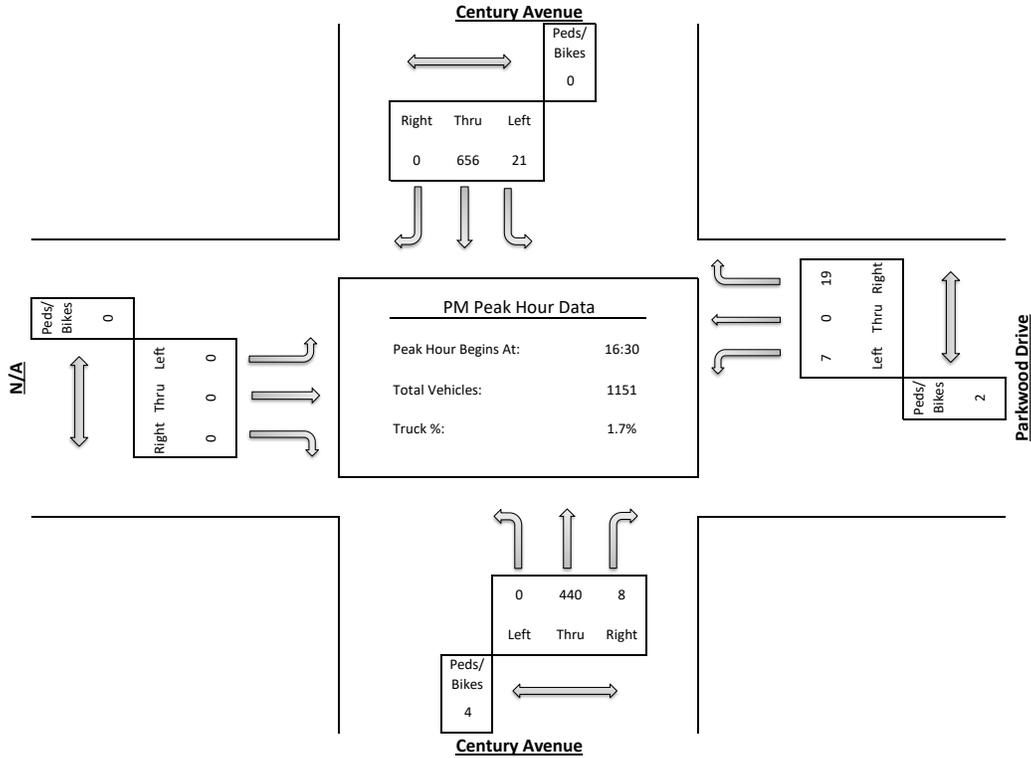
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Parkwood Drive
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 300
 Ref Pt: N/A
 Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Parkwood Drive Westbound						Century Avenue Northbound						N/A Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
16:30	--	3	165	--	168	--	--	1	--	3	4	--	--	--	117	--	117	4	--	--	--	--	0	--	289	4
16:45	--	8	177	--	185	--	--	2	--	6	8	1	--	--	108	3	111	--	--	--	--	0	--	304	1	
17:00	1	2	155	--	158	--	--	3	--	4	7	1	--	--	105	3	108	--	--	--	--	0	--	273	1	
17:15	--	7	159	--	166	--	--	1	--	6	7	--	--	--	110	2	112	--	--	--	--	0	--	285	--	
Hour Total	1	20	656	--	677	--	--	7	--	19	26	2	--	--	440	8	448	4	--	--	--	--	--	--	1151	6
% of App.	0.1%	3.0%	96.9%	0.0%			0.0%	26.9%	0.0%	73.1%			0.0%	0.0%	98.2%	1.8%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
% of Total	0.1%	1.7%	57.0%	0.0%	58.8%	0.0%	0.0%	0.6%	0.0%	1.7%	2.3%	33.3%	0.0%	0.0%	38.2%	0.7%	38.9%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.3%	
Cars Total	1	20	648	--	669	--	--	6	--	18	24	--	--	--	431	8	439	4	--	--	--	--	0	--	1132	4
Cars % of Movement	100%	100%	98.8%	0.0%	98.8%	0.0%	0.0%	85.7%	0.0%	94.7%	92.3%	0.0%	0.0%	0.0%	98.0%	100%	98.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.3%	
Trucks Total	--	--	8	--	8	--	--	1	--	1	2	2	--	--	9	--	9	--	--	--	--	--	0	--	19	2
Trucks % of Movement	0.0%	0.0%	1.2%	0.0%	1.2%	0.0%	0.0%	14.3%	0.0%	5.3%	7.7%	100.0%	0.0%	0.0%	2.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Pouiot Parkway
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 400
 Ref Pt: N/A
 Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Pouiot Parkway Westbound						Century Avenue Northbound						N/A Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:00	--	10	72	--	82	--	--	1	--	2	3	--	--	--	105	--	105	--	--	--	--	--	0	--	190	--
7:15	--	6	88	--	94	--	--	1	--	5	6	--	1	--	136	--	137	--	--	--	--	--	0	--	237	--
7:30	--	14	94	--	108	--	--	2	--	6	8	--	--	--	168	--	168	--	--	--	--	--	0	--	284	--
7:45	--	15	101	--	116	--	--	3	--	6	9	1	--	--	137	2	139	--	--	--	--	--	0	--	264	1
Hour Total	--	45	355	--	400	--	--	7	--	19	26	1	1	--	546	2	549	--	--	--	--	--	--	--	975	1
8:00	--	10	88	--	98	--	--	1	--	5	6	--	--	--	121	1	122	--	--	--	--	--	0	--	226	--
8:15	--	11	78	--	89	--	--	1	--	9	10	--	--	--	113	3	116	--	--	--	--	--	0	--	215	--
8:30	--	9	69	--	78	--	--	1	--	5	6	--	--	--	100	--	100	--	--	--	--	--	0	--	184	--
8:45	--	5	65	--	70	--	--	2	--	4	6	--	--	--	116	1	117	--	--	--	--	--	0	--	193	--
Hour Total	--	35	300	--	335	--	--	5	--	23	28	--	--	--	450	5	455	--	--	--	--	--	--	--	818	--
Break																										
16:00	--	6	156	--	162	--	--	1	--	12	13	2	--	--	91	1	92	--	--	--	--	--	0	--	267	2
16:15	--	3	139	--	142	--	--	--	--	13	13	--	--	--	94	--	94	--	--	--	--	--	0	--	249	--
16:30	1	9	156	--	166	--	--	1	--	7	8	--	--	--	112	3	115	--	--	--	--	--	0	--	289	--
16:45	--	6	170	--	176	--	--	--	--	10	10	--	--	--	104	2	106	--	--	--	--	--	0	--	292	--
Hour Total	1	24	621	--	646	--	--	2	--	42	44	2	--	--	401	6	407	--	--	--	--	--	--	--	1097	2
17:00	--	1	155	--	156	--	--	--	--	9	9	--	--	--	97	1	98	--	--	--	--	--	0	--	263	--
17:15	1	3	160	--	164	--	--	4	--	7	11	1	--	--	103	2	105	--	--	--	--	--	0	--	280	1
17:30	2	2	109	--	113	--	--	--	--	12	12	--	--	--	82	--	82	--	--	--	--	--	0	--	207	--
17:45	--	3	98	--	101	--	--	--	--	2	2	4	--	--	82	1	83	--	--	--	--	--	0	--	186	4
Hour Total	3	9	522	--	534	--	--	4	--	30	34	5	--	--	364	4	368	--	--	--	--	--	--	--	936	5
Grand Total	4	113	1798	--	1915	--	--	18	--	114	132	8	1	--	1761	17	1779	--	--	--	--	--	0	--	3826	8
% of App.	0.2%	5.9%	93.9%	0.0%			0.0%	13.6%	0.0%	86.4%			0.1%	0.0%	99.0%	1.0%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
% of Total	0.1%	3.0%	47.0%	0.0%	50.1%	0.0%	0.0%	0.5%	0.0%	3.0%	3.5%	100.0%	0.0%	0.0%	46.0%	0.4%	46.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cars Total	4	104	1769	--	1877	--	--	18	--	104	122	6	1	--	1730	16	1747	--	--	--	--	--	0	--	3746	6
Cars % of Movement	100%	92.0%	98.4%	0.0%	98.0%	0.0%	0.0%	100%	0.0%	91.2%	92.4%	100.0%	100%	0.0%	98.2%	94.1%	98.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	97.9%	
Trucks Total	--	9	29	--	38	--	--	--	--	10	10	2	--	--	31	1	32	--	--	--	--	--	0	--	80	2
Trucks % of Movement	0.0%	8.0%	1.6%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	8.8%	7.6%	100.0%	0.0%	0.0%	1.8%	5.9%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	

ALLIANT ENGINEERING, INC.

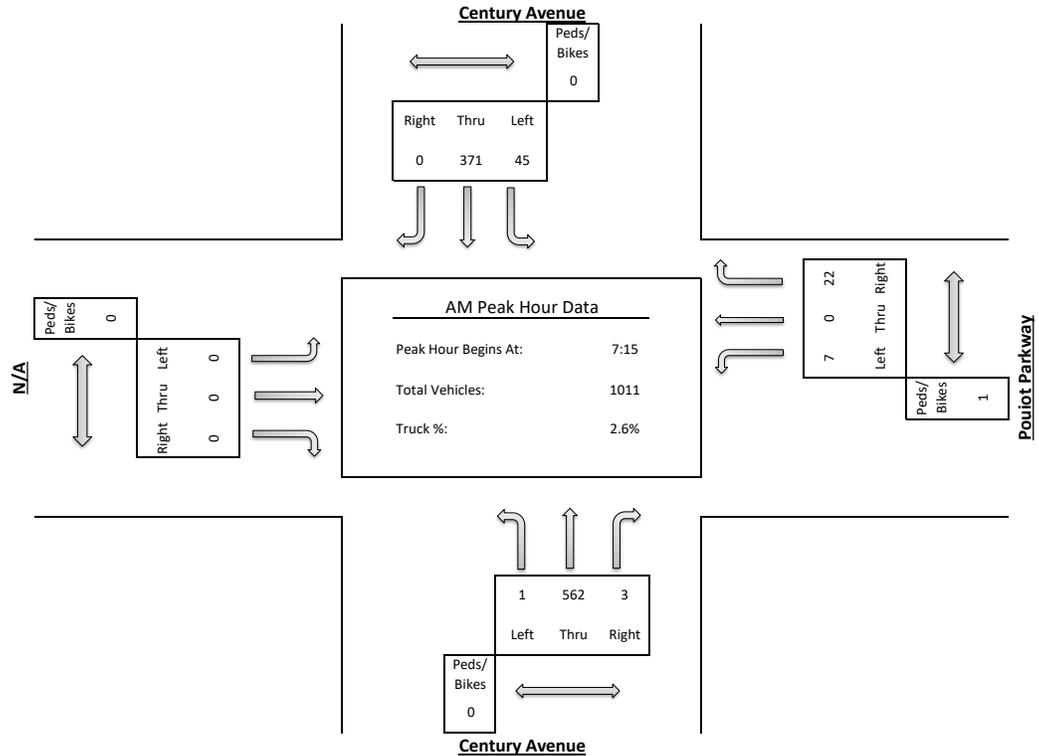
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Pouiot Parkway
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 400
 Ref Pt: N/A
 Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Pouiot Parkway Westbound						Century Avenue Northbound						N/A Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:15	--	6	88	--	94	--	--	1	--	5	6	--	1	--	136	--	137	--	--	--	--	--	0	--	237	--
7:30	--	14	94	--	108	--	--	2	--	6	8	--	--	--	168	--	168	--	--	--	--	--	0	--	284	--
7:45	--	15	101	--	116	--	--	3	--	6	9	1	--	--	137	2	139	--	--	--	--	--	0	--	264	1
8:00	--	10	88	--	98	--	--	1	--	5	6	--	--	--	121	1	122	--	--	--	--	--	0	--	226	--
Hour Total	--	45	371	--	416	--	--	7	--	22	29	1	1	--	562	3	566	--	--	--	--	--	--	--	1011	1
% of App.	0.0%	10.8%	89.2%	0.0%			0.0%	24.1%	0.0%	75.9%			0.2%	0.0%	99.3%	0.5%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
% of Total	0.0%	4.5%	36.7%	0.0%	41.1%	0.0%	0.0%	0.7%	0.0%	2.2%	2.9%	100.0%	0.1%	0.0%	55.6%	0.3%	56.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cars Total	--	43	361	--	404	--	--	7	--	20	27	--	1	--	550	3	554	--	--	--	--	--	0	--	985	--
Cars % of Movement	0.0%	95.6%	97.3%	0.0%	97.1%	--	0.0%	100%	0.0%	90.9%	93.1%	--	100%	0.0%	97.9%	100%	97.9%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	97.4%	
Trucks Total	--	2	10	--	12	--	--	--	--	2	2	1	--	--	12	--	12	--	--	--	--	--	0	--	26	1
Trucks % of Movement	0.0%	4.4%	2.7%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	9.1%	6.9%	100.0%	0.0%	0.0%	2.1%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	



ALLIANT ENGINEERING, INC.

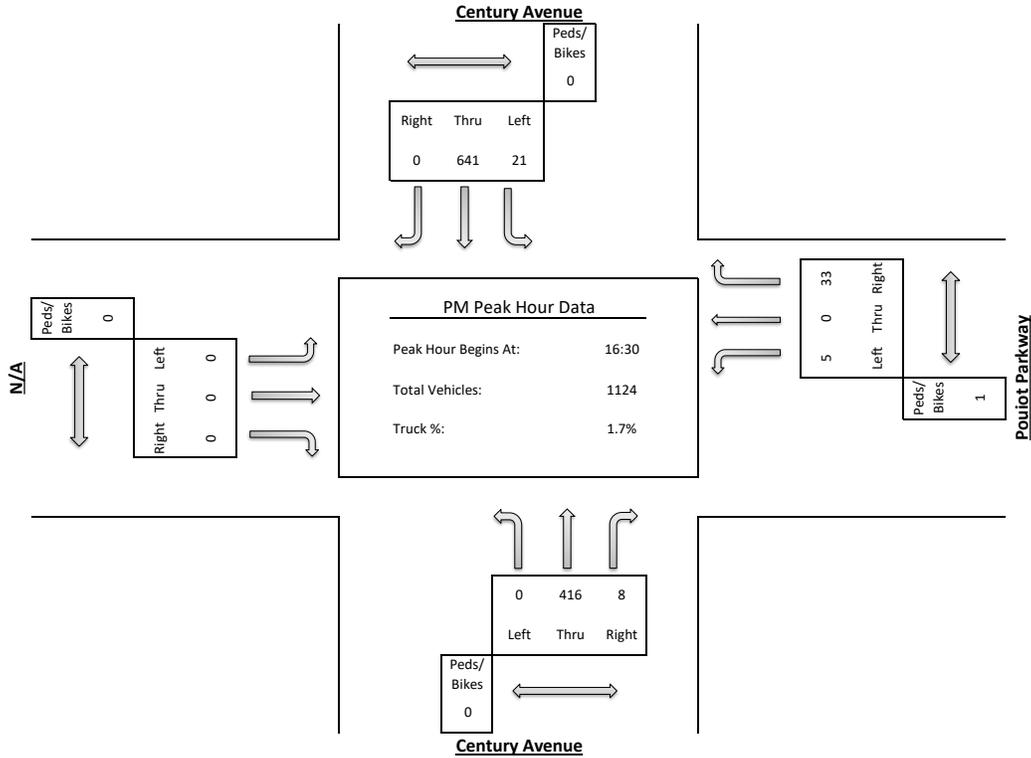
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Pouiot Parkway
 Date: 2/25/2025
 Duration: 0700-0900, 1600-1800

Site Code: 400
 Ref Pt: N/A
 Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Pouiot Parkway Westbound						Century Avenue Northbound						N/A Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
16:30	1	9	156	--	166	--	--	1	--	7	8	--	--	--	112	3	115	--	--	--	--	--	0	--	289	--
16:45	--	6	170	--	176	--	--	--	--	10	10	--	--	--	104	2	106	--	--	--	--	--	0	--	292	--
17:00	--	1	155	--	156	--	--	--	--	9	9	--	--	--	97	1	98	--	--	--	--	--	0	--	263	--
17:15	1	3	160	--	164	--	--	4	--	7	11	1	--	--	103	2	105	--	--	--	--	--	0	--	280	1
Hour Total	2	19	641	--	662	--	--	5	--	33	38	1	--	--	416	8	424	--	--	--	--	--	--	--	1124	1
% of App.	0.3%	2.9%	96.8%	0.0%			0.0%	13.2%	0.0%	86.8%			0.0%	0.0%	98.1%	1.9%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
% of Total	0.2%	1.7%	57.0%	0.0%	58.9%	0.0%	0.0%	0.4%	0.0%	2.9%	3.4%	100.0%	0.0%	0.0%	37.0%	0.7%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cars Total	2	17	634	--	653	--	--	5	--	31	36	--	--	--	408	8	416	--	--	--	--	--	0	--	1105	--
Cars % of Movement	100%	89.5%	98.9%	0.0%	98.6%	--	0.0%	100%	0.0%	93.9%	94.7%	--	0.0%	0.0%	98.1%	100%	98.1%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	98.3%	
Trucks Total	--	2	7	--	9	--	--	--	--	2	2	1	--	--	8	--	8	--	--	--	--	--	0	--	19	1
Trucks % of Movement	0.0%	10.5%	1.1%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	6.1%	5.3%	100.0%	0.0%	0.0%	1.9%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue - Lake Road & Apartment Access - Century Avenue
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 500
 Ref Pt: N/A
 Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Apartment Access Westbound						Lake Road Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:00	--	2	55	6	63	--	--	1	--	--	1	--	1	15	88	4	108	--	--	14	--	45	59	--	231	--
7:15	--	4	69	9	82	--	--	--	--	0	--	--	--	24	121	8	153	--	--	19	1	60	80	--	315	--
7:30	--	5	56	9	70	--	--	1	--	1	2	--	--	30	127	2	159	--	--	21	--	58	79	--	310	--
7:45	--	4	72	20	96	--	--	--	1	--	1	--	--	36	127	2	165	--	--	36	--	63	99	--	361	--
Hour Total	--	15	252	44	311	--	--	2	1	1	4	--	1	105	463	16	585	--	--	90	1	226	317	--	1217	--
8:00	--	5	71	13	89	--	--	1	--	1	2	--	--	32	127	3	162	--	--	27	--	47	74	--	327	--
8:15	--	3	63	16	82	--	--	1	1	1	3	--	1	28	111	1	141	--	--	16	--	47	63	--	289	--
8:30	--	1	63	11	75	--	--	3	--	--	3	--	--	34	98	2	134	--	--	21	1	39	61	--	273	--
8:45	1	3	50	10	64	--	--	5	--	--	5	--	--	30	79	2	111	--	--	19	--	36	55	--	235	--
Hour Total	1	12	247	50	310	--	--	10	1	2	13	--	1	124	415	8	548	--	--	83	1	169	253	--	1124	--
Break																										
16:00	--	1	97	31	129	--	--	5	--	3	8	--	--	41	92	3	136	--	--	20	--	40	60	--	333	--
16:15	--	--	120	25	145	--	--	3	--	3	6	1	1	42	82	1	126	1	--	14	--	41	55	--	332	2
16:30	--	1	151	30	182	--	--	2	1	6	9	--	--	46	77	1	124	--	--	20	--	66	86	--	401	--
16:45	--	2	120	25	147	--	--	2	--	3	5	--	1	47	64	1	113	--	--	27	--	39	66	--	331	--
Hour Total	--	4	488	111	603	--	--	12	1	15	28	1	2	176	315	6	499	1	--	81	--	186	267	--	1397	2
17:00	--	--	121	38	159	--	--	1	--	7	8	--	--	36	87	--	123	--	--	24	--	55	79	--	369	--
17:15	--	--	120	34	154	--	--	--	--	--	0	2	1	48	67	--	116	2	--	10	--	25	35	--	305	4
17:30	--	--	100	24	124	--	--	3	1	1	5	--	--	53	72	--	125	--	--	17	--	36	53	--	307	--
17:45	--	--	84	24	108	--	--	1	--	--	1	--	--	27	56	2	85	--	--	12	--	28	40	--	234	--
Hour Total	--	--	425	120	545	--	--	5	1	8	14	2	1	164	282	2	449	2	--	63	--	144	207	--	1215	4
Grand Total	1	31	1412	325	1769	--	--	29	4	26	59	3	5	569	1475	32	2081	3	--	317	2	725	1044	--	4953	6
% of App. % of Total	0.1%	1.8%	79.8%	18.4%			0.0%	49.2%	6.8%	44.1%			0.2%	27.3%	70.9%	1.5%			0.0%	30.4%	0.2%	69.4%				
Cars Total	1	31	1397	308	1737	--	--	29	4	26	59	3	5	558	1450	32	2045	3	--	310	2	715	1027	--	4868	6
Cars % of Movement	100%	100%	98.9%	94.8%	98.2%	0.0%	0.0%	100%	100%	100%	100%	50.0%	100%	98.1%	98.3%	100%	98.3%	50.0%	0.0%	97.8%	100%	98.6%	98.4%	0.0%	98.3%	
Trucks Total	--	--	15	17	32	--	--	--	--	--	0	--	--	11	25	--	36	--	--	7	--	10	17	--	85	--
Trucks % of Movement	0.0%	0.0%	1.1%	5.2%	1.8%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	1.9%	1.7%	0.0%	1.7%	--	0.0%	2.2%	0.0%	1.4%	1.6%	--	1.7%	

ALLIANT ENGINEERING, INC.

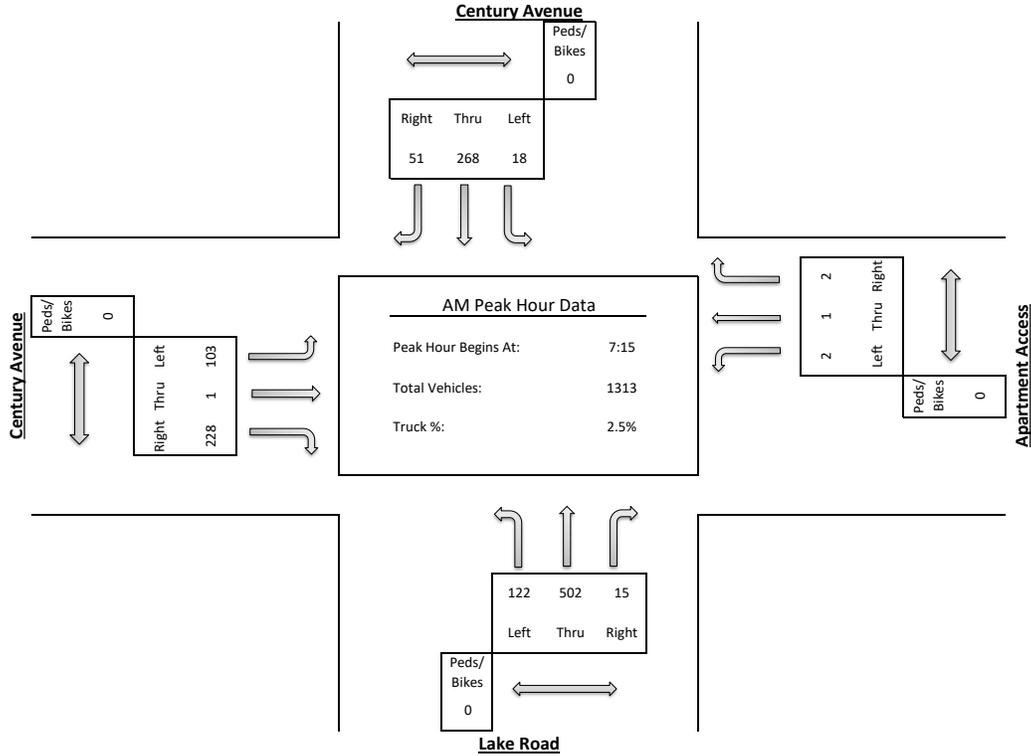
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue - Lake Road & Apartment Access - Century Avenue
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 500
 Ref Pt: N/A
 Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Apartment Access Westbound						Lake Road Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:15	--	4	69	9	82	--	--	--	--	--	0	--	--	24	121	8	153	--	--	19	1	60	80	--	315	--
7:30	--	5	56	9	70	--	--	1	--	1	2	--	--	30	127	2	159	--	--	21	--	58	79	--	310	--
7:45	--	4	72	20	96	--	--	--	1	--	1	--	--	36	127	2	165	--	--	36	--	63	99	--	361	--
8:00	--	5	71	13	89	--	--	1	--	1	2	--	--	32	127	3	162	--	--	27	--	47	74	--	327	--
Hour Total	--	18	268	51	337	--	--	2	1	2	5	--	--	122	502	15	639	--	--	103	1	228	332	--	1313	--
% of App.	0.0%	5.3%	79.5%	15.1%			0.0%	40.0%	20.0%	40.0%			0.0%	19.1%	78.6%	2.3%			0.0%	31.0%	0.3%	68.7%				
% of Total	0.0%	1.4%	20.4%	3.9%	25.7%	--	0.0%	0.2%	0.1%	0.2%	0.4%	--	0.0%	9.3%	38.2%	1.1%	48.7%	--	0.0%	7.8%	0.1%	17.4%	25.3%	--		
Cars Total	--	18	262	48	328	--	--	2	1	2	5	--	--	117	490	15	622	--	--	100	1	224	325	--	1280	--
Cars % of Movement	0.0%	100%	97.8%	94.1%	97.3%	--	0.0%	100%	100%	100%	100%	--	0.0%	95.9%	97.6%	100%	97.3%	--	0.0%	97.1%	100%	98.2%	97.9%	--	97.5%	--
Trucks Total	--	--	6	3	9	--	--	--	--	--	0	--	--	5	12	--	17	--	--	3	--	4	7	--	33	--
Trucks % of Movement	0.0%	0.0%	2.2%	5.9%	2.7%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	4.1%	2.4%	0.0%	2.7%	--	0.0%	2.9%	0.0%	1.8%	2.1%	--	2.5%	--



ALLIANT ENGINEERING, INC.

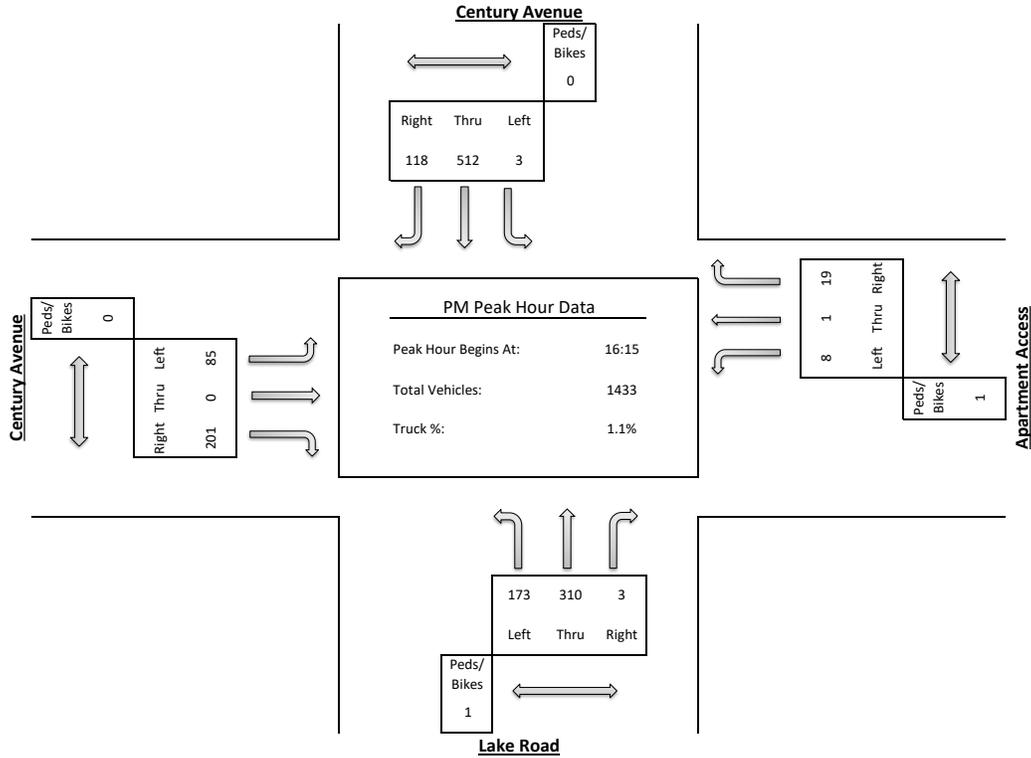
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue - Lake Road & Apartment Access - Century Avenue
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 500
 Ref Pt: N/A
 Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Century Avenue Southbound						Apartment Access Westbound						Lake Road Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
16:15	--	--	120	25	145	--	--	3	--	3	6	1	1	42	82	1	126	1	--	14	--	41	55	--	332	2
16:30	--	1	151	30	182	--	--	2	1	6	9	--	--	46	77	1	124	--	--	20	--	66	86	--	401	--
16:45	--	2	120	25	147	--	--	2	--	3	5	--	1	47	64	1	113	--	--	27	--	39	66	--	331	--
17:00	--	--	121	38	159	--	--	1	--	7	8	--	--	36	87	--	123	--	--	24	--	55	79	--	369	--
Hour Total	--	3	512	118	633	--	--	8	1	19	28	1	2	171	310	3	486	1	--	85	--	201	286	--	1433	2
% of App.	0.0%	0.5%	80.9%	18.6%			0.0%	28.6%	3.6%	67.9%			0.4%	35.2%	63.8%	0.6%			0.0%	29.7%	0.0%	70.3%				
% of Total	0.0%	0.2%	35.7%	8.2%	44.2%	0.0%	0.0%	0.6%	0.1%	1.3%	2.0%	50.0%	0.1%	11.9%	21.6%	0.2%	33.9%	50.0%	0.0%	5.9%	0.0%	14.0%	20.0%	0.0%		
Cars Total	--	3	510	112	625	--	--	8	1	19	28	1	2	171	307	3	483	1	--	83	--	198	281	--	1417	2
Cars % of Movement	0.0%	100%	99.6%	94.9%	98.7%	0.0%	0.0%	100%	100%	100%	100%	50.0%	100%	100%	99.0%	100%	99.4%	50.0%	0.0%	97.6%	0.0%	98.5%	98.3%	0.0%	98.9%	
Trucks Total	--	--	2	6	8	--	--	--	--	--	0	--	--	--	3	--	3	--	--	2	--	3	5	--	16	--
Trucks % of Movement	0.0%	0.0%	0.4%	5.1%	1.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	1.0%	0.0%	0.6%	--	0.0%	2.4%	0.0%	1.5%	1.7%	--	1.1%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Linwood Avenue - Corner Stone Medical Access
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 600
 Ref Pt: N/A
 Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Linwood Avenue Southbound						Century Avenue Westbound						Corner Stone Medical Access Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:00	--	18	--	--	18	--	--	--	15	6	21	--	--	--	--	1	1	--	--	--	38	--	38	--	78	--
7:15	--	29	--	--	29	--	--	--	29	4	33	--	--	--	--	1	1	--	--	--	52	--	52	--	115	--
7:30	--	28	--	3	31	--	--	--	32	8	40	--	--	--	--	1	1	--	--	3	48	--	51	--	123	--
7:45	--	22	--	5	27	--	1	1	51	4	57	--	--	--	--	2	2	--	--	--	75	--	75	--	161	--
Hour Total	--	97	--	8	105	--	1	1	127	22	151	--	--	--	--	5	5	--	--	3	213	--	216	--	477	--
8:00	--	24	--	--	24	--	--	2	37	7	46	--	--	--	--	5	5	--	--	--	44	--	44	--	119	--
8:15	--	25	--	--	25	--	--	--	32	13	45	--	--	--	--	8	8	--	--	1	30	--	31	--	109	--
8:30	--	18	--	--	18	--	--	--	29	16	45	--	--	--	--	7	7	--	--	--	35	--	35	--	105	--
8:45	--	17	--	2	19	--	--	--	36	3	39	--	--	--	--	9	9	--	--	--	28	--	28	--	95	--
Hour Total	--	84	--	2	86	--	--	2	134	39	175	--	--	--	--	29	29	--	--	1	137	--	138	--	428	--
Break																										
16:00	--	13	--	--	13	--	--	--	50	23	73	--	--	--	--	12	12	--	--	1	34	--	35	--	133	--
16:15	--	15	--	1	16	--	--	--	46	21	67	--	--	--	--	12	12	1	--	--	27	--	27	1	122	2
16:30	--	18	--	5	23	--	--	--	55	23	78	--	--	--	--	26	26	--	--	2	44	--	46	--	173	--
16:45	--	11	--	1	12	--	--	--	49	22	71	--	--	--	--	16	16	1	--	2	37	--	39	--	138	1
Hour Total	--	57	--	7	64	--	--	--	200	89	289	--	--	--	--	66	66	2	--	5	142	--	147	1	566	3
17:00	--	15	--	--	15	--	--	1	52	20	73	--	--	--	--	20	20	--	--	2	46	--	48	--	156	--
17:15	--	12	--	--	12	--	--	--	60	23	83	--	--	--	--	5	5	2	--	--	19	--	19	--	119	2
17:30	--	14	--	1	15	--	1	1	49	26	77	--	--	--	--	5	5	--	--	1	32	--	33	--	130	--
17:45	--	9	--	2	11	--	--	--	34	17	51	--	--	--	--	6	6	--	--	--	24	--	24	--	92	--
Hour Total	--	50	--	3	53	--	1	2	195	86	284	--	--	--	--	36	36	2	--	3	121	--	124	--	497	2
Grand Total	--	288	--	20	308	--	2	5	656	236	899	--	--	--	--	136	136	4	--	12	613	--	625	1	1968	5
% of App.	0.0%	93.5%	0.0%	6.5%			0.2%	0.6%	73.0%	26.3%			0.0%	0.0%	0.0%	100.0%			0.0%	1.9%	98.1%	0.0%				
% of Total	0.0%	14.6%	0.0%	1.0%	15.7%	0.0%	0.1%	0.3%	33.3%	12.0%	45.7%	0.0%	0.0%	0.0%	0.0%	6.9%	6.9%	80.0%	0.0%	0.6%	31.1%	0.0%	31.8%	20.0%		
Cars Total	--	286	--	18	304	--	2	5	631	231	869	--	--	--	--	136	136	4	--	12	599	--	611	1	1920	5
Cars % of Movement	0.0%	99.3%	0.0%	90.0%	98.7%	0.0%	100%	100%	96.2%	97.9%	96.7%	0.0%	0.0%	0.0%	0.0%	100%	100%	80.0%	0.0%	100%	97.7%	0.0%	97.8%	20.0%	97.6%	
Trucks Total	--	2	--	2	4	--	--	--	25	5	30	--	--	--	--	--	0	--	--	--	14	--	14	--	48	--
Trucks % of Movement	0.0%	0.7%	0.0%	10.0%	1.3%	--	0.0%	0.0%	3.8%	2.1%	3.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	2.3%	0.0%	2.2%	--	2.4%	

ALLIANT ENGINEERING, INC.

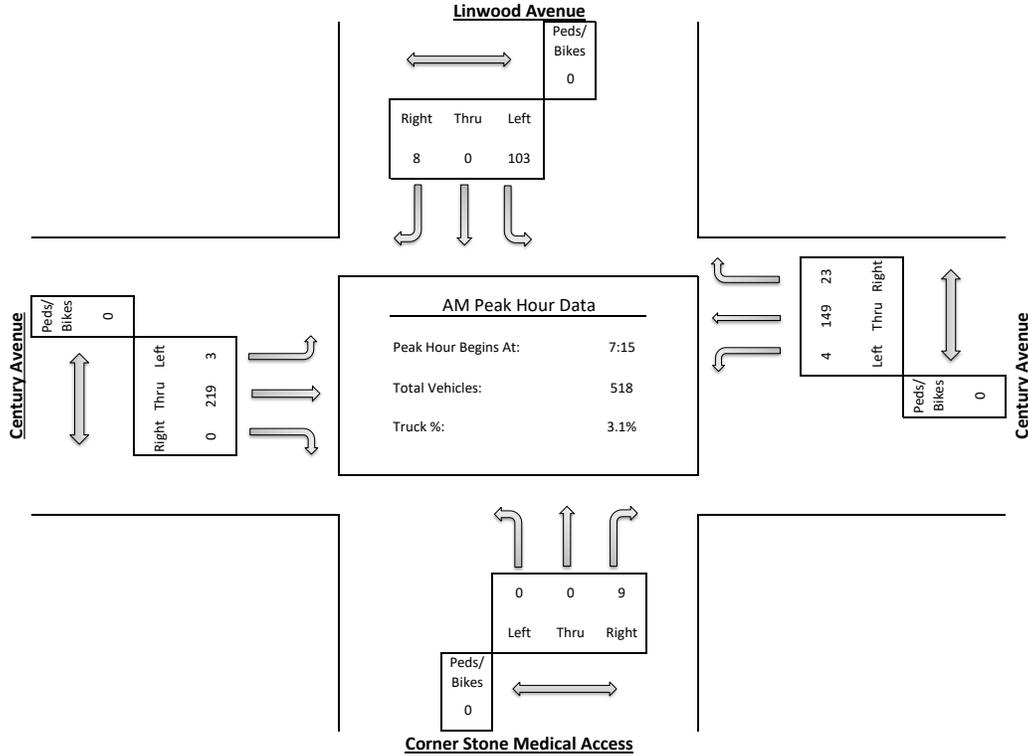
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Linwood Avenue - Corner Stone Medical Access
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 600
 Ref Pt: N/A
 Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Linwood Avenue Southbound						Century Avenue Westbound						Corner Stone Medical Access Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
7:15	--	29	--	--	29	--	--	--	29	4	33	--	--	--	--	1	1	--	--	--	52	--	52	--	115	--
7:30	--	28	--	3	31	--	--	--	32	8	40	--	--	--	--	1	1	--	--	3	48	--	51	--	123	--
7:45	--	22	--	5	27	--	1	1	51	4	57	--	--	--	--	2	2	--	--	--	75	--	75	--	161	--
8:00	--	24	--	--	24	--	--	2	37	7	46	--	--	--	--	5	5	--	--	--	44	--	44	--	119	--
Hour Total	--	103	--	8	111	--	1	3	149	23	176	--	--	--	--	9	9	--	--	3	219	--	222	--	518	--
% of App.	0.0%	92.8%	0.0%	7.2%			0.6%	1.7%	84.7%	13.1%			0.0%	0.0%	0.0%	100%			0.0%	1.4%	98.6%	0.0%				
% of Total	0.0%	19.9%	0.0%	1.5%	21.4%	--	0.2%	0.6%	28.8%	4.4%	34.0%	--	0.0%	0.0%	0.0%	1.7%	1.7%	--	0.0%	0.6%	42.3%	0.0%	42.9%	--		
Cars Total	--	102	--	8	110	--	1	3	141	22	167	--	--	--	--	9	9	--	--	3	213	--	216	--	502	--
Cars % of Movement	0.0%	99.0%	0.0%	100%	99.1%	--	100%	100%	94.6%	95.7%	94.9%	--	0.0%	0.0%	0.0%	100%	100%	--	0.0%	100%	97.3%	0.0%	97.3%	--	96.9%	--
Trucks Total	--	1	--	--	1	--	--	--	8	1	9	--	--	--	--	0	0	--	--	--	6	--	6	--	16	--
Trucks % of Movement	0.0%	1.0%	0.0%	0.0%	0.9%	--	0.0%	0.0%	5.4%	4.3%	5.1%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	2.7%	0.0%	2.7%	--	3.1%	--



ALLIANT ENGINEERING, INC.

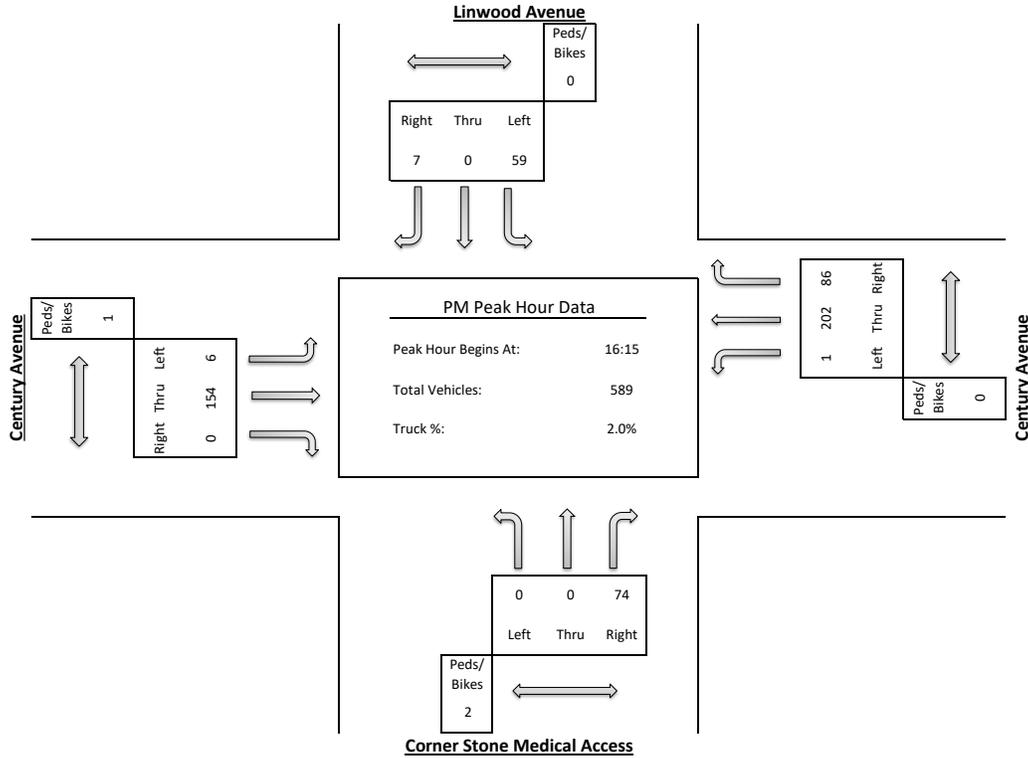
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Century Avenue & Linwood Avenue - Corner Stone Medical Access
 Date: 1/8/2025
 Duration: 0700-0900, 1600-1800

Site Code: 600
 Ref Pt: N/A
 Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

Start Time	Linwood Avenue Southbound						Century Avenue Westbound						Corner Stone Medical Access Northbound						Century Avenue Eastbound						Int. Veh. Total	Int. Ped/Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/Bikes		
16:15	--	15	--	1	16	--	--	--	46	21	67	--	--	--	--	12	12	1	--	--	27	--	27	1	122	2
16:30	--	18	--	5	23	--	--	--	55	23	78	--	--	--	--	26	26	--	--	2	44	--	46	--	173	--
16:45	--	11	--	1	12	--	--	--	49	22	71	--	--	--	--	16	16	1	--	2	37	--	39	--	138	1
17:00	--	15	--	--	15	--	--	1	52	20	73	--	--	--	--	20	20	--	--	2	46	--	48	--	156	--
Hour Total	--	59	--	7	66	--	--	1	202	86	289	--	--	--	74	74	2	--	6	154	--	160	1	589	3	
% of App.	0.0%	89.4%	0.0%	10.6%			0.0%	0.3%	69.9%	29.8%			0.0%	0.0%	0.0%	100%		0.0%	3.8%	96.3%	0.0%					
% of Total	0.0%	10.0%	0.0%	1.2%	11.2%	0.0%	0.0%	0.2%	34.3%	14.6%	49.1%	0.0%	0.0%	0.0%	0.0%	12.6%	12.6%	66.7%	0.0%	1.0%	26.1%	0.0%	27.2%	33.3%		
Cars Total	--	58	--	6	64	--	--	1	196	86	283	--	--	--	74	74	2	--	6	150	--	156	1	577	3	
Cars % of Movement	0.0%	98.3%	0.0%	85.7%	97.0%	0.0%	0.0%	100%	97.0%	100%	97.9%	0.0%	0.0%	0.0%	100%	100%	66.7%	0.0%	100%	97.4%	0.0%	97.5%	33.3%	98.0%		
Trucks Total	--	1	--	1	2	--	--	--	6	--	6	--	--	--	--	0	--	--	--	--	4	--	4	--	12	--
Trucks % of Movement	0.0%	1.7%	0.0%	14.3%	3.0%	--	0.0%	0.0%	3.0%	0.0%	2.1%	--	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	2.6%	0.0%	2.5%	--	2.0%		



Appendix B: Detailed Measures of Effectiveness

Century Ponds Traffic Impact Study - Measures of Effectiveness Summary

Scenario 1 2025 Existing Conditions

	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)
200	Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.6 / 17.6	B / C	19.0 / 20.1
300	Century Ave & Parkwood Dr	A / A	1.8 / 7.4	A / A	2.4 / 5.5
400	Century Ave & Pouliot Pkwy	A / A	2.0 / 5.0	A / A	1.5 / 4.1
500	Century Ave / Lake Rd & Century Ave / Apartments	A / A	9.4 / 10.0	B / B	11.0 / 12.4
600	Century Ave & Linwood Ave	A / A	2.0 / 6.8	A / A	1.8 / 6.7

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

Scenario 2 2025 Build

	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)
200	Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.4 / 16.7	C / C	20.1 / 22.3
300	Century Avenue & Parkwood Dr / Access B	A / A	2.1 / 6.8	A / A	3.0 / 9.2
400	Century Ave & Pouliot Pkwy	A / A	2.3 / 5.3	A / A	1.6 / 4.4
500	Century Ave / Lake Rd & Century Ave / Apartments	B / B	10.4 / 11.5	B / B	10.9 / 11.5
600	Century Ave & Linwood Ave	A / A	2.4 / 7.4	A / A	1.9 / 7.2
101	Century Ave & Access A	A / A	3.5 / 3.6	A / A	2.8 / 5.4
103	Linwood Ave & Access D	A / A	0.8 / 4.1	A / A	0.8 / 6.4

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

Scenario 3 2025 Build w/ Improvements

	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)
200	Century Ave & Lower Afton Rd / Valley Creek Rd	B / B	16.6 / 17.3	C / C	20.0 / 21.9
300	Century Avenue & Parkwood Dr / Access B	A / A	2.0 / 6.7	A / A	2.9 / 9.7
400	Century Ave & Pouliot Pkwy	A / A	2.1 / 4.9	A / A	1.6 / 4.5
500	Century Ave / Lake Rd & Century Ave / Apartments	B / B	10.3 / 10.7	B / B	11.5 / 12.8
600	Century Ave & Linwood Ave	A / A	2.5 / 7.3	A / A	1.9 / 6.8
101	Century Ave & Access A	A / A	3.4 / 3.5	A / A	2.8 / 5.7
103	Linwood Ave & Access D	A / A	0.9 / 4.2	A / A	0.7 / 6.2

Overall Intersection LOS / Worst Approach LOS

Overall Intersection Delay / Worst Approach Delay

2025 Existing Conditions - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	19.3	19.5	3.8	20.3	22.4	5.9	14.9	19.3	4.3	17.3	17.3	4.6	16.6
	Total Delay (hr)	0.3	0.9	0.1	0.1	1.4	0.2	0.4	2.5	0.0	0.6	1.5	0.0	8.0
	Movement LOS	B	B	A	C	C	A	B	B	A	B	B	A	B
	Movement Volume	60	166	85	17	224	144	102	465	41	126	303	24	1757
	Movement 95th Queue (ft)	54	54	25	24	96	47	75	139	0	83	96	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	15.2			16.1			17.6			16.6			
	Approach LOS	B			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	0.0	0.0	0.0	11.7	0.0	4.6	0.0	0.6	0.2	4.5	2.9	0.0	1.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.4
	Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	15	0	23	0	585	4	9	399	0	1035
	Movement 95th Queue (ft)	0	0	0	56	0	56	0	0	0	17	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	230	0	0	
	Approach Delay (sec/veh)	0.0			7.4			0.6			2.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	9.6	0.0	4.0	0.0	2.6	3.2	2.8	0.7	0.0	2.0
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.6
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	5	0	23	0	611	2	40	371	0	1052
	Movement 95th Queue (ft)	0	0	0	43	0	43	0	0	0	38	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			5.0			2.6			0.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	16.7	4.5	4.5	17.3	4.3	5.5	12.0	9.3	2.3	8.5	11.1	3.0	9.4
	Total Delay (hr)	0.4	0.0	0.3	0.0	0.0	0.0	0.4	1.3	0.0	0.0	1.0	0.0	3.4
	Movement LOS	B	A	A	B	A	A	B	A	A	A	B	A	A
	Movement Volume	92	4	219	2	1	2	122	501	14	14	312	49	1332
	Movement 95th Queue (ft)	84	76	76	11	14	14	81	114	18	31	90	50	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	8.1			10.0			9.7			9.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	2.1	0.6	0.0	0.0	0.7	0.5	0.0	0.0	3.3	7.0	0.0	3.7	2.0
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	3	203	0	0	151	22	0	0	8	101	0	8	496
	Movement 95th Queue (ft)	8	8	0	0	0	0	0	0	30	55	55	55	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.6			0.7			3.3			6.8			
	Approach LOS	A			A			A			A			

2025 Existing Conditions - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	34.6	22.2	5.8	35.1	22.5	5.0	19.2	21.7	4.2	18.7	19.8	5.2	19.0
	Total Delay (hr)	0.4	1.8	0.1	0.5	2.0	0.2	0.5	1.9	0.1	1.0	2.8	0.1	11.4
	Movement LOS	C	C	A	D	C	A	B	C	A	B	B	A	B
	Movement Volume	39	290	82	52	321	157	101	306	46	190	513	46	2143
	Movement 95th Queue (ft)	51	88	29	63	118	43	87	107	0	124	145	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	20.1			18.6			19.4			18.6			
	Approach LOS	C			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	0.0	0.0	0.0	9.7	0.0	3.7	0.0	0.4	0.2	5.4	3.6	0.0	2.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.7
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	8	0	19	0	437	8	20	639	0	1131
	Movement 95th Queue (ft)	0	0	0	43	0	43	0	0	0	25	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	230	0	0	
	Approach Delay (sec/veh)	0.0			5.5			0.4			3.7			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	7.4	0.0	3.5	0.0	1.9	2.1	2.0	1.0	0.0	1.5
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.4
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	6	0	31	0	427	7	23	621	0	1115
	Movement 95th Queue (ft)	0	0	0	48	0	48	0	0	0	26	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			4.1			1.9			1.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	20.1	1.0	6.2	21.4	10.7	3.1	13.8	7.4	1.8	11.9	14.2	4.3	11.0
	Total Delay (hr)	0.4	0.0	0.3	0.0	0.0	0.0	0.7	0.6	0.0	0.0	2.1	0.1	4.2
	Movement LOS	C	A	A	C	B	A	B	A	A	B	B	A	B
	Movement Volume	78	5	188	4	1	14	179	288	2	3	532	116	1410
	Movement 95th Queue (ft)	80	84	84	17	28	28	113	71	4	13	155	67	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	10.1			7.4			9.8			12.4			
	Approach LOS	B			A			A			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	2.6	0.8	0.0	0.0	0.7	0.7	0.0	0.0	4.2	6.9	0.0	4.8	1.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	7	151	0	0	210	88	0	0	61	56	0	7	580
	Movement 95th Queue (ft)	18	18	0	0	0	3	0	0	59	43	43	43	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.9			0.7			4.2			6.7			
	Approach LOS	A			A			A			A			

2025 Build - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	19.9	20.9	3.2	18.5	22.8	5.9	15.0	18.5	4.3	16.2	17.3	4.8	16.4
	Total Delay (hr)	0.4	1.0	0.1	0.1	1.3	0.2	0.5	2.5	0.1	0.6	1.5	0.0	8.3
	Movement LOS	B	C	A	B	C	A	B	B	A	B	B	A	B
	Movement Volume	63	170	80	21	210	135	109	486	54	131	312	31	1802
	Movement 95th Queue (ft)	58	68	26	26	84	34	77	144	0	86	103	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	16.2			16.3			16.7			16.2			
	Approach LOS	B			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	8.4	0.0	4.0	9.2	0.0	4.6	2.1	0.8	0.2	5.8	3.1	2.2	2.1
	Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.6
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	17	0	28	20	0	22	7	610	3	9	403	6	1125
	Movement 95th Queue (ft)	52	52	52	50	50	50	19	19	0	18	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	230	0	0	
	Approach Delay (sec/veh)	5.7			6.8			0.8			3.1			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	8.5	0.0	4.6	0.0	3.0	3.0	2.8	0.8	0.0	2.3
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.6
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	5	0	23	0	645	4	41	409	0	1127
	Movement 95th Queue (ft)	0	0	0	50	0	50	0	0	0	37	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			5.3			3.0			1.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	18.5	4.7	4.5	13.0	24.8	3.3	13.2	10.6	2.5	8.7	12.6	2.6	10.4
	Total Delay (hr)	0.6	0.0	0.3	0.0	0.0	0.0	0.4	1.5	0.0	0.0	1.2	0.0	4.0
	Movement LOS	B	A	A	B	C	A	B	B	A	A	B	A	B
	Movement Volume	118	4	238	2	1	2	122	513	15	16	331	64	1426
	Movement 95th Queue (ft)	104	80	80	12	14	14	91	126	23	24	92	32	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	9.1			11.5			10.9			10.9			
	Approach LOS	A			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	2.5	0.8	0.0	2.5	0.8	0.5	0.0	0.0	3.5	7.7	0.3	4.5	2.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	2	225	0	5	150	33	0	0	10	123	1	10	559
	Movement 95th Queue (ft)	6	6	0	9	9	0	0	0	32	65	65	65	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.8			0.8			3.5			7.4			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Access A	Movement Delay (sec/veh)	0.0	0.0	0.1	6.4	3.6	0.0	3.5	0.0	2.6	0.0	0.0	0.0	3.5
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	2	5	5	343	0	8	0	18	0	0	0	381
	Movement 95th Queue (ft)	0	0	0	0	0	0	45	0	45	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.1			3.6			2.9			0.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Linwood Ave & Access D	Movement Delay (sec/veh)	1.3	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.0	4.2	0.0	1.4	0.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	2	109	0	0	26	9	0	0	0	24	0	1	171
	Movement 95th Queue (ft)	0	0	0	0	0	0	0	0	0	47	0	47	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.2			0.2			0.0			4.1			
	Approach LOS	A			A			A			A			

2025 Build - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	36.0	25.6	5.4	34.2	22.0	5.3	19.8	22.7	4.2	19.3	21.4	5.5	20.1
	Total Delay (hr)	0.4	2.1	0.1	0.7	2.0	0.2	0.6	2.0	0.1	1.0	3.3	0.1	12.6
	Movement LOS	D	C	A	C	C	A	B	C	A	B	C	A	C
	Movement Volume	41	297	90	75	324	155	105	319	55	192	553	56	2262
	Movement 95th Queue (ft)	58	116	24	75	108	40	80	111	0	128	157	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	22.3			19.0			19.9			19.8			
	Approach LOS	C			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	11.2	0.0	7.9	14.9	0.0	3.9	8.9	0.8	0.2	5.0	3.8	4.9	3.0
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.7	0.0	0.9
	Movement LOS	B	A	A	B	A	A	A	A	A	A	A	A	A
	Movement Volume	11	0	17	5	0	22	26	450	8	18	689	23	1269
	Movement 95th Queue (ft)	45	45	45	44	44	44	48	48	0	23	3	3	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	230	0	0	
	Approach Delay (sec/veh)	9.2			5.9			1.2			3.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	8.2	0.0	3.7	0.0	1.9	1.5	2.3	1.2	0.0	1.6
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.4
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	6	0	33	0	468	8	23	689	0	1227
	Movement 95th Queue (ft)	0	0	0	48	0	48	0	0	0	21	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			4.4			1.9			1.2			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	20.5	1.0	6.7	13.1	18.4	3.3	14.5	7.2	1.1	6.5	13.5	4.3	10.9
	Total Delay (hr)	0.6	0.0	0.3	0.0	0.0	0.0	0.7	0.6	0.0	0.0	2.2	0.2	4.6
	Movement LOS	C	A	A	B	B	A	B	A	A	A	B	A	B
	Movement Volume	100	4	182	4	3	16	182	312	2	2	564	154	1525
	Movement 95th Queue (ft)	108	87	87	15	36	36	110	77	3	8	143	59	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	11.4			7.0			9.9			11.5			
	Approach LOS	B			A			A			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	4.0	0.8	0.0	0.0	0.7	0.7	0.0	0.0	3.9	7.7	0.7	4.2	1.9
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	7	148	0	0	229	109	0	0	62	75	2	7	639
	Movement 95th Queue (ft)	22	22	0	0	0	0	0	0	59	52	52	52	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.9			0.7			3.9			7.2			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Access A	Movement Delay (sec/veh)	0.0	0.0	0.0	6.1	2.7	0.0	5.7	0.0	5.3	0.0	0.0	0.0	2.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	3	13	18	467	0	7	0	15	0	0	0	523
	Movement 95th Queue (ft)	0	0	0	6	6	0	41	0	41	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.0			2.8			5.4			0.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Linwood Ave & Access D	Movement Delay (sec/veh)	3.2	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.0	6.3	0.0	7.3	0.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	64	0	0	90	26	0	0	0	17	0	2	200
	Movement 95th Queue (ft)	4	4	0	0	0	0	0	0	0	39	0	39	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.1			0.3			0.0			6.4			
	Approach LOS	A			A			A			A			

2025 Build w/ Improvements - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	18.4	20.4	3.4	18.6	22.2	6.0	15.2	19.3	4.4	18.4	17.7	5.0	16.6
	Total Delay (hr)	0.3	1.0	0.1	0.1	1.2	0.2	0.5	2.6	0.1	0.7	1.5	0.0	8.3
	Movement LOS	B	C	A	B	C	A	B	B	A	B	B	A	B
	Movement Volume	64	171	89	22	199	132	109	489	56	135	298	29	1793
	Movement 95th Queue (ft)	65	66	20	27	75	43	78	141	0	99	103	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	15.3			15.9			17.3			17.1			
	Approach LOS	B			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	7.4	0.0	4.2	9.3	0.0	4.3	2.0	0.7	0.3	5.7	3.1	2.8	2.0
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.4
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	17	0	28	18	0	20	6	618	4	8	401	7	1127
	Movement 95th Queue (ft)	56	56	56	47	47	47	13	0	0	15	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	180	0	0	230	0	0	
	Approach Delay (sec/veh)	5.4			6.7			0.7			3.1			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	7.6	0.0	4.3	0.0	2.8	3.1	2.4	0.8	0.0	2.1
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.6
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	6	0	25	0	643	4	43	403	0	1124
	Movement 95th Queue (ft)	0	0	0	51	0	51	0	0	0	34	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			4.9			2.8			1.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	19.2	6.5	4.7	14.2	11.9	4.5	12.7	10.2	2.8	10.9	12.1	2.9	10.3
	Total Delay (hr)	0.6	0.0	0.3	0.0	0.0	0.0	0.4	1.5	0.0	0.1	1.1	0.0	4.0
	Movement LOS	B	A	A	B	B	A	B	B	A	B	B	A	B
	Movement Volume	121	4	241	1	2	1	123	513	16	19	329	58	1428
	Movement 95th Queue (ft)	97	83	83	9	15	15	88	118	21	33	88	41	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	9.5			10.6			10.5			10.7			
	Approach LOS	A			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	2.0	0.8	0.0	3.0	0.8	0.6	0.0	0.0	4.3	7.6	0.3	4.7	2.5
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	222	0	5	147	34	0	0	9	132	2	10	562
	Movement 95th Queue (ft)	0	0	0	17	17	0	0	0	29	70	70	70	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.8			0.8			4.3			7.3			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Access A	Movement Delay (sec/veh)	0.0	0.0	0.0	3.5	3.5	0.0	3.3	0.0	2.6	0.0	0.0	0.0	3.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	2	4	4	332	0	9	0	19	0	0	0	370
	Movement 95th Queue (ft)	0	0	0	0	0	0	45	0	45	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.0			3.5			2.8			0.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Linwood Ave & Access D	Movement Delay (sec/veh)	2.3	0.2	0.0	0.0	0.3	0.3	0.0	0.0	0.0	4.2	0.0	4.6	0.9
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	113	0	0	25	10	0	0	0	29	0	1	179
	Movement 95th Queue (ft)	0	0	0	0	0	0	0	0	0	49	0	49	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.2			0.3			0.0			4.2			
	Approach LOS	A			A			A			A			

2025 Build w/ Improvements - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Lower Afton Rd / Valley Creek Rd	Movement Delay (sec/veh)	36.3	25.1	6.1	36.2	22.5	5.0	19.7	21.4	4.4	19.8	21.5	5.4	20.0
	Total Delay (hr)	0.4	2.2	0.2	0.7	2.1	0.2	0.6	1.9	0.1	1.1	3.3	0.1	12.9
	Movement LOS	D	C	A	D	C	A	B	C	A	B	C	A	C
	Movement Volume	37	311	98	70	334	146	101	320	59	194	553	55	2278
	Movement 95th Queue (ft)	52	124	36	82	120	41	81	108	0	137	166	0	
	Storage Bay Distance (ft)	325	0	335	325	0	600	300	0	0	480	0	0	
	Approach Delay (sec/veh)	21.9			19.6			19.0			20.0			
Approach LOS	C			B			B			B				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Parkwood Dr	Movement Delay (sec/veh)	11.9	0.0	8.5	16.4	0.0	4.4	8.5	0.5	0.0	4.4	3.7	4.7	2.9
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.7	0.0	0.9
	Movement LOS	B	A	A	C	A	A	A	A	A	A	A	A	A
	Movement Volume	11	0	19	7	0	20	27	451	10	19	694	21	1279
	Movement 95th Queue (ft)	47	47	47	45	45	45	34	0	0	20	3	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	180	0	0	230	0	0	
	Approach Delay (sec/veh)	9.7			7.5			0.9			3.7			
Approach LOS	A			A			A			A				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Pouliot Pkwy	Movement Delay (sec/veh)	0.0	0.0	0.0	10.6	0.0	3.5	0.0	2.0	1.2	2.3	1.2	0.0	1.6
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.5
	Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A	A
	Movement Volume	0	0	0	5	0	30	0	473	8	22	701	0	1239
	Movement 95th Queue (ft)	0	0	0	50	0	50	0	0	0	24	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	180	0	0	
	Approach Delay (sec/veh)	0.0			4.5			2.0			1.2			
Approach LOS	A			A			A			A				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave / Lake Rd & Century Ave / Apartments	Movement Delay (sec/veh)	21.0	1.3	7.2	18.2	25.3	4.2	13.8	7.4	1.9	11.7	14.9	4.4	11.5
	Total Delay (hr)	0.6	0.0	0.4	0.0	0.0	0.0	0.7	0.6	0.0	0.0	2.4	0.2	4.9
	Movement LOS	C	A	A	B	C	A	B	A	A	B	B	A	B
	Movement Volume	97	4	187	3	1	18	182	313	3	3	584	143	1538
	Movement 95th Queue (ft)	94	97	97	16	40	40	110	80	7	13	164	60	
	Storage Bay Distance (ft)	200	0	0	50	0	0	325	0	175	335	0	315	
	Approach Delay (sec/veh)	11.8			7.1			9.7			12.8			
Approach LOS	B			A			A			B				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Linwood Ave	Movement Delay (sec/veh)	3.0	0.8	0.0	2.7	0.7	0.7	0.0	0.0	4.2	7.3	0.2	3.0	1.9
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	6	149	0	1	210	114	0	0	69	68	2	6	625
	Movement 95th Queue (ft)	16	16	0	4	4	0	0	0	63	45	45	45	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.9			0.7			4.2			6.8			
Approach LOS	A			A			A			A				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Century Ave & Access A	Movement Delay (sec/veh)	0.0	0.2	0.0	6.0	2.7	0.0	6.6	0.0	5.4	0.0	0.0	0.0	2.8
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	4	12	16	475	0	4	0	12	0	0	0	523
	Movement 95th Queue (ft)	0	0	0	5	5	0	37	0	37	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.1			2.8			5.7			0.0			
Approach LOS	A			A			A			A				

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Linwood Ave & Access D	Movement Delay (sec/veh)	2.3	0.1	0.0	0.0	0.3	0.2	0.0	0.0	0.0	6.3	0.0	4.2	0.7
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	60	0	0	98	22	0	0	0	14	0	1	196
	Movement 95th Queue (ft)	5	5	0	0	0	0	0	0	0	36	0	36	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.1			0.3			0.0			6.2			
Approach LOS	A			A			A			A				

Appendix C: Proposed Development Plan



ALLIANT

733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
www.alliant-inc.com

CENTURY PONDS

MAPLEWOOD, MN

PRELIMINARY PLAT

SITE PLAN OVERVIEW

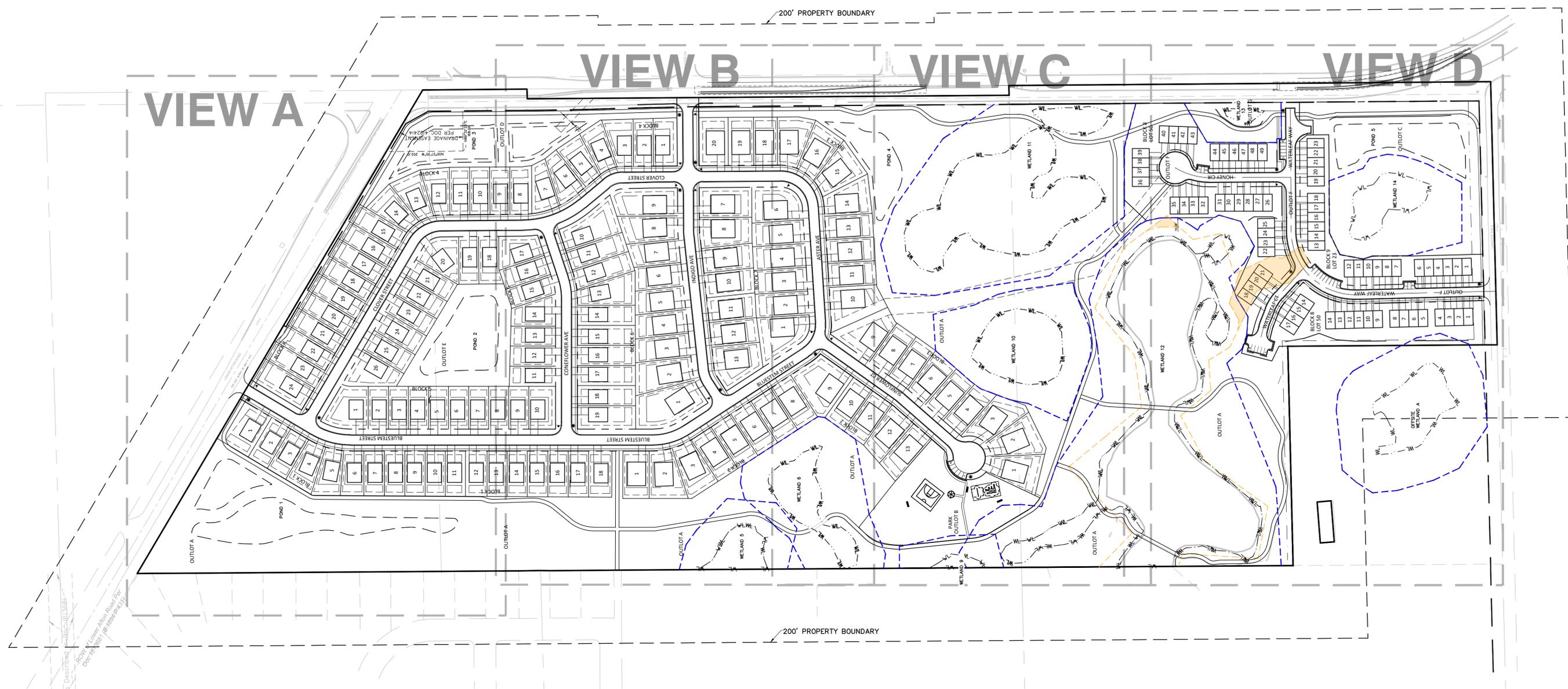
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

Dave Nash
DAVE NASH, PE
2/5/2025 21836
Date License No.

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
2/5/2025	CITY SUBMITTAL

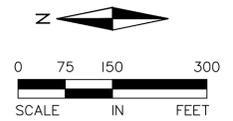
PROJECT TEAM DATA
DESIGNED: JP
DRAWN: JP
PROJECT NO: 4000041



LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- WETLAND BUFFER
- STREET LIGHT
- STOP SIGN
- RETAINING WALL

FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION



Drawing name: X:\2023\4000041-00 - Century Ponds\plan_sheets\4000041 site.dwg Mar 12, 2025 - 3:00pm