EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
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VLAWMO BOARD OF DIRECTORS MEETING AGENDA

7:00 PM June 24, 2020

Meeting will be held in-person at City of Vadnais Heights City Hall Council Chambers, 800 County Road E, East, Vadnais Heights

COVID-19 safety recommendation, masks & social distancing; see City of VH document attached under agenda item IV. B.

I. **Call to Order**, Chair, Jim Lindner

II. **Approval of Agenda**

III. **Visitors and Presentations**

A. Public visitors – non agenda items

IV. **Consent Agenda**

A. Approval of Minutes May 27, 2020
B. COVID -19 Preparedness Plan
C. Project Updates

V. **Business**

A. Administration
   1. 2021 Budget, Res. 02-2020 – Phil
B. Projects
   1. Lambert Lake Meander, Res. 03-2020 - Dawn
   2. East Goose Lake Boat Ramp Agreement – Phil
C. WCA
   1. Anderson Woods South Replacement Plan – Brian

VI. **Discussion /Updates**

A. Blue Thumb resilient yard webinar

XI. **Adjourn**

Next regular meeting: August 26, 2020

Upcoming Events: vlawmo.org/events

Self-guided neighborhood raingarden + plant tour: Aug 22-23

The Vadnais Lake Area Water Management Organization
800 County Road E East, Vadnais Heights, 55127 651-204-6070
Website: www.vlawmo.org; Email: office@vlawmo.org

MINUTES OF THE BOARD OF DIRECTORS – May 2020 SPECIAL BOARD MEETING
May 27th, 2020

Attendance		Present	Absent
Jim Lindner, Chair	City of Gem Lake	X	
Marty Long, Vice Chair	City of North Oaks	X	
Rob Rafferty, Secretary-Treasurer	City of Lino Lakes	X	
Ed Prudhon	White Bear Township	X	
Dan Jones	City of White Bear Lake	X	
Patricia Youker	City of Vadnais Heights		X
Phil Belfiori	Administrator	X	
Brian Corcoran	Water Resources Mgr.	X	
Dawn Tanner	Program Development Coord.	X	
Nick Voss	Education & Outreach Coord.	X	
Tyler Thompson	GIS Watershed Tech.	X	

Others in attendance: Paul Duxbury (VLAWMO TEC Commissioner & rep.); Bob Larson (VLAWMO TEC Commissioner); Greg Wilson (Barr Engineering); Dan Fabian (BWSR); Rick Johnston (WBL EAC); Connie Tailon (City of White Bear Lake).

I. Call to Order

The meeting was called to order at 7:01 pm by Chair Lindner, and a roll call was made for the Board Directors for the electronic video conferencing meeting, also available by telephone call-in.
Roll call: Lindner: **Present** Long: **Present** Rafferty: **Present** Jones: **Present** Prudhon: **Present** Youker: **Absent** (with prior notice)

II. Approval of Agenda

The agenda for the May 27th, 2020 Special Board meeting was presented for approval, Chair Lindner asked for any additions or corrections; none requested.
A motion was made by Rafferty and seconded by Jones to approve the April Special meeting agenda, as presented. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

III. Visitors and Presentations

A. Public Visitors – non-agenda items

None.

IV. Consent Agenda

A. Approval of Minutes: April 22, 2020

The minutes from the April 22nd, 2020 Board meeting are placed on the consent agenda for approval, as presented.

A motion was made by Rafferty and seconded by Jones to approve the May Special Board meeting consent agenda, as presented. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: abstain. Motion passed.

V. Business

A. Projects

1. Goose Lake Alum Treatment Grant

Administrator Belfiori provided the Board with a presentation with the background, analysis, options and recommendations (from both Board members Lindner and Jones

as well as from staff) related to the proposed East Goose Lake Alum Treatment Grant and Project.
Staff first provided a summary of the meetings held with BWSR and that the BWSR required assurance as identified in the assurance agreement were summarized as follows:

"If WMO lake water quality monitoring data collected for East Goose Lake indicates that lake surface water quality does not fall within 20% of the state water quality standard for total phosphorous of <72 µg/L and either the chlorophyll-a (<20 µg/L) or secchi depth (>1 m) criteria, for three out of any five years for the effective 15 year life of the PROJECT, the WMO agrees to undertake additional actions (including additional alum treatments if needed) at the WMO's expense to reduce internal and external phosphorous load reductions to achieve the PROJECT annual numeric surface water quality target identified for East Goose Lake."

Based on the numeric project assurance standards identified by BWSR, project engineer Wilson (Barr Engineering) then summarized his scientific background related to the proposed Alum project and discuss his technical findings on the proposed project assurance standards. Belfiori then presented two possible options for Board Consideration: Option 1- Approve the BWSR assurance agreement and corresponding grant agreement and work plan, and Option 2- approve and authorize staff to pursue an "adaptive lake management" program on East Goose Lake.
Belfiori then provided a financial breakdown and a summary of the budget Implications of the proposed options including summarizing the rough estimate 15 year VLAWMO project costs. In summary, it is estimated that the VLAMWO cost for ongoing operation of the whole lake management approach for option 1 (approve the BWSR grant /assurance agreement) would in the range of $435,000 – over $600,000 depending on how many VLAWMO additional alum applications are required during the mandated 15 year period.
Belfiori provided the Board a summary of Board Chair Lindner and Board Member Jones discussion and identified that the two appointed Board members discussed the possible options to recommend to the full Board.
Discussion: Lindner agreed option 2 would be the best option, moving forward for the future of VLAWMO and VLAWMO Boards not being tied to these assurances. Jones and Rafferty concurred. Rafferty thanked the subcommittee for their time and effort on this issue.
Staff then also provided the Board with its recommendation which was also to pursue option 2 (the adaptive lake management program) for East Goose Lake.

After further discussion the Board approved the following two motions:

- A motion was made by Long and seconded by Rafferty to authorize staff to take the necessary steps to pursue the "Adaptive Lake Management program" for East Goose Lake as described in the Board packet materials for the 5/27/20 special board meeting as "Option 2". Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

- A motion was made by Prudhon and seconded by Rafferty to direct staff to stop the negotiation process on the BWSR proposed project assurance agreement and therefore authorize staff to send communication to BWSR notify them that the VLAWMO Board has

decided to not approve the 15 year proposed assurance agreement or the required grant work plan/ grant agreement for the East Goose Lake Alum Treatment grant. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

B. Administration

1. LMCIT VLAWMO Insurance Renewal

Belfiori presented the League of Minnesota Cities (VLAWMO's insurance) liability coverage waiver form, which the Board must make an annual determination on to either wave or do not waive the monetary limits on municipal tort liability established by Minnesota Statute 466.04. VLAWMO's insurance broker, Justin Bullis (Bullis Insurance Agency, LLC.) recommended not waiving the monetary limit on municipal tort liability. The Board has voted to not waive monetary limits on municipal tort liability in the past, and staff is recommending this same action for 2020.

Discussion:

A motion was made by Rafferty and seconded by Prudhon for the authorization of VLAWMO to not waive the monetary limits on municipal tort liability established by Minnesota Statutes, Section 466.04 to the extent of the limits of the liability coverage obtained from the LMCIT. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

C. Cost Share

1. Landscape Level 2 Grant App: 2020-04 Monda Lambert Creek Restoration Ext, VH

Thompson presented a Landscape Level 2 grant application for a streambank restoration on Lower Lambert Creek. The homeowner applying for the grant is looking to extend the creek restoration that was completed on part of their property by VLAWMO in 2017 further down onto their property, to restore with native vegetation and to halt further degradation and erosion on the streambank. The total project cost is $8,003.33, and the applicant is applying for $4,416.30 in Landscape Level 2 cost share funding, which would expend the Level 2 funds for 2020. The project and application has been recommended for approval by staff and the Technical Commission at their May 8, 2020 meeting in the amount of $4,416.30.

Discussion: Rafferty asked if this project is a priority and how match funding would be adjusted if more Landscape Level 2 grant funding was available. Prudhon asked if this part of Lambert Creek is a priority. Thompson answered that Lower Lambert Creek has been one of VLAWMO's priority areas due to steep and high banks that are especially prone to erosion and soil loss, and he would recommend this application for a greater funding match from VLAWMO if more funds were available. Rafferty asked if it would be advisable to pull from 2021 LL2 budgeting for this project, and if other landowners on the Creek have been reached out to, and stressed the continuation of reaching out to these landowners. Thompson advised against pulling from the 2021 budget for 2020 grant projects, and agreed that he will continue to reach out to residents on Lower Lambert Creek to continue to spread these restorations.

A motion was made by Rafferty and seconded by Prudhon for the approval of the Landscape Level 2 2020-04 grant application for funding in the amount of $4,416.30. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

VIII. Discussion/Updates

Tanner gave an update that the Lambert Lake EAW is still out for comment and staff is working with SEH on retrofits and possible projects in the Wilkinson subwatershed.

Voss updated that the Blue Thumb resilient yard webinar will be held on June 11th, and overviewed the Lawns to Legumes program.

Rafferty voiced that he would like to see an in-person meeting for the June VLAWMO Board of Directors meeting. Jones mentioned the governor's orders to still keep meetings to 10 people or

less. The Board agreed to review and update the June Board of Directors meeting format dependent on local and state direction within the month of June.

IX. Administration Communication

None.

X. Adjourn

A motion was made by Rafferty and seconded by Jones to adjourn at 7:56 pm. Vote: Lindner: aye Rafferty: aye Jones: aye Prudhon: aye Long: aye. Motion passed.

Minutes compiled and submitted by Tyler Thompson.

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

Date: June 18, 2020

To: VLAWMO Board

From: Phil Belfiori, Administrator

Re: Consent Agenda- COVID -19 Preparedness Plan

Background

The VLAWMO insurance provided (Bullis Insurance Agency) has recommended that VLAMWO consider approval of a COVID 19 Preparedness Plan (Plan). Based on this recommendation, please find for your consideration the Attached the City of Vadnais Heights Preparedness Plan. Given VLAWMO employees are co-located in City Hall and VLAWMO visitors are utilizing the same building (City Hall) as the City, it is appropriate that the Board consider the City's approved COVID -19 Preparedness Plan as its own Plan. The overall objective of the Plan is to identify best practice to attempt to make employees and visitors more confident in the safety of the workplace. This Plan is also based on the State of Minnesota Plan template and the City of Vadnais Heights has approved the attached Plan on 5/19/20.

The Plan is to provide staff with direction on working in an environment where COVID-19 exists and the public is engaging them face-to-face. The Plan addresses how employees should self-screen, or what to do if they have a potential exposure. It also addresses handwashing, respiratory etiquette, masks, social distancing, housing keeping and general communication. The Plan attempts to accommodate everyone and their specific concerns and needs. This Plan is the foundation to address those concerns and give employees the tools to stay safe. It's expected that as the COVID-19 pandemic evolves, this plan may evolve as well.

Recommendation – Staff recommends that the VLAWMO Board approve the attached City of Vadnais Heights Preparedness Plan as the VLAWMO Preparedness Plan.

Proposed Board Action

Approve the attached City of Vadnais Heights Preparedness Plan as the VLAWMO COVID- 19 Preparedness Plan as part of the Consent agenda.

Attachments

Attachment 1 –letter from City Administrator Watson to VLAWMO Staff dated May 15, 2020

Attachment 2 – COVID – 19 Preparedness Plan (City of Vadnais Heights) Dated May 19, 2020.

May 15, 2020

City of Vadnais Heights Employees &
VLAWMO Employees

RE: Re-Open City Hall and COVID-19 Preparedness Plan

Please see the attached COVID-19 Preparedness Plan. The plan has been prepared to inform employees of expectations for facilitating a safe environment for the City operation. Candidly, I believe City staff have done a great job staying healthy through the first few months of the COVID-19 pandemic. Continue to do so and if you feel sick, stay home! To adapt to this new environment and maintain the operation so effectively, I commend everyone for a job well done.

As many of you are aware, Governor Walz is letting the shelter in place expire on Monday, May 18th. He is allowing many businesses to re-open if proper CDC guidelines are met. For our purposes, it is time for the City to re-open to the public. We certainly won't be opening like we once were. Social distancing and hygiene will be of the highest priority. We will start by only opening City Hall. Fire and Public Works will remain closed to the general public.

As you have likely noticed at City Hall, only one counter will be open, and all business will be conducted behind the plexi-glass. I ask that if a customer wants to meet with someone for a discussion, those discussions happen away from the counter in the lobby where proper social distancing can be maintained.

Moving forward I continue to ask everyone to stay diligent about personal health and well-being. If you're sick, stay home. Please continue to wipe down shared equipment, furniture and other amenities after you use them. The attached plan lays out the City's expectations as it relates exposures to COVID-19, respiratory etiquette, handwashing, social distancing and more. Please become familiar with the document and ask questions if something isn't clear. This is a living document I'm happy to tweak if necessary.

The City will be providing staff with two masks each (currently on order). They are yours to keep and maintain as they are machine washable and reusable. While we will not be requiring masks at all times, you are welcome to wear them if you are more comfortable doing so. You are also welcome to wear your own masks if you wish as well. There are a few instances where we recommend or require a mask to be worn and those are laid out in the document. Fire and Public Works may have additional requirements specific to their duties.

In conclusion, we require all employees and visitors in City facilities to adhere to safety guidelines observed through MDH and CDC recommendations. I encourage everyone to provide feedback if you feel improvements could be made to this plan.

We have a great staff here at the City and I appreciate everyone stepping up to make the public's experience with the City as seamless as possible.

Lastly, if you feel sick, stay home and talk to your supervisor.

Best Regards,

Kevin Watson,
City Administrator

COVID-19 Preparedness Plan

May 19, 2020

The City of Vadnais Heights is committed to providing a safe and healthy workplace. To ensure that, we have developed the following Preparedness Plan in response to the COVID-19 pandemic. Our goal is to mitigate the potential for transmission of COVID-19 in our workplaces, and that requires full cooperation among workers and management. Only through this cooperative effort can we establish and maintain the safety and health of our workers and workplaces.

All employees are responsible for implementing and complying with all aspects of this Preparedness Plan. Department Heads, managers, and supervisors have the full support of the City Administrator and City Council in enforcing the provisions of this policy.

Our employees are our most important asset. We are serious about safety, health, and keeping our staff working at the City of Vadnais Heights. Employee involvement is essential in developing and implementing a successful COVID-19 Preparedness Plan. Our Preparedness Plan follows Centers for Disease Control and Prevention (CDC) and Minnesota Department of Health (MDH) guidelines and federal OSHA standards related to COVID-19 and addresses:

- Hygiene and respiratory etiquette;
- Engineering and administrative controls for social distancing;
- Housekeeping - cleaning, disinfecting and decontamination;
- Prompt identification and isolation of sick persons;
- Communications and training that will be provided to managers and workers; and
- Management and supervision necessary to ensure effective implementation of the plan.

If employees identify areas for concern or improvement, they should notify their supervisor. This is a very fluid environment that changes week to week and we ask all employees participate in making our work environment as safe as possible. Questions or concerns regarding this plan should be directed to your supervisor and/or Human Resources.

Screening and Policies for Employees Exhibiting Symptoms of COVID-19

Employees have been informed of and encouraged to self-monitor for signs and symptoms of COVID-19. The following policies and procedures are being implemented to assess workers' health status prior to entering the workplace and for workers to report when they are sick or experiencing symptoms.

Self-Screening

Employees are expected to conduct a self-assessment each day before reporting to work. The self-assessment includes seeing if any COVID-19 symptoms are present. Symptoms of COVID-19 include:

- Fever
- Cough
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle Pain
- Headache
- Sore throat
- New loss of taste or smell

Symptoms may appear 2-14 days after exposure to COVID-19.

The City is acquiring a couple touchless thermometers for use if an employee would like to check their temperature during work. Thermometers can be made available by talking with your supervisor.

Employees wanting privacy may take a thermometer to a restroom, break room, office, or other room to use. Thermometers should be cleaned with a sanitizing wipe after use and returned in the kit to the original location.

Exposure or Potential Exposure to COVID-19

The City will utilize the CDC's recommendations for employees that may have been exposed to COVID-19. **Potential Exposure** is defined as, "A household contact or having close contact within 6 feet of an individual with confirmed or suspected COVID-19." The timeframe for having contact with an individual includes the period of 48 hours before the individual became symptomatic.

The CDC advises that employees may be permitted to continue work following potential exposure to COVID-19, provided they remain asymptomatic and additional precautions are implemented. These precautions are:

- **Pre-Screen:** The employee shall take their temperature upon arrival to the workplace, in the presence of a supervisor or Human Resources. Employees will also conduct a self-assessment of additional COVID-19 symptoms and will not enter the facility if they are experiencing any COVID-19 symptoms.

- **Wear a Mask:** Employees shall wear a face mask at all times while in the workplace for 14 days after the last exposure. The City of Vadnais Heights will provide employees with a cloth face covering, or the employee may wear their own mask if approved by the supervisor.
- **Social Distance:** The employee shall maintain 6 feet and practical social distancing as work duties permit in the workplace.
- **Disinfect and Clean Workspaces:** The employee shall clean and disinfect their work station and equipment daily, as well as any equipment that may be shared by others after use.
- **Report Symptoms:** If an employee starts experiencing symptoms during the day, they should immediately notify their supervisor and go home. Surfaces in their workspace should be cleaned and disinfected right away. Such instances should be reported to Human Resources so an inventory of persons who had contact with the ill employee can be made. The supervisor will ensure the workspace is disinfected immediately.

The City will also inform employees if they have been exposed to a person with COVID-19 in the workplace. The City will attempt to protect the privacy of workers' health status and health information. The name of the employee testing positive will not be disclosed unless consent is provided by the employee. Human Resources will work with that employee and their supervisor to determine who may have been in close contact with the person in the previous two days and will notify employees and others who may have been exposed.

Return to Work

Persons with COVID-19 who have symptoms and were directed to isolate at home may return to work under the following conditions:

- At least 3 days have passed since recovery, defined as resolution of fever without the use of fever-reducing medications, AND
- Improvement in respiratory symptoms (cough, shortness of breath), AND
- At least 7 days have passed since symptoms **first** appeared.
- Individual has received a negative test result

Employee Leave

In line with the Families First Coronavirus Response Act, the City of Vadnais Heights has implemented leave policies that promote workers staying at home when they are sick, when household members are sick, or when required by a health care provider to isolate or quarantine themselves or a member of their household. Additionally, the leave will accommodate daycare related needs resulting from COVID-19. For more information regarding this leave, please contact Human Resources.

Handwashing

Basic infection prevention measures are being implemented at our workplaces at all times. Employees shall wash their hands for at least 20 seconds with soap and water frequently throughout the day, especially at the beginning and end of their shift, prior to mealtimes, and after using restroom facilities. Hand sanitizer may be used in the absence of soap and water. At City Hall, Hand sanitizing stations are being made available for visitors, which they are encouraged to utilize upon arrival. Signage will also be placed in restrooms to remind employees and visitors to

wash their hands.

Respiratory Etiquette: Cover your cough or sneeze

Workers and visitors are being instructed to cover their mouth and nose with their sleeve or a tissue when coughing or sneezing and to avoid touching their face, in particular their mouth, nose and eyes, with their hands. They should dispose of tissues in the trash and wash or sanitize their hands immediately afterward. Respiratory etiquette will be demonstrated on posters and supported by making tissues and trash receptacles available to all workers and visitors.

Masks

The City will be providing each employee two masks that are washable and reusable. They are the responsibility of the individual employee to properly wash and maintain. The City encourages employees to wear masks when interacting with another individual and social distancing cannot be maintained. The City requires individuals to wear masks when entering a non-city facility to conduct City business. Similarly, the City will require employees to wear masks if riding in vehicles with more than one individual.

Social Distancing

Social distancing is being implemented in the workplace through the following engineering and administrative controls:

- Employees and visitors are to maintain a distance of 6 feet whenever possible. If not possible, proper personal protective equipment and/or additional precautions should be used. Social distancing signage will be placed near the front counter at City Hall.
- Meetings are being held virtually or by phone if the objective can be achieved without meeting in person. If a meeting must be held face-to-face, a distance of 6 feet should be maintained. Movement through other departments should be limited to business specific purposes, and only when alternative methods are not practical. (For example: Going into the copy room to access the supply cabinets is necessary, but visiting a co-worker's desk for a question that could have been asked on the phone is not.) Additionally, employees should plan a route to their destination that allows them to best maintain social distancing.
- When meeting with walk-in customers, these discussions should occur in the main lobby where proper social distancing can be maintained and the front counter is free from congestion.
- Supervisors will stagger shifts and start times to allow employees to report to work and maintain social distancing.
- Employees that can perform their tasks at home should continue telecommuting as available. Scheduling will be at the discretion of the supervisor but maintaining necessary coverage to serve the public will continue to be a priority.
- Break times should be staggered so employees can maintain distance during lunch.
- Installation of plastic barriers at the front counter of City Hall has been installed as well as stanchions to ensure customer flow restricts face to face interactions at one point.
- Please limit break room users to two at a time. If those individuals are using the table, they should sit at least 6ft apart.
- City facilities were closed to the public on March 18th. In addition to the barriers and signage mentioned above, management will continue to evaluate the need for additional signage and markers to ensure social distancing is maintained by visitors.

If an employee notices an area or work situation where social distancing is not possible to maintain, they should report it to their supervisor and/or Human Resources.

Housekeeping

Regular housekeeping practices are being implemented, including routine cleaning and disinfecting of work surfaces, equipment, and areas in the work environment, including restrooms, break rooms, lunch rooms and meeting rooms. What follows is a breakdown of the type and frequency of cleaning that is taking place.

Routine Cleaning

City Hall has routine housekeeping by our regular janitorial services, which includes: mopping, vacuuming, wiping and disinfecting all surfaces, cleaning bathrooms, kitchens, offices, cubicles, meeting rooms, conference areas, lobbies, empty all garbage and recycling, dusting all surfaces, wiping down all doors, handles, and high-touch surfaces. This occurs on Tuesdays and Fridays.

Facilities that are not on the routine cleaning schedule are being cleaned daily by staff in that workspace, including disinfection of high-touch areas. This includes all doors, windows, desks, counters, bathrooms, kitchens, offices, cubicles, meeting rooms, conference areas, lobbies, handles, and any other high-touch surfaces. Products that should be used to disinfect these areas are either diluted bleach, or disinfectant cleaners. Appropriate protective gear should be used while cleaning, such as gloves, masks, and protective eyewear.

Additionally, the City will have monthly sanitizing by professional cleaners of the City Hall, Fire Stations and Public Works facilities.

Frequent Sanitizing by Employees

Sanitizing wipes and cleaners have been made available throughout our facilities, most notably in common work areas, such as conference rooms, break rooms, and photocopy areas. Employees should wipe down shared equipment after their use to prevent the spread of germs. Employees are also encouraged to wipe down their own work stations and equipment on a regular basis. For additional cleaning supplies, please contact your supervisor.

Cleaning after Potential COVID-19 Exposure

If an employee is diagnosed with COVID-19 or is sent home with symptoms, contact your supervisor to have the area disinfected. High-touch surfaces in the employee's work area, including doors, desks, counters, bathrooms, kitchens, conference areas, and other spaces the employee may have used, will be disinfected with diluted bleach or a disinfectant cleaner. The employee's personal work station will also be disinfected, including their phone, computer equipment, desk, chair, and other items in their immediate workspace.

Communications and Training

This Preparedness Plan was sent via email to all City of Vadnais Heights employees on May 18, 2020. Additional communication and training will be ongoing as needs and procedures change. Managers and supervisors are to monitor program effectiveness and report any issues to Human

Resources. All employees are to work through this new program together and request training or clarification as necessary.

If employees have any concerns with a business partner not complying with social distancing or other aspects of this plan, they should contact their supervisor and/or Human Resources.

Employees are encouraged to raise ideas to make the work environment as safe as possible. See below for resources on how to stay safe.

Appendix A

General
www.cdc.gov/coronavirus/2019-nCoV
www.health.state.mn.us/diseases/coronavirus
www.osha.gov
www.dli.mn.gov

Handwashing
www.cdc.gov/handwashing/when-how-handwashing.html
www.cdc.gov/handwashing
https://youtu.be/d914EnpU4Fo

Respiratory etiquette: Cover your cough or sneeze
www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html
www.health.state.mn.us/diseases/coronavirus/prevention.html
www.cdc.gov/healthywater/hygiene/etiquette/coughing_sneezing.html

Social distancing
www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html
www.health.state.mn.us/diseases/coronavirus/businesses.html

Housekeeping
www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html
www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html
www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2
www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html

Employees exhibiting signs and symptoms of COVID-19
www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html
www.health.state.mn.us/diseases/coronavirus/basics.html

Training
www.health.state.mn.us/diseases/coronavirus/about.pdf
www.cdc.gov/coronavirus/2019-ncov/community/guidance-small-business.html
www.osha.gov/Publications/OSHA3990.pdf

June-20		Actual 6/1/20	Actual to Date	2020 Budget	2019 carry over/Grants	Remaining in Budget	2020 Available	Act vs. Budget
BUDGET #	**INCOME**							
5.11	Storm Water Utility	$0	$16,449	$890,800	$0	$874,351	$890,800	2%
5.12	Service Fees	$0	$0	$200	$0	$200	$200	0%
5.13	Interest + mitigation acct	$132	$4,071	$5,000	$0	$929	$5,000	81%
5.14	Misc. income - WCA admin & other	$0	$3,150	$3,000	$0	($150)	$3,000	105%
5.15	Other Income Grants	$6,994	$33,048	$0	$0	($33,048)	$0	
5.16	Transfer from reserves	$0	$100,000	$0	$0	($100,000)	$0	
	TOTAL	$7,126	$156,718	$899,000	$0	$742,282	$899,000	17%
	EXPENSES							
3.1	**Operations & Administration**							
3.110	Office - rent, copies, post tel supplies	$1,886	$11,947	$25,200	$0	$13,253	$25,200	47%
3.120	Information Systems	$1,918	$6,895	$20,000	$2,000	$15,105	$22,000	31%
3.130	Insurance	$120	$120	$5,800	$0	$5,680	$5,800	2%
3.141	Consulting - Audit	$0	$6,893	$6,700	$0	($193)	$6,700	103%
3.142	Consulting - Bookkeeping	$0	$0	$1,500	$0	$1,500	$1,500	0%
3.143	Consulting - Legal	$0	$299	$4,000	$2,500	$6,201	$6,500	5%
3.144	Consulting - Eng. & Tech.	$0	$1,503	$30,000	$0	$28,497	$30,000	5%
3.150	Storm Sewer Utility	$750	$3,478	$14,000	$0	$10,522	$14,000	25%
3.160	Training (staff/board)	$0	$0	$4,500	$1,500	$6,000	$6,000	0%
3.170	Misc. & mileage	$353	$2,470	$5,500	$800	$3,830	$6,300	39%
3.191	Administration - staff	$64,303	$195,470	$347,200	$50,000	$201,730	$397,200	49%
3.192	Employer Liability	$12,020	$50,968	$89,600	$12,000	$50,632	$101,600	50%
3.2	**Monitoring and Studies**							
3.210	Lake and Creek lab analysis	$1,643	$1,965	$22,000	$10,000	$30,035	$32,000	6%
3.220	Equipment	$0	$416	$4,000	$0	$3,584	$4,000	10%
3.230	Wetland assessment & management	$0	$0	$10,000	$0	$10,000	$10,000	0%
3.3	**Education and Outreach**							
3.310	Public Education	$34	$2,247	$8,500	$1,000	$7,253	$9,500	24%
3.320	Marketing	$389	$1,622	$7,500	$0	$5,878	$7,500	22%
3.330	Community Blue Ed Grant	$0	$7,952	$10,000	$2,000	$4,048	$12,000	66%
Total Core functions: Ops, Monitoring, Education		*$83,417*	*$294,245*	*$616,000*	*$81,800*	*$403,555*	*$697,800*	*42%*
Capital Improvement Projects and Programs								
3.4	**Subwatershed Activity**							
3.410	Gem Lake	$0	$0	$0	$0	$0	$0	
3.420	Lambert Creek	$35,389	$60,779	$120,000	$63,275	$122,496	$183,275	33%
3.425	Goose Lake	$10,289	$34,690	$60,000	$150,316	$175,626	$210,316	16%
3.430	Birch Lake	$5,628	$22,877	$10,000	$39,067	$26,190	$49,067	47%
3.440	Gilf Black Tam Wilk Amelia	$7,362	$7,362	$30,000	$50,000	$72,638	$80,000	9%
3.450	Pleasant Charley Deep	$5,605	$3,605	$10,000	$9,000	$15,395	$19,000	19%
3.460	Sucker Vadnais	$0	$3,164	$12,000	$10,000	$18,836	$22,000	14%
3.48	**Programs**							
3.481	Landscape 1	$2,833	$2,966	$24,000	$11,500	$32,534	$35,500	8%
3.482	Landscape 2	$3,754	$20,169	$20,000	$11,361	$11,192	$31,361	64%
3.483	Project Research & feasibility	$0	$9,725	$0	$0	($9,725)	$0	#DIV/0!
3.470	Facilities Maintenance	$0	$0	$5,000	$29,176	$34,176	$34,176	0%
3.5	**Regulatory**							
3.510	Engineer Plan review	$0	$0	$2,000	$0	$2,000	$2,000	0%
	Total CIP & Program	*$70,861*	*$165,337*	$293,000	$373,695	*$501,358*	*$666,695*	*25%*
	Total of Core Operations & CIP	**$154,278**	$459,582	$909,000	$455,495	**$904,913**	$1,364,495	**34%**

Fund Balance		5/1/2020	6/1/2020
4M Account		$116,719	$78,584
4M Plus Savings		$513,284	$513,398
Total		$630,003	$591,982

Restricted funds	6/1/2020
Mitigation Savings	$21,035
Term Series (3/28/19)	$0

Vadnais Lake Area Water Management Orga

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Profit & Loss

06/03/2020

May 9 through June 12, 2020

Cash Basis

	May 9 - Jun 12, 20
Ordinary Income/Expense	
Income	
5.1 · Income	
5.13 · Interest	132.30
5.15 · Other Income Grants	6,861.26
Total 5.1 · Income	6,993.56
Total Income	6,993.56
Gross Profit	6,993.56
Expense	
3.1 · Administrative/Operations	
3.110 · Office	
Copies	23.20
Phone/Internet/Machine Overhead	275.00
Postage	48.25
Rent	1,540.00
Total 3.110 · Office	1,886.45
3.120 · Information Systems	
IT Support	1,918.00
Total 3.120 · Information Systems	1,918.00
3.130 · Insurance	120.00
3.150 · Storm Sewer Utility	750.00
3.160 · Training (staff/board)	0.00
3.170 · Misc. & mileage	352.75
3.191 · Employee Payroll	
Payroll	64,303.28
Total 3.191 · Employee Payroll	64,303.28
3.192 · Employer Liabilities	
Admin payroll processing	44.92
Administration FICA	4,756.20
Administration PERA	3,453.54
Insurance Benefit	3,765.57
Total 3.192 · Employer Liabilities	12,020.23
Total 3.1 · Administrative/Operations	81,350.71
3.2 · Monitoring and Studies	
3.210 · Lake & Creek lab analysis	1,643.00
Total 3.2 · Monitoring and Studies	1,643.00
3.3 · Education and Outreach	
3.310 · Public Education	34.26
3.320 · Marketing	389.44
Total 3.3 · Education and Outreach	423.70
3.4 · Capital Imp. Projects/Programs	
3.420 · Lambert Creek Restoration	
Whitaker Wetlands	256.82

1 · LL grant $302,679	35,132.42
Total 3.420 · Lambert Creek Restoration	35,389.24
3.425 · Goose Lake	
WB Funding - Goose subshed	10,289.00
Total 3.425 · Goose Lake	10,289.00
3.430 · Birch Lake	
4th & Otter project	5,627.53
Total 3.430 · Birch Lake	5,627.53
3.440 · Gilfillan Black Tamarack Wilkin	7,362.42
3.450 · Pleasant Charley Deep	5,605.30
Total 3.4 · Capital Imp. Projects/Programs	64,273.49
3.48 · Programs	
3.481 · Landscape 1 - cost-share	2,833.44
3.482 · Landscape 2	3,753.86
Total 3.48 · Programs	6,587.30
Total Expense	154,278.20
Net Ordinary Income	-147,284.64
Net Income	**-147,284.64**

Vadnais Lake Area Water Management Organization
Check Detail
May 9 through June 12, 2020

Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
Check		**05/13/2020**	**Mark Smith**		**Mitigation & Monitoring - 8355**		**-5,537.00**
			Mark Smith		Wetland Mitigation Payable	-5,537.00	5,537.00
TOTAL						-5,537.00	5,537.00
Check	**eft**	**05/20/2020**	**further**		**Checking - 1987**		**-5.00**
					Insurance Benefit	-5.00	5.00
TOTAL						-5.00	5.00
Check	**eft**	**05/28/2020**	**Reliance Standard**		**Checking - 1987**		**-176.03**
					Insurance Benefit	-176.03	176.03
TOTAL						-176.03	176.03
Check	**4937**	**05/20/2020**	**MN DNR Ecological & Water Resources**		**Checking - 1987**		**-3,000.00**
					1 · LL grant $302,679	-3,000.00	3,000.00
TOTAL						-3,000.00	3,000.00
Check	**4938**	**06/12/2020**	**Nicholas Voss**		**Checking - 1987**		**-46.34**
					3.170 · Misc. & mileage	-12.08	12.08
					3.310 · Public Education	-34.26	34.26
TOTAL						-46.34	46.34
Check	**4939**	**06/12/2020**	**Brian Corcoran**		**Checking - 1987**		**-117.74**
					3.170 · Misc. & mileage	-117.74	117.74
TOTAL						-117.74	117.74
Check	**4940**	**06/12/2020**	**Tyler J Thompson**		**Checking - 1987**		**-77.45**
					3.170 · Misc. & mileage	-77.45	77.45
TOTAL						-77.45	77.45
Check	**4941**	**06/12/2020**	**Dawn Tanner**		**Checking - 1987**		**-145.48**
					3.170 · Misc. & mileage	-145.48	145.48
TOTAL						-145.48	145.48
Check	**4942**	**06/12/2020**	**City of White Bear Lake**		**Checking - 1987**		**-76,142.48**
					payroll	-64,303.28	64,303.28
					Administration FICA	-4,756.20	4,756.20
					Administration PERA	-3,453.54	3,453.54
					Insurance Benefit	-3,584.54	3,584.54
					Admin payroll processing	-44.92	44.92
TOTAL						-76,142.48	76,142.48

Check	**4943**	**06/12/2020**	**FastSigns**	**Checking - 1987**	**-53.12**
			4th & Otter project	-53.12	53.12
TOTAL				-53.12	53.12
Check	**4944**	**06/12/2020**	**City Of Roseville**	**Checking - 1987**	**-1,918.00**
			IT Support	-959.00	959.00
			IT Support	-959.00	959.00
TOTAL				-1,918.00	1,918.00
Check	**4945**	**06/12/2020**	**Barr Engineering Co**	**Checking - 1987**	**-17,200.00**
			4th & Otter project	-5,540.50	5,540.50
			WB Funding - Goose subshed	-10,289.00	10,289.00
			3.450 · Pleasant Charley Deep	-1,370.50	1,370.50
TOTAL				-17,200.00	17,200.00
Check	**4946**	**06/12/2020**	**SEH**	**Checking - 1987**	**-32,240.71**
			3.440 · Gilfillan Black Tamarack Wilkin	-7,362.42	7,362.42
			1 · LL grant $302,679	-11,467.54	11,467.54
			1 · LL grant $302,679	-5,539.24	5,539.24
			1 · LL grant $302,679	-7,871.51	7,871.51
TOTAL				-32,240.71	32,240.71
Check	**4947**	**06/12/2020**	**Regents of the University of Minnesota**	**Checking - 1987**	**-7,435.69**
			Whitaker Wetlands	-256.82	256.82
			1 · LL grant $302,679	-7,178.87	7,178.87
TOTAL				-7,435.69	7,435.69
Check	**4948**	**06/12/2020**	**Press Publications**	**Checking - 1987**	**-389.44**
			3.320 · Marketing	-192.00	192.00
			3.320 · Marketing	-197.44	197.44
TOTAL				-389.44	389.44
Check	**4949**	**06/12/2020**	**carp solutions**	**Checking - 1987**	**-4,234.80**
			3.450 · Pleasant Charley Deep	-3,200.00	3,200.00
			3.450 · Pleasant Charley Deep	-517.40	517.40
			3.450 · Pleasant Charley Deep	-517.40	517.40
TOTAL				-4,234.80	4,234.80
Check	**4950**	**06/12/2020**	**Ehlers & Associates, Inc.**	**Checking - 1987**	**-750.00**
			3.150 · Storm Sewer Utility	-750.00	750.00
TOTAL				-750.00	750.00
Check	**4951**	**06/12/2020**	**City of Vadnais Heights**	**Checking - 1987**	**-1,886.45**

			Rent	-1,540.00	1,540.00
			Phone/Internet/Machine Overhead	-200.00	200.00
			Phone/Internet/Machine Overhead	-75.00	75.00
			Postage	-48.25	48.25
			Copies	-23.20	23.20
TOTAL				-1,886.45	1,886.45
Check	**4952**	**06/12/2020**	**Bullis Insurance Agency LLC**	**Checking - 1987**	**-120.00**
			3.130 · Insurance	-120.00	120.00
TOTAL				-120.00	120.00
Check	**4953**	**06/12/2020**	**RMB Environmental Laboratories, Inc.**	**Checking - 1987**	**-1,643.00**
			3.210 · Lake & Creek lab analysis	-1,150.00	1,150.00
			3.210 · Lake & Creek lab analysis	-493.00	493.00
TOTAL				-1,643.00	1,643.00
Check	**4954**	**06/12/2020**	**sonja piper**	**Checking - 1987**	**-1,337.00**
			3.481 · Landscape 1 - cost-share	-1,337.00	1,337.00
TOTAL				-1,337.00	1,337.00
Check	**4955**	**06/12/2020**	**samantha crosby**	**Checking - 1987**	**-42.50**
			3.481 · Landscape 1 - cost-share	-42.50	42.50
TOTAL				-42.50	42.50
Check	**4956**	**06/12/2020**	**matt moldan**	**Checking - 1987**	**-67.64**
			3.481 · Landscape 1 - cost-share	-67.64	67.64
TOTAL				-67.64	67.64
Check	**4957**	**06/12/2020**	**anthony monda**	**Checking - 1987**	**-3,753.86**
			3.482 · Landscape 2	-3,753.86	3,753.86
TOTAL				-3,753.86	3,753.86
Check	**4958**	**06/12/2020**	**Laura Smith**	**Checking - 1987**	**-1,386.30**
			3.481 · Landscape 1 - cost-share	-1,386.30	1,386.30
TOTAL				-1,386.30	1,386.30

Vadnais Lake Area Water Management Organization

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Custom Transaction Detail Report

06/03/2020

May 1 through June 1, 2020

Accrual Basis

	Type	Date	Num	Name	Memo	Account	Clr	Split	Amount	Balance
May 1 - Jun 1, 20										
	Credit Card Charge	05/04/2020		Google*SVCAPPS_VLAWM		US Bank CC	√	WEB	34.20	34.20
	Credit Card Charge	05/06/2020		Prairie Moon Nursery	seed for 4th & otter	US Bank CC	√	3.320 · Marketing	159.85	194.05
	Credit Card Charge	05/14/2020		Press Publications		US Bank CC		1 · LL grant $302,679	75.26	269.31
May 1 - Jun 1, 20									**269.31**	**269.31**

TEC Report to the Board
June 2020

Programs & Projects	Effort Level LOW MED HIGH	Completion Date	Comments
Projects			
East Goose lk. Adaptive Mgnt.		2023	Upon Board approval for adpative mgnt. Project in May, staff has continue to work on boat launch construction, and will be starting public engagement later in 2020.
Goose Lk subshed project		2017-2021	Barr has produced plans for an alternate BMP (BMP14) as well as probable costs for an iron-enhanced sand filter near HWY 61 and Cedar Ave in White Bear Lake.
Lambert Creek - Ditch 14, branches		2020	S.E.H. has started the design work. This includes replacement of the sheet pile in the pond and design of the meander and treatment cells. MPCA loan was approved.
Birch Lake		2017-20	Construction is just about complete, waiting for backflow prevention valve, and Barr is coming up with a final punch-list for project items.
Wetland Assessment - Vadnais Sucker		2020	S.EH has the field work scheduled for week of June 12th.
Whitaker Wetlands		2020	Finishing final report and project updates
Programs			
Outreach		April-June	Social media active, lawns to legumes assistance. Tamarack Nature Center phenology partnership. New neighborhood spotlights in collaboration with residents on cost-share and stewardship efforts.
Education		April-July	Lambert Lake "Floodplain Friday" video series. Goose Lake video and education series. Birch Lake education sign.
Website		Ongoing	Lambert Lake meander, Birch Lake sand-iron filter web pages updated with videos, photos, and project descriptions. Carp management project page for West Vadnais, Pleasant Lake. New website consultations occuring with other watersheds.
WAV		May-July	Master Water Stewards assisting with cost-share photos, welcome-to-the-neighborhood letters, Leaf Pack macroinvertebrate monitoring, a rainbarrel workshop, junior water steward initiative.
Cost Share		ongoing	8 LL1 grants have been approved for 2020, and 4 LL2 projects, with LL2 fund being exhausted for 2020. Site visits on-going.
GIS		ongoing	Lambert Lake EAW, programs support
Monitoring		ongoing	2020 season has started
WCA		ongoing	Nord and Anderson Woods parcels in North Oaks are under review.

TEC Report to the Board
June 2020

Administration & Operation			
SLMPs		2020	Lake surveys and studies planned for 2020 on SLMP lakes.
Budget		April 2020	2021 Budget subcommittee scheudled for 6/12/20 (Jesse F is TEC rep. on subcommittee) with Board consideration of 2021 budget on 6/24/20.
Administration		April 2020	no comments
SSU		ongoing	After the 6/24 Board decision on 2021 budget, staff will begin work with consultant on defining the 2021 SSU rates.
Water Plan		ongoing	no comments

FINANCIAL SUMMARY as of 6/1/2020		
4M Account (1.10)	4M Plus (1.23)	Total
$78,584	$513,398	$591,982

CD's	4M Term Series	
	Maturity	Rate
Term series		

Budget Summary	Actual Expense YTD	2020 Budget amended	Remaining in Budget	% YTD
Operations	*$294,245*	*$697,800*	*$403,555*	42%
CIP	*$165,337*	$666,695	*$501,358*	25%
Total	$459,582	$1,364,495	$904,913	34%

800 County Road E E, Vadnais Heights, MN 55127
www.vlawmo.org; Office@vlawmo.org

To: VLAWMO Board of Directors

From: VLAWMO Staff

Date: June 18, 2020

Re: **IV. C. Project Updates**

1. **Frog and Toad Survey (Year 2):** The survey is underway for Year 2. The first 2 runs have been completed. The final run will take place between June 25-July 10, as specified by the MN DNR protocol. The Frog and Toad Story Map is available here: https://storymaps.arcgis.com/stories/71bb6ac948a248dfbc0675514cc0bddf

   *The Story Map has had over 800 views as of early June, 2020.

2. **West Vadnais Carp Project with Ramsey Washington Metro Watershed District:** The new pipe was put in place in June at the outlet of West Vadnais Lake. For that installation, the temporary carp barrier was briefly removed. Once installation was completed, a new barrier was installed. RWMWD supervised this construction and has provided updates to VLAWMO. Carp have been observed aggregating at the barrier this spring. The barrier is doing its job, preventing carp from moving into the Phalen Chain of Lakes where removal has been conducted previously. RWMWD and VLAWMO have been checking the barrier. Large aggregations that would be worth removal have not been observed this season.

Carp aggregating at the West Vadnais outlet barrier	New barrier and pipe completed (June 2020)
	

3. **Birch 4th and Otter Construction Update:** (TEC update for Tyler to update) The Birch Lake 4th Street & Otter Lake Road iron-enhanced sand filter project is nearing completion, and the majority of the project has been completed by the first week of June. On May 29th, the final seeding and erosion control blanket was being laid on the site. The filter itself is now complete, with the installation of a backflow-prevention valve, which was installed on June 9th. The valve is installed on the exit pipe of the filter and keeps high water levels at the outlet of wetland from going back up and into the filter, which could cause the filter to be counter-productive and export phosphorus. The iron-enhanced sand filter is now on-line and treating 55 acres of storm water that flows into the northeast corner of Birch Lake. The final project materials and quantities are being tallied for the 1st and final bill to be paid to Blackstone Contractors LLC to include all construction costs. With construction being complete, staff is monitoring how the filter performs and if any small changes are necessary to keep the project optimally functioning. Staff will soon begin water quality sampling of the project.

   VLAWMO and the City of White Bear Lake are working together to continue developing the restoration effort that was seeded this past winter. We are so grateful to Jane and Dale Bacon, who have large native planting areas in their yard, just down the street from 4th and Otter. Their plantings have been supported by previous VLAWMO cost share. Jane and Dale are thinning their plantings that have grown and filled in and are assisting the restoration effort by donating these native plants. On June 1, D. Tanner and C. Taillon transplanted more than 10 species of native plants in large clumps that should establish well and help to crowd out Buckthorn and Garlic mustard at the site. Planting, invasive species removal, and monitoring is ongoing at this site.

		
Erosion control blanket and seeding to the area following filter completion	Turtlehead clumps planted in May with Great blue lobelia in-between planted in early June	False dragonhead (aka Vivid) from the extensive planting areas at Jane and Dale Bacon's house. It looks a little droopy, but this was only 1 day post planting, and most of it had perked back up already

4. **Wilkinson Feasibility Study Update:** SEH has been making substantial progress on the Wilkinson feasibility study. VLAWMO is conducting this study in partnership with RCSWCD. VLAWMO and SEH are including North Oaks Company in project meetings because they are a major landowner in North Oaks. North Oaks Company is sharing plans for environmental projects (currently in planning stages) and concept plans for development. SEH also consulted with White Bear Township and Ramsey County to better understand upcoming road projects and other planned construction that could provide opportunities for additional BMPs that could be designed and grant ready as part of this feasibility.

   In analyzing the existing conditions of the Wilkinson Lake watershed, SEH initially identified 40 potential sites to locate water quality BMPs that would treat for total phosphorus (TP). They conducted a desktop analysis to identify these sites. They used previously completed reports and monitoring done by VLAWMO and others (e.g., the TMDL, monitoring from the automated sampler, the Retrofit report by RCD). They developed criteria to identify sites including hydrology, soils, land ownership, anticipated P load reduction, wetlands present, planned construction, and others. In working through the analysis a set of criteria were identified to analyze each site by to assess the viability of each site. "Viability" in this sense is a combination of how likely a project could be constructed at a site as well as how effective a BMP at this location might be at reducing the overall load of TP to Wilkinson Lake. The analysis yielded 11 of the initially identified 40 sites as having a "HIGH" viability rating.

   Maps for the 40 sites identified and the 11 priority sites are included in the packet. SEH is now waiting for input from VLAWMO to further limit sites and proceed into the design phase.

5. **Pleasant Lake Sedimentation Study: Core Sample & Bathymetry:** Barr Engineering is making progress with the study, as planned this spring/summer. They have finished the bathymetry and sediment core data collection. They conducted 2 separate trips to 1) collect bathymetry data and 2) collect sediment cores. VLAWMO appreciates the involvement of SPRWS and the Ramsey County Water Patrol in helping these projects go smoothly.

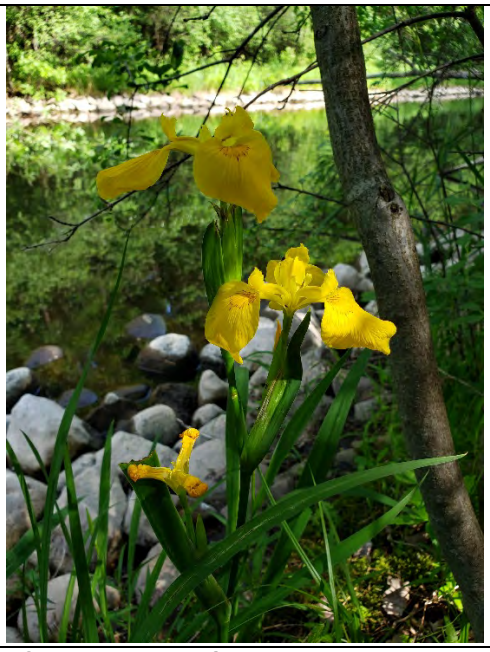
6. **Yellow iris removal:** Yellow iris is an invasive species present in the Vadnais Lake Area Watershed. Many people do not realize that it is invasive and are surprised to learn that, especially because it is considered so pretty. We only have native Blue flag iris in Minnesota, which is purple/blue and grows in shoreline and wetland areas. Yellow iris is highly aggressive, forms large monoculture stands, and outcompetes the native iris in areas where it overlaps. Yellow iris is established on Wilkinson Lake, Deep Lake, and in clumps on Pleasant Lake. It has been reported by residents in North Oaks on Mallard Pond. VLAWMO staff observed and removed 2 small clumps on the channel flowing into East Vadnais. VLAWMO staff also observed a small clump in a planting area on Birch Lake. Staff contacted the resident, and the Yellow iris was promptly removed by the resident. Prompt action was very much appreciated.

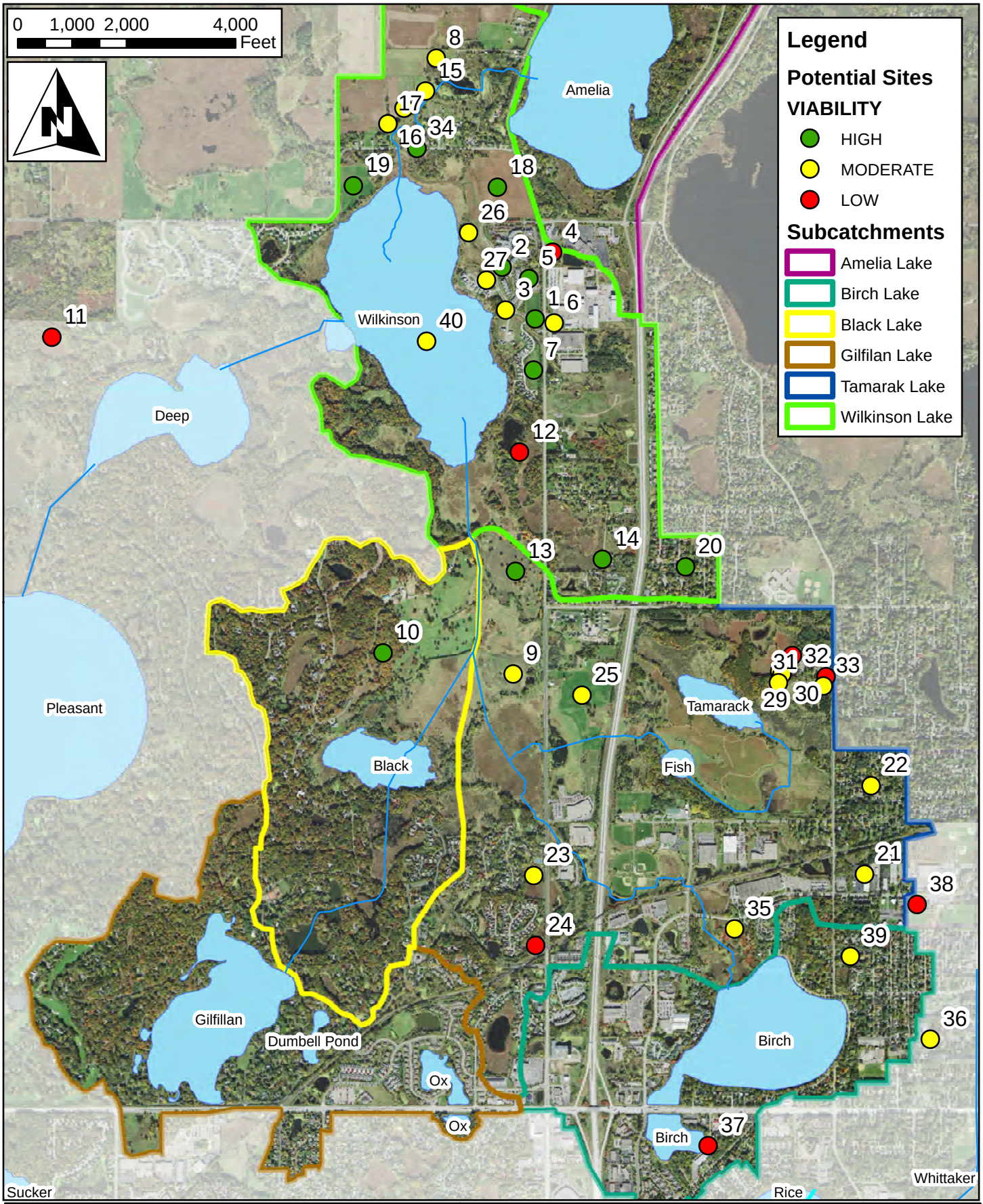
   In 2019, VLAWMO staff surveyed Deep Lake for Yellow iris and obtained a permit for removal from MN DNR. A large removal effort with a pontoon was planned for 2020 but could not be carried out with appropriate social distance in place. A smaller effort was undertaken during June 2020, when Yellow iris are blooming to make ID rapid and easy, with coordination from residents in North Oaks (A huge thank you to Susan Miller and Diane Gorder!). A large stretch of shoreline was cleared of more than 300 pounds of Yellow iris. Yellow iris can be removed by hand, does not require chemical treatment, and the only disposal required is that it is composted above the Ordinary High Water Level. Yellow iris removed was composed on NOHOA property, above the OHWL. This effort will be reported to MN DNR, as part of the invasive species removal permit, and continued effort will be planned for 2021.

7. **Education and Outreach:** Summer activities adapted for COVID
   a. Neighborhood cost-share tour: self-guided, Master Water Stewards - Aug 22-23
   b. Rainbarrel installation workshop, Master Water Stewards (Date TBD)
   c. VLAWMO BMP virtual tour/story map (August)
   d. Education signage for Birch Lake 4th and Otter sand-iron filter
   e. New picture post at Tamarack Nature Center in partnership with TNC staff: Citizen science that accommodates for social distancing
   f. Lambert Pond and Meander outreach: “Floodplain Friday” series on social media
   g. Consulting with watershed peers and planning a new chapter in Goose Lake education and outreach.
   h. Underwater lake video captured to compare water clarity visuals between lakes
   i. Healthy Soils Blue Thumb webinar: September

8. **Goose Subwatershed Watershed Based Funding (WBF) Project**

   Since the Board last voted at the April meeting to move ahead with selecting BMP 14 for project implementation and construction, as identified by Barr Engineering and staff as the most cost-efficient project, staff has also been vetting exploring various less-expensive project options. These projects would meet the grant parameters of removing 3-6 lbs of total phosphorus per year, while being drastically less expensive. Several hurdles for the selected BMP 14 iron-enhanced sand filter at the White Bear Terrace apartments were encountered. The proposed project has a limited drainage area for treatment, technicalities of the filter would require more intensive engineering and design, further increasing costs, and the location is split between 3 different ownerships, including MnDOT right-of-way and Bus Rapid Transit station that is at least 3 years out before construction is slated. Staff is anticipating having additional information on alternative BMPs for a 2021 construction at the August Board meeting.

	
Native Blue flag iris growing in Vadnais-Sucker Park	Small clumps of Yellow iris becoming established in Vadnais-Sucker Park (These were removed)
	
Large, well-established shoreline area dominated by Yellow iris	The same shoreline area with more than 300 pounds of Yellow iris removed



Path: C:\Projects\Wilkinson Lake\GIS\MXD\Figure_2.mxd

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
PHONE: (651) 490-2000
FAX: (888) 908-8166
TF: (800) 325-2055
www.sehinc.com

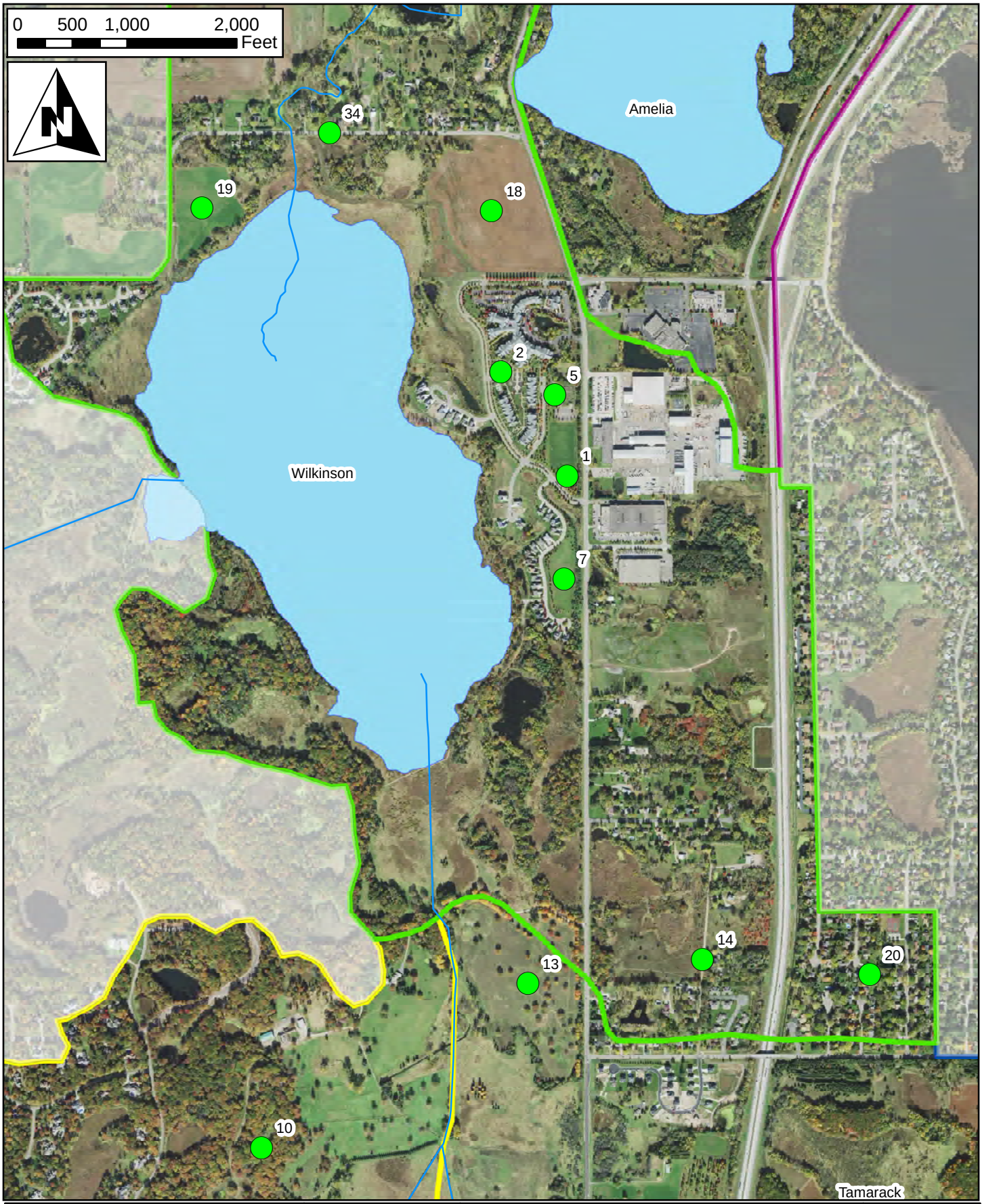
Project: VADLA-153927
Print Date: 5/8/2020

Map by: mchristenson
Projection: NAD 1983 UTM Zone 15N
Source: MnGeo, SEH, VLAWMO

Potential Sites Map

Wilkinson Lake Feasibility Study
Ramsey and Anoka County, MN

Figure 2



Path: C:\Projects\Wilkinson Lake\GIS\MXD\Figure_1.mxd

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
PHONE: (651) 490-2000
FAX: (888) 908-8166
TF: (800) 325-2055
www.sehinc.com

Project: VADLA-153927
Print Date: 5/8/2020

Map by: mchristenson
Projection: NAD 1983 UTM Zone 15N
Source: MnGeo, SEH, VLAWMO

High Viability Sites Map

Wilkinson Lake Feasibility Study
Ramsey and Anoka County, MN

Figure 1

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

Date: June 18, 2020

To: VLAWMO Board

From: Phil Belfiori, Administrator

Re: Status Report on Board Agenda Item V.A. 1. Consideration of 2021 Budget

Due to unanticipated events that occurred for one of the 2021 Budget/Finance Subcommittee members, the Subcommittee meeting was rescheduled to Friday June 19, 2020 at 10:30am. After the completion of this rescheduled subcommittee meeting, the final recommended 2021 Budget packet will be delivered in person to each board member. Thank you for your understanding.

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

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(651) 204-6070

To: The Board of Directors
From: Dawn Tanner, Program Development Coordinator

Re: V. B. 1. Lambert Lake Project Progress and Cost Estimates for Construction

Project update from April (provided for review):

Lambert Lake EAW: *VLAWMO staff have continued working closely with SEH and MN DNR on the Environmental Assessment Worksheet (EAW). The EAW was determined to be necessary following the February Board meeting. The current draft of the EAW will be included in the packet if MN DNR is able to respond with respect to the rare species features and required concurrence for mitigation during construction. SEH is approaching 90% designs and construction plans for the meander. These designs will also be included in the packet if they are ready in time.*

Online Updates & Press:

The Lambert Pond and Meander Project webinar is posted on the project page and includes regular updates: http://www.vlawmo.org/projects/maps/project-map/lambertlakemeander/

VLAWMO was highlighted in the MPCA Waterfront Bulletin:
https://content.govdelivery.com/accounts/MNPCA/bulletins/28da028

The Lambert Lake meander was included in an article in the Star Tribune called *Natural curves of streams restored*:
http://e.startribune.com/Olive/ODN/StarTribune/shared/ShowArticle.aspx?doc=MST%2F2020%2F05%2F10&entity=Ar01302&sk=404CD608&mode=text

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Attachments included in the packet:

1. EAW with most recent draft engineering design/plans
2. Resolution 03-2020
3. Finding of Fact and Conclusions resulting from EAW process
4. Memo from SEH regarding cost recommendations, including previous geotechnical memo presented to the Board in August, 2019
5. Memo from SEH regarding additional engineering costs and explanation dated June 16, 2020
6. Grant contract budget for consultation
7. Cost estimate for project construction prepared by SEH

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Recent communication and stakeholder meeting

A stakeholder meeting was held remotely on May 20, 6:00-7:00 pm. The meeting was co-hosted by VLAWMO, SEH, and the City of Vadnais Heights. The meeting was announced in the VLAWMO website, by an ad in the Press Pubs, and direct postcards were sent to residents living in the area. View the meeting here.

Environmental Assessment Worksheet (EAW) update and Board action needed:

Since the April Board meeting, staff have continued EAW and permitting discussions with MN DNR and SEH. Staff conducted an initial NHIS inventory and communicated results with MN DNR. Staff used USFWS resources to select native wetland/shoreline flowering plants that could support Rusty-patched bumble bees, at the recommendation of MN DNR. Species of concern information was communicated to USFWS and guidance requested as to how to best proceed and accommodate requirements in the construction planning and schedule. The full EAW was sent to TEC and Board and is included in the current packet.

VLAWMO received concurrence from MN DNR on the NHIS inventory for species of concern on 4/30/2020 (ERDB #20200248). The formal letter of concurrence from MN DNR is included in the EAW document that is included in the current Board packet. Following discussions with MN DNR staff and a virtual site visit with photos of the ditch, it was determined that the area is not suitable for hibernating Blanding's turtles. That means that meander construction will be allowed to be completed with a single mobilization in the winter, as originally planned, with silt fencing installed in the fall as an added precaution. The alternative would have been phasing to dig the meander during the winter, maintain fill onsite, and incorporate sediment/abandon the old ditchline in the spring. The process working with MN DNR to make these determinations added time and consultation effort with SEH to prepare possible alternative plans if required.

Staff completed the EAW with consultation and review from SEH. The EAW was published in the Environmental Quality Board (EQB) Monitor on May 18, 2020. A link to the EQB Monitor is provided here. Notice was

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published in Press Publications as required on May 20. The Comment period ran from May 19-June 17, 2020. Comments received are included in the attached Finding of Fact and Conclusions and incorporated into the decision for Resolution 03-2020.

Recommendation: Staff requests that the Board approves Resolution 03-2020 ratifying the Finding of Fact and Conclusions that resulted from the Lambert Lake EAW process.

Permit update:

Permit discussions are continuing with MN DNR and USACE. The project involves amending the previous permits from the large project completed in 2004 in both cases. The original MN DNR permit is 2004-3102. USACE asked us to use two permit numbers. The original permit is MVP 2003-02114, and the update is MVP 2019-02143. With preliminary discussions complete, SEH is continuing communication and responses with MN DNR and USACE. VLAWMO received an invoice from MN DNR for $3,000 for the Water Permit for channel realignment. That was paid in May, has been received by MN DNR, and the permit is proceeding forward.

Financial update:

Project estimates are coming in higher than originally anticipated for sheetpile replacement and engineering for the project. The previous estimate for sheetpile was presented to the Board with higher costs than expected due to the extreme depth required (up to 32 feet in some places). Depth was determined as a result of the resistivity study that was conducted during summer 2019. The original estimate from the geotechnical engineer was for materials. A full cost estimate was prepared by SEH and is now available for consultation. The cost estimate will require an amendment to the MPCA Clean Water Partnership Loan, as anticipated. It is higher than previously discussed however. The Loan program will allow us to apply for up to twice the original amount in the application. The current budget estimate does fit within the parameters of the current loan and amendment buffer. Staff plans to wait to amend until construction bids are received so that the amendment process only has to happen once. This plan to wait to amend has been communicated with MPCA, both with our loan manager and our project manager, and to the Board previously. Full cost estimates from engineering are included in the packet. Memos with recommendations from SEH are included in the Board packet and include the previous geotechnical memo recommendation because of the impact on final costs.

Our grant spreadsheet is included in the packet attachments with the cost estimate spreadsheet to allow clear discussion of costs related to the grant contract.

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Engineering costs are also higher than originally anticipated. SEH provided a scope of work and cost estimate for $38,800. As of our invoice from SEH dated 6/2/2020, we have paid $34,077.15. SEH estimates that it will cost an additional $11,900 to complete remaining permitting/responses, final design/specs, and provide support/supervision for the bid process (See attached memo dated June 16, 2020).

Higher engineering costs resulted from back-up planning during the NHIS inventory/formal MN DNR concurrence to mitigate possible risks to species of concern found in the area. During the process, VLAWMO and SEH needed to fully consider a 2-stage phased construction process whereby the new channel would be constructed in the winter, sediment would be maintained on-site until spring, and the new channel would be brought on-line/sediment incorporated into the old channel in the late spring or summer. This was an accommodation that needed to be considered for possible Blanding's turtles that could be using the site for winter hibernation. During a photo tour of the site between VLAWMO staff and MN DNR, it was determined that the site is not currently suitable for hibernation due to shallow water, mucky substrate, high nutrients, and algae blooms that would create anoxic winter conditions. Time and effort were required to work through this process. Engineering backup plans were required to deal with the range of possibilities. VLAWMO also requested co-hosting and presentation by SEH in the stakeholder meeting. That required prep time, partner meetings, and presentation time/response to questions. These tasks were not included in the original engineering scope. A memo from SEH explains the additional financial support requested.

Work is also underway with the UMN researchers. The Twin Cities and Duluth labs both needed to obtain designation as essential to continue efforts as planned. Those designations were received from University leadership in May. Lab work began in early June in Duluth. Prototype design is underway in the Twin Cities. Regular update meetings are being held via Zoom to include both campuses and engineering. VLAWMO has paid a first installment of funds to cover these tasks.

Recommendation: Staff requests approval for the additional $11,900 in engineering funds.

July 2013 version

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.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 19.
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: Vadnais Lake Area Water Management Organization (VLAWMO) Bacteria, Nutrient, and Sediment Reduction Project

Figure 1: A range of views along the ditch that flows out of Lambert Lake stormwater retention pond. This is a close-up view of part of the construction area that is the focus for the meander.

Figure 2: Schematic that shows the path of the meander with respect to the wetland area and Lambert Lake stormwater retention pond (at the top right).

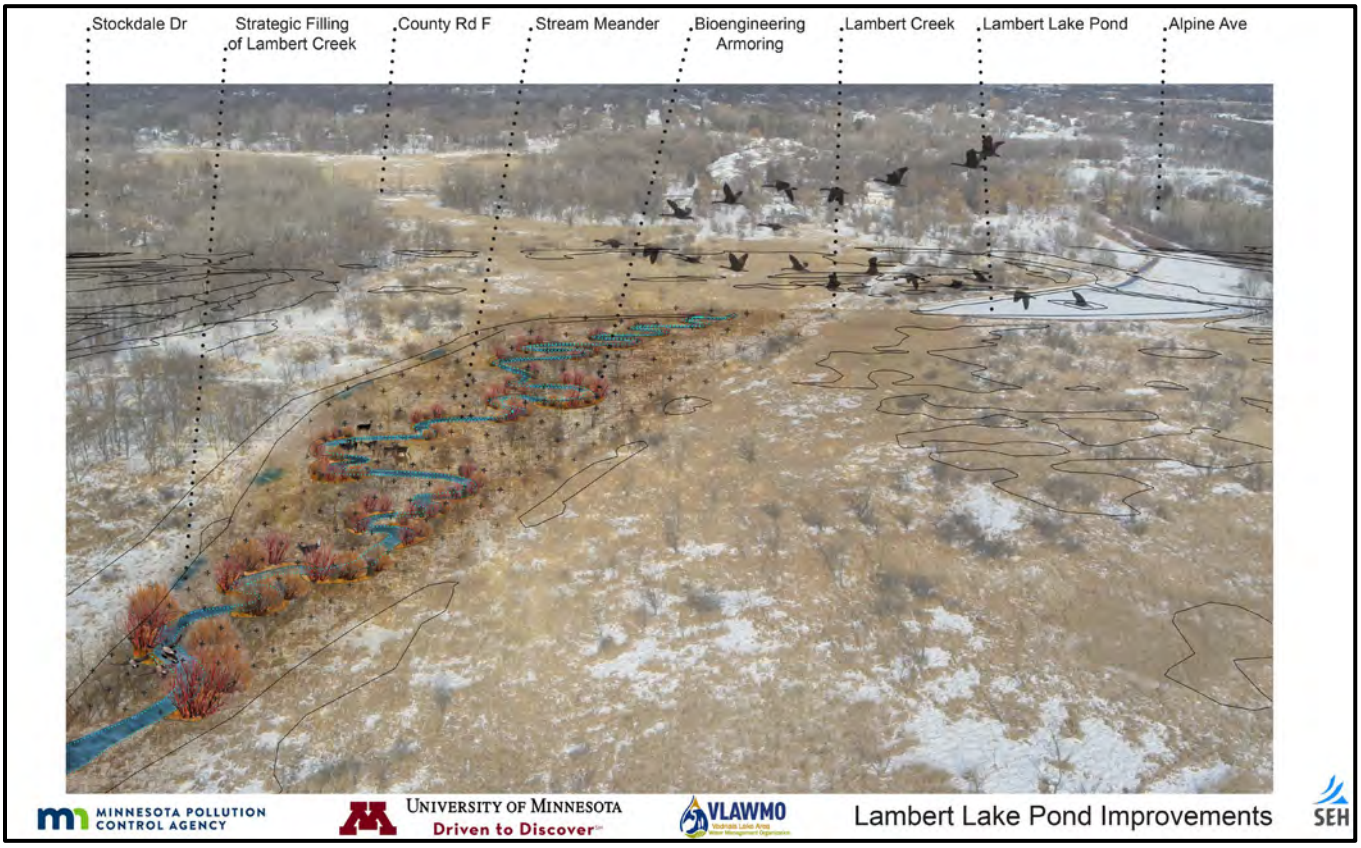
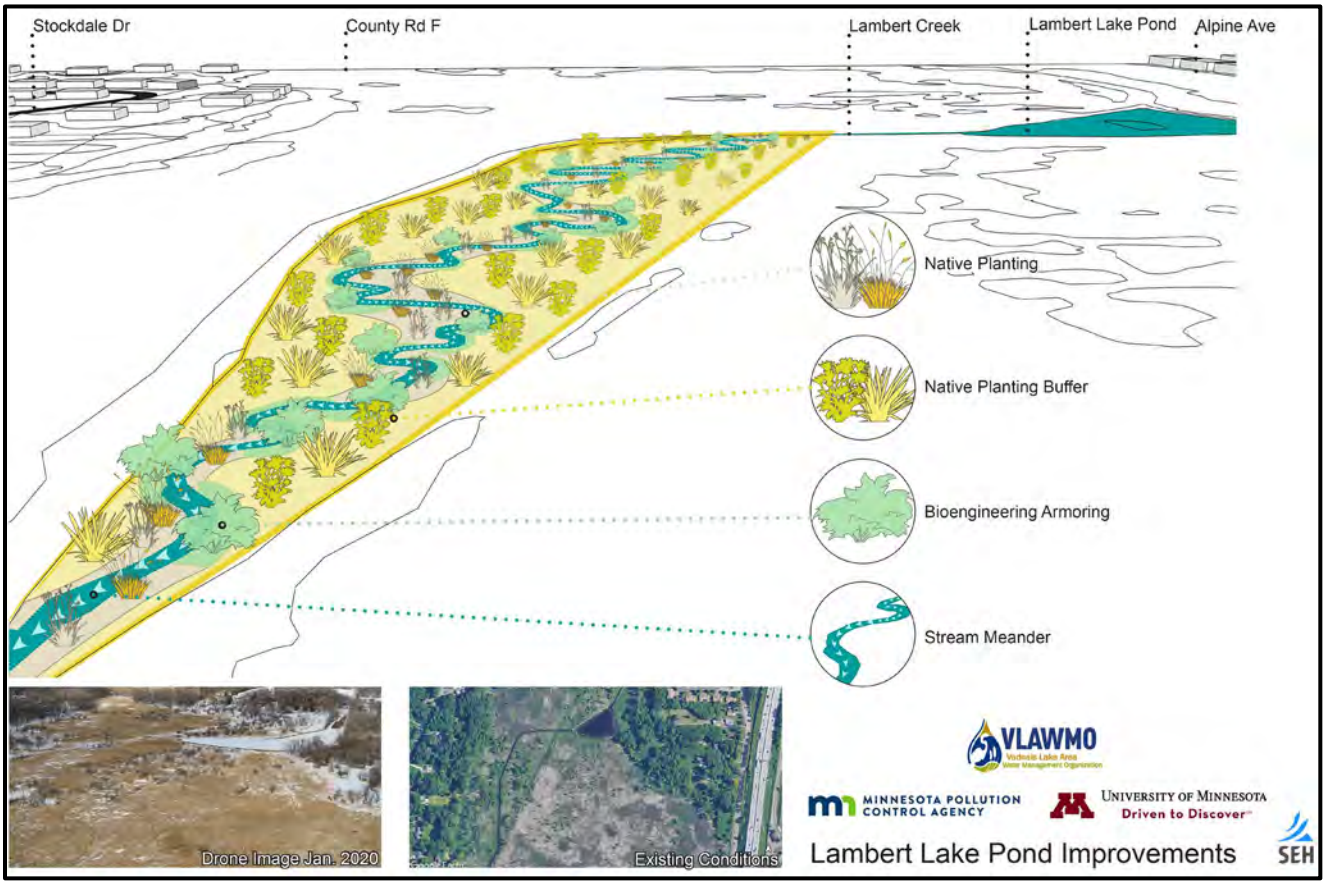


Figure 3: Schematic of new meander, simplified for easy viewing.



2. Proposer: VLAWMO	3. RGU: VLAWMO
Contact person: Dawn Tanner	Contact person: D. Tanner (VLAWMO)
Title: Program Development Coordinator	Title: Program Development Coordinator
Address:800 East County Road E	Address: 800 East County Road E
City, State, ZIP: Vadnais Heights, MN 55127	City, State, ZIP: Vadnais Heights, MN 55127
Phone: 651-204-6074	Phone: 651-204-6074
Fax: N/A	Fax: N/A
Email: dawn.tanner@vlawmo.org	Email: dawn.tanner@vlawmo.org

4. Reason for EAW Preparation: (check one)

Required:
- ☐ EIS Scoping
- **X Mandatory EAW**

Discretionary:
- ☐ Citizen petition
- ☐ RGU discretion
- ☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

EQB rule category: 4410.4300, subpart 26, Stream diversion

This Project reaches two thresholds requiring a mandatory Environmental Assessment Worksheet. In the Streams and ditches category (4410.4300, subpart 26), this project will divert or realign more than 500 feet of a natural watercourse with a total drainage area of 10 or more square miles. The project will also trigger a mandatory EAW in the next category, Wetlands and Protected Waters (4410.4300, subpart 27). The Project will change the course and cross section of one acre or more of a protected water (DNR 62-30P). While the purpose of the Project is to improve water quality, restore wetland functions lost when this wetland was ditched 90 years ago, reconnect the ditch to its floodplain, and address flooding issues adjacent to this urban wetland, VLAWMO holds itself to the same high standard that would be expected of any project proposer. No petitions by landowners or agencies have been filed.

5. Project Location:

County: Ramsey County
City/Township: Vadnais Heights
PLS Location (¼, ¼, Section, Township, Range): NW ¼, NW ¼, S: 28, T: 30, R: 22
Watershed (81 major watershed scale): HUC8: 07010206
GPS Coordinates: 45.0616895, -93.0626052
Tax Parcel Number: 283022230001

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project and site plans showing all significant project and natural features: Attachment #1;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable): Attachment #2; and
- Pre-construction site plan and post-construction site plan/SEH 90% design: Attachment #3.

6. Project Description:

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

The Vadnais Lake Area Water Management Organization (VLAWMO) received MPCA funding for improvements along County Ditch #14 (Lambert Creek), which is a tributary of the St. Paul Regional Water Services' final impoundment reservoir, East Vadnais Lake. The Project includes sheetpile replacement, a meandered channel, and the addition of biochar treatment cells to address the bacteria impairment.

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.

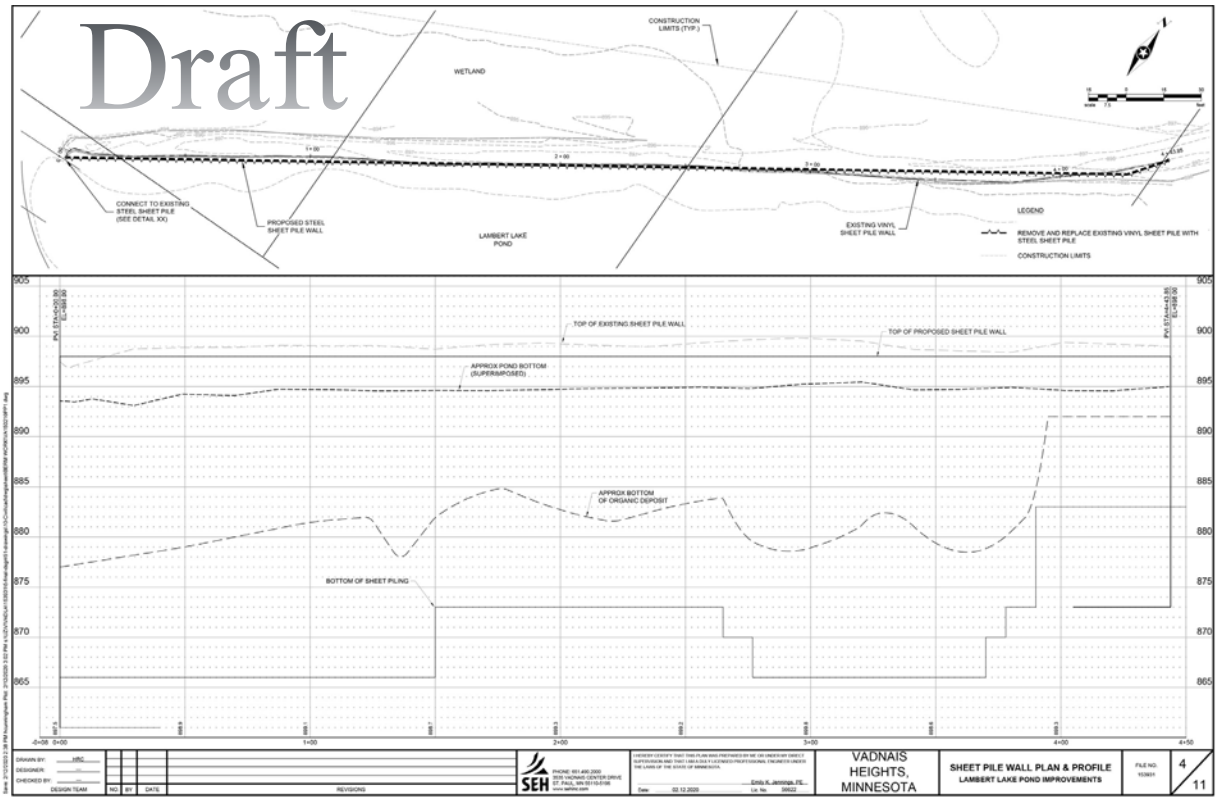
This Project is an amendment to a project that was completed at the same site in 2004. The earlier project included creating a new ditchline, attempting to install sheetflow across the wetland, building a stormwater retention basin that was reinforced with steel sheetpile on the south end and vinyl sheetpile on the north end, constructing an access berm on the north end of the pond, and building an access road on the eastern side of the site. These structures are in place now. Because of the previous work at the site, new infrastructure is not needed.

A tentative construction schedule is outlined here. This schedule depends upon timely completion of permitting (currently underway). Bidding for the project will be conducted in September. Fall installation of BMPs will begin as early as mid-September, 2020. Construction is planned for winter 2020-2021, and planned to be conducted from November 1-March 1. Initiation of construction will depend upon suitable weather conditions. Meander construction and sheetpile installation require frozen peat for equipment access to the site. Construction mats will be used if necessary to limit soil compaction and disturbance. Vegetation work will be completed April-July, 2021.

The steel sheetpile on the south end of the pond continues to function well and does not need updating. The vinyl sheetpile on the north end of the pond has exceeded its lifespan (~10-15 years) and has been heaved up from the natural freeze/thaw cycle because it was not anchored into solid substrate. At the time when the vinyl sheetpile was installed, resistivity imaging was not widely available, so it was not known that the sheetpile would need to be installed up to 32 feet to reach solid substrate. A resistivity study was conducted during summer 2019 and allowed mapping of the peat depth to sand and clay. The resistivity study informed design of replacement of the failing vinyl sheetpile with steel (Figure 4). The sheetpile replacement is a reconstruction project to an existing structure that is not of historical, cultural, architectural, archaeological, or recreational value. As such, by itself, the replacement would be exempt from the EAW process. However, it is included here because it is part of the overall footprint of the project, and construction to replace sheetpile and build the meander will happen at the same time during winter when the wetland is frozen and heavy equipment can safely access the site.

Replacement of the sheetpile on the north end of the pond is a flood control and maintenance issue. If the sheetpile was not replaced, it could fail and result directly in flooding to the area.

Figure 4: Replacement sheetpile depths across the length of the replacement area



The new meander is the primary focus of this EAW because it involves new construction between the original and previous ditch channels, fill incorporated into the old channel to mimic natural processes and restore the ditchline, and this will involve impacts to existing wetland area. The overall goal of the project is restoration of the site and increased resilience during flooding events. A multifaceted approach has been engaged so far including consultation with experts in: hydrology, vegetation restoration, species of concern, soils, and engineering. Views from these experts have been incorporated into the design and plan for the site.

Currently, the creek runs a straight path dug to the west side of the Lambert Lake wetland, as part of the prior Lambert Lake Project. Prior to the current alignment, the historic creek alignment ran through the middle of the Lambert Lake wetland area (realigned to a straighter ditch for rapid conveyance in 1916). The new creek alignment, spanning from the Lambert Lake Pond outlet to the convergence of the historic creek and the current creek path, is planned to meander throughout, restoring the creek to a more natural alignment and allowing the Lambert Lake area to benefit from vegetation restoration, habitat and ecological improvements, and improved water quality (Figure 5). The new planned meander follows guidelines for a Stream Type E, according to the Rosgen Stream Classification (Table 1).

The pre-altered stream alignment is unknown. Historical photography dating back as early as 1940 indicates a straightened channel. The meander design was based around the current Lambert

Lake wetland characteristics and landscape, as well as the overall drainage area and flow characteristics. The wetland area is low gradient and has a wide floodplain. The proposed meander will follow the low gradient wetland and will meet the entrenchment ratio, W/D ratio, and sinuosity of a stream type E. The historical photography does not show scarring or other indications of a historic braided channel pattern or other pattern.

Figure 5: Diagram of new meander path compared to current ditchlines and project area

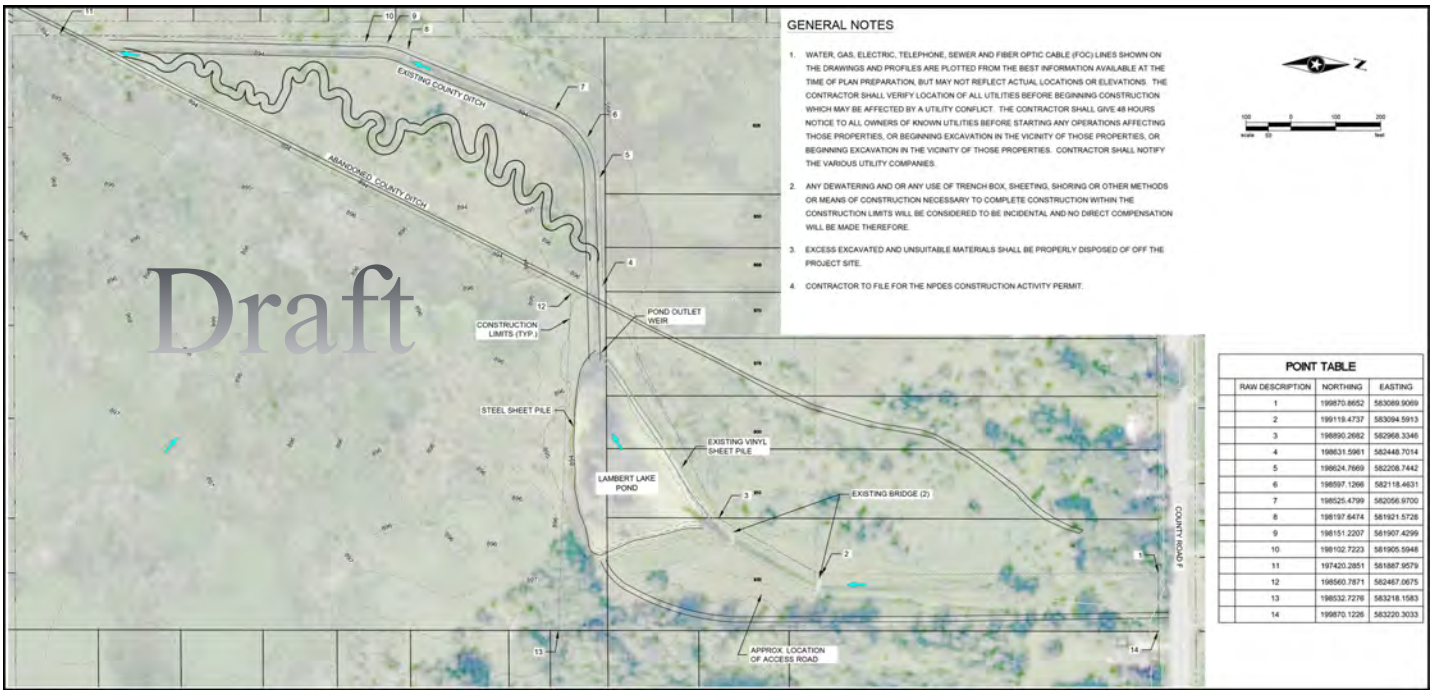


Table 1: New Creek Alignment Properties Compared to Stream Type E (Rosgen Classification)

Stream Type	Description	Entrenchment Ratio	W/D Ratio	Sinuosity	Slope	Soils/Features
E	Low gradient, meandering riffle/pool stream with low width/ depth ratio and little deposition. Efficient and stable. High meander width ratio.	>2.2	<12	>1.5	<0.02	Broad valley/meadows. Alluvial materials with floodplains. Highly sinuous with stable, well vegetated banks. Riffle/pool morphology and very low width/depth ratios.
Lambert Creek Meander (E)	Low gradient design with meandering stream through an extensive floodplain with gentle slopes. Low W/D ratio.	Flood Prone Width = 1000+ Bankfull Width = 15 Entrenchment Ratio = 66.67	Width = 15 ft Depth = 1.75 ft W/D = 8.57	Straight Line Dist. = 1250 ft Meander Dist. = 2020 ft K = 2020/1250 = 1.6	Up Inv. = 894 Down Inv. = 890.43 Length = 2020 ft Slope = 0.002 ft/ft	High sinuous design in a well-vegetated floodplain. Retention pond upstream; therefore, minimal bed load (sediment starved) so slightly oversized cross section. Stable channel capacity.

The current ditch section of the project area has an approximate bankfull carrying capacity of 80 cfs. Based on recent field visits, the creek segment just upstream of Lambert Lake Pond has an approximate bankfull carrying capacity of 42 cfs. The proposed meander will be designed to meet the carrying capacity of the upstream segment as to not cause any flooding or backwater concerns upstream. It will also reconnect the steam to its floodplain to create a more functional system with flood storage. Historically, the residential properties adjacent to the upstream segment have had structural flooding occurrences. The proposed section will have a great improvement in the interaction with the wetland areas adjacent to the creek without exacerbating flooding concerns upstream.

There are various data available for the Lambert Lake area watershed, including the watershed's XPSWMM model, the City of Vadnais Heights Surface Water Management Plan (SWMP), and available Streamstats and DNR data. Peak flow rates from the watershed XPSWMM Model and USGS Stream Stats information is summarized in Table 2, just downstream of the Lambert Lake Pond including Branch Ditch #3, for reference. The peak flow rates from the watershed's model are higher than those listed by Streamstats for more frequent events. The watershed's model flow rates are being used as the primary data for design as they represent the conveyance of the watershed as modelled, while the Streamstats information are based on regression equations, scaled to the watershed characteristics as defined by USGS. The Streamstats characteristics may not represent the latest development, storage areas, and exact conveyance characteristics of the Lambert Creek watershed.

Table 2: USGS Stream Stats Information, just downstream of the Lambert Lake Pond

Statistic	Peak Flow from Watershed XPSWMM Model (cfs)	Peak Flow from Streamstats (cfs)
1 Year Peak Flood	49.1	-
1.5 Year Peak Flood	-	23.1
2 Year Peak Flood	61.6	29.7
5 Year Peak Flood	74.5	47.8
10 Year Peak Flood	83.8	62.1
25 Year Peak Flood	94.5	81.6
50 Year Peak Flood	101.5	97.0
100 Year Peak Flood	109.2	114.0

To aid in design, a search for a reference reach with similar characteristics and landscape within the Vadnais Creek watershed was investigated; however, it was found that Lambert Creek has been subject to significant straitening over time. Due to this, the search was extended outwards from the Lambert Creek watershed. There were two reference reaches identified for the proposed project outside of the watershed area, including:

- Sunrise River and Unnamed Ditch tributaries AUID: 07030005-538 (Stacy/Chisago City, MN)
- Rice Creek from Unnamed Lk (02-0041-00) to Long Lk AUID: 07010206-583 (Indian Hills Lane, Circle Pines, MN)

These reference reaches have similar characteristics and landscape to Lambert Lake. A summary of the characteristics of reference reaches is included in Table 3.

Table 3: Reference reaches

Stream	Entrenchment Ratio	W/D Ratio	Sinuosity	Slope	Soils/Features
Rice Creek (Rice Creek Regional Trail to County Rd J) (E)	Flood Prone Width = 885 Bankfull Width = 40 Entrenchment Ratio = 22	Width = 40 ft Depth = 4 ft W/D = 10	Straight Line Dist. = 2900 ft Meander Dist. = 4900 ft K = 4900/2900 = 1.7	Up Inv. = 880 Down Inv. = 878 Length = 4900 ft Slope = 0.0004 ft/ft	Restoration project that addressed flooding concerns and nutrient impairments, reconnecting the creek to the adjacent wetlands and improving in-stream habitat (http://eml9g2kib3430igb0341sat1.wpengine.net dna-cdn.com/creek-meander.pdf)
Rice Creek (County Rd H to County Road I) (E)	Flood Prone Width = 700 Bankfull Width = 40 Entrenchment Ratio = 17.5	Width = 40 Depth = 4 W/D = 10	Straight Line Dist. = 4820 Meander Dist. = 9070 K = 9070/4820 = 1.9	Up Inv. = 876 Down Inv. = 874 Length = 9070 Slope = 0.0002	
Sunrise River, West Branch (From Falcon Ave N to Lyons St NE) (E)	Flood Prone Width = 350 Bankfull Width = 20 Entrenchment Ratio = 17.5	Width = 20 Depth = unknown W/D = unknown	Straight Line Dist. = 5280 Meander Dist. = 9020 K = 9020/5280 = 1.7	Up Inv. = 886 Down Inv. = 882 Length = 9020 Slope = 0.0004	The Sunrise River West Branch is just upstream of a series of shallow reservoirs associated with the Carlos Avery State Wildlife Management Area. All basins within the West Branch watershed are classified as shallow. The River is highly sinuous and appears to have stable, well vegetated banks and broad floodplain.

Meander construction and sheetpile installation will occur during the winter months to allow for access to the wetland areas. Winter construction will minimize damage to vegetation and wetland areas, with mats if necessary to limit soil compaction and disturbance. A staging area will be specified within the field, and the contractor will be allowed to only use the staging area for material and equipment storage. Fueling and equipment maintenance will not be allowed on-site. If stockpiling is needed on-site, the contractor must get approval from the engineer in the field. The sheetpile removal and installation will be staged such that removals will not precede installation such that a continuous barrier cannot be established within a 24-hour period. During construction, temporary sediment control devices will be utilized to control sediment at leaving the site and establish a clear perimeter of limits. Following disturbance, temporary erosion control devices will be in place to promote revegetation of any disturbed areas. These devices will be removed following revegetation. All erosion control materials will be limited to wildlife-friendly and plastic-free materials. Equipment will be cleaned and inspected to limit the spread of invasive species. Areas will be revegetated with appropriate BWSR-approved, noxious weed-free native seed mixes.

The proposed meander is designed to incorporate vegetation restoration and habitat and ecological improvements. The plant community of the Lambert Lake wetland area is currently dense Phragmites/cattail. Vegetation establishment following meander construction will be important to stand up to these aggressive species. A fast growing native planting species will be utilized in disturbed areas and bio-engineering armor through live stakes such as Willow or Red Osier Dogwood, for example, on strategic meander curves will be utilized through the meander length. The native plantings and bio-engineering armor will provide increased aquatic habitat for the otter population that has been observed in the Lambert Lake area. The vegetation will provide the otters a more accessible buffer from the creek to play, hunt, and build their dens. Otters build their dens by tunneling close to the water's edge to ultimately create a chamber for resting and protecting their young. The meander channel cross section coupled with the vegetation plan will provide ample locations for burrowing. Other use of logs or brush piles are being considered for increased den locations.

c. Project magnitude:

Total Project Acreage	~14 acres
Linear project length	2,020 feet
Number and type of residential units	N/A
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 – Wetland/natural area (in sq. feet)	~14 acres
Structure height(s)	N/A

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 this project is to repair and enhance failing infrastructure that otherwise poses a flooding risk and implement new BMPs to remove bacteria, increase storage, provide resilience, and improve ecosystem function on Lambert Creek, which is an impaired stream that flows into East Vadnais Lake, the a major reservoir for St. Paul's drinking water supply. This project will remove bacteria, nutrients, and possibly heavy metals from the system. It will also allow sediment deposition, through reconnection to the floodplain, and improve wetland function for filtering and storing water. The proposed section will improve interaction with the wetland areas adjacent to the creek without exacerbating flooding concerns upstream.

Information has been gathered on Lambert Creek beginning in the early 1980s. In 1991, Lambert Creek was the focus of an analysis of sediment stratigraphy, phosphorus cycling, sediment phosphorus, and phosphorus content of interstitial waters (Engstrom 1991). This work was conducted to better understand the consequences of decades of dumping of sewage sludge into Lambert Creek. The sewage sludge was deposited into Sobota Slough and Goose Lake. The waste traveled down the creek, collecting in wetland sediments. Additionally, the high bounce in the system is a result of extensive ditching that channelized flow and reduced residence times reducing the possible function of the wetland network in filtering out pollutants. These wetlands are sustained by diffuse nonpoint sources and exceed what could be retained by internal nutrient cycling. As part of this proposal, we are seeking to reverse detrimental modifications that were done in past decades to restore wetland function and improve water quality.

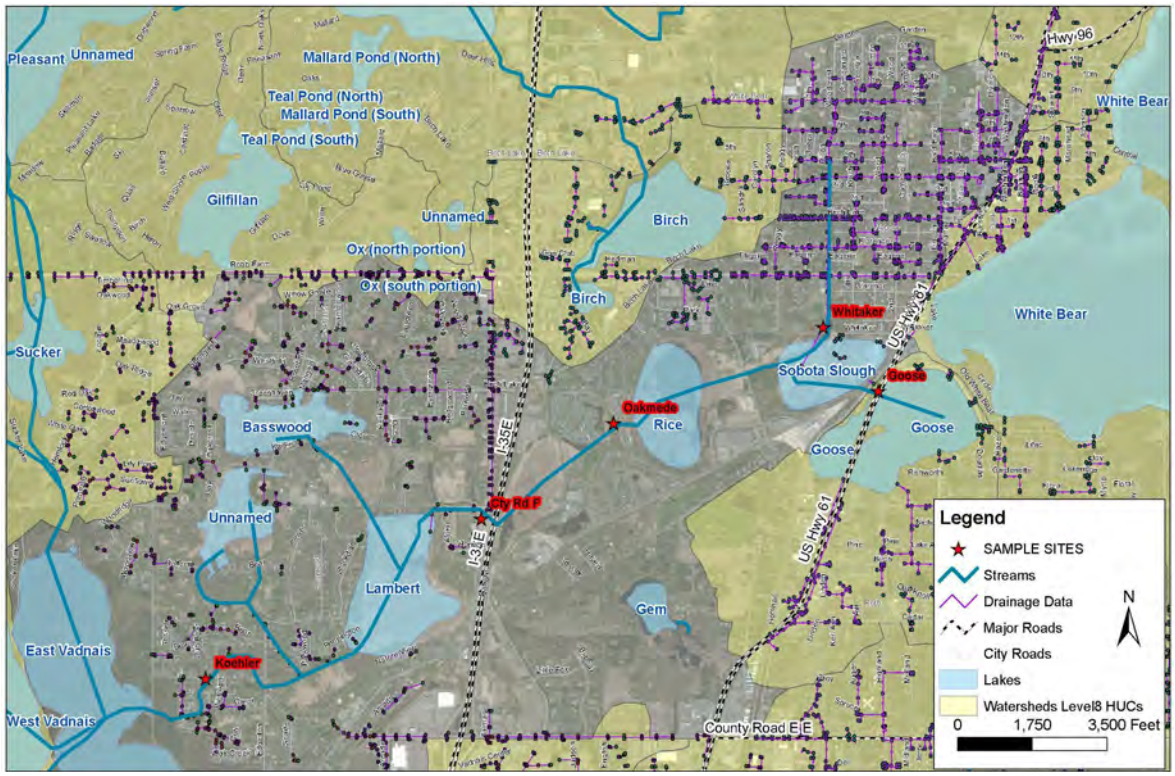
Bacteria loading to Lambert Creek is predominately from nonpoint urban stormwater with a small contribution to the load from wildlife and canine pet waste within the watershed. As part of the TMDL for Lambert Creek, recommendation for priority load reduction strategies included streambank restoration, infiltration basins, and researching the source of bacteria. The 107 BMP cost shares that have been added in the subwatershed since 2007 were prioritized to help meet the goals of reducing nonpoint stormwater delivery into the creek. Implemented cost shares with local citizen involvement include: pervious pavement, infiltration basins, and stream stabilization at Oakmede, Lower Lambert, and Koehler.

The most critical pollution sources come from stormwater from MS4s: Gem Lake City, MN DOT, Ramsey County, Vadnais Heights City, White Bear Lake City, and White Bear Township. These MS4s have been involved in building additional stormwater BMPs into their city designs and planning process. MN DOT reworked a major roadway in the Vadnais Lake Area Watershed to allow pretreatment of stormwater. Their efforts with VLAWMO resulted in delisting Gem Lake in

2018. Gem Lake is just south of Lambert Creek. The City of White Bear Lake is working diligently to enforce upgrades of BMPs citywide. Specifically, White Bear Lake is permitting and requiring a large landowner (car dealership) that has previously sent untreated stormwater from their large network of parking lots untreated into Goose Lake to fund a professional shoreline restoration, remove deltas built up in the lake from their snowplowing practices, and add iron-enhanced sand filters on-site. These additions will improve water quality in Goose Lake. Goose Lake outlets directly into Lambert Creek.

Extensive monitoring has been the focus of VLAWMO's efforts following establishment of the TMDL to build the research need regarding understanding source and concentration of bacteria loading. From 2008-2014, 5 locations on Lambert Creek were sampled twice per month from May through September. Samples were collected for nutrients and bacteria. From 2014-2018, continuous sampling was done in 4 subwatersheds upstream from Lambert Lake during wet and dry periods to identify bacterial sources (Figure 6). Bacterial sources were found to be primarily avian and are collected with stormwater runoff from streets and gutters throughout the subwatershed. Variation was found among samples, but results among sites were not significantly different. Bacteria is collected fairly uniformly in stormwater across the subwatershed (Burns & McDonnell 2014; final results and report pending).

Figure 6: Monitoring sites for bacteria study conducted by Burns & McDonnell and VLAWMO

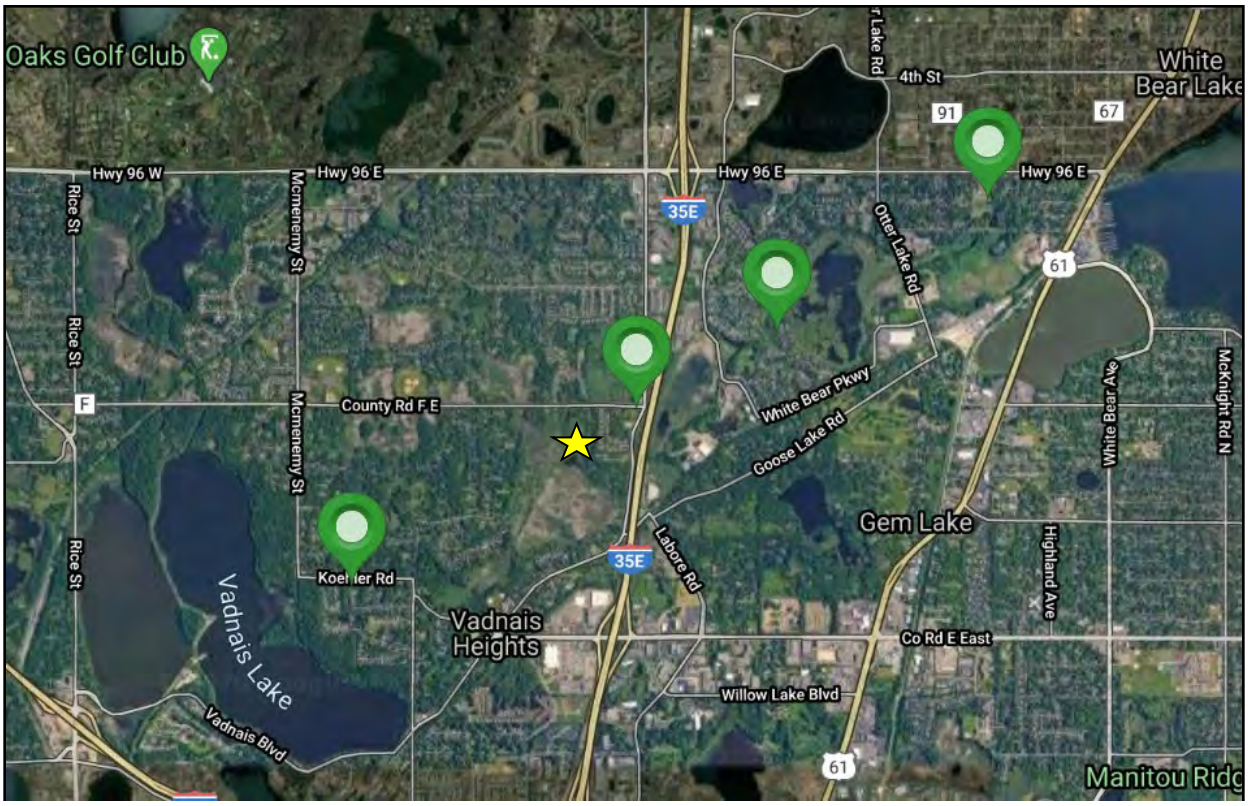


The Whitaker Treatment Wetlands is a large research project that was completed in 2018 with

support from LCCMR. The Whitaker Treatment Wetlands is a sub-surface treatment wetland project adjacent to Whitaker Pond in White Bear Township at the headwaters of Lambert Creek. Whitaker Pond captures drainage from a 640-acre area to the northeast in White Bear Township and White Bear Lake. The wetland cells receive stormwater in 3, 10x40-foot experimental cells. Each cell contains a different media to test their effectiveness at removing bacteria and nutrients. Results are being collected by researchers at the University of Minnesota and will be shared semi-annually with VLAWMO.

Four automated samplers have been added to Lambert Creek to provide continuous discharge data. Samplers were installed during 2019 and have been running continuously since installation (Figure 7).

Figure 7: Locations of automated samplers on Lambert Creek
(The Project is west of 35E and slightly south of the sampler located closest to 35E. The project area is marked with a yellow star.)



The suite of BMPs implemented so far have helped reduce untreated stormwater delivered to the creek. Research has been conducted to better understand nonpoint sources of bacteria in the subwatershed. Adding BMPs to Lambert Lake including adding a meander to the stream and installing biochar cells will remove bacteria and nutrients and slow water to allow sediment deposition, improving storage and resilience. The repair and enhancement of existing BMPs is required to maintain the system, prevent a system failure, and support function of the new, proposed BMPs.

Project beneficiaries include residents living along Lambert Creek, especially south of the project area, residents of St. Paul who receive drinking water from SPRWS, and residents of Vadnais Heights who have a desire for flooding protection, improved habitat quality, and resilience in local wetlands. Project beneficiaries also include wildlife such as: pollinators, migrating and resident birds, and mammals including otters that use the project site.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes **X No**
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f. Is this project a subsequent stage of an earlier project? **X Yes** ☐ No
If yes, briefly describe the past development, timeline and any past environmental review.

The Project is an amendment to a project that was completed at the same site in 2004 (as described above). The earlier project included creating a new ditch line, attempting to install sheetflow across the wetland, building a stormwater retention basin that was reinforced with steel sheetpile on the south end and vinyl sheetpile on the north end, constructing an access berm on the north end of the pond, and building an access road on the eastern side of the site.

An EAW was completed for the earlier project in Oct. 2003. VLAWMO was the proposer and Responsible Government Unit for review of that project. The decision that resulted from the previous EAW was a determination that the Lambert Creek Water Quality Improvement Project would not result in significant environmental impact, and that the project did not require the preparation of an environmental impact statement.

Permits acquired for the earlier project included:

- City of Vadnais Heights: Construction and grading permit
- Department of Natural Resources: Public Water Work Permit
- US Army Corps of Engineers: GP/LOP-98-MN Stream & Wetland Restoration Activity

These permits remain relevant to the current project. For purposes of permitting, the MN DNR Public Water Work Permit and US Army Corps of Engineers Stream & Wetland Restoration Activity Permit remain attached to the site. The current project permitting will be handled as amendments to the original permits.

Other Approvals in place from the earlier project:

Easements were acquired from seven private property owners and the City of Vadnais Heights.
A Memo of Understanding between Ramsey County, VLAWMO and the St. Paul Regional Water Service was completed to secure the Centerville Road stormwater treatment funding.
A management plan was approved for the restored wetland area and the overflow channel between the City of Vadnais Heights, VLAWMO and the St. Paul Regional Water Service.

7. **Cover types:** Estimate the acreage of the site with each of the following cover types before and after development:

*** There is no net change in wetland/ecological habitat due to lengthening of stream.**

	Before	After		Before	After
Wetlands	11.1	10.8	Lawn/landscaping	-	-
Deep water/streams	0.6	0.9	Impervious surface	-	-
Wooded/forest	-		Stormwater Pond	2	2
Brush/Grassland	0.3	0.3	Other (describe)	-	-
Cropland	-	-			
			***TOTAL**	**14**	**14**

The Lambert wetland area is mixture of type 2, fresh meadow; type 3, shallow fresh marsh, and type 6, shrub-scrub swamp. There are small pockets of type 7, forested wetland that lie along the edges of the basin.

The large watershed basin of about 250 acres could be considered in three sections. North Lambert is north of County Road F and will not be impacted by this project. The central basin of Lambert is about 150 acres and contains the project site. The central basin narrows in the southwest corner, then broadens to the final stretch of wetland: Lower Lambert. Lambert Creek or county ditch #14 enters the central basin in the northeast corner from a 48" concrete pipe and travels southwest through the central and lower basins to a culvert under Edgerton Ave.

Cover types in the central basin impact are characterized as follows: 60% type 3, cattail dominated; 25% type 2, Reed canary grass dominated; 15% shrub-scrub with about 2% type 7 forested. The center of the basin is dominated by the cattail and native Phragmites population with the exception of ridge of shrub-scrub and reed canary grass paralleling the ditch about 100 ft to the east. The edges of the basin are mainly shrub-scrub, Phragmites, and reed canary grass. Along the north and west side, several yards extend into the wetland area with intermittent maintenance, possibly depending on saturation level. There is an excavated open water area in the southwest corner. The northwest area has forested wetland to the west of the cattail-covered channel that accommodates flow from north Lambert.

From the earlier project in 2004, approximately 2 acres of type 3/2 (cattail and Reed canary grass dominated) wetland were excavated to create a dispersion pond (type 4 wetland), which increased the diversity of wetland types in the basin.

As in the previous project, wetland type should not change significantly in this area. Vegetation diversity and habitat quality will be improved.

8. **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.*

Unit of government	Type of application	Status
City of Vadnais Heights	Construction and grading permit	Pending approval of DNR permit
Department of Natural Resources	Public Water Work Permit	In process to be completed after EAW. Current permit will be an amendment to the previous permit for work in 2004. Previous permit #: 2004-3102
US Army Corps of Engineers	GP/LOP-98-MN Stream & Wetland Restoration Activity	In process to be completed concurrent with DNR amendment. Current permit will be an amendment to the previous permit for work in 2004. Previous permit #: MVP 2004-02114. New # established: MVP 2019-02143-EJW
DNR Water Appropriation Permit	Note: If there is dewatering of surface water, stormwater, or groundwater, in volumes that exceed 10,000 gallons/day, or 1 million gallons/year, that would need to be approved. This includes pumping water to allow the placing of culverts, water mains, sanitary sewers, grading, and storm sewer, etc.	Will apply if needed; not currently planned

9. **Land use:**
   a. Describe:
      i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.
      ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.
      iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

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

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

Land use on the construction site has not change significantly since the early years of the 20th century. Prior to this Lambert Lake was an open water lake or possibly a Type IV wetland. Sometime during the initial decade of the 20th century, the wetland was ditched along with three upstream wetlands, Sobota Slough, Rice Lake, and Grass Lake, to form County Ditch #14. Since that time little change has occurred within the wetland in terms of land use. Development has occurred adjacent to the wetland, as it has in the contributing watershed, and a sanitary sewer line was installed near the western portion of the wetland. The proposed project is a wetland restoration. Restoration of the wetland to original conditions is not feasible due to constraints. Improved hydrologic function, stream flow, pollutant reduction, plant community and habitat quality, and resilience are part of this restoration project.

10. 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.

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 11.b.ii.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

A geophysical investigation was conducted to determine the depth of organic deposits and soft clays along the alignment of the replacement sheetpile wall. Organic deposits and soft clay were encountered to depths of 12 to 20 feet.

The soils on the site consist primarily of Seelyeville muck, which is known for moderately rapid permeability and very slow runoff. The proposed project involves very limited use of contaminants (primarily fuel for construction vehicles) and thus there is limited potential for soil and ground water contamination. If a spill were to occur during construction, appropriate

remediation procedures would be performed in accordance with MPCA guidelines and regulations.

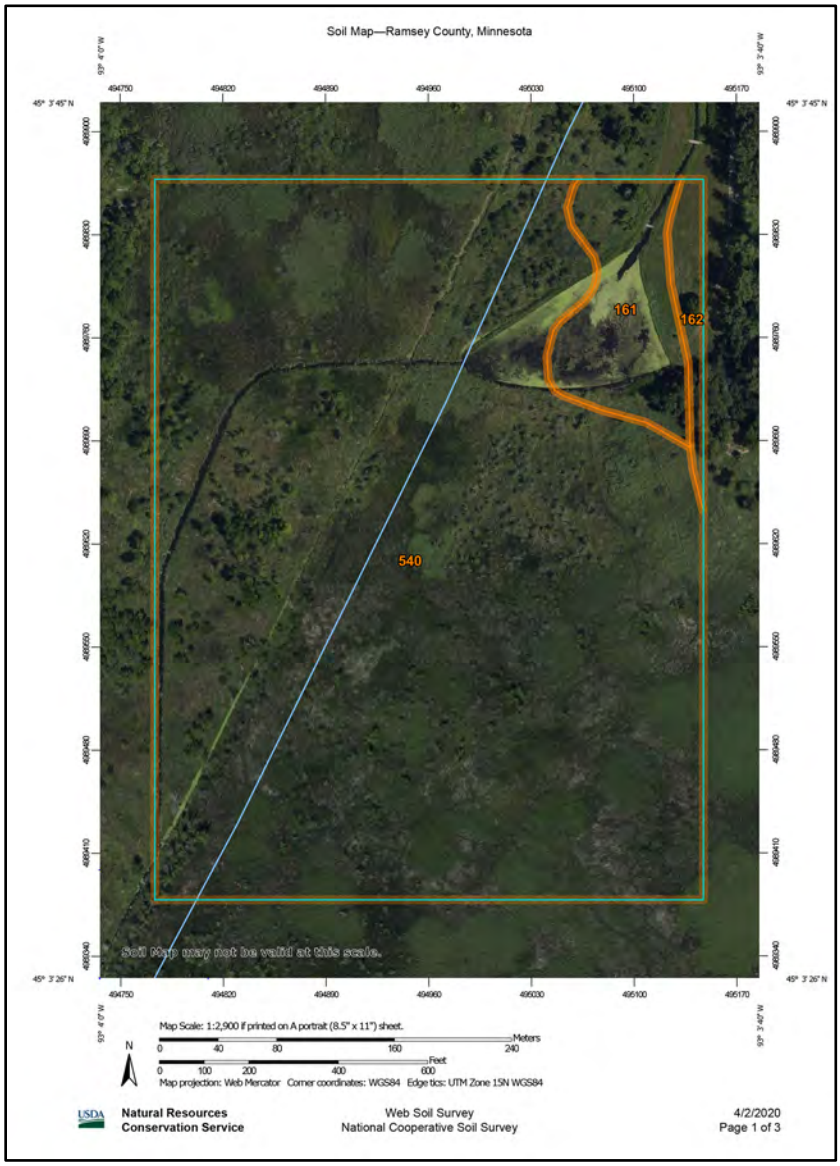
Thermal imaging was conducted with a drone at the site during winter 2020 to identify possible shallow aquifer and upwelling locations. No locations were identified that would pose a problem with upwelling to the project.

A USDA soil map was created using Web Soil Survey. A larger study area was included that encompasses the immediate surroundings of the project site (Figure 8).

Table 4: USDA Soil Map results for Lambert Lake

Map Unit Symbol	Name	Acres	Percentage
161	Isanti loamy fine sand, depressional	3.0	6.6%
162	Lino loamy fine sand	0.8	1.7%
540	Seelyeville muck	45.4	91.7%
Totals for Area of Interest		49.2	100%

Figure 8: USDA Soil Map: Area of interest encompasses the project and surrounding area. The project area itself is 14 acres within this 49.2-acre project area.



11. 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, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include 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.

Lambert Lake pond—the existing stormwater retention ponding site, realignment of Ramsey County Ditch 14 (Lambert Creek), Branch Ditches 3 and 4 connection, and the proposed stream meander site lie within Minnesota DNR Public Water Basin 62-0030-00, known collectively as Lambert Lake. Lambert Lake is a large wetland complex that was historically a shallow lake that was drained in the early 20th century by construction of drainage ditches for agricultural development. Lambert Lake does not have any special designated outstanding resources, besides being classified as a MN DNR public water. Lambert Creek/County Ditch 14 is currently listed under the MPCA 303d IWL for fecal coliform impairment for recreation, first listed in 2008. Downstream, East Vadnais Lake (62-0038-01), is impaired for mercury in fish tissue for aquatic consumption.

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.

As the majority of the project is taking place within a wetland, depth to groundwater is limited, as much as <1 feet in some areas, but varying. As mentioned above, thermal imaging was conducted via a drone in winter 2020 to identify upwelling or shallow aquifer exchange, though no such potentially problematic areas were identified. The project lies within the St. Paul Regional Water Services wellhead protection area (MDH ID: 114101). There are numerous domestic wells within the area. Within 2,000 feet of the project center point, there are 22 domestic wells. Within 1,000 feet of the project center point, there is 1 well (ID #531834). This well relates to the construction of a nearby townhome development from the 1990s, and it appears to be an abandoned wellhead. The nearest municipal well to the site is the City of Vadnais Heights Well #2 (ID #127265), and is 0.99 miles to the north of the project area.

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.

No wastewater discharge, production, or municipal wastewater infrastructure expansion or connection is anticipated, as part of the project.

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.

No wastewater discharge will be routed to a SSTS, as part of the project.

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.

No wastewater will be discharged to surface waters and there will be no resulting effect on surface or groundwater, as a result.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

Prior to construction of the Project, the site acts a public stormwater conveyance system, routing stormwater downstream via an open ditch that pools in a stormwater retention basin, and then overtops sheet piling to exit via open ditch again. The site directly receives, conveys, and treats upstream stormwater from Lambert Creek (RC Ditch 14), with immediate downstream conveyance of Lambert Creek. The final and major receiving water is East Vadnais Lake, roughly 1.6 miles downstream from the Project location. The proposed Project will fill the current ditch line, and replace and redirect flow through a newly-meandered stream, south of the retention basin. The project itself is a BMP to improve stormwater treatment by permanently slowing stormwater flow, reducing streambank erosion, and improving habitat for aquatic life, to environmentally-improve the site from its current state while not increasing flood risk. A SWPPP and ESC plan is included with the 90% plans. Post-construction, the project will be stabilized and restored with native vegetation and natural netting erosion control mat armoring for vegetation and natural armoring to establish.

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. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Dewatering is not planned for the project. If dewatering occurs, it would be incidental. The contractor plan to accomplish this will be submitted to SEH prior to construction to ensure sufficient environmental controls will be used.

Well (ID #531834) is roughly 500 feet away from the proposed project work area was drilled as part of the nearby townhome development construction in 1993. It is not known if the well has been sealed or capped, but is not considered to be active. The Project will not be connecting to a municipal water supply, expanding municipal water infrastructure, or affecting or utilizing domestic wells.

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. 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.

700 linear feet of existing Ramsey County Ditch 14, 400 linear feet of abandoned County Ditch 14 will be filled, and 2,020 linear feet of the new stream meander will be excavated within the limits of the Lambert MN DNR Public Water Basin 62-0030-00. The existed ditch fill area is being performed to block and re-route water flow through the constructed stream meander. Filled areas will be properly revegetated and stabilized with native vegetation seeding and planting, along with the new meander streambanks (see more detail in plans included in Attachment #3). Direct impacts are decreased flow velocity and bank erosion, and naturalized sediment deposition in the stream meander once the project is completed. Wildlife friendly erosion control products will be used whenever erosion control is required. Due to entanglement issues with small animals, use of erosion control blanket will be limited to ‘bio-netting’ or ‘natural netting’ types, and specifically not products containing plastic mesh netting or other plastic components. These are Category 3N or 4N in the 2016 & 2018 MnDOT Standards Specifications for Construction.

The project will have direct and indirect increased environmental effects within the watershed, as part of the project. Improved native vegetation and aquatic species habitat will result in increased biodiversity, stormwater treatment, and reduced localized flooding issues, as the site currently exists. Alternative measures to avoid impacts to the project were explored for impact and mitigation, as the project is working in coordination with oversight agencies to ensure the proper procedures and plans are followed for beneficial restoration of the meander site, and for lowest site impact and maximum improvement of the site. Wetland-impact mitigation is described in the rare species section.

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. 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.

The project will also be replacing 470 linear feet of fiberglass sheetpile with steel sheetpile on the northwest bank of the preexisting stormwater retention BMP basin. This is classified as maintenance work and will not result in wetland impact nor direct or indirect environmental impacts to the watershed. All proper temporary and permanent erosion and sediment control BMPs will be utilized for any area disturbed by the project, including silt fence, bio logs, and permanent native plant revegetation. The project will not change watercraft recreation activities in the area, as none currently take place.

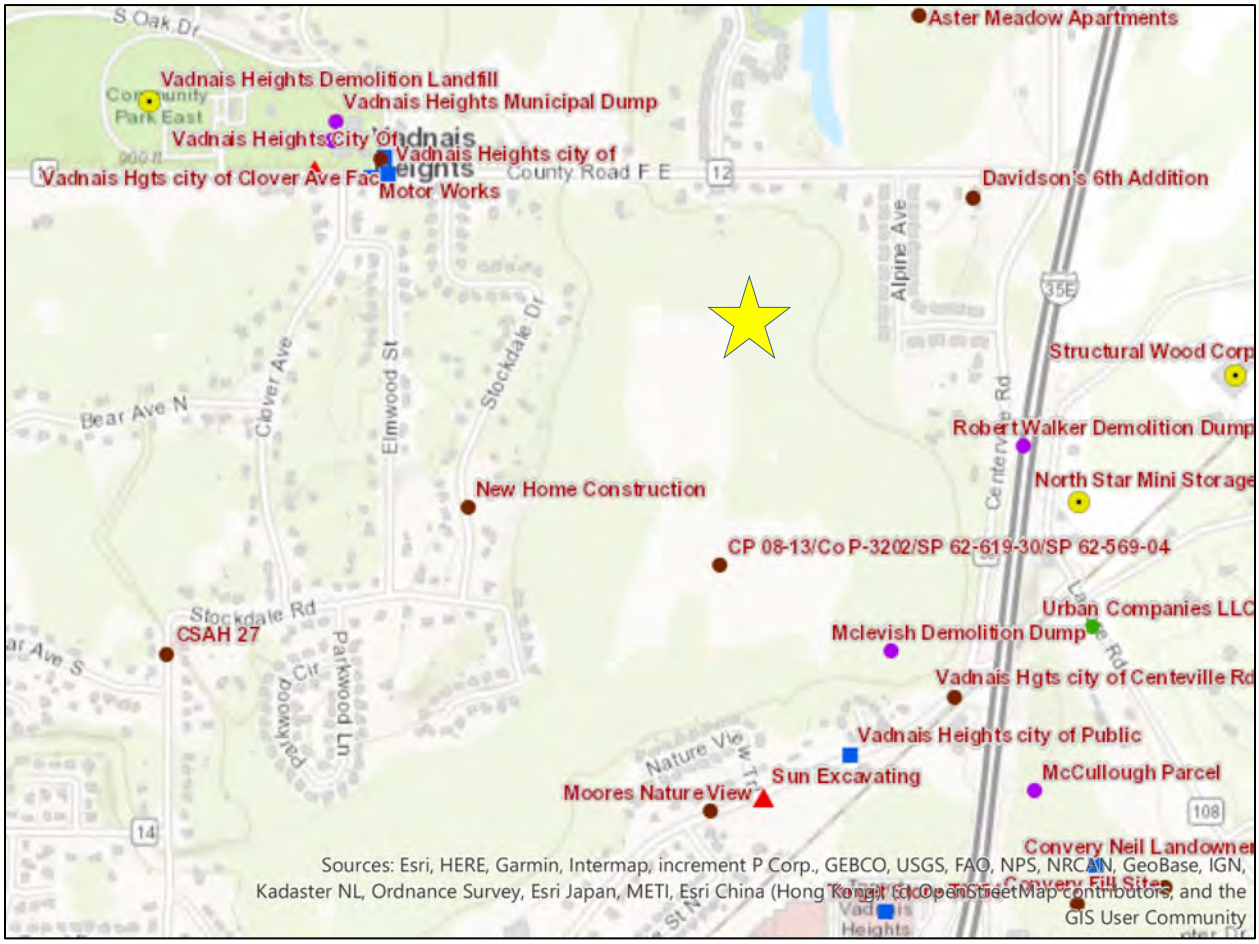
12. Contamination/Hazardous Materials/Wastes:

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 MPCA's What's in My Neighborhood and Environmental Protection Agency's Cleanups in My Community databases were reviewed to determine if sites with regulatory listings for contamination such as dumps, landfills, storage tanks, or hazardous liquids are located within or adjacent to the proposed Project area. No potential contamination sites were identified within the proposed Project area.

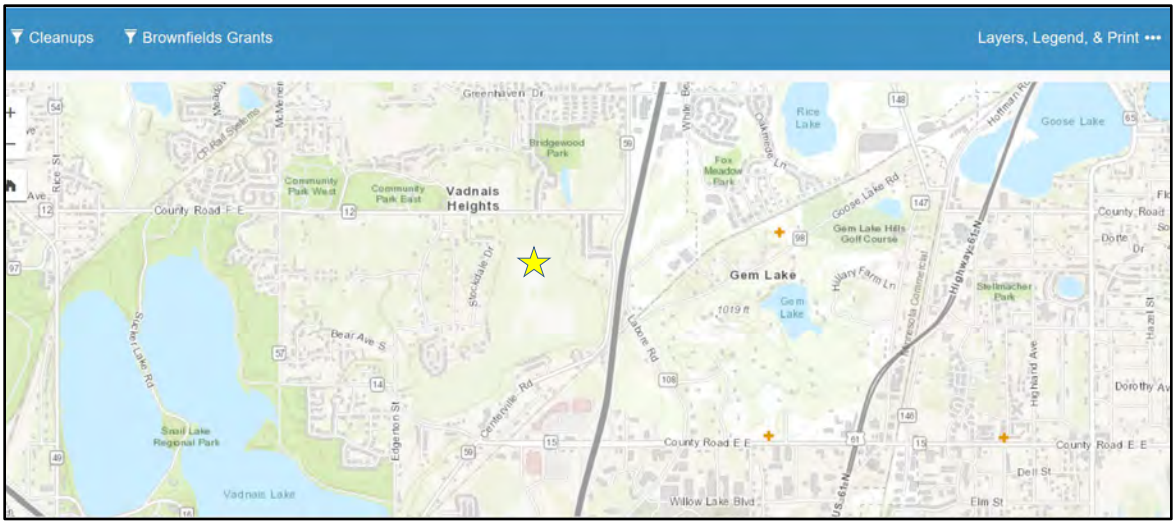
One site is identified within the study area (Figure 9). Site ID CP 08-13/COP-3202 is no longer an active construction site. The Mclevish Demolition Dump is located to the southeast of the project area. It is also inactive, according to Site Assessment SA008369.

Figure 9: MPCA What's in My Neighborhood Results (Note: Project area identified with a yellow star)



The EPA Cleanups in My Community database showed 2 sites, both to the east of 35E (Figure 10). One of those sites is located at 1522 Whitaker St. at a previous site used by the City of White Bear Lake for sewage disposal. An assessment was completed, and the site has been slated for redevelopment. The other site is Gem Lake-Hoffman Corners Property ID: 173701. An assessment was completed for this brownfield site in 2014. No clean-up was initiated.

Figure 10: EPA Cleanups in My Community (Note: Project area identified with a yellow star)



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.

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 above or below ground tanks to store petroleum or other materials. 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.

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.

Construction of the proposed Project is not anticipated to generate any hazardous wastes or introduce new hazardous materials to the proposed Project area. Any unexpected hazardous waste encountered during project construction would be removed from the site and transported to an appropriate disposal facility upon evaluation.

13. 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.

Fish monitoring has not been conducted at the Project site. However, the retention pond has a high amount of accumulated sediment, turbidity, and algae during summer months. Common carp are frequently observed in the pond. Curly-leaf pondweed is abundant in early summer months and present throughout the growing season. Macroinvertebrate monitoring is being initiated during summer 2020. Macroinvertebrate diversity is expected to be low.

Vegetation shows low diversity and is primarily dominated by native Phragmites (verified by J. Bohnen during a site visit in 2018), Reed canary grass, and cattails. Along the easement access road, there is abundant Buckthorn, Red-osier dogwood, and Willow spp. Reseeding with native prairie plants was conducted as part of the prior project in 2004. That work included seeding of the access berm on the north end of the retention pond and to the east side of the pond and creek in the staging area. The berm has some Monarda and Rudbeckia that has survived. It also has a high coverage of Reed canary grass, native Phragmites, and invasive Leafy spurge. A native grass mix was used at the staging area site. After the 2004 project was completed, the parcel that includes the access road and staging area was sold. The new home/landowner mowed the area including the buffer adjacent to the creek. During summer 2019, the landowner was contacted by the City of Vadnais Heights and told that they were not supposed to be mowing the area. Mowing ceased, and native grasses grew and produced seed. Big bluestem and Indian grass are the dominant grasses with very few forbs.

VLAWMO conducted call monitoring of frogs and toads in the watershed during 2019. Continued monitoring is planned for 2020. Two locations on Lambert Lake were included in this monitoring protocol (Figure 11). In the watershed overall, 8 frog and toad species were documented. Four species were heard at the project site: Wood frogs, Boreal chorus frogs, Gray treefrogs, and American toads. Few individuals were heard in the project area itself. A small mitigation site that is a wooded wetland along the easement access road to the east of the pond was the location of the strongest choruses and most species. At the sampling location to the east of the project site, only Boreal chorus frogs and Gray treefrogs were heard.

Figure 11: Frog and toad monitoring sites at the Lambert Lake Project site.

Remote cameras were also used to monitor mammal activity at Lambert Lake from April 2, 2019-June 12, 2019 for a total of 71 trapnights. Two locations were monitored at the Project site. A camera was placed at an active otter latrine site on the north end of the project site for the bulk of the monitoring. A second site was set for a few days at the west end of the berm at the outlet of the pond into the creek. Cameras recorded 5 mammal species: White-tailed deer, Mink, Racoon, River otter, Coyote, and Virginia opossum. Wild turkeys and Canada geese were also photographed frequently. The project staging area and native grasses previously mentioned is used as a Wild turkey lekking site. River otters frequently visit and use the latrine site. River otter mating was observed at this location, and interactions between coyotes and otter were also observed. Although the site itself consists of low-quality habitat, the connection via the creek to Vadnais-Sucker Park appears to provide a valuable corridor for wildlife. The level of activity documented with remote cameras was surprising and supports the idea that improving habitat quality at this site and along the meander will be useful in supporting local wildlife including River otters.

Figure 12: Selected remote camera photos from the Project site (White-tailed deer, Coyotes, and River otter)

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

VLAWMO has a license agreement (LA-975) with the MN DNR for access to the Natural Heritage Information System (NHIS) database, which was queried in April of 2020 to determine if any rare species could potentially be affected by the proposed Project. The NHIS database indicates that 5 state-endangered, threatened, special concern, or watchlist species have been documented near but not within the proposed Project area (Table 5).

Concurrence was sought with MN DNR with regard to species of concern. That was obtained 4/30/2020, ERDB #20200248. The letter of concurrence is included as Attachment #4.

Table 5: Rare Species Documented within 1.5 Miles of Proposed Project Area According to MDNR NHIS

Common Name	Scientific Name	Federal Status	State Status	Habitat[1]
Blanding's turtle	*Emydoidea blandingii*	None	Threatened	Wetland complexes adjacen to sandy uplands; calm shall waters, including wetlands associated with rivers and streams.
Red-shouldered hawk	*Buteo lineatus*	None	Special Concern	Large tracts of mature deciduous forest with scattered wetland openings.
Rusty patched bumble bee	*Bombus affinis*	Endangered	Watchlist	Open areas with abundant flowering plants and undisturbed soils for overwintering.
Western foxsnake	*Pantherophis ramspott*	None	Watchlist	Agricultural fields, farms, grasslands, and riparian woodlands.
Tubercled rein orchid	*Platanthera flava*	None	Threatened	Moist/wet meadows, sunny swales in savannas, and at the margins of shallow marshy lakes, especially where there is a turf of low-growing native grasses or sedges

1: Habitat information obtained from MDNR Rare Species Guide: https://www.dnr.state.mn.us/rsg/index.html

There are many reports of Blanding's turtles in the general area but not including the Project site. Because of this, close consultation was sought with MN DNR to determine what mitigation steps would be appropriate and necessary to protect turtles.

Rusty patched bumble bees have been reported in the watershed but not in the Project site. The Rusty patched bumble bee is a federally listed species, so additional consultation was undertaken with USFWS and USACE.

Red-shouldered hawks have been reported near the project area. There are no known nesting areas for Red-shouldered hawks at Lambert Lake. There is a Red-tailed hawk nest at the site, near the retention pond.

The Tubercled rein orchid is located near the Project site but not in the wetland complex that is part of the Project site. Tubercled rein orchids would not be expected at the Project site because of the Phragmites/cattails and overall degraded condition of the wetland.

Besides Rusty patched bumble bee, the Northern long-eared bat is the other federally listed species that is documented near the Vadnais Lake Area watershed. This species is not recorded in VLA. The Northern long-eared bat inhabits caves, mines, and forests. Suitable forest habitat is not located at the proposed Project area. According to the MN DNR, the nearest hibernacula is south of West Vadnais Lake (West Vadnais lake is southwest of the Project area). No maternity roost trees have been identified within the vicinity of the proposed Project area. There will be no tree clearing as part of this project. There is also a single report of Tri-colored bats in the watershed, listed as rare in MN. This report was north of the Project area.

No Minnesota Biological Survey (MBS) native plant communities, Sites of Biodiversity Significance (SBS), or MN DNR Scientific and Natural Areas (SNAs) are present within the proposed Project area.

There are no karst nor calcareous fen features located in the Project area, nor are there Regionally Significant Ecological Areas.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. 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.

The Project site has a high colonization of invasive species including: Reed canary grass, Leafy spurge, and Buckthorn. Buckthorn is found along the easement access road (not in the wetland area of the Project). Earlier efforts at the site including a low-diversity seed mix with highly aggressive warm season grasses (e.g., Big bluestem and Indian grass). The creek has invasive Curly-leaf pondweed and Common carp. Native vegetation diversity at the site currently is low and dominated by a few aggressive species especially in the Project staging area. The wetland area has high density native Phragmites and cattails, which is also aggressive and limited the effectiveness of earlier sheetflow designs through the wetland.

Spread of invasive species will be minimized by utilizing temporary construction erosion and sediment control at the site during construction and by cleaning and inspecting equipment. Construction will be phased to protect Blanding's turtles (described in the next section). A phased approach will also optimize native species planting on freshly exposed soil. Maintenance of these areas will prevent recolonization by Reed canary grass.

The proposed Project may have minor temporary adverse effects on terrestrial wildlife in the vicinity of the Project area. Temporary impacts to terrestrial wildlife may include increased noise and human activity during construction activities. Many species, even those accustomed to human proximity, could temporarily abandon habitats near the proposed Project area until the work is completed. These temporary impacts are not expected to irreparably harm terrestrial wildlife individuals or populations.

Fish and other aquatic organisms inhabiting the vicinity of the active construction area may be temporarily impacted during construction; however, it is anticipated that mobile aquatic organisms would generally relocate to adjacent aquatic habitats during construction activities.

Blanding's turtles may be present in the vicinity of the Project and could potentially be directly impacted by the proposed Project during construction should they be present in the immediate construction area. The most pronounced threat to known threatened and endangered species is digging the new channel during winter, when the wetland is accessible to large equipment and when

Blanding's turtles could be hibernating in the creek and nearby muddy areas. Through consultation with MN DNR, it was determined that the ditch is not suitable habitat for Blanding's turtles to use for hibernation. The ditch is too shallow, likely to be anoxic in the winter, and does not provide suitable banks/substrate for turtles. Mitigation will include installing silt fence and possibly additional snow fence to prevent possible entry to the site by Blanding's turtles, contacting Erica Hoaglund if turtles are encountered during construction and revegetating, and educating workers at the site so that they can identify and alert VLAWMO if Blanding's turtles are encountered. The potential for impacts to wetlands along the meander are planned to improve Blanding's turtle habitat.

From consultation with Erica Hoaglund, Nongame Wildlife Specialist Sr., regarding Blanding's turtles:

Potential Overwintering Habitat

The site has very shallow water with abundant aquatic vegetation and algae. There is some flow that maintain the channel that will be filled as liquid during the winter months but very shallow water and lots of decaying algae and curly-leaf mean that oxygen levels in the water are likely pretty low in the winter. What these factors mean is that the site is not excellent overwintering habitat for the state listed Blanding's turtle. While it is possible that naïve individuals might stray in and attempt to over winter this can be easily remedied by installing a silt fence (or similar) in the fall before construction to keep any turtles out. Since none of the aquatic veg are big floating mats there is actually not that much free water out there, it looks like mostly very wet wetland vegetation.

Potential Summer/Breeding Habitat

The most likely use of this wetland by Blanding's turtles is during the summer, likely early summer as individuals are moving around to and from the various larger bodies of water in the area. I did not see any suitable nesting habitat nor did Dawn describe any so I don't have concerns for turtles cruising the emergent vegetation and trying to nest in it. Avoidance can be easily achieved during active season activities by providing information and education to on-site staff about what to do if they encounter a Blanding's turtle.

It is my conclusion that take of Blanding's turtles during this project is unlikely and can be minimized via silt fence installation in the fall and on site staff education for any hand work in the active season. I would recommend that construction occur after about Oct. 15 and before May 1.

With the exception of Blanding's turtles, habitat is not present within the proposed Project area for any of the federally or state-listed species discussed above. As such, impacts to these species are not anticipated from the proposed Project.

No MBS native plant communities, SBS, or MDNR SNAs are present within the proposed Project area, therefore impacts to these resources are not anticipated. Contractors will comply with Minnesota regulations regarding the spread of invasive species.

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

Given the known presence Blanding's turtles in the area, steps were taken to protect turtles. The plan detailed below identifies measures that will be executed to avoid take and minimize potential

impacts to Blanding's turtles. The Rare Species Guide, Blanding's turtle fact sheet, Blanding's turtle flyer, and wildlife friendly erosion control were consulted in developing this plan.

Potential impacts to aquatic organisms during construction will be minimized by implementing BMPs to avoid potential impacts to water quality.

Measures to avoid or minimize disturbance include:

- Avoidance of suitable habitat and appropriate timing of construction: For Blanding's turtles, MN DNR recommends fall installation of silt fencing, winter construction with a single mobilization, and spring vegetation work. Construction of the new meandered channel will take place in the winter with mats if needed. Erosion control measures including natural fiber fencing will be used at the site. Silt fencing will be set up to keep turtles out of construction areas during spring efforts. Silt fencing be removed after the area has been revegetated.

  MN DNR also recommends erosion mesh that is natural fiber instead of plastic or photodegradable products. This has been incorporated into the construction plan. No rip rap is planned for the Project.

  The Landscaping and Vegetation Management section of the Blanding's turtle Fact Sheet (http://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/factsheet.pdf) will be implemented following meander construction. Specifically, terrain will be restored to natural contours, and areas will be revegetated with native grasses and forbs,

- Training for construction crew: A flyer with an illustration of and information about Blanding's turtles will be given to all contractors working in the area. Homeowners will also be informed of the presence of Blanding's turtles in the area. Blanding's turtles are unlikely to be observed during winter construction because it is during the time of hibernation. During channel abandonment in the spring, all contractors working in the area will be instructed to move, by hand, any turtles observed that are in imminent danger. Contractors will be instructed to contact VLAWMO staff so that turtles can be moved to a separate location on the creek, where they are out of the way of construction. Turtles which are not in imminent danger will be left undisturbed.

A list of suitable native forbs and flowering shrubs known to be favored by Rusty patched bumble bees was compiled using the USFWS species list (https://www.fws.gov/midwest/endangered/insects/rpbb/plants.html). The native plants selected area found in wetlands and adjacent to streams. They are native to our specific area in the State, and provide blooms throughout the growing season. That list was used to build the vegetation plan. Recommended species are shown below (Table 6). The majority of these species are deer resistant, which will be important in the Project area where White-tailed deer are abundant.

Table 6: Native wetland plants appropriate for streamside restoration recommended to support Rusty patched bumble bees provided in the Minnesota State Seed Mix 34-261 Riparian South and West Mix

Species name	Common name	Deer resistant	Bloom time						**Habitat**
			May	**June**	**July**	**Aug**	**Sept**	**Oct**	
Asclepias incarnata	Marsh milkweed	X	X	X	X	X			moist to damp soil, in full sun to partial shade, typically found growing near edges of ponds, lakes, streams, ditches and in low areas
Eupatorium perfoliatum	Common boneset	X			X	X	X		swamps, bogs, wet meadows
Eutrochium maculatum	Spotted joe pye weed	X			X	X	X		moist soil along shores
Helenium autumnale	Autumn sneezeweed	X				X	X	X	full sun in wet to moist areas such as wet prairies, meadows, stream banks, pond perimeters and roadsides
Helianthus giganteus	Giant sunflower	X			X	X	X		grows best in sunny, moist, or disturbed areas
Impatiens capensis	Jewel weed (Spotted touch-me-not)	X			X	X	X		along shores
Lobelia siphilitica	Great lobelia	X			X	X	X	X	soggy meadows near rivers, low areas along rivers and ponds, swamps, floodplain and bottomland woodlands
Mimulus ringens	Blue monkey flower	X		X	X	X	X		typical of wetlands and consistently moist soils
Pycnanthemum virginianum	Virginia mountain mint	X		X	X	X	X		part shade, sun; fields, prairies, thickets, fens
Rudbeckia laciniata	Tall coneflower	X			X	X	X	X	part shade, sun; moist fields, woodland edges, along shores, floodplains, swamps, wet ditches

14. Historic properties:

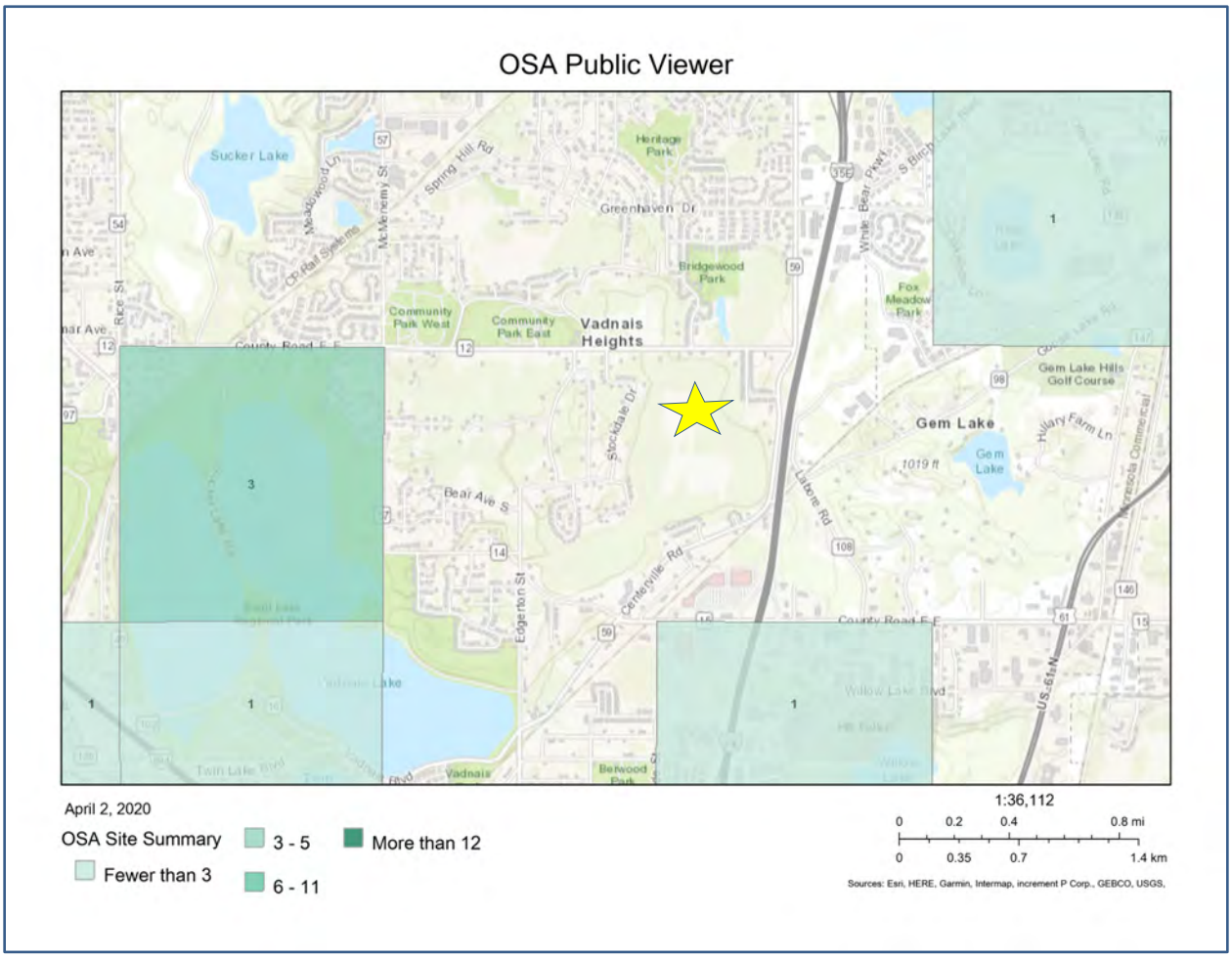
Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss 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.

Lambert Lake lies just west of Interstate 35E and south of County Road F in Vadnais Heights. Historically, this area was farmland. Most of the area is now single family residential with some townhomes. Nineteenth century maps show an even larger wetland basin prior to ditch construction. No known archaeological, historical, or architectural resources are known or likely in the area.

A trail along Centerville Road runs along the east side of Lambert Lake. This is part of a larger trail system and has the opportunity for a wetland educational effort. The trail connects to Vadnais Elementary school along the southeast shores of the main basin. This provides opportunity to dovetail with school curricula and public education efforts.

The Minnesota State Historic Preservation Office (SHPO) was contacted on April 2, 2020 to request a summary of all archeological sites and historic structures located within one mile of the proposed Project (Figure 13). The Office of the State Archaeologist (OSA) WebPortal was also reviewed. According to the data provided, there are no archaeological sites or historic structures search of our historic structures and archaeological sites databases. The SHPO responded on April 6, 2020. Their search confirmed that there are no archaeological records for the area.

Figure 13: Office of the State Archeologist Web Portal Viewer for Lambert Lake (Project area marked with a yellow star)



15. Visual:

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 project will not create visual effects, as described above, at the site.

16. 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.

Not Applicable

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 project will require construction equipment, which will have vehicle-related emissions, which is a temporary condition. The project will not generate any new permanent vehicle-related emissions.

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 16a). 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.

As in the prior project conducted at this site in 2004, the proposed Project should not generate odors during construction. The Project is anticipated to be constructed during the winter months; therefore, minimal dust control is anticipated. Any dust generated during construction would be due primarily to the tracking of material from the site onto adjacent roadways which would be minimized utilizing standard measures such as a rock construction entrance and frequent street sweeping. After construction is completed, dust levels should be minimal and return to that of preconstruction levels for the site.

17. 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.

Noise due to construction would be expected as a result of this Project, most notably installation of sheetpile. Construction noise will be limited to daytime hours, in accordance with City ordinances. Construction equipment will be equipped with standard mufflers to reduce noise levels during the construction process. After construction is complete, noise levels will return to that of preconstruction levels for the site.

18. 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 alternative transportation modes.

Not Applicable

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.

Not Applicable

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

Not Applicable

19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

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.

The proposed Project will improve habitat quality and increased ecosystem function including a more natural stream that is reconnected to its floodplain. The reconnected floodplain will increase resilience in the system especially during flooding events. Biochar treatment cells will remove bacteria and nutrients and improve overall quality of the creek below the Project site. Future assessments will show if the improvements are sufficient to remove the creek from the Impaired Waters List (MPCA). The goal of the project is delisting.

Construction of the project is expected to take 6 months from start to finish. Construction will begin during the winter months, once the peat is frozen to allow equipment to work safely. This will be followed by spring vegetation restoration. Vegetation will be monitored over years to follow to determine success of the newly planted vegetation. Sites with low recruitment and survival of native vegetation will be supplemented with additional plantings. Additional detail about construction time is included in Attachment #3.

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.

VLAWMO does not have additional projects planned at this location. However, the City of Vadnais Heights has expressed interest in utilizing similar meander designs for maintenance of branch ditches. VLAWMO will continue to monitor the creek and may conduct maintenance as needed as has been done in the past. Maintenance efforts have included clearing of log jams,

incorporation of habitat elements, stream stabilization efforts, and removal of invasive shrubby vegetation (including but not limited to buckthorn).

Monitoring of the creek is conducted bi-weekly by VLAWMO during the season (May-Sept). Monitoring will be ongoing following completion of the project. In addition to bi-weekly monitoring, 4 automated samplers measure and report discharge real-time. These samplers upload data to the Monitor My Watershed website where they are publicly available (https://monitormywatershed.org/). This sampling effort will continue into 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 cumulative effects analysis for the proposed Project assesses both negative and beneficial potential environmental effects.

Negative Effects

In general, the potential for negative effects from the proposed Project would be short-term, lasting only for the duration of proposed Project work activities. As such, these effects are discussed in detail in the resource-specific sections above. Mitigation is needed to reduce possible impact to Blanding's turtles that may hibernate in the project site. Mitigation efforts have been described above and will be implemented to reduce possible impact to this species.

Beneficial Effects

As summarized above, the primary purpose of the proposed Project is to restore a functional stream ecosystem, reconnect the creek to its floodplain, improve water quality to downstream water resources, perform maintenance to important flood control infrastructure, and increase water storage in the area. It is also to improve habitat quality by building a more diverse plant community with habitat components to support rare species including but not limited to Blanding's turtles and Rusty-patched bumble bees. River otters are also known to use the site. Habitat elements have been incorporated into the plan to improve habitat quality for this species as well. Radio telemetry of River otters is planned to begin prior to construction at the site. Data that results pre/post construction will demonstrate habitat improvements for this species in particular.

Biochar treatment cells will be used to remove bacteria with a specified goal of delisting Lambert Creek for its bacteria impairment. Pre/post monitoring will show results with respect to this goal.

20. 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.

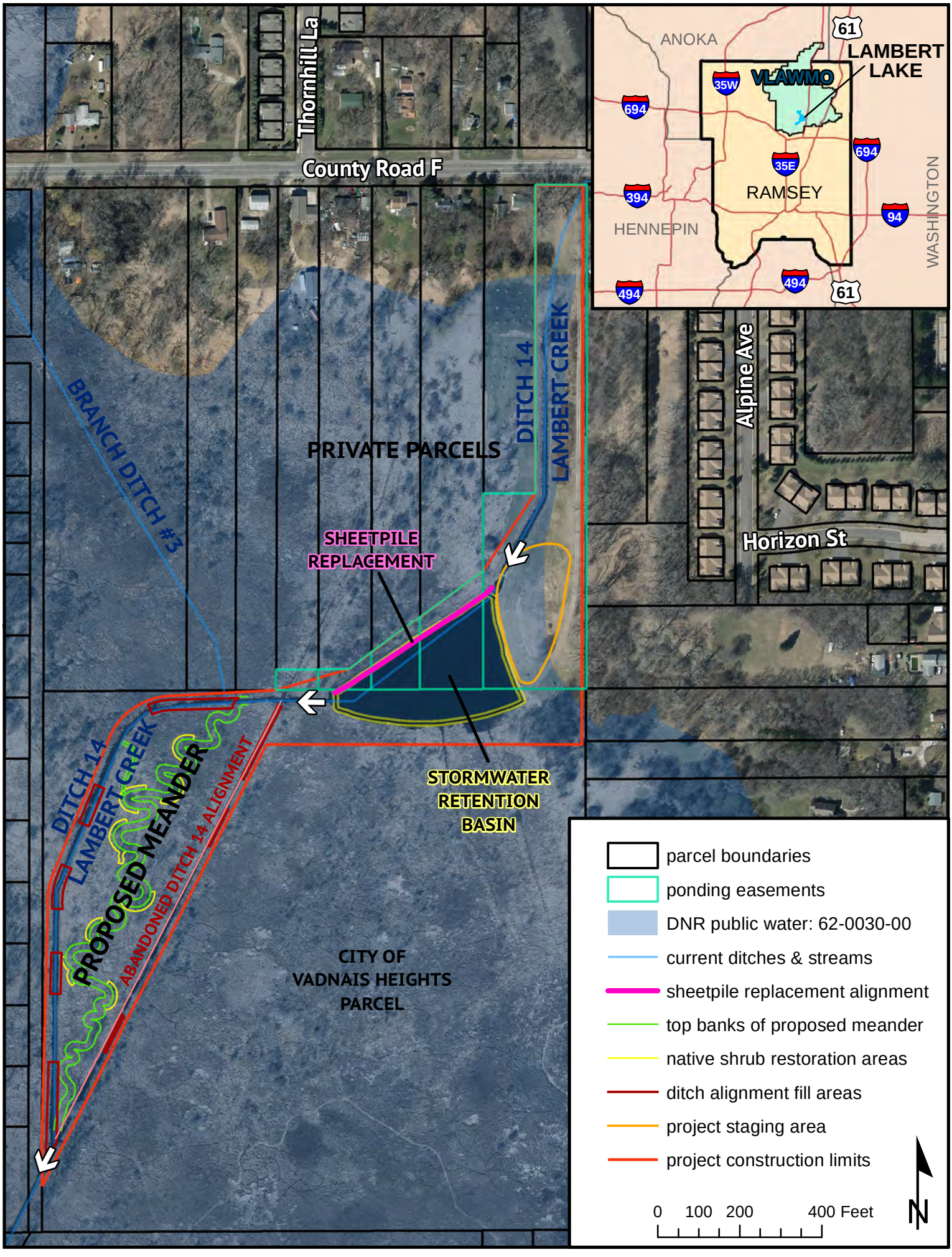
RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

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 Dawn Tanner Date 5/11/2020

Title Program Development Coordinator


Thornhill La
County Road F
BRANCH DITCH #3
PRIVATE PARCELS
DITCH 14
LAMBERT CREEK
SHEETPILE REPLACEMENT
STORMWATER RETENTION BASIN
DITCH 14
LAMBERT CREEK
PROPOSED MEANDER
ABANDONED DITCH 14 ALIGNMENT
CITY OF VADNAIS HEIGHTS PARCEL
Alpine Ave
Horizon St
ANOKA
LAMBERT LAKE
VLAWMO
RAMSEY
HENNEPIN
WASHINGTON
61
35W
694
35E
394
94
494
parcel boundaries
ponding easements
DNR public water: 62-0030-00
current ditches & streams
sheetpile replacement alignment
top banks of proposed meander
native shrub restoration areas
ditch alignment fill areas
project staging area
project construction limits
0 100 200 400 Feet
N

USGS

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

WHITE BEAR LAKE WEST QUADRANGLE
MINNESOTA
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 15T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery .... NAIP, October 2017 - November 2017
Roads .... U.S. Census Bureau, 2016
Names .... GNIS, 1980 - 2019
Hydrography .... National Hydrography Dataset, 2001 - 2018
Contours .... National Elevation Dataset, 2016
Boundaries .... Multiple sources; see metadata file 2017 - 2018
Public Land Survey System .... BLM, 2019
Wetlands .... FWS National Wetlands Inventory 2016

SCALE 1:24 000

KILOMETERS
METERS
MILES
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

ROAD CLASSIFICATION
Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

1 Circle Pines
2 Centerville
3 Hugo
4 New Brighton
5 White Bear Lake East
6 Saint Paul West
7 Saint Paul East
8 Lake Elmo

WHITE BEAR LAKE WEST, MN
2019

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION

CITY OF

VADNAIS HEIGHTS, MN

LAMBERT LAKE IMPROVEMENTS

EXISTING

- RIGHT OF WAY
- PERMANENT EASEMENT
- PROPERTY LINE
- HORIZONTAL CONTROL POINT
- BENCHMARK
- SURVEY MARKER
- SOIL BORING
- SANITARY SEWER AND MANHOLE
- FORCE MAIN AND LIFT STATION
- SANITARY SEWER SERVICE & CLEANOUT
- WATER MAIN, HYDRANT, VALVE AND MANHOLE
- WATER SERVICE AND CURB STOP BOX
- STORM SEWER, MANHOLE AND CATCH BASIN
- CULVERT AND APRON ENDWALL
- GAS MAIN, VALVE, VENT AND METER
- HANDHOLE
- BURIED FIBER OPTIC CABLE AND MANHOLE
- BURIED PHONE CABLE, PEDESTAL AND MANHOLE
- BURIED TV CABLE, PEDESTAL AND MANHOLE
- BURIED ELECTRIC CABLE, PEDESTAL, MANHOLE, TRANSFORMER AND METER
- OVERHEAD WIRE, POLE AND GUY WIRE
- LIGHT POLE
- TRAFFIC SIGNAL
- STREET NAME SIGN
- SIGN (NON STREET NAME)
- RAILROAD TRACKS
- DECIDUOUS AND CONIFEROUS TREE
- BUSH / SHRUB AND STUMP
- EDGE OF WOODED AREA
- WETLAND
- BUILDING
- FENCE (UNIDENTIFIED)
- BARBED WIRE FENCE
- CHAIN LINK FENCE
- ELECTRIC WIRE FENCE
- WOOD FENCE
- WOVEN WIRE FENCE
- PLATE BEAM GUARDRAIL
- CABLE GUARDRAIL
- POST / BOLLARD
- RETAINING WALL

PROPOSED

- STREET CENTERLINE
- RIGHT-OF-WAY
- PERMANENT EASEMENT
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS
- SANITARY SEWER, BULKHEAD AND MANHOLE
- FORCE MAIN
- SANITARY SERVICE AND CLEANOUT
- WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
- WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
- WATER SERVICE AND CURB STOP BOX
- STORM SEWER, MANHOLE AND CATCH BASIN
- CULVERT AND APRON ENDWALL
- DRAIN TILE
- DITCH / SWALE
- RIPRAP
- STREET NAME SIGN
- SIGN (NON STREET NAME)
- RETAINING WALL

NOTES:
THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR SHALL CALL THE ONE CALL SYSTEM AT 811 BEFORE COMMENCING EXCAVATION.

ELEVATIONS SHOWN ARE IN NAVD88

811 Know what's **below.** **Call** before you dig.

N

N.T.S.

GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

THIS PLAN CONTAINS 10 SHEETS.

PROJECT LOCATION

VADNAIS HEIGHTS
RAMSEY COUNTY

APPROVED:

XXXXX DATE

VADNAIS HEIGHTS, MINNESOTA

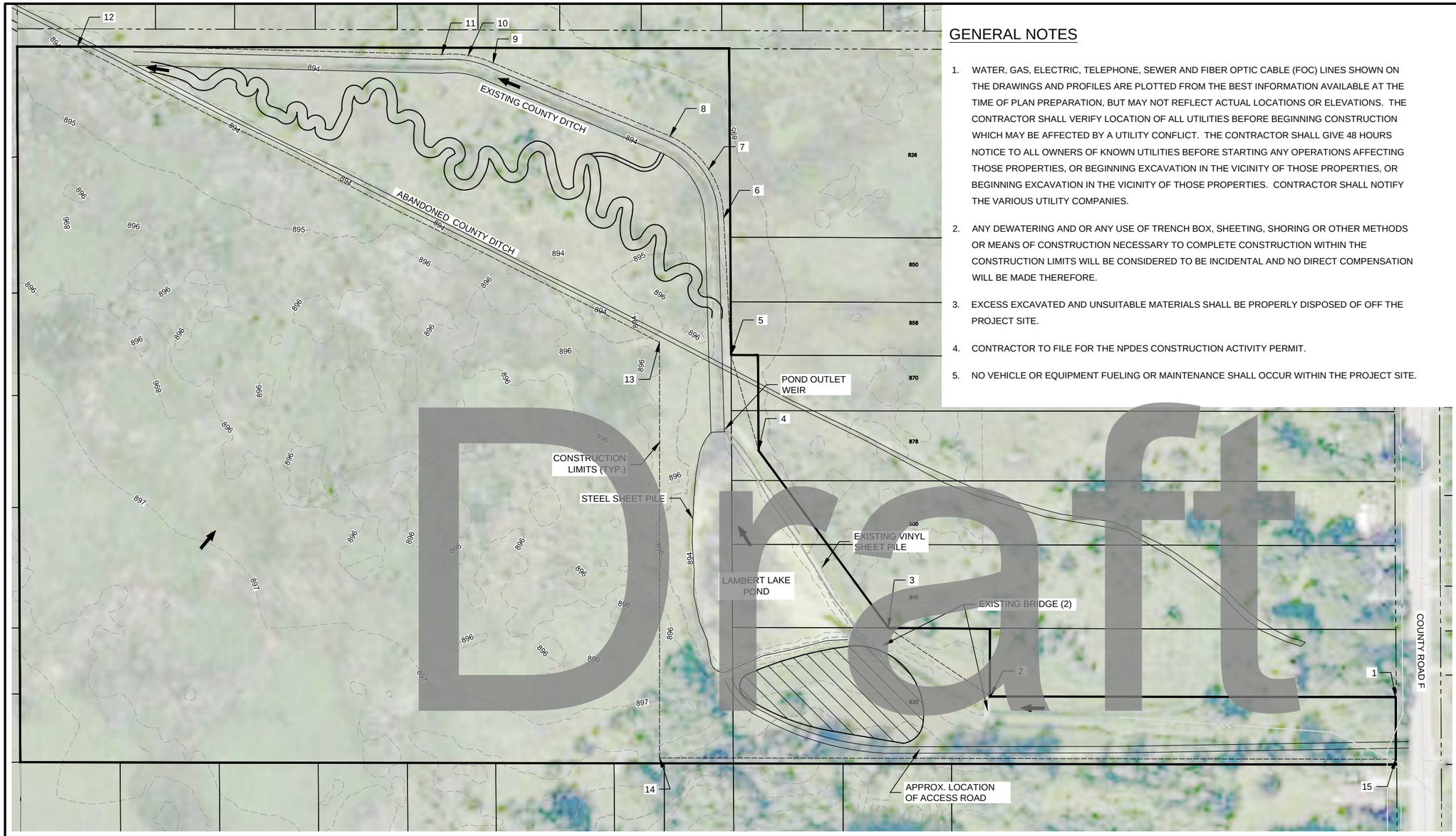
SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
www.sehinc.com

FILE NO. 153931

Emily Jennings, P.E.
Signature

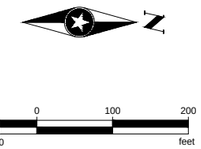
Date: 02.12.2020 Lic. No. 56622

1/10



GENERAL NOTES

1. WATER, GAS, ELECTRIC, TELEPHONE, SEWER AND FIBER OPTIC CABLE (FOC) LINES SHOWN ON THE DRAWINGS AND PROFILES ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO ALL OWNERS OF KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. CONTRACTOR SHALL NOTIFY THE VARIOUS UTILITY COMPANIES.
2. ANY DEWATERING AND OR ANY USE OF TRENCH BOX, SHEETING, SHORING OR OTHER METHODS OR MEANS OF CONSTRUCTION NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS WILL BE CONSIDERED TO BE INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFORE.
3. EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE PROPERLY DISPOSED OF OFF THE PROJECT SITE.
4. CONTRACTOR TO FILE FOR THE NPDES CONSTRUCTION ACTIVITY PERMIT.
5. NO VEHICLE OR EQUIPMENT FUELING OR MAINTENANCE SHALL OCCUR WITHIN THE PROJECT SITE.



POINT TABLE

	RAW DESCRIPTION	NORTHING	EASTING
	1	199870.1226	583095.7904
	2	199119.4737	583094.5913
	3	198930.0569	582967.6276
	4	198689.3800	582638.9600
	5	198638.3730	582462.2939
	6	198624.7669	582208.7442
	7	198597.1266	582118.4631
	8	198525.4799	582056.9700
	9	198197.6474	581921.5728
	10	198151.2207	581907.4299
	11	198102.7223	581905.5948
	12	197427.2106	581891.3868
	13	198505.9986	582438.7211
	14	198505.9986	583208.1582
	15	199870.1421	583210.7953

NOTES:

1. ALL CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE KEPT IN THE STAGING AREA.
2. LOCATION OF MATERIAL STOCKPILES SHALL BE APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL SUBMIT STAGING AND ACCESS PLANS TO THE ENGINEER FOR REVIEW.

LEGEND

- STAGING AREA
- PARCEL BOUNDARIES
- EASEMENT LIMITS
- CONSTRUCTION LIMITS
- EXISTING STORM SEWER
- EXISTING STORM SEWER STRUCTURE
- FLOW ARROW

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
www.sehinc.com

I HEREBY CERTIFY THAT THIS PLAN 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.

Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

GENERAL SITE PLAN
LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

2/10

NOTES:

1. PROTECT ALL FACILITIES NOT SPECIFIED FOR REMOVAL.
2. ANY TREE REMOVAL MUST BE APPROVED BY VLAWMO OR THE ENGINEER IN THE FIELD (INCIDENTAL).
3. BASED ON INSTALLATION RECORDS THE APPROXIMATE QUANTITIES OF EXISTING VINYL SHEET PILE ARE 444 LF.
4. CONTRACTOR SHALL ENSURE THAT REMOVALS SHALL NOT PRECEDE NEW INSTALLATION SUCH THAT A CONTINUOUS SHEET PILE BARRIER CANNOT BE ESTABLISHED WITHIN 24 HOURS OF A RUNOFF OR HIGH WATER EVENT WITHIN THE POND.

N

100 0 100 200
scale 50 feet

LEGEND

- REMOVE AND REPLACE EXISTING VINYL SHEET PILE WITH STEEL SHEET PILE
- CONSTRUCTION LIMITS
- EXISTING STORM SEWER
- EXISTING STORM SEWER STRUCTURE

CONSTRUCTION LIMITS (TYP.)
EXISTING COUNTY DITCH
ABANDONED COUNTY DITCH
POND OUTLET WEIR
CLEAR & GRUB FROM EXISTING VINYL SHEET PILE AS NEEDED (INCIDENTAL)
REMOVE APPROX. 444 LF OF SHEET PILE VINYL. REPLACE WITH STEEL SHEET PILE
PROTECT EXISTING BERM
LAMBERT LAKE POND
STEEL SHEET PILE
APPROX. LOCATION OF ACCESS ROAD
COUNTY ROAD F
REMOVE AND REPLACE ACCESS GATE IF NECESSARY (INCIDENTAL)

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
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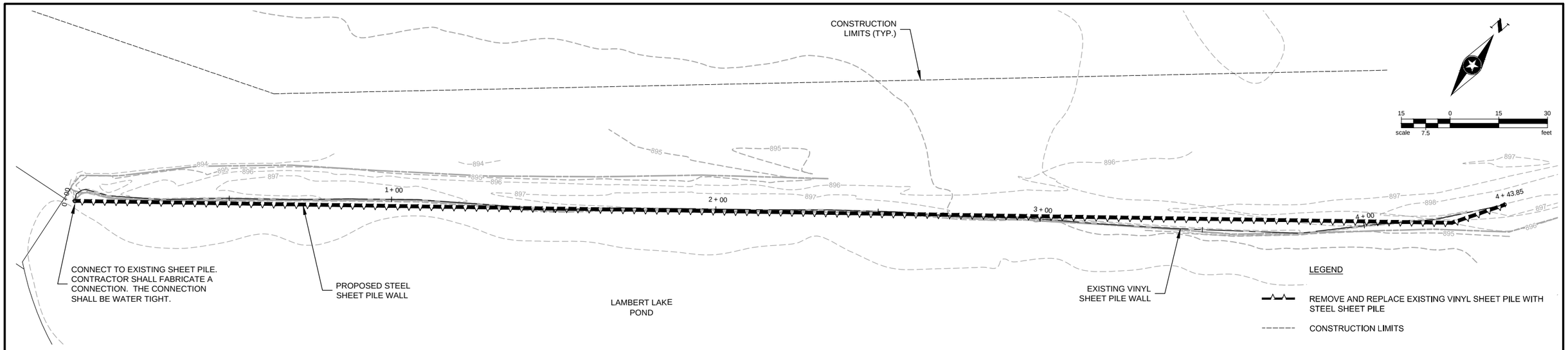
VADNAIS HEIGHTS, MINNESOTA

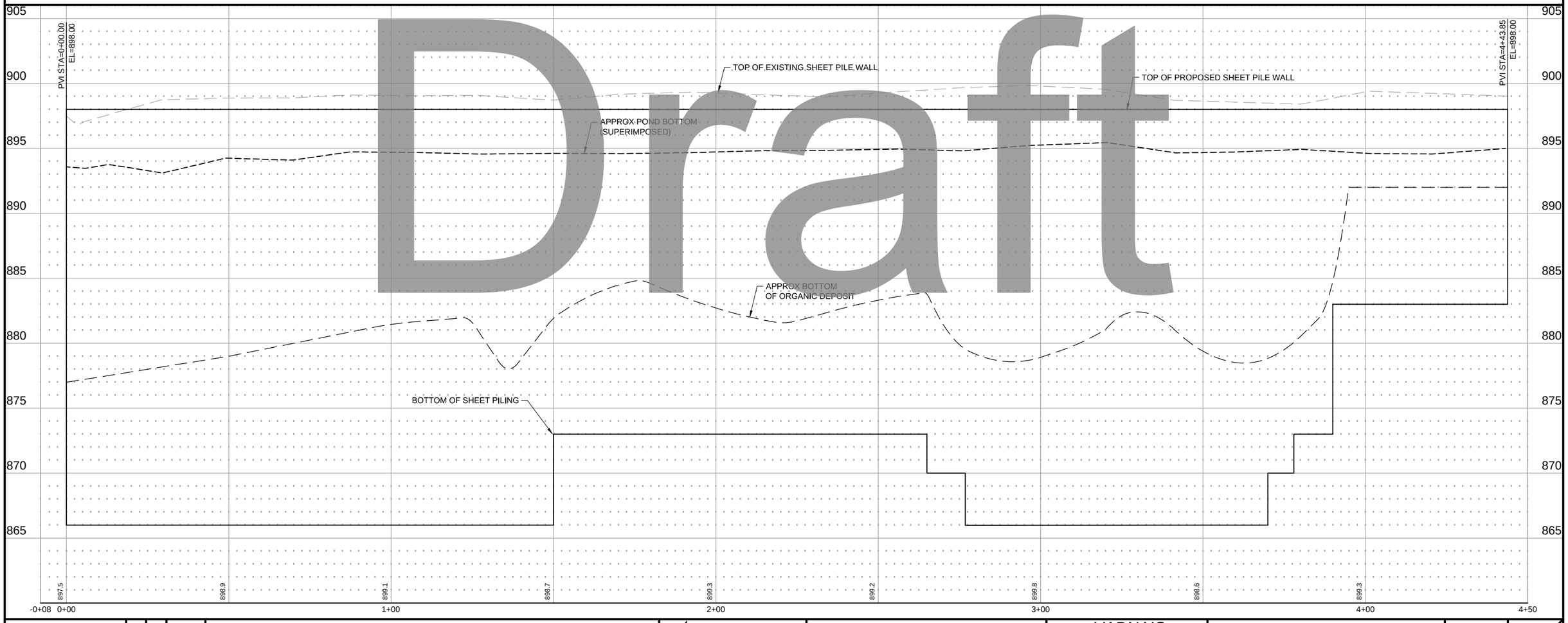
REMOVAL PLAN

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

3/10





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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: HRC				
DESIGNER: EKJ				
CHECKED BY: EKJ				

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
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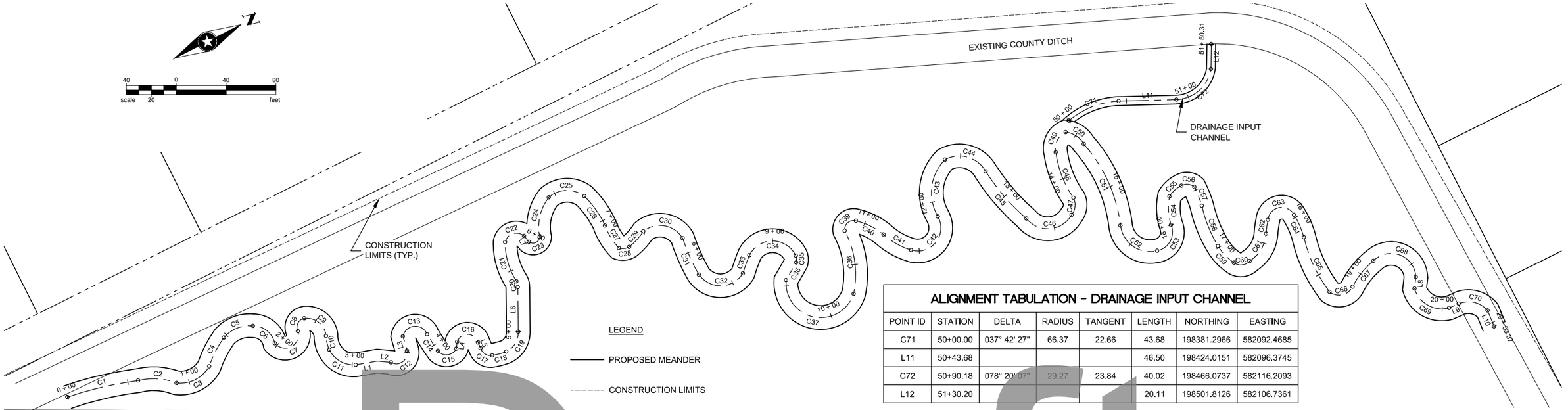
Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

SHEET PILE WALL PLAN & PROFILE
LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

4/10



ALIGNMENT TABULATION - DRAINAGE INPUT CHANNEL

POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING
C71	50+00.00	037° 42' 27"	66.37	22.66	43.68	198381.2966	582092.4685
L11	50+43.68				46.50	198424.0151	582096.3745
C72	50+90.18	078° 20' 07"	29.27	23.84	40.02	198466.0737	582116.2093
L12	51+30.20				20.11	198501.8126	582106.7361

ALIGNMENT TABULATION - PROPOSED MEANDER

POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING
C1	0+00.00	011° 37' 40"	287.85	29.31	58.42	197563.1586	581929.3191
C2	0+58.42	035° 10' 49"	51.14	16.21	31.40	197619.8572	581942.9583
C3	0+89.82	067° 12' 14"	26.52	17.62	31.11	197646.5723	581958.5070
C4	1+20.93	016° 59' 42"	88.26	13.19	26.18	197675.9302	581958.4497
C5	1+47.11	055° 07' 21"	27.12	14.15	26.09	197696.8986	581942.9371
C6	1+73.20	078° 09' 39"	17.91	14.55	24.44	197721.8973	581945.1225
C7	1+97.63	157° 09' 50"	10.66	52.79	29.25	197731.3443	581965.6371
C8	2+26.88	106° 16' 58"	7.23	9.64	13.41	197752.2424	581965.2063
C9	2+40.29	091° 37' 37"	15.72	16.18	25.15	197761.4750	581958.2352
C10	2+65.44	026° 09' 39"	25.21	5.86	11.51	197770.7518	581978.7908
C11	2+76.95	069° 04' 37"	21.49	14.79	25.91	197768.1278	581989.8962
L1	3+02.86				17.65	197781.5879	582010.2097
L2	3+20.51				10.87	197798.4660	582015.3732
C12	3+31.37	131° 57' 42"	8.79	19.73	20.25	197807.6669	582021.1565
L3	3+51.62				11.86	197823.4994	582018.4723
C13	3+63.48	147° 56' 38"	10.16	35.37	26.24	197825.7512	582006.8308
C14	3+89.72	006° 12' 12"	145.89	7.91	15.80	197843.8731	582014.1232
C15	4+05.51	114° 31' 40"	8.91	13.86	17.81	197845.5642	582029.8205
L4	4+23.32				5.53	197859.6666	582034.9009
C16	4+28.86	146° 10' 10"	8.79	28.90	22.42	197862.6742	582030.2568
L5	4+51.28				4.99	197877.4358	582038.3169
C17	4+56.27	081° 35' 46"	8.43	7.28	12.01	197877.1171	582043.3004
C18	4+68.29	011° 18' 55"	60.13	5.96	11.87	197882.8187	582052.7331
C19	4+80.16	065° 06' 51"	17.26	11.02	19.61	197894.4252	582055.1491
L6	4+99.77				36.00	197910.1273	582045.2285
C20	5+35.77	034° 51' 01"	8.03	2.52	4.88	197925.9739	582012.9078
C21	5+40.65	034° 05' 23"	55.73	17.09	33.16	197927.0224	582008.2151
C22	5+73.81	119° 22' 58"	9.23	15.78	19.22	197933.1479	581976.1247

ALIGNMENT TABULATION - PROPOSED MEANDER

POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING
L7	5+93.03				6.08	197948.8920	581978.5566
C23	5+99.11	122° 52' 03"	5.39	9.91	11.57	197950.2868	581984.4760
C24	6+10.68	049° 43' 58"	38.84	18.00	33.72	197959.7562	581984.8134
C25	6+44.40	078° 44' 50"	22.50	18.46	30.92	197980.5877	581959.6481
C26	6+75.32	021° 01' 57"	78.97	14.66	28.99	198006.4532	581971.7230
C27	7+04.31	022° 20' 40"	54.86	10.83	21.39	198010.6910	582000.2361
C28	7+25.70	046° 55' 36"	10.51	4.56	8.61	198012.5503	582021.4129
C29	7+34.32	018° 36' 41"	52.00	8.52	16.89	198020.4060	582024.3103
C30	7+51.21	099° 11' 52"	21.00	24.67	36.36	198036.0985	582018.2662
C31	7+87.56	011° 16' 34"	163.71	16.16	32.22	198061.7709	582037.3443
C32	8+19.78	111° 40' 13"	21.39	31.51	41.69	198060.3000	582069.4770
C33	8+61.47	006° 50' 04"	129.36	7.72	15.43	198092.4018	582084.3855
C34	8+76.90	129° 04' 58"	20.66	43.40	46.55	198103.5321	582073.7124
C35	9+23.45	031° 22' 40"	10.12	2.84	5.54	198136.6973	582090.8086
C36	9+28.99	000° 35' 15"	1588.66	8.15	16.29	198134.4926	582095.8178
C37	9+45.28	166° 20' 39"	27.87	232.79	80.92	198120.8849	582104.7730
C38	10+26.21	040° 03' 34"	74.83	27.28	52.32	198164.3322	582139.0686
C39	10+78.52	112° 38' 59"	7.25	10.87	14.25	198180.7456	582090.5110
C40	10+92.77	026° 49' 33"	53.18	12.68	24.90	198192.4194	582087.4838
C41	11+17.67	025° 45' 07"	56.99	13.03	25.61	198207.2354	582107.2122
C42	11+43.28	136° 16' 34"	18.55	46.25	44.13	198221.3787	582128.3082
C43	11+87.41	075° 39' 53"	37.57	29.18	49.62	198252.7175	582114.0231
C44	12+37.03	089° 45' 39"	24.07	23.97	37.71	198278.3525	582075.7178
C45	12+74.75	016° 34' 48"	173.66	25.30	50.25	198303.2696	582098.8136
C46	13+25.00	111° 55' 57"	22.00	32.58	42.98	198315.4406	582147.3891
C47	13+67.98	066° 02' 48"	12.58	8.18	14.50	198349.2680	582161.0118
C48	13+82.48	027° 19' 11"	82.98	20.17	39.57	198356.7193	582149.5048
C49	14+22.05	078° 30' 38"	14.25	11.64	19.53	198360.4646	582110.4908

ALIGNMENT TABULATION - PROPOSED MEANDER

POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING
C50	14+41.58	055° 58' 03"	18.54	9.85	18.11	198374.8071	582099.5582
C51	14+59.69	034° 03' 57"	122.68	37.58	72.94	198383.5865	582114.5829
C52	15+32.63	097° 14' 04"	23.78	26.99	40.35	198380.4973	582186.3877
C53	15+72.98	102° 10' 53"	15.11	18.71	26.94	198397.6223	582217.6882
C54	15+99.92	028° 34' 35"	46.57	11.86	23.23	198416.8885	582204.2166
C55	16+23.15	033° 16' 04"	22.54	6.73	13.09	198426.1177	582183.1628
C56	16+36.24	072° 26' 38"	8.85	6.48	11.18	198438.5460	582179.6844
C57	16+47.42	008° 52' 35"	104.43	8.11	16.18	198447.2967	582185.4045
C58	16+63.60	019° 14' 49"	104.22	17.67	35.01	198445.9653	582201.5116
C59	16+98.61	026° 08' 40"	40.88	9.49	18.65	198442.9693	582236.2272
C60	17+17.26	083° 47' 13"	9.62	8.63	14.07	198448.3375	582253.9231
C61	17+31.33	053° 45' 08"	28.26	14.32	26.51	198460.3503	582258.4846
C62	17+57.84	009° 42' 18"	66.65	5.66	11.29	198481.8860	582244.7372
C63	17+69.13	147° 56' 28"	11.08	38.57	28.61	198488.3115	582235.4703
C64	17+97.75	016° 37' 53"	67.98	9.94	19.73	198508.7790	582241.3737
C65	18+17.48	024° 27' 47"	114.25	24.77	48.78	198507.7305	582261.0105
C66	18+66.26	102° 30' 51"	12.14	15.13	21.72	198506.4387	582309.4025
C67	18+87.98	024° 11' 10"	63.86	13.68	26.96	198524.7961	582314.0653
C68	19+14.94	132° 37' 39"	19.94	45.46	46.16	198549.1359	582302.9476
L8	19+61.10				9.39	198573.7538	582329.9268
C69	19+70.50	088° 20' 00"	22.79	22.14	35.13	198568.5802	582337.7673
L9	20+05.63				8.49	198586.3265	582364.1022
C70	20+14.12	072° 21' 02"	20.13	14.72	25.42	198594.8042	582364.5588
L10	20+39.54				13.83	198613.0699	582379.7634

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
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Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

MEANDER PLAN

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

5/10

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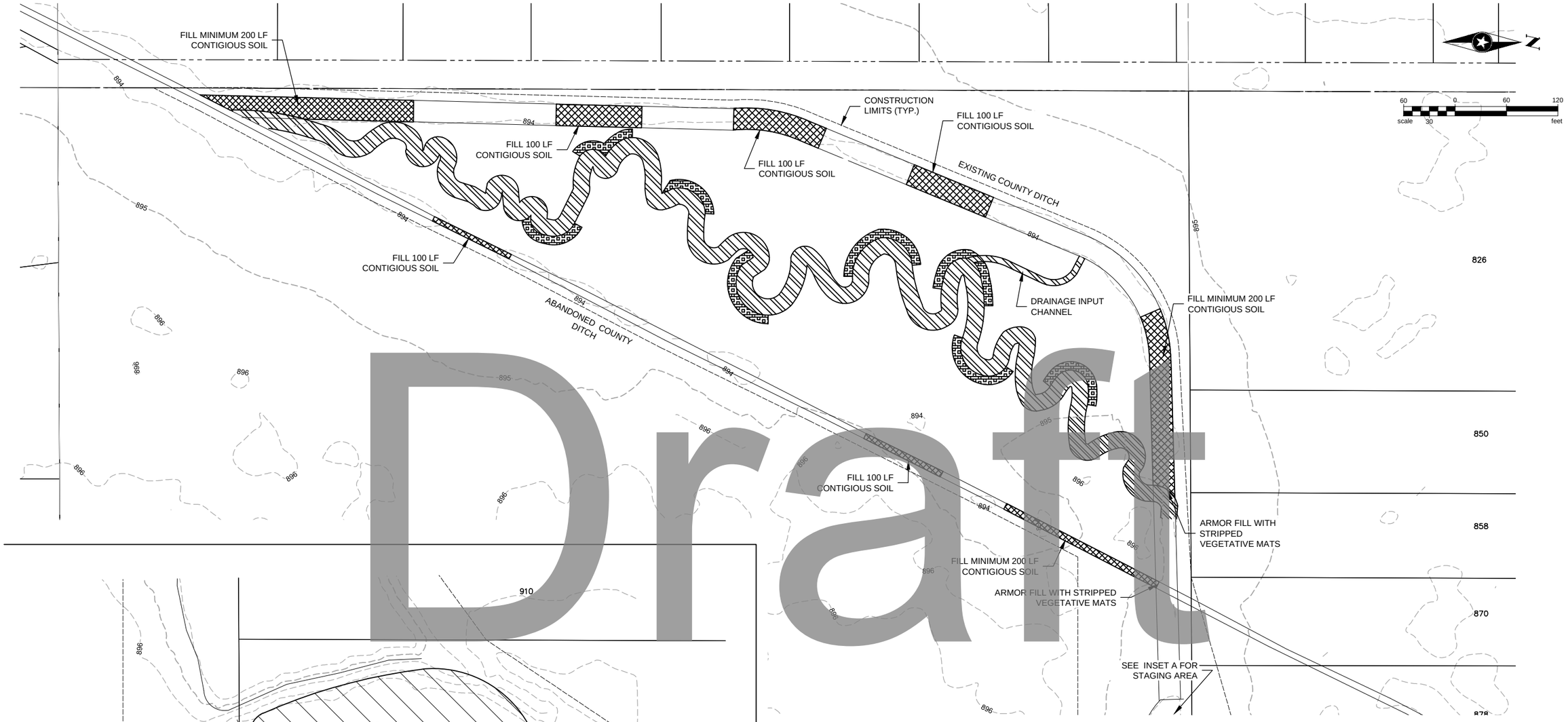

INSET A- STAGING AREA

LEGEND

- PROPOSED FILL AREA OF EXISTING DITCHES RESTORE WITH MINNESOTA STATE SEED MIX 34-261
- MEANDERING CHANNEL RESTORE WITH MINNESOTA STATE SEED MIX 34-181
- SHRUB PLANTING AREA RESTORE WITH MINNESOTA STATE SEED MIX 34-261 AS BASE LAYER
- STAGING AREA RESTORE WITH MINNESOTA STATE SEED MIX 35-241, AS DIRECTED BY ENGINEER
- CONSTRUCTION LIMITS

NOTES:

1. FILL MATERIAL SHALL BE CONTIGIOUS AND FORM ONE SOLID MASS OF MATERIAL WITH ORGANIC SOILS ON TOP AND MINERAL SOILS IN BOTTOM (IF PRESENT).
2. FILL SHOULD BE FREE OF WOODY DEBRIS AND ROCKS.
3. BACKFILL SHALL BE PLACED IN 1 FOOT LIFTS AND BUCKET TAMPED OR COMPACTED WITH TRACKED EQUIPMENT TO MINIMIZE VOIDS.
4. NO FILL SHALL BE PLACED IN THE EXISTING COUNTY DITCH UNTIL THE PROPOSED MEANDER IS ON-LINE AND STABILIZED.
5. AVOID EXCESS COMPACTION IN RESTORATION AREAS.
6. ALL AREAS NOT SPECIFIED AND DISTURBED WITHIN THE WETLAND AREA SHALL BE RESTORED WITH MINNESOTA STATE SEED MIX 34-171.
7. ALL RESTORED AREAS SHALL BE STABILIZED WITH EROSION CONTROL BLANKET, CATEGORY 3N.
8. RESTORATION OF THE STAGING AREA IS REQUIRED TO RESTORE THE AREA BACK TO ITS ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE (INCIDENTAL).

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
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Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

FILL & PERMANENT RESTORATION
LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

6/10

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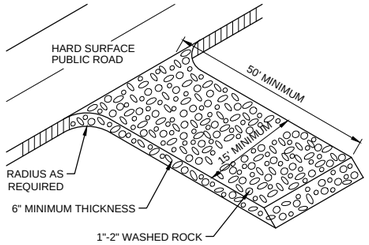
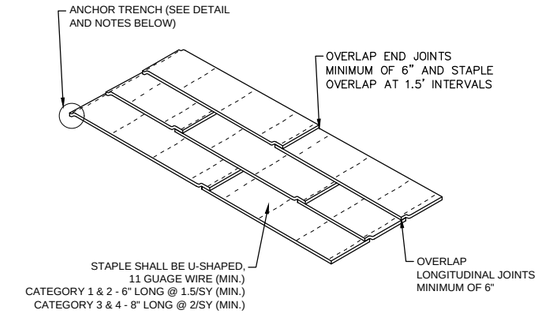


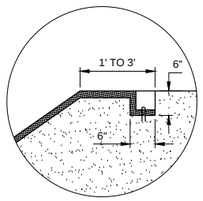
NOTE:
TO PREVENT TRACKING OF MUD ONTO PAVED ROADS, INSTALL ADDITIONAL ROCK OR REMOVE AND REPLACE THE PAD AS REQUIRED

NTS

SEH	ROCK CONSTRUCTION ENTRANCE	Revised: Oct. 2011	SEH Plate No. ERO-35

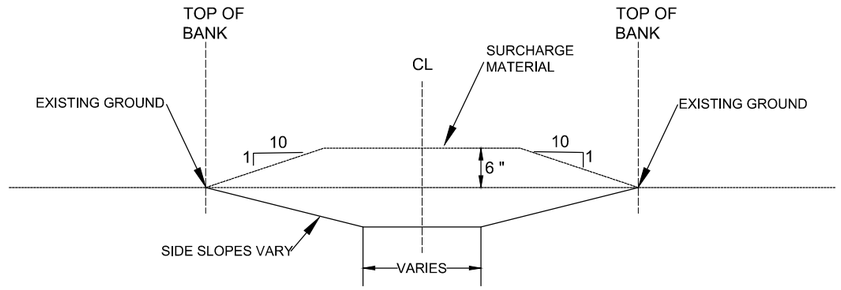


ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH

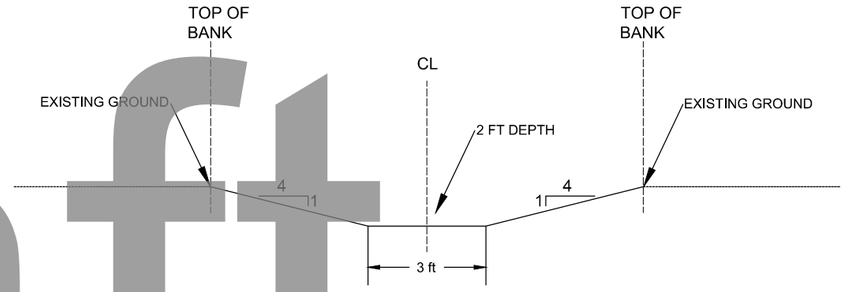


NTS

SEH	EROSION CONTROL BLANKET INSTALLATION	Revised: Oct. 2011	SEH Plate No. ERO-11

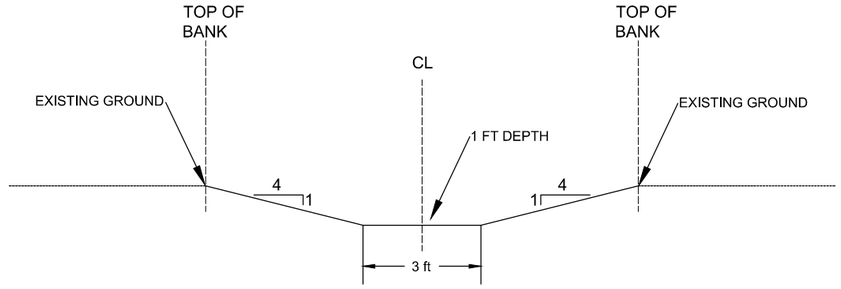


TYPICAL PROPOSED FILL CROSS SECTION FOR EXISTING COUNTY DITCH AND ABANDONED COUNTY DITCH



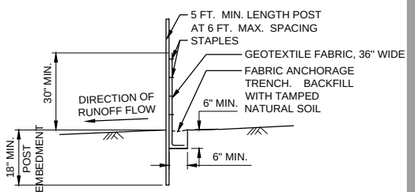
TYPICAL PROPOSED MEANDER CROSS SECTION

STA. 0+00 TO STA. 20+53.37



TYPICAL PROPOSED DRAINAGE INPUT CHANNEL CROSS SECTION

STA. 50+00 TO STA. 51+50.31



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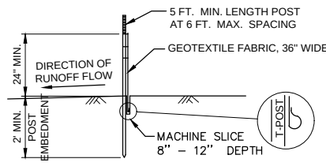
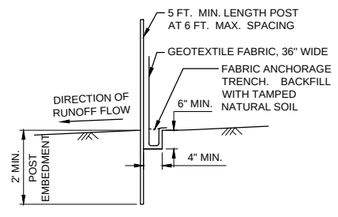


STANDARD MACHINE SLICED

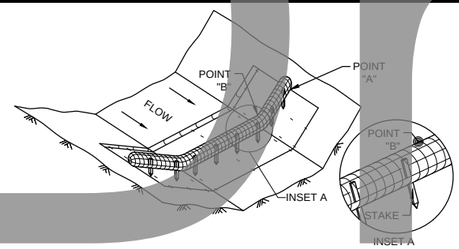


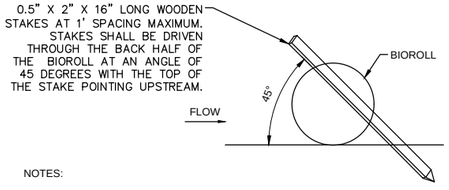
HEAVY DUTY

DESIGN GUIDELINES:
(SEE MNDOT SPEC. 2573.3C AND 3886)

NTS

SEH	SILT FENCE	Revised: Jan. 2013	SEH Plate No. ERO-15





NOTES:

SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{SPACING (FT)} = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\text{\% CHANNEL SLOPE}}$$

POINT "A" LABELED ON DETAILS SHALL BE A MIN. OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

CHECK DAMS AND DIKES SHOULD BE LIMITED IN USE FOR DRAINAGE AREAS OF LESS THAN FIVE ACRES AND IN CHANNELS OF LESS THAT TEN PERCENT SLOPE.

IF IN SERIES, THE TOP OF THE DOWNSTREAM DAM OR DIKE SHOULD ALIGN WITH THE BOTTOM OF THE UPSTREAM.

NTS

SEH	BIOROLL STAKING	Revised: Oct. 2011	SEH Plate No. ERO-07

DRAWN BY:	HRC
DESIGNER:	EKJ
CHECKED BY:	EKJ
DESIGN TEAM	

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
www.sehinc.com

I HEREBY CERTIFY THAT THIS PLAN 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.

Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

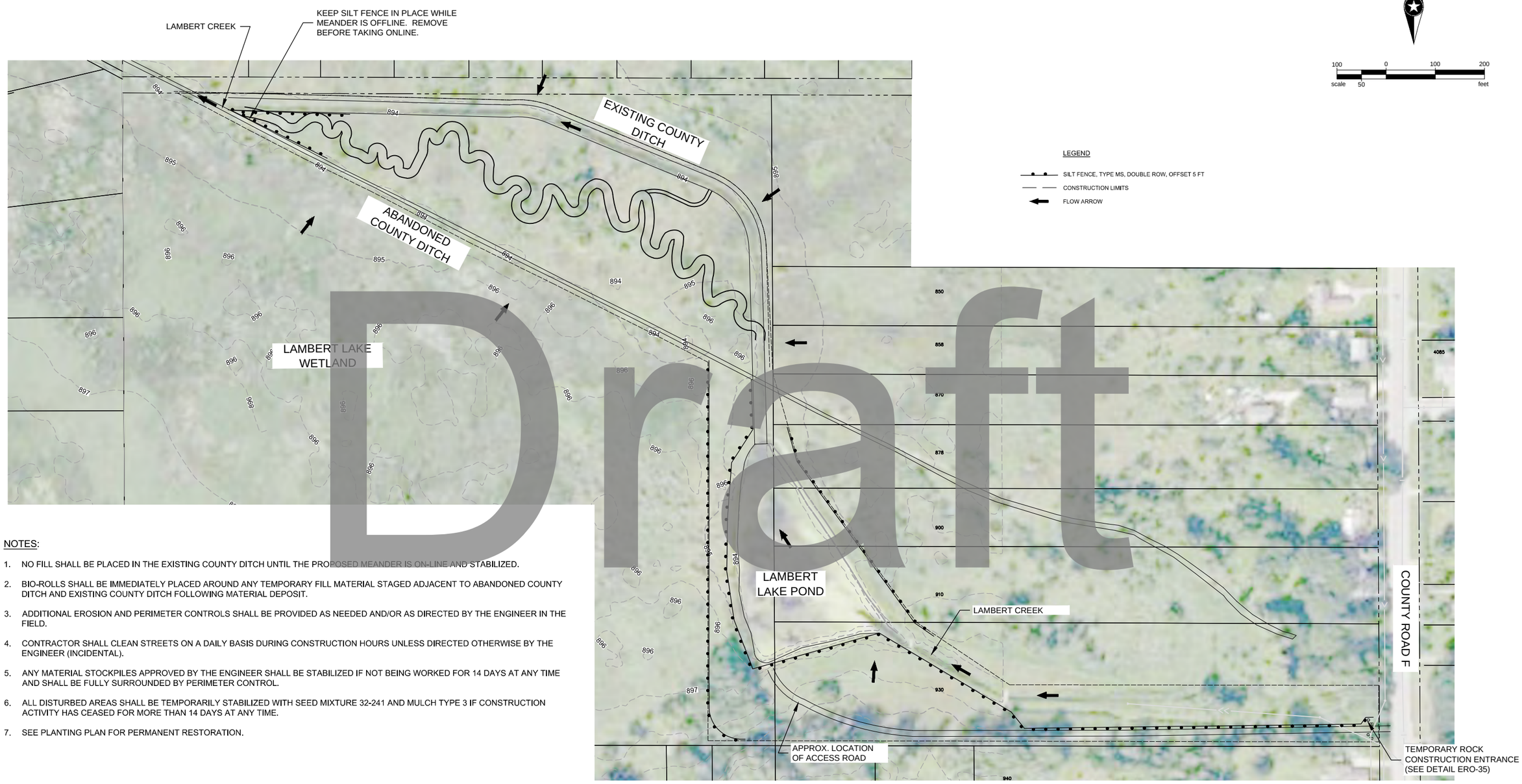
VADNAIS HEIGHTS, MINNESOTA

DETAILS & TYP. SECTIONS

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

7 / 10



NOTES:

1. NO FILL SHALL BE PLACED IN THE EXISTING COUNTY DITCH UNTIL THE PROPOSED MEANDER IS ON-LINE AND STABILIZED.
2. BIO-ROLLS SHALL BE IMMEDIATELY PLACED AROUND ANY TEMPORARY FILL MATERIAL STAGED ADJACENT TO ABANDONED COUNTY DITCH AND EXISTING COUNTY DITCH FOLLOWING MATERIAL DEPOSIT.
3. ADDITIONAL EROSION AND PERIMETER CONTROLS SHALL BE PROVIDED AS NEEDED AND/OR AS DIRECTED BY THE ENGINEER IN THE FIELD.
4. CONTRACTOR SHALL CLEAN STREETS ON A DAILY BASIS DURING CONSTRUCTION HOURS UNLESS DIRECTED OTHERWISE BY THE ENGINEER (INCIDENTAL).
5. ANY MATERIAL STOCKPILES APPROVED BY THE ENGINEER SHALL BE STABILIZED IF NOT BEING WORKED FOR 14 DAYS AT ANY TIME AND SHALL BE FULLY SURROUNDED BY PERIMETER CONTROL.
6. ALL DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED MIXTURE 32-241 AND MULCH TYPE 3 IF CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS AT ANY TIME.
7. SEE PLANTING PLAN FOR PERMANENT RESTORATION.

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

EROSION & SEDIMENT CONTROL
LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

8/10

SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	LAMBERT LAKE, SW OF THE INTERSECTION OF COUNTY ROAD F E AND CENTERVILLE ROAD
LATITUDE/LONGITUDE:	45.062119, -93.061986
PROJECT DESCRIPTION:	CREEK RESTORATION, SHEET PILE REPLACEMENT
SOIL DISTURBING ACTIVITIES:	EXCAVATION, FILL, GRADING, RESTORATION

CONTACTS:

OWNER:	CITY OF VADNAIS HEIGHTS
CONTACT:	JESSE FARRELL, PE
ADDRESS:	800 COUNTY RD E EAST, VADNAIS HEIGHTS, MN 55127
PHONE:	651-204-6050
EMAIL:	JESSE.FARRELL@CITYVADNAISHEIGHTS.COM

ENGINEER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
CONTACT:	EMILY JENNINGS, PE
PHONE:	651-302-7669
EMAIL:	EJENNINGS@SEHINC.COM
PROJECT NO.:	VADLA 153931

NOTE:
THIS PROJECT IS BEING FUNDED AND LED BY THE VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION (VLAWMO). ADDITIONAL PROJECT CONTACT INCLUDES:

DAWN TANNER
PROGRAM DEVELOPMENT COORDINATOR
651-204-6074
DAWN.TANNER@VLAWMO.ORG

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH ALL CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE THE IMPLEMENTATION OF THE SWPPP.

CONTRACTOR	X
CONTACT	X
PHONE	X
EMAIL	X

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

GENERAL SWPPP RESPONSIBILITIES:
THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

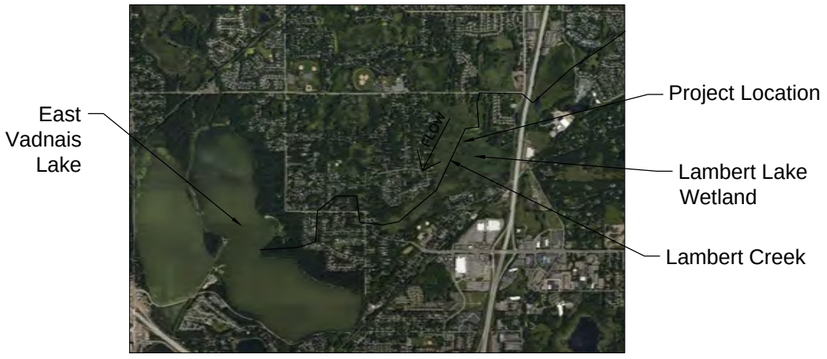
THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR.

ALL SWPPP CHANGES MUST BE DONE BY AN INDIVIDUAL TRAINED IN ACCORDANCE WITH SECTION 21.4 OR 21.5, CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

LONG TERM OPERATION AND MAINTENANCE
THE OWNER WILL BE RESPONSIBLE OR WILL OTHERWISE IDENTIFY WHO WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM(S).

THE OWNER WILL PREPARE AND IMPLEMENT A PERMANENT STORMWATER TREATMENT SYSTEM(S) MAINTENANCE PLAN.



TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	EMILY JENNINGS, PE
EMPLOYER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
DATE OBTAINED / REFRESHED	REFRESHED APRIL 2020
INSTRUCTOR(S)/ENTITY PROVIDING TRAINING:	UNIVERSITY OF MINNESOTA EROSION AND STORMWATER MANAGEMENT DESIGN OF CONSTRUCTION SWPPP

CONTENT OF TRAINING AVAILABLE UPON REQUEST.

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

1) DATES OF TRAINING
2) NAME OF INSTRUCTORS
3) CONTENT AND ENTITY PROVIDING TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

TOTAL DISTURBED AREA:	15.0 AC
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.0 AC
POST-CONSTRUCTION IMPERVIOUS AREA:	0.0 AC
IMPERVIOUS AREA ADDED:	0.0 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
(http://pca-gis02.pca.state.mn.us/CSW/index.html)

ID	NAME	TYPE	SPECIAL WATER?	IMPAIRED WATER?	CONSTRUCTION RELATED IMPAIRMENT OR SPECIAL WATER CLASSIFICATION	TMDL
XX	LAMBERT	CREEK	NO	YES	NON-CONSTRUCTION RELATED	NON-CONSTRUCTION RELATED
XX	EAST VADNAIS	LAKE	NO	YES	NON-CONSTRUCTION RELATED	N/A
ADDITIONAL BMPS AND/OR ACTIONS REQUIRED:						
SEE SECTION 23 OF THE PERMIT AND APPLICABLE TMDL WLA'S						

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SITE SOIL INFORMATION (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
MUCK	D
ANTICIPATED RANGE OF PARTICLE SIZES	LOAMY/FINE SILTS/SANDS

RELATED REVIEWS & PERMITS:
ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHEOLOGICAL, LOCAL, STATE, AND/OF FEDERAL REVIEWS/PERMITS:

AGENCY:	TYPE OF PERMIT:
VLAWMO (LGU)	WCA
DNR PUBLIC WATERS WORK PERMIT	PUBLIC WATER WORKS PERMIT
USACE	SECTION 404 PERMIT

PROJECT SPECIFIC NOTES:
THE PROJECT INCLUDE RESTORING A PORTION OF LAMBERT CREEK TO A MEANDERING STREAM TO BETTER UTILIZE THE LAMBERT LAKE FLOODPLAIN AND IMPROVE WATER QUALITY, HABITAT, AND ECOLOGY. AN EAW WAS PREPARED AND SHOULD BE REVIEWED PRIOR TO CONSTRUCTION.

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:
GENERAL SITE PLAN: 2
MEANDER PLAN: 5
FILL AND TEMPORARY RESTORATION: 6
DETAILS & TYPICAL SECTIONS: 7
EROSION & SEDIMENT CONTROL: 8
SWPPP NOTE AND DETAIL SHEETS: 9-10
PROJECT SPECIFICATIONS
PROJECT BID FORM

TEMPORARY BMP DESIGN FACTORS:
EROSION PREVENTION AND SEDIMENT CONTROL BMP'S MUST BE DESIGNED TO ACCOUNT FOR:

THE EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION

THE NATURE OF STORMWATER RUNOFF AND RON-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES

THE STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS

THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT.

TEMPORARY SEDIMENT BASINS:
THE CONTRACTOR SHALL INSTALL TEMPORARY SEDIMENT BASIN(S) INDICATED ON PLANS AND REQUIRED BY THE NPDES CONSTRUCTION PERMIT.

THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24-HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER.

TEMPORARY SEDIMENT BASIN OUTLETS SHALL BE CONSTRUCTED TO PREVENT SHORT-CIRCUITING AND PREVENT THE DISCHARGE OF FLOATING DEBRIS.

OUTLET STRUCTURES MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS.

BASINS MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW, WITHDRAW WATER FROM THE SURFACE, AND PROVIDE ENERGY DISSIPATION AT THE OUTLET.

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED WITH ENERGY DISSIPATION AT ANY BASIN OUTLET TO PREVENT SOIL EROSION.

SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES, AND MUST BE DESIGNED TO AVOID THE DRAINING WATER FROM WETLANDS.

IMPLEMENTATION SEQUENCE:
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

1	INSTALL ROCK CONSTRUCTION ENTRANCE(S)
2	INSTALL PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
3	ACCESS AND STAGING
4	EXCAVATE MEANDER OFFLINE OF EXISTING CONVEYANCE, PLACE FILL TEMPORARILY ADJACENT TO EXISTING DITCHES AND INSTALL PERIMETER CONTROL IMMEDIATELY FOLLOWING PLACEMENT
5	INITIATE RESTORATION AND FINAL STABILIZATION WITHIN MEANDER AREA
6	PLACE STRATEGIC FILL AND BRING MEANDER ONLINE
7	COMPLETE FINAL GRADING AND STABILIZE DISTURBED AREAS
8	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPS, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

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DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
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Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

SWPPP

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

9/10

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE PERMITTEE(S) IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE PERMITTEE(S) SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE PERMITTEE(S) SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

-DATE AND TIME OF INSPECTIONS;
-NAME OF PERSON(S) CONDUCTING INSPECTION;
-FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
-CORRECTIVE ACTIONS TAKEN;
-DATE AND AMOUNT OF RAINFALL EVENTS;
-POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
-AMENDMENTS MADE TO THE SWPPP.

THE PERMITTEE(S) SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANOR AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

PERMIT TERMINATION CONDITIONS:
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING FINAL STABILIZATION OF THE ENTIRE SITE. PERMIT TERMINATION CONDITIONS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

ALL SOIL DISTURBING ACTIVITIES HAVE BEEN COMPLETED.

ALL EXPOSED SOILS HAVE BEEN UNIFORMLY STABILIZED WITH AT LEAST 70% VEGETATION COVERAGE.

PERMANENT STORM WATER MANAGEMENT SYSTEM(S) ARE CONSTRUCTED AND ARE OPERATING AS DESIGNED.

ALL DRAINAGE DITCHES, PONDS, AND ALL STORM WATER CONVEYANCE SYSTEMS HAVE BEEN CLEARED OF SEDIMENT AND STABILIZED WITH PERMANENT COVER TO PRECLUDE EROSION.

ALL TEMPORARY SYNTHETIC BMPS HAVE BEEN REMOVED AND PROPERLY DISPOSED OF.

.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY IS COMPLETE, PERMITTEE(S) MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

THE CONTRACTOR SHALL PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROL AT THE BASE OF THE STOCKPILES.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

RECEIVING WATER	NATURAL BUFFER	IS THE BUFFER BEING ENCROACHED ON?	REASON FOR BUFFER ENCROACHMENT
LAMBERT CREEK	50 FT	YES	THE PROJECT INCLUDES RESTORING A PORTION OF THE CREEK.
EAST VADNAIS LAKE	50 FT	NO	N/A

A 50 FOOT NATURAL BUFFER MUST BE PRESERVED OR PROVIDE REDUNDANT (DOUBLE) PERIMETER SEDIMENT CONTROLS IF NATURAL BUFFER IS INFEASIBLE.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

DEWATERING AND BASIN DRAINING ACTIVITIES:
THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAN DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION AND RETAIN VEGETATION WHENEVER POSSIBLE.

THE PERMITTEE SHALL DELINEATE AREAS NOT TO BE DISTURBED. PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES.

THE CONTRACTOR SHALL STABILIZE OF ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 14 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION. STABILIZATION MUST BE COMPLETED WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT CLAY, SILT, OR ORGANIC COMPONENTS DO NOT REQUIRE STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

THE CONTRACTOR SHALL STABILIZE TEMPORARY AND/OR PERMANENT DRAINAGE DITCHES OR SWALES WITHIN 200 LINEAL FEET FROM PROPERTY EDGE, OR DISCHARGE POINT(S) WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH IN 24 HOURS OF CONNECTION TO A SURFACE WATER.

THE CONTRACTOR SHALL DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. VELOCITY DISSIPATION DEVICES MUST BE USED TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

POLLUTION PREVENTION MANAGEMENT MEASURES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEAK POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL ARE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R, CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST CONTACT THE GROUND AND BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

DRAWN BY: HRC
DESIGNER: EKJ
CHECKED BY: EKJ
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
www.sehinc.com

I HEREBY CERTIFY THAT THIS PLAN 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.

Emily K. Jennings, PE
Date: 04.15.2020 Lic. No. 56622

VADNAIS HEIGHTS, MINNESOTA

SWPPP

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

10/10

Dawn Tanner <dawn.tanner@vlawmo.org>

Requesting concurrence

Bump, Samantha (DNR) <samantha.bump@state.mn.us> Thu, Apr 30, 2020 at 9:23 AM
To: Dawn Tanner <dawn.tanner@vlawmo.org>
Cc: "Collins, Melissa (DNR)" <Melissa.Collins@state.mn.us>, "Parris, Leslie (DNR)" <leslie.parris@state.mn.us>, "Hoaglund, Erica (DNR)" <erica.hoaglund@state.mn.us>, "Joyal, Lisa (DNR)" <lisa.joyal@state.mn.us>

Hi Dawn,

I have reviewed the attached assessment of the potential for the VLAWMO Lambert Lake project to impact rare features. I concur with your assessment and have the additional comments:

- Do not include the proximity of the polygons or the location details of state-listed species as it is non-public information.
- Avoidance needs to include contacting the Regional Nongame Specialist, Erica Hoaglund, if turtles are encountered.
- Include a more specific timeline for construction phases, so it is more clear.
    - For example, *the construction of the new meandered channel will take place between [beginning/mid/end of the month] and [beginning/mid/end of the month].*

Thank you for consulting with Erica on the development of the project details and please continue that coordination. The reference number for this correspondence is ERDB #20200248. Let me know if you have any questions.

Have a great day,
Samantha Bump
NHIS Review Specialist | Ecological & Water Resources
Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, MN 55155
Phone: 651-259-5091
Samantha.Bump@state.mn.us

From: Dawn Tanner <dawn.tanner@vlawmo.org>
Sent: Wednesday, April 8, 2020 1:17 PM
To: Bump, Samantha (DNR) <samantha.bump@state.mn.us>; Joyal, Lisa (DNR) <lisa.joyal@state.mn.us>; Hoaglund, Erica (DNR) <erica.hoaglund@state.mn.us>
Cc: Collins, Melissa (DNR) <Melissa.Collins@state.mn.us>; Parris, Leslie (DNR) <leslie.parris@state.mn.us>
Subject: Re: Requesting concurrence

[Quoted text hidden]
[Quoted text hidden]

[Quoted text hidden]
[Quoted text hidden]

DAWN TANNER, PhD
Program Development Coordinator
651.204.6074 | www.vlawmo.org
800 E County Rd E Vadnais Heights, MN 55127
Vadnais Lake Area Water Management Organization

3 attachments

Finalized EAW Lambert excerpt for species of concern.docx
5272K

Attachment #1_LambertMeander-inset.pdf
3285K

Attachment #2_USGS Lambert Lake 7.5 24K1.pdf
17109K

FINDINGS OF FACT and CONCLUSIONS

Vadnais Lake Area Water Management Organization (VLAWMO) Bacteria, Nutrient, and Sediment Reduction Project

In Vadnais Heights, Minnesota

June 2020

Vadnais Lake Area Water Management Organization

And

City of Vadnais Heights

In the Matter of the Need For an
Environmental Impact Statement for the
Vadnais Lake Area Water Management Organization (VLAWMO)
Bacteria, Nutrient, and Sediment Reduction Project

Statement of Issue

The Vadnais Lake Area Water Management Organization (VLAWMO) proposes and has received MPCA funding for improvements along County Ditch 14, a tributary to East Vadnais Lake, the reservoir for the St. Paul Regional Water Service. The Project includes sheetpile replacement, a meandered channel, and the addition of biochar treatment cells to address the bacteria impairment. This Project is an amendment to a project that was completed at the same site in 2004. The earlier project included creating a new ditchline, attempting to install sheetflow across the wetland, building a stormwater retention basin that was reinforced with steel sheetpile on the south end and vinyl sheetpile on the north end, constructing an access berm on the north end of the pond, and building an access road on the eastern side of the site. These structures are in place now. Because of the previous work at the site, new infrastructure is not needed.

This Project reaches two thresholds requiring a mandatory Environmental Assessment Worksheet. In the Streams and ditches category (4410.4300, subpart 26), this project will divert or realign more than 500 feet of a natural watercourse with a total drainage area of 10 or more square miles. The project will also trigger a mandatory EAW in the next category, Wetlands and Protected Waters (4410.4300, subpart 27). The Project will change the course and cross section of one acre or more of a protected water (DNR 62-30P). The purpose of the Project is to improve water quality, restore wetland functions lost when this wetland was ditched 90 years ago, reconnect the ditch to its floodplain, and address flooding issues adjacent to this urban wetland.

The VLAWMO is the proposer and Responsible Government Unit for review of this project.

VLAWMO's decision in this matter shall be either a negative or a positive declaration of the need for an environmental impact statement (EIS). VLAWMO must order an EIS for the project if it determines the project will have the potential for significant environmental effects.

Based upon the information in the record, which is comprised of the EAW for the proposed project, written comments received, responses to the comments and other supporting documents, VLAWMO makes the following Findings of Fact and Conclusions:

FINDINGS OF FACT

Project Description

Location

Lambert Creek or County Ditch 14 is in the northeast Twin City area, with its headwaters in White Bear Lake and flowing southwest to East Vadnais Lake in Vadnais Heights. Restoration of the two wetlands upstream of Lambert Lake, realignment of the ditch, construction of the stormwater retention pond (i.e., Lambert Pond), and construction of the access road happened as part of previous projects completed prior to 2004.

Lambert Lake is in the southwest corner of County Road F and Centerville Road in Vadnais Heights, Ramsey County, Minnesota. The main body of the 250-acrew wetland is south of County Road F and goes south and west to the outlet under Kohler Road. A northwest lobe of Lambert lies to the north of Co. Rd. F and is connected via culvert. The proposed access to the project area is off of Co. Rd. F. The project includes replacement of sheetpile on the north end of the pond and constructing a meander between the two previous ditchlines to restore habitat and ecosystem function. Replacement of the sheetpile is a critical protection for flood control and maintaining stormwater infrastructure.

Existing Conditions

The existing ditchline was constructed in 2004 to provide access on higher ground. That replaced an earlier ditchline that was installed in the early 1900s to accommodate farming practices and to provide additional water sources for the St. Paul water utility. It is understood that maintenance in the form of redredging of the Lambert Lake and downstream portion of Lambert Creek was done in the 1970s. Adjustable control structures were installed at the outlets of upstream Grass Lake and Rice Lake in White Bear Township and have been in operation since 1995. A weirs were installed on the south and north ends of Lambert Pond in 2004. Steel sheetpile was used on the south end, and vinyl sheetpile was used on the north end. The vinyl sheetpile has exceeded its predicted lifespan (10-15 years) and was not placed into solid substrate when it was installed. It has heaved upward with the freeze-thaw cycle, and is leaning into the pond.

Gains in water quality have been made with the impoundments at Grass, Rice, and Lambert Lakes upstream. The Creek is listed as impaired for bacteria and continues to have high nutrient loads.

Project Components

Fall installation of BMPs will begin as early as mid-September, 2020. Construction includes replacing the vinyl sheetpile, building a meander, and restoring vegetation along the new meander to stabilize its path. Construction is planned for winter 2020-2021, and planned to be conducted from November 1-March 1. Initiation of construction will depend upon suitable weather conditions. Meander construction and sheetpile installation require frozen peat for equipment access to the site. Construction mats will be used if necessary to limit soil compaction and disturbance. Vegetation work will be completed April-July, 2021.

The steel sheetpile on the south end of the pond continues to function well and does not need updating. The vinyl sheetpile on the north end of the pond has exceeded its lifespan (~10-15 years) and has been heaved up from the natural freeze/thaw cycle because it was not anchored into solid substrate. At the time when the vinyl sheetpile was installed, resistivity imaging was not widely

available, so it was not known that the sheetpile would need to be installed up to 32 feet to reach solid substrate. A resistivity study was conducted during summer 2019 and allowed mapping of the peat depth to sand and clay. The resistivity study informed design of replacement of the failing vinyl sheetpile with steel (Figure 4). The sheetpile replacement is a reconstruction project to an existing structure that is not of historical, cultural, architectural, archaeological, or recreational value. As such, by itself, the replacement would be exempt from the EAW process. However, it is included here because it is part of the overall footprint of the project, and construction to replace sheetpile and build the meander will happen at the same time during winter when the wetland is frozen and heavy equipment can safely access the site.

Replacement of the sheetpile on the north end of the pond is a flood control and maintenance issue. If the sheetpile was not replaced, it could fail and result directly in flooding to the area.

Agency and Public Comments on the EAW and VLAWMO Responses

There were a total of six agency comments received. Copies of the agency letters are included in this document.

An online public meeting was held on May 20, 2020. Invitations to this meeting were mailed to more than 250 property owners living immediately adjacent to the project and surrounding areas. The public meeting was recorded and is available on VLAWMO's website. The meeting was co-hosted by VLAWMO, the City of Vadnais Heights, and SEH. SEH is the engineering firm designing and supervising the project.

Agencies

- Minnesota Department of Transportion (MnDOT): No comments to address
- US Army Corps of Engineers (USACE): Recommended initiating permit process, which is underway and occurring as an amendment to the previous project in 2004 (MVP 2003-02114, and the update is MVP 2019-02143)
- Minnesota State Historic Preservation Office (SHPO): Explained that this project will require review and consultation under Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800 because the project is receiving federal funds. Review and consultation under Section 106 are occurring and underway as part of the USACE permit process.
- Minnesota Pollution Control Agency (MPCA): See below
- Minnesota Department of Natural Resources (MnDNR): No comments to address
- The Metropolitan Council: No comments to address; recommended continued collaboration with plans and construction

MPCA Comments and Responses

Comment #1: *Permits and Approvals (Item 8)*

The response to Item 8 does not identify the need to get coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (CSW Permit). Coverage under the CSW Permit is required for all projects that will disturb one acre or more above the ordinary high water level (OHWL). The EAW does not clearly describe the amount of disturbance above the OHWL that will occur; however, if the one-acre or more threshold is exceeded, coverage under the CSW Permit is required.

Response: The full project will take place below the OHWL and, therefore, does not require a CSW Permit.

Comment #2: *Contamination/Hazardous Materials/Wastes (Item 12)*

- *It appears that Items 12.b and 12.c were not addressed in the EAW.*

- *The EAW does not discuss if sediments will be removed during the Project. If sediments will be removed as part of the Project, the EAW should discuss any sediment sampling that was conducted and the method of sediment disposal.*

Response: Sediment from the stormwater pond will not be removed as part of this project.

Natural soils from the wetland area will be excavated to create the new meander channel. The excess soils removed from the new meander channel will be strategically placed in the existing channel in order to create small oxbow pools along the existing channel. Soil incorporation on-site is part of the USACE permit evaluation and process. No soil will be imported to the project site and no soil will be exported from the project site. Sampling of soils in the new meander area have not been done.

Criteria for Determining the Significance of Environmental Impacts

Minnesota Rule 4410.1700 provides that an environmental impact statement shall be ordered for projects that have the potential for significant environmental effects. In deciding whether a project has the potential for significant environmental effects, the following factors shall be considered:

Type, extent and reversibility of environmental impacts:

VLAWMO finds that the project will have no significance impact on air quality. The project is being undertaken to improve water quality. Increasing diversity of habitat and native vegetation will have a positive effect on the local wildlife. Noise will increase during construction but will return to normal once the project is complete. Operational hours will be limited to winter daylight. Other environmental effects as described in the EAW are not significant and will be fully mitigated. No significant environmental effects were identified.

Cumulative potential effects of related or anticipated future projects:

VLAWMO hopes that this project, together with the previous Clean Water Partnership projects will improve water quality by removing nutrients, sediment, and bacteria. VLAWMO is working to address the bacteria impairment on the stream as part of this project. Future projects will include maintenance of the ditch and restoration areas. Additional large-scale construction projects related to stormwater at this site have not been identified at this time.

The extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority:

There are several federal, state, and local permits required to ensure that specific environmental effects are mitigated. The mitigation of environmental impacts will be designed and implemented in coordination with regulatory agencies, and will be submit to permitting processes. Permits and approvals that have been or may be required prior to the project construction are pending and identified in the EAW document.

The extent to which the environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer including other EISs.

This projects combines the experience of VLAWMO, SEH, the City of Vadnais Heights. All entities are very familiar with the project site, and construction work is taking place at the location of prior project work completed in 2004. Experience gained during that project, in addition to monitoring, modeling, and survey work completed in preparation for this project, have informed the design and implementation plan. Communication and collaboration were completed with MN DNR, USACE, and others to identify and plan for possible impacts. Planning has been iterative and allowed full incorporation of comments received prior to and through the EAW process.

CONCLUSIONS

1. All requirements of the environmental review of the proposed project have been met.
2. The EAW and permit processes related to the project have generated information that is sufficient to determine whether the project has the potential for significant effects.
3. Areas where potential environmental effects have been identified are being addressed during the design of the project. Mitigation will be provided where impacts are expected to result from project construction. Mitigative measures are incorporated into the project design, and have been or will be coordinated with the appropriate local and state agencies during the permit process.
4. Based on the criteria in Minnesota Rules part 4410.1700, the project does not have the potential for significant deleterious environmental effects.

ORDER

Based on the Findings of Fact and Conclusions contained herein and on the entire record:

The Vadnais Lake Area Water Management Organization hereby determines that the Vadnais Lake Area Water Management Organization (VLAWMO) Bacteria, Nutrient, and Sediment Reduction Project will not result in significant environmental impact, and that the project does not require the preparation of an environmental impact statement.

For the Vadnais Lake Area Water Management Organization:

_____ _____

Jim Lindner, VLAWMO Board Chair Date

Appendix: Responses from Agencies

Figure 1: Comment received from MnDOT on May 29, 2020

Dear Ms. Tanner,

The Minnesota Department of Transportation (MnDOT) has reviewed the above-referenced site plan and has no comments, as the proposed project should have little or no impact on MnDOT's highway system.

Cordially,

Cameron Muhic
Senior Planner
MnDOT Metro District
651-234-7797
Cameron.Muhic@state.mn.us

Figure 2: Comment received from US Army Corps of Engineers on June 4, 2020

CLASSIFICATION: UNCLASSIFIED

Good morning,

Please see the attached pre-application comments letter for the Lambert Lake Improvement Project in Ramsey County, MN, and let me know if you have any questions.

Respectfully,

Maria DeLaundreau (she/her)
Project Manager

US Army Corps of Engineers
St. Paul District
180 East 5th Street, Suite 700
St. Paul, MN 55101
651-290-5266

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT
180 FIFTH STREET EAST, SUITE 700
ST. PAUL, MN 55101-1678

June 4, 2020

Regulatory File No. MVP-2020-00775-MAD

VLAWMO
c/o Dawn Tanner
800 East County Road E
Vadnais Heights, MN 55127

Dear Ms. Tanner:

This letter is in response to correspondence we received from Vadnais Lakes Area Water Management Organization regarding the Lambert Lake Bacteria, Nutrient, and Sedicment Reduction Project. The purpose of this letter is to inform you that based on the Environmental Assessment Worksheet for the project referenced above a Department of the Army (DA) permit may be required for your proposed activity. In lieu of a specific response, please consider the following general information concerning our regulatory program that may apply to the proposed project.

If the proposal involves activity in navigable waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Section 10 prohibits the construction, excavation, or deposition of materials in, over, or under navigable waters of the United States, or any work that would affect the course, location, condition, or capacity of those waters, unless the work has been authorized by a Department of the Army permit.

If the proposal involves discharge of dredged or fill material into waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 404 of the Clean Water Act (CWA Section 404). Waters of the United States include navigable waters, their tributaries, and adjacent wetlands (33 CFR § 328.3). CWA Section 301(a) prohibits discharges of dredged or fill material into waters of the United States, unless the work has been authorized by a Department of the Army permit under Section 404. Information about the Corps permitting process can be obtained online at http://www.mvp.usace.army.mil/regulatory.

The Corps evaluation of a Section 10 and/or a Section 404 permit application involves multiple analyses, including (1) evaluating the proposal's impacts in accordance with the National Environmental Policy Act (NEPA) (33 CFR part 325), (2) determining whether the proposal is contrary to the public interest (33 CFR § 320.4), and (3) in the case of a Section 404 permit, determining whether the proposal complies with the Section 404(b)(1) Guidelines (Guidelines) (40 CFR part 230).

If the proposal requires a Section 404 permit application, the Guidelines specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (40 CFR § 230.10(a)). Time and money spent on the proposal prior to applying

for a Section 404 permit cannot be factored into the Corps' decision whether there is a less damaging practicable alternative to the proposal.

If an application for a Corps permit has not yet been submitted, the project proposer may request a pre-application consultation meeting with the Corps to obtain information regarding the data, studies or other information that will be necessary for the permit evaluation process. A pre-application consultation meeting is strongly recommended if the proposal has substantial impacts to waters of the United States, or if it is a large or controversial project.

If you have any questions, please contact me in our St. Paul office at (651) 290-5266 or Maria.A.DeLaundreau@usace.army.mil. In any correspondence or inquiries, please refer to the Regulatory file number shown above.

Sincerely,

Maria DeLaundreau
Project Manager

Figure 3: Comment received from SHPO on June 15, 2020

Good Afternoon –

Please find attached, the SHPO comment letter for this project.

Best Regards,

Kelly

Kelly Gragg-Johnson | Environmental Review Specialist
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3285
kelly.graggjohnson@state.mn.us

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

June 15, 2020

Dawn Tanner
Program Development Coordinator
VLAWMO
800 East County Rd E
Vadnais Heights, MN 55127

RE: EAW – Vadnais Lake Area Water Management Organization (VLAWMO) Bacteria, Nutrient, and Sediment Reduction Project
Vadnais Heights, Ramsey County
SHPO Number: 2020-1822

Dear Ms. Tanner:

Thank you for providing this office with a copy of the Environmental Assessment Worksheet (EAW) for the above-referenced project.

Based on our review of the project information, we conclude that there are no properties listed in the National or State Registers of Historic Places and no known or suspected archaeological properties in the area that will be affected by this project.

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.

Please contact Kelly Gragg-Johnson, Environmental Review Specialist, at kelly.graggjohnson@state.mn.us if you have any questions regarding our review of this project.

Sincerely,

Sarah J. Beimers
Environmental Review Program Manager

Figure 4: Comment received from MPCA on June 15, 2020

Attached are the Minnesota Pollution Control Agency's comments on the Vadnais Lake Area WMO Bacteria, Nutrient, and Sediment Reduction Project Environmental Assessment Worksheet.

Please acknowledge receipt of this comment letter to Karen Kromar at Karen.kromar@state.mn.us

Thank you.

Elizabeth Tegdesch
Environmental Review and EQB Support
651-757-2100
Elizabeth.tegdesch@state.mn.us

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

June 15, 2020

Dawn Tanner
Program Development Coordinator
Vadnais Lake Area Watershed Management Organization
800 East County Road E
Vadnais Heights, MN 55127

Re: Vadnais Lake Area Watershed Management Organization (VLAWMO) Bacteria, Nutrient, and Sediment Reduction Project Environmental Assessment Worksheet

Dear Dawn Tanner:

Thank you for the opportunity to review and comment on the Environmental Assessment Worksheet (EAW) for VLAWMO Bacteria, Nutrient, and Sediment Reduction project (Project) in the city of Vadnais Heights, Ramsey County, Minnesota. The Project consists of various improvements along Lambert Creek to address impairments. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility or other interests, the MPCA staff has the following comments for your consideration.

Permits and Approvals (Item 8)
The response to Item 8 does not identify the need to get coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (CSW Permit). Coverage under the CSW Permit is required for all projects that will disturb one acre or more above the ordinary high water level (OHWL). The EAW does not clearly describe the amount of disturbance above the OHWL that will occur; however, if the one-acre or more threshold is exceeded, coverage under the CSW Permit is required.

Contamination/Hazardous Materials/Wastes (Item 12)
- It appears that Items 12.b and 12.c were not addressed in the EAW.
- The EAW does not discuss if sediments will be removed during the Project. If sediments will be removed as part of the Project, the EAW should discuss any sediment sampling that was conducted and the method of sediment disposal.

We appreciate the opportunity to review this Project. Please provide your specific responses to our comments and notice of decision on the need for an Environmental Impact Statement. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit action(s) by the MPCA. Ultimately, it is the responsibility of the Project proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this EAW, please contact me by email at Karen.kromar@state.mn.us or by telephone at 651-757-2508.

Sincerely,

Karen Kromar

Karen Kromar
Project Manager
Environmental Review Unit
Resource Management and Assistance Division

KK:bt

cc: Dan Card, MPCA, St. Paul
Scott Fox, MPCA, St. Paul

Figure 5: Comment received from MnDNR on June 17, 2020

Dear Ms. Tanner,

The DNR has reviewed the final VLAWMO Bacteria, Nutrient, and Sediment Reduction Project EAW. Thank you for your early coordination with the DNR during the development of this project. We appreciate the effort to construct the stream meander in a way that reduces soil compaction within the wetland and minimizes impact to wildlife. We fully support this project that will provide many ecological benefits including: flood control, wildlife habitat, vegetation restoration, and improved water quality.

Thank you for the opportunity to review this project.

Sincerely,

Melissa Collins

Regional Environmental Assessment Ecologist | Ecological and Water Resources
Pronouns: She/her
Minnesota Department of Natural Resources
1200 Warner Road
St. Paul, MN 55106
Phone: 651-259-5755

Email: melissa.collins@state.mn.us
mndnr.gov

Figure 6: Comment received from the Metropolitan Council on June 17, 2020

The attached letter is being sent electronically on 6/17/2020.

Sandi Dingle
Program Technical Specialist | Regional Planning
sandi.dingle@metc.state.mn.us
P. 651.602.1312 | F. 651.602.1674
390 North Robert Street | St. Paul, MN | 55101 | metrocouncil.org

June 17, 2020

Dawn Tanner, Program Development Coordinator
Vadnais Lake Area Watershed Management Organization
800 East County Road E
Vadnais Heights, MN 55127

RE: Vadnais Lake Area WMO Environmental Assessment Worksheet (EAW) – Bacteria, Nutrient, and Sediment Reduction Project
Metropolitan Council Review No. 22450-1
Metropolitan Council District No. 11

Dear Dawn Tanner:

The Metropolitan Council received the EAW for the Bacteria, Nutrient, and Sediment Reduction project in Vadnais Heights on May 11, 2020. The proposed project is located at Lambert Creek. The proposed development consists of 14 acres with a new creek alignment, spanning from the Lambert Lake Pond outlet to the convergence of the historic creek and the current creek path, will fill the current ditch line, and replace and redirect flow through a newly-meandered stream, south of the retention basin.

The staff review finds that the EAW is complete and accurate with respect to regional concerns and does not raise major issues of consistency with Council policies. An EIS is not necessary for regional purposes.

We offer the following comments for your consideration.

Item 6. Project Description (Colin Kelly, 651-602-1361)
Council staff appreciate how the EAW outlines project beneficiaries, including wildlife, on page 17: "residents living along Lambert Creek, especially south of the project area, residents of St. Paul who receive drinking water from SPRWS, and residents of Vadnais Heights who have a desire for flooding protection, improved habitat quality, and resilience in local wetlands. Project beneficiaries also include wildlife such as: pollinators, migrating and resident birds, and mammals including otters that use the project site."

Item 9. Land Use (Colin Kelly, 651-602-1361)
Regional Park System units in the vicinity include the existing Vadnais-Snail Lake Regional Park (approx. 1.1 miles to the southwest), the existing Highway 96 Regional Trail (approx. 1.3 miles to the north) and the St. Anthony Railroad Spur Regional Trail Search Corridor (approximately 0.1 mile southeast of the project site). However, as a Regional Trail Search Corridor, the specific routing of this future regional trail has not yet been finalized and it does not have a Council-adopted master plan. Council staff does not anticipate that the proposed project will adversely impact any of these Regional Park System units.

Item 11.a. – Water Resources: Surface & Ground Water Features (Lanya Ross, 651-602-1803)
The EAW accurately acknowledges the impact of the project on the St. Paul drinking water supply. As the project moves forward, Council staff encourage the project team to consult with Saint Paul Regional Water Services to be sure the water utility is aware of activities that might impact its water treatment.

Item 11.b.i. – Water Resources: Wastewater (Roger Janzig, *roger.janzig@metc.state.mn.us*)
Metropolitan Council Interceptor (1-VH-422) is located west of this proposed project. The interceptor was built in 1968 and is a 42-inch Reinforced Concrete Pipe. To assess the potential impacts to our interceptor system; prior to initiating this project, preliminary plans should be sent to Tim Wedin, Interceptor Engineering Assistant Manager, *Timothy.Wedin@metc.state.mn.us*, (651-602-4571) at the Metropolitan Council Environmental Services.

Item 11.b.ii. – Water Resources: Stormwater (Emily Resseger, 651-602-1033)
This project is a benefit for water resources: it will improve the water quality entering Vadnais Lake, restore the stream ecosystem, improve the wetland complex habitat, and create better flood resiliency.

Item 13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features) (Emily Resseger, 651-602-1033)
The EAW shows the project proposers are thoughtfully considering impacts to the existing system and surrounding areas by using wildlife-friendly erosion control materials and doing construction in the winter when the wetland is frozen. Council staff appreciate the attention to wildlife and natural resources shown in this project.

This concludes the Council's review of the EAW. The Council will not take formal action on the EAW. If you have any questions or need further information, please contact Cameran J. Bailey, Principal Reviewer, at 651-602-1212.

Sincerely,

Angela R. Torres, AICP, Manager
Local Planning Assistance

CC: Tod Sherman, Development Reviews Coordinator, MnDOT – Metro Division
Susan Vento, Metropolitan Council District 11
Kyle Colvin, MCES Engineering Programs Manager
Judy Sventek, MCES Water Resources Manager
Emily Resseger, MCES Water Resources Environmental Analyst
Tim Wedin, MCES Interceptor Engineering Assistant Manager
Raya Esmaeili, Sector Representative, Reviews Coordinator

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Building a Better World for All of Us®

MEMORANDUM

TO: Vadnais Lake Area Water Management Organization (VLAWMO)

FROM: Emily Jennings, PE (Lic. MN)
Water Resources Engineer, SEH

DATE: June 4, 2020

RE: Lambert Lake Improvements Project
SEH No. VADLA 153931 14.00

The Lambert Lake Improvements project has reached a 90% design milestone. United States Army Corps of Engineers (USACE) and Minnesota Department of Natural Resources (MnDNR) permits have been applied for and are both currently under review. SEH has prepared two estimates for project construction costs; one for the meander construction and one for the sheet pile replacement. We understand that the meander construction is being financed through grant and match funds while the sheet pile replacement project is being financed solely through loan funds. The construction cost estimate totals are as follows:

- Meander Construction = $291,750
- Sheet Pile Replacement = $650,000

The meander construction cost was optimized to meet the overall grant funded amount (294,670). The cost of the sheet pile replacement is more than the original loan amount identified by VLAWMO ($388,000) however following soil investigation through resistivity, it was determined that the sheet pile would need to be installed to a greater depth than originally anticipated.

A repair of the existing sheet pile was investigated early on in the design development process however given the current depth and configuration of the vinyl sheet pile, there is uncertainty that a repair would meet the expectations for the desired lifespan of a functional sheet pile wall relative to the potential construction costs of the repair. SEH staff did investigate the feasibility of reusing some of the vinyl sheet pile material in an effort to save on material costs, however there is only approximately 50 feet that are deep enough for use and there was concern of the existing material structural integrity due to the current configuration that may be exacerbated during removal. Based on this information, SEH recommended replacing the entirety of the existing vinyl sheet pile wall with steel PZ27 steel sheet pile. For more information, see the attached memorandum from August 2019.

It was requested that SEH revisit the recommended sheet pile material and/or investigate any other cost savings associated with the sheet pile replacement. As currently shown within the 90% design plans, SEH geotechnical engineers have currently optimized the material area by identifying sheet pile depth in accordance with the variation of the soil profile as identified by the resistivity study (wall depth varies).

Currently, PZ27 material has been recommended for the proposed sheet pile wall. This material was chosen as it has a higher section modulus to reduce deflection due to bending. There is bending stress due to the thick peat material. This bending is evident in the existing vinyl wall. Additionally, the PZ27 material was also used for the south and east sides of the pond and has shown to be stable over time. An alternate material is PZ22, which has a smaller section modulus that could lead to greater deflection. PZ22 was investigated early in the design process

but is not recommended due to the smaller section modulus that could lead to greater deflection. Both materials provide an adequate structural section. The deflection (outward bending towards pond) for the PZ27 and PZ22 material are less than 1 inch and approximately 2.5 inches, respectively. Deflection could occur immediately upon placement and additional creep could be experienced over time.

The difference in cost between the PZ27 and PZ22 sheets are based on the price of steel. The price of steel is estimated at $0.30-0.50 per pound which would equate to approximately $1.50-2.50 per square foot, or a material cost savings of $18,600-$31,000 or about 4-6% of current material costs.

Another potential cost saving approach could be to allow the use of used sheet pile at the project site. Used sheet pile often shows signs of wear and tear. However, if the joints are intact and the material meets other criteria such as limited rust wear, bending, etc, it would still be functional.

Recommendations
As recommended previously, it is suggested that PZ27 sheet pile be used for the project due to the minimal deflection and long term durability within the project area. The use of used sheet pile seems appropriate for this project as long as the used material meets a certain set of criteria and is inspected prior to installation. Used steel sheet pile will be included as an alternative bid item to see if a cost savings can be recognized.

EKJ
c: Jeremy Walgrave, SEH

Attachments
Lambert Lake Improvements Recommendations Memo dated August 20, 2019

S:\UZ\V\VADLA\153931\5-final-dsgn\50-final-dsgn\50-Hydro\Memo

Building a Better World for All of Us®

MEMORANDUM

TO: Vadnais Lake Area Water Management Organization (VLAWMO)

FROM: Emily Erdahl, PE (Lic.MN)
Wayne Wambold, PE (Lic.MN, WI, IA, NE)
SEH

DATE: August 20, 2019

RE: Lambert Lake Pond Recommendations
SEH No. VADLA 150210 14.00

Lambert Lake Pond Lifespan Analysis and Recommendations
SEH water resources staff used P8 Urban Catchment Model to estimate the TSS loading and capture to the Lambert Lake Pond to estimate the remaining life span of the pond, assuming that the life span is over when the pond dead storage has reached 50% of the existing capacity. The existing capacity as measured by VLAWMO staff in June of 2017 was used in comparison. SEH staff used the following parameters for analysis:

- Nationwide Urban Runoff Program (NURP) 50th Percentiles Particle Distribution and manipulated TSS concentration information from County Road F sampling data received from VLAWMO on August 9, 2019, for both high and low flow events
- Drainage Area and land cover assumptions from USGS Streamstats delineation, for both completely and partially directly connected impervious coverage scenarios

Based on the analysis, it was determined that the capture rate of the pond is approximately 40-60% of the annual loading. The P8 software with NURP 50th Percentile Particle Distribution loading results are much higher than the loading from manipulated TSS concentrations from County Road F sampling data. This is likely due to wetland areas surrounding Lambert Creek upstream capturing TSS prior to discharge to the creek, which is not accounted for in the P8 model. SEH has determined that the Lambert Lake pond does not need to be dredged at this time. SEH recommends that VLAWMO continue to monitor the discharge and loading to the pond as well as the pond volume with bathymetric surveys to be used in further analysis for dredging needs.

Geotechnical Recommendations
SEH geotechnical staff reviewed the condition of the existing vinyl sheet pile wall located on the north side of the Lambert Lake Pond. The review confirmed the VLAWMO staff's concerns that the wall is in a state of failure and in need of repair or replacement. The existing wall is leaning outward toward the pond and appears to have heaved upward in places. Some of the vinyl sheet interlocks are also cracked due to excessive stress and heaving. It is our understanding, based on previous plans and materials invoicing for the existing wall, that the vinyl sheets are 8 to 14 feet in length.

A geophysical investigation was conducted to determine the depth of organic deposits and soft clays along the alignment of the wall. In general, organic deposits and soft clay were encountered to depths of 12 to 20 feet below the top of the berm adjacent to the wall for the western most 350 feet. These depths exceed the length of the vinyl sheet piling used to construct the existing wall.

It is recommended to replace the existing wall with a new steel sheet pile wall. Reuse of existing vinyl sheet piling was considered; however, the lengths are too short to provide a stable wall, with the exception of the eastern most 50 feet. Also, the stresses induced on the wall would cause excessive deflection of vinyl sheet piling, even if the lengths were adequate. Based on the geotechnical analysis, steel sheet piling, meeting the material and section properties of a PZ-27 sheet, driven to a depth up to 32 feet is necessary to provide a stable wall.

EKE
c: Brad Woznak, Jeremy Walgrave
S:\UZ\V\VADLA\150210\Lambert Lake\Memo

June 16, 2020

RE: Vadnais Lake Area Water Management Organization (VLAWMO)
Lambert Lake Improvements Project
SEH No. VADLA 153931 14.00

Phil Belfiori, Administrator
Dawn Tanner, Program Development Coordinator
Vadnais Lake Area Water Management Organization (VLAWMO)
800 East Co. Rd. E
Vadnais Heights, MN 55127

Dear Mr. Belfiori:

Short Elliott Hendrickson Inc. has prepared this letter to identify our services completed beyond our original agreement, dated October 15th, 2019. The basis for our request is described below.

Task 1: Stakeholder Coordination
The original project scope included time for the following stakeholder and team meetings:

- 60% Design Milestone Meeting with Watershed Staff
- Pre-project meeting with DNR Staff
- 90% Design Milestone Meeting with Watershed Staff
- 100% Design Milestone Meeting with Watershed Staff

Throughout the design process, several other team and stakeholder meetings were necessary for the project development. DNR input and coordination was more extensive than originally planned and budgeted for, as several DNR specialists were involved early in the design process. There were several comments and considerations that were investigated early on, including things such as Blandings Turtles and two-season construction phasing. These considerations were discussed during additional meetings. These meetings were imperative to identify a strategic approach to compliance and the impacts to the overall project budget. These additional services attributed to this were $2,500.

Additionally, VLAWMO and the design team initiated weekly check-in meetings as the project neared critical application deadlines to ensure that all expectations were met and communicated appropriately. These meetings will continue at an appropriate frequency through the approval process of the project. The additional services attributed to this were $2,000 to date, and an estimated $2,600 for future meetings. We have assumed that there will be 8 future meetings, assuming bi-weekly occurrence, and attended by the Project Manager and Senior Water Resources Engineer. These meetings would extend through mid-August, at which time the project will be authorized for bids by the Board.

Task 1B: Stakeholder Coordination
The original project scope did not include a stakeholder coordination meeting for the public. SEH prepared for and participated in a virtual stakeholder meeting alongside VLAWMO and City of Vadnais Heights staff. The additional services attributed to this were $1,800.

Task 5: Water Resources Design
As mentioned in the additional services description of Task 1, above, there were DNR specialists involved early in the design process. This involvement is expected to solicit additional comments from agency stakeholders. The additional services attributed to this are an estimated $1,700 for additional comment response and 2 additional team meetings to discuss comments.

Task 9: EAW
At the time of the scope preparation, it was not known that an EAW would be required for the project. While VLAWMO prepared and submitted the EAW, SEH provided some additional services including content input and review from SEH. The additional services attributed to this were $1,300.

SEH requests additional fees of **$11,900** for completion of the services identified above. These additional fees will be used to complete the remaining scope items of the project and future team meetings on an hourly basis and including any expenses and equipment.

Please feel free to contact me with any questions or concerns you may have.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Emily Jennings, PE
Project Manager
(Lic. MN)

Accepted this ____day of _____, 2020

Vadnais Lake Area Water Management Organization (VLAWMO)

By: _____

Title: _____

EKJ

c: Brad Woznak, Client Service Manager
S:\UZ\V\VADLA\153931\1-genl\10-setup-cont\03-proposal\Additional Services Request

MINNESOTA POLLUTION CONTROL AGENCY

Attachment A - Budget

SWIFT:	169280
Purchase Order:	3000025454
AI:	192051
Activity ID:	PRO20190002

VLAWMO Bacteria, Sediment, & Nutrient Reduction Project
Vadnais Lake Area Water Management Organization (VLAWMO)

Objective	Cost category	Unit cost	Rate	Quantity	Grant	In kind match	Cash match	Total match	Budget total
Objective 1: Lambert Lake Sheet Pile Replacement									
Task A: Replace failing fiberglass sheet pile with steel sheet pile (420 total feet)	Best Management Practices (BMP) Replacement	$400,000.00				$ -	$ 400,000.00	$ 400,000.00	$ 400,000.00
Objective 1 - Total					**$ -**	**$ -**	**$ 400,000.00**	**$ 400,000.00**	**$ 400,000.00**
Objective 2: BMP Engineering and Technical Assistance									
Tasks A-B: Engineering and Technical Assistance	Engineering	$59,000.00			$ 34,000.00	$ -	$ 25,000.00	$ 25,000.00	$ 59,000.00
Tasks A-B: VLAWMO Staff Coordination	Coordinator				$ -	$ 8,772.00	$ -	$ 8,772.00	$ 8,772.00
Objective 2 - Total					**$ 34,000.00**	**$ 8,772.00**	**$ 25,000.00**	**$ 33,772.00**	**$ 67,772.00**
Objective 3: BMP Installation									
Task A: Build meander from Lambert Lake and reconnect to ditch (1,500 to 2,000 total feet)	BMP Implementation	$294,670.00			$ 190,670.00		$ 104,000.00	$ 104,000.00	$ 294,670.00
Objective 3 - Total					**$ 190,670.00**	**$ -**	**$ 104,000.00**	**$ 104,000.00**	**$ 294,670.00**
Objective 4: Design and Install Biochar Cells									
Task A-C: Lab test, work with vendor to design, select placement	Engineering	$22,509.00			$ 12,509.00	$ -	$ 10,000.00	$ 10,000.00	$ 22,509.00
Task D: Installation of biochar cells, includes perforated tubes, accessories, and support rods anchored through peat	BMP Implementation	$5,500.00			$ 5,500.00	$ -	$ -	$ -	$ 5,500.00
Objective 4 - Total					**$ 18,009.00**		**$ 10,000.00**	**$ 10,000.00**	**$ 28,009.00**
Objective 5 - Monitoring Design and Installation									
Task A-B: Design sensors and sampling protocol and install	Engineering and Research	$35,000.00			$ 25,000.00	$ -	$ 10,000.00	$ 10,000.00	$ 35,000.00
Objective 5 - Total					**$ 25,000.00**	**$ -**	**$ 10,000.00**	**$ 10,000.00**	**$ 35,000.00**
Objective 6 - Monitoring and Analysis									
Task A: Staff Monitoring	Water Resources Manager				$ -	$ 3,366.40	$ -	$ 3,366.40	$ 3,366.40
Task B: Bacteria Samples Lab Analysis	Lab Fees				$ -	$ 780.00	$ -	$ 780.00	$ 780.00
Task B: Nutrient Samples Lab Analysis	Lab Fees				$ -	$ -	$ 7,080.00	$ 7,080.00	$ 7,080.00
Tasks B-D: Analyze data, enter into databases, and develop research paper	Research	$55,000.00			$ 35,000.00		$ 20,000.00	$ 20,000.00	$ 55,000.00
Objective 6 - Total					**$ 35,000.00**	**$ 4,146.40**	**$ 27,080.00**	**$ 31,226.40**	**$ 66,226.40**
Objective 7 - Grant administration, monitoring, and community engagement									
Education and Outreach									
Task A: Programming	E&O Coordinator				$ -	$ 2,689.60	$ -	$ 2,689.60	$ 2,689.60
Grant Reporting and Adminstration									
Task B: Staff Coordination	Administrator				$ -	$ 4,496.05	$ -	$ 4,496.05	$ 4,496.05
Task B: Staff Coordination	Coordinator				$ -	$ 5,263.20	$ -	$ 5,263.20	$ 5,263.20
Objective 7 - Total					**$ -**	**$ 12,448.85**	**$ -**	**$ 12,448.85**	**$ 12,448.85**
	Total				**$ 302,679.00**	**$ 25,367.25**	**$ 576,080.00**	**$ 601,447.25**	**$ 904,126.25**

VADNAIS HEIGHTS, MINNESOTA
2020 LAMBERT LAKE IMPROVEMENTS
SEH NO. VADLA 153931

ENTER QTY **ENTER QTY**

	BASE BID				TOTAL		MEANDER + PLANTS		SHEET PILE		
	ITEM NO.	ITEM	UNIT	UNIT PRICE	ESTIMATED QUANTITY	ESTIMATED COST	ESTIMATED QUANTITY	ESTIMATED COST	ESTIMATED QUANTITY	ESTIMATED COST	NOTES
1	2021.501	MOBILIZATION	LS	$148,382.56	2.00	$148,382.56	1.00	$40,052.58	1.00	$108,329.98	
2	2101.505	CLEARING	ACRE	$7,500.00	0.40	$3,000.00	0.25	$1,875.00	0.15	$1,125.00	
3	2101.505	GRUBBING	ACRE	$7,500.00	0.40	$3,000.00	0.25	$1,875.00	0.15	$1,125.00	
4	2104.518	REMOVE SHEET PILING	LS	$40,000.00	1.00	$40,000.00	0.00	$0.00	1.00	$40,000.00	
5	2104.503	SALVAGE AND REINSTALL FENCE	LS	$1,000.00	1.00	$1,000.00	1.00	$1,000.00	0.00	$0.00	FRONT ENTRANCE GATE
6	2105.507	MUCK EXCAVATION	CY	$30.00	1,645.00	$49,350.00	1645.00	$49,350.00	0.00	$0.00	
7	2105.507	COMMON BORROW	CY	$30.00	1,235.00	$37,050.00	1235.00	$37,050.00	0.00	$0.00	CUT FILL RATIO 1:0.74-0.77
8	2011.601	CONSTRUCTION SURVEYING	LS	$15,000.00	2.00	$15,000.00	1.00	$14,000.00	1.00	$1,000.00	
9	2123.510	COMMON LABORERS	HOUR	$135.00	10.00	$1,350.00	10.00	$1,350.00	0.00	$0.00	
10	2123.610	CRAWLER MOUNTED BACKHOE	HOUR	$275.00	5.00	$1,375.00	5.00	$1,375.00	0.00	$0.00	
11	2123.610	SKID LOADER	HOUR	$175.00	5.00	$875.00	5.00	$875.00	0.00	$0.00	
12	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	$150.00	20.00	$3,000.00	20.00	$3,000.00	0.00	$0.00	
13	2452.618	STEEL SHEET PILING (PERMANENT)	SF	$40.00	12,400	$496,000.00	0.00	$0.00	12400.00	$496,000.00	
14	2571.525	DECIDUOUS SHRUB NO 2 CONT	SHRB	$40.00	165.00	$6,600.00	165.00	$6,600.00	0.00	$0.00	RED OISER DOGWOOD
15	2571.525	DECIDUOUS SHRUB NO 2 CONT	SHRB	$40.00	110.00	$4,400.00	110.00	$4,400.00	0.00	$0.00	PUSSY WILLOW
16	2571.525	DECIDUOUS SHRUB NO 2 CONT	SHRB	$40.00	55.00	$2,200.00	55.00	$2,200.00	0.00	$0.00	MEADOWSWEET
17	2573.501	STABILIZED CONSTRUCTION EXIT	LS	$4,000.00	1.00	$4,000.00	1.00	$4,000.00	0.00	$0.00	
18	2573.503	SILT FENCE, TYPE MS	LF	$3.00	7,500.00	$22,500.00	7500.00	$22,500.00	0.00	$0.00	
19	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LF	$4.00	880.00	$3,520.00	880.00	$3,520.00	0.00	$0.00	ASSUMES 2 - 200 LENGTH AND 20 WIDE SECTIONS OF LOG NEEDED
20	2575.504	EROSION CONTROL BLANKET CATEGORY 3N	SQ YD	$3.00	13,552.00	$40,656.00	12826.00	$38,478.00	726.00	$2,178.00	(2.65 ac Meander and 0.15 ac SP)
21	2575.508	SEEDING MIXTURE 32-241	LB	$7.00	106.40	$744.80	100.70	$704.90	5.70	$39.90	38 LB/AC TEMP SEEDING (2.65 ac Meander and 0.15 ac SP)
22	2575.508	SEEDING MIXTURE 34-171	LB	$115.00	14.80	$1,702.00	14.00	$1,610.00	0.80	$92.00	5.3 LB/AC (2.65 ac Meander and 0.15 ac SP)
23	2575.508	SEEDING MIXTURE 34-181	LB	$275.00	5.00	$1,375.00	5.00	$1,375.00	0.00	$0.00	5 LB/AC
24	2575.508	SEEDING MIXTURE 34-261	LB	$35.00	23.00	$805.00	23.00	$805.00	0.00	$0.00	31.5 LB/AC
25	2575.508	SEEDING MIXTURE 35-241	LB	$20.00	36.50	$730.00	36.50	$730.00	0.00	$0.00	36.5 LB/AC - INCIDENTAL
26	2575.509	MULCH MATERIAL TYPE 3	TON	$300.00	5.60	$1,680.00	5.30	$1,590.00	0.30	$90.00	2 TONS/AC (2.65 ac Meander and 0.15 ac SP)
		TOTAL ESTIMATED CONSTRUCTION COST				**$890,000**		**$240,315.48**		**$649,979.88**	
		LESS 10% RESERVE				**178000.00**		$24,031.55			
		ENGINEERING OVERSIGHT						$24,000.00			
		PERMITTING FEES						$3,400.00			
		MEANDER BUDGET						**$291,747.03**			
		LOAN TOTAL						$294,670.00			
										$388,000.00	
						$741,912.80		**$200,262.90**		**$541,649.90**	
				MOBILIZATION		**$148,382.56**		**$40,052.58**		**$108,329.98**	

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

Date: June 19, 2020

To: VLAWMO Board

From: Phil Belfiori, Administrator

Re: V. B. 2. Consideration of Memorandum of Agreement - East Goose Lake Boat Launch Access

Background / Introduction

The Attached proposed Memorandum of Agreement (agreement) between City of White Bear Lake (City) and Vadnais Lake Area Water Management Organization (VLAWMO) is in regards to the construction, installation and operation of a limited access boat launch on East Goose Lake. The City owns the Right-of-Way-on East Goose Lake at Highland Avenue. The Property will require construction and grading work of a boat launch to allow for reasonable Lake access.

Overview of Agreement

Within the agreement, the City would grant VLAWMO and its contractor the right to occupy the property to both complete the necessary construction and to operate the boat launch in perpetuity. The agreement identifies VLAWMO as responsible for: 1)design, 2) hiring or a contractor, and 3)all construction work and construction costs with exception of spoil haul off and tree removal (City).

City Staff has been working closely with VLAWWO staff in the drafting of this proposed agreement. City staff stated they plan to bring this agreement to the City Council in July. Troy Gilchrist (VLAWMO attorney) has also conducted a review of the attached agreement.

Overview of Construction, Permits and Costs

It is anticipated that construction of the boat launch would begin in mid to late summer (pending City agreement and necessary permits). Construction staging at the property will be located at the end of Highland Avenue as identified in Attachment 1. The boat launch grading work /area of disturbance would be approximately located with the red box area on the Attachment 1.

VLAWMO would be responsible for all work related to design, construction, and O&M of the launch site. The City has offered to assist with tree removal and hauling off /disposal of excess materials. VLAWMO staff have obtained a preliminary quote from an experienced local contractor in the range of apx. $2000 -$3000 to grade and construct the launch. Costs for any necessary engineering/permit fees and related costs are anticipated to be minimal and will be dependent on permit requirements.

The City will require a right of way permit for this work and VLAWMO staff is also in communication with the City Forester related to the minimal tree removal that will be required within the approximate boat launch location. Staff is also communicating with the MN DNR on

if any permit will be needed.

At the time of drafting of this memo, VLAWMO staff continues to be in active discussions with City staff on a few specifics within with the agreement. It is anticipated that staff may bring a slightly revised version of this agreement along with preliminary plans to the 6/24/20 Board meeting.

Recommendation

Staff recommends approval of the attached MOU for East Goose Lake Boat Launch Access.

Proposed Motion

_____ moves to approve the attached MOU for East Goose Lake Boat Launch Access with any non –material changes and upon advice of Counsel. Seconded by _____.

Attachments

Attachment 1 – MOU for East Goose Lake Boat Launch Access, with "exhibit A" map /graphic identifying construction limits and other key locational project information.

MEMORANDUM OF AGREEMENT

East Goose Lake Boat Launch Access

This Memorandum of Agreement ("MOA") is made and entered into by and between the City ,of White Bear Lake ("City") and the Vadnais Lake Area Water Management Organization ("VLAWMO") for the construction, operation, and maintenance of a limited access boat launch on East Goose Lake.

RECITALS

A. The two entities share the water quality goals and ecological goals for East Goose Lake and wish to facilitate access for VLAWMO to conduct its necessary partnership-based water quality management activities to pursue mutual beneficial management activities. Water quality management activities and programs for East Goose Lake are identified as a priority in both the VLAWMO Watershed Management Plan and City Local Water Management Plan. East Goose Lake is also listed for nutrient impairment on the State's Impaired Waters list and therefore has been incorporated into VLAWMO's 10-year capital improvement program and in the City's requirements under its MS4 permit.

B. The City owns the right-of-way adjacent to East Goose Lake ("Lake") at Highland Avenue as shown in Exhibit A ("ROW").

C. In order to allow for reasonable Lake access by VLAWMO, VLAWMO must undertake grading work and construct a boat launch in the ROW ("Project").

D. The boat launch ("Launch") is intended for use by VLAWMO and, if needed, by the City. The Launch is not intended to be operated as a public access to the Lake.

E. The City is willing to grant VLAWMO and its contractors a license over the ROW to construct the Project and to operate the Launch in accordance with the terms and conditions of this MOA.

AGREEMENT

The parties to this MOA hereby agree as follows:

1. Grant of License. The City hereby grants VLAWMO a license over the portion of ROW shown on the attached Exhibit A for the entire term of this MOA to allow VLAWMO to construct, operate, and maintain a Launch to facilitate access to the Lake by VLAWMO, its employees, agents, and contractors. Access to the ROW will take place via Highland Avenue. Construction staging at the ROW will be located at the end of Highland Avenue as identified in Exhibit A.

2. Responsibility for Design Engineering.

2.1 VLAWMO shall prepare plans, specifications, and proposals and distribute these documents to the City for review.

2.2 The City will promptly give VLAWMO any information in its possession regarding subsurface structures, utilities or other physical features within the Project area relevant to construction of the Project.

2.3 VLAWMO shall prepare a permit application for work in the City's right-of-way. The City will cooperate with VLAWMO in securing permits and approvals in its status as landowner, and will timely process any permit or approval that it requires. The City will not charge a fee for any such permit or approval.

3. Procurement and Award of Contract.

3.1 VLAWMO shall be responsible for complying with all applicable laws related to letting the contract to construct the Project.

3.2 VLAWMO shall distribute a summary of construction proposals it receive and its recommendation for contract award to the City, and award the construction contract upon concurrence from VLAWMO and the City.

3.3 VLAWMO will require its contractor to conform to all laws in performing the Project. The VLAWMO will require that the City be named as an additional insured under the contractor's commercial general liability insurance for the Project.

4. Responsibility for Construction.

4.1 VLAWMO shall administer the construction contract for the Project, including authorization to begin work, construction inspection, approval of change orders, certification of work completed and partial and final payments to the contractor.

4.2 VLAWMO shall comply with local, state and federal standards for all construction activities, erosion control, restoration, and permits.

4.3 Construction access and staging will be allowed at the ROW as identified in Exhibit A.

4.4 The license granted herein allows access to the ROW by VLAWMO and its contractors for construction of the Project including, but not limited to, land disturbance, excavation, grading, filling, recontouring of adjacent land, seeding and planting, staging, stockpiling, installations to protect work-in-progress and public safety, and all other operations convenient or necessary for construction of the Access. Any type of equipment deemed necessary by VLAMWO to complete the construction work will be granted access.

4.5 VLAWMO will notify the City a minimum of 72 hours prior to construction.

4.6 The City will take the lead with any necessary barricades for construction activities.

4.7 The City agrees to work in good faith with VLAWMO to accommodate reasonable adjustments to the construction plans, means, methods, and schedule as necessary.

5. Project Construction Costs.

5.1 VLAWMO will assume all costs for design engineering of the Project, including permits and permit fees.

5.2 VLAWMO will be responsible for all construction project costs, with the exception of spoil hauling and tree removal/cleaning and grubbing which is the City's costs.

6. Use and Maintenance Responsibility.

6.1 The license granted herein allows VLAWMO the right to unlimited use of the Access for its purposes, including to launch equipment and vessels to conduct any and all water quality management activities, research and data collection, and monitoring and related Lake Management work.

6.2 VLAWMO's use of the ROW will be confined to the area labeled on the site plan in the attached Exhibit A.

6.3 The parties will coordinate so VLAWMO may accomplish its purposes with the least disruption to normal use of the ROW.

6.4 VLAWMO shall be responsible for routine maintenance of the Access. VLAWMO shall coordinate its maintenance activities with the City.

6.5 The City agrees to allow for the installation of electrical service facilities and or lines on or thru the ROW if VLAWMO needs to install electrical service for any water quality related activity or device on the Lake. VLAWMO will work with the City on the location of lines and any possible equipment or electrical equipment that needs to be permanently or temporary kept or constructed on site.

6.6 VLAWMO's Administrator and the City Engineer are the designated representatives of the parties for all coordination and notice under this MOA.

7. Term and Termination. This MOA is effective when fully executed by both parties. The parties intend this MOA to have an initial term of 10 years, and shall automatically renew for successive 10 year terms unless it is terminated as provided herein. The parties may

mutually agree to terminate this MOA at anytime. The City may terminate this MOA upon 180 days written notice to VLAWMO if it determines VLAWMO's use of the Access unreasonably interferes with the City's use, or planned use, of the ROW.

8. Indemnification. VLAWMO agrees to indemnify, hold harmless and defend the City, its officials, agents, and employees against any and all liability, losses, costs, damages, expenses, claims or actions, including reasonable attorney's fees, which the City, its officials, agents, or employees may hereafter sustain, incur or be required to pay, arising out of and to the extent resulting from any act or omission of the VLAWMO, its officials, agents or employees, or contractors in the execution, performance, or failure to adequately perform the VLAWMO's obligations under this MOA including, but not limited to, the imposition of any lien against the City for labor or materials for the Project, any action or inaction of VLAWMO or its contractor in the performance of the Project, or any injury, loss, or damage arising from the Project or VLAWMO's use of the Access. Nothing in this MOA is a waiver by City or VLAWMO of any immunity, defense or liability limit provided by law or and nothing creates a right in any third party against the City or VLAWMO

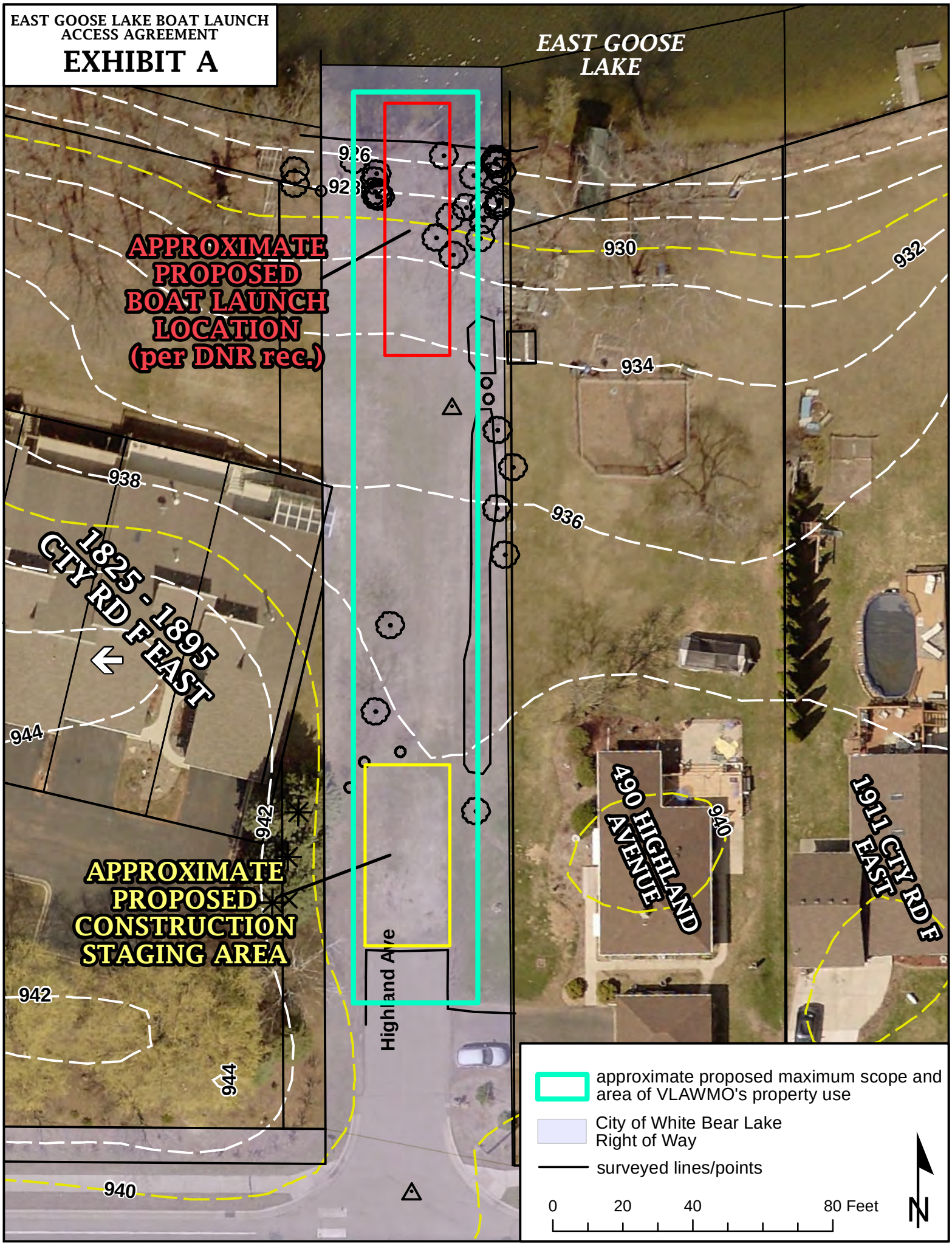
9. Modifications. The terms of this agreement may be changed only by written agreement of the parties signed by duly authorized officers.

The parties have entered into this MOA effective as the date of the last party to execute it.

City of White Bear Lake Organization	**Vadnais Lake Water Management**
_____	_____
Mayor	Chairperson
_____	_____
City Manager	Administrator
Date:_____	Date:_____

EAST GOOSE LAKE BOAT LAUNCH ACCESS AGREEMENT

EXHIBIT A



VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E E, Vadnais Heights, MN 55127
www.vlawmo.org; Office@vlawmo.org

To: VLAWMO Board of Directors

From: Brian Corcoran

Date: June 24, 2020

Re: **V. C. 1. Anderson Woods South Replacement Plan**

V. C. 1. Anderson Woods South Replacement Plan

North Oaks Company is proposing a 21.43-acre 9-lot single-family residential development known as Anderson Woods South The project will include a street and utilities. The site does not include any existing structures. Stormwater management practices will provide treatment of runoff before discharge to wetlands after development.

Anderson Woods South will require 0.1925 acre of permanent impact to one wetland. The need for a safe, efficient and functional site access street consistent with land use guidance and accepted engineering practices renders proposed wetland impacts unavoidable. The project has been designed to minimize wetland impacts to the extent practicable and includes construction practices to reduce or eliminate secondary wetland impacts. Permanent wetland impacts will be replaced by withdrawing 0.3850 acre of wetland credit from the North Oaks Company wetland bank, Account #170. This wetland bank is owned by the Applicant and located within the same County, Major Watershed, and Bank Service Area as the wetland impact.

Project application is included in the packet.

Recommendation: Staff and TEC are recommending to the Board for the approval of proposed impacts of 0.1925 acre of permanent wetland impact and replacement at 2:1 via wetland bank credits 0.3850 (acres)

Anderson Woods South

City of North Oaks, Ramsey County, Minnesota

Wetland Permit Application

Prepared for

North Oaks Company, LLC

by

Kjolhaug Environmental Services Company, Inc.
(KES Project No. 2018-149)

May 20, 2020

Anderson Woods South

City of North Oaks, Ramsey County, Minnesota

Wetland Permit Application

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

Anderson Woods South

City of North Oaks, Ramsey County, Minnesota

Wetland Permit Application

1. INTRODUCTION

North Oaks Company, LLC is proposing a 21.43-acre 9-lot single-family residential development to be located in the City of North Oaks and known as Anderson Woods South (**Figure 1**). The project will include a street and utilities. The existing site consists of mostly wetland and woodland, with open patches of grassy upland. The site does not include any existing structures. Stormwater management practices will provide treatment of runoff before discharge to wetlands after development.

The project is located in the northeastern part of the City of North Oaks, Ramsey County, Minnesota, within the Vadnais Lake Area Water Management Organization (VLAWMO) area, the Mississippi River Metro Major Watershed (#20) and Bank Service Area 7. The VLAWMO is the LGU administering the Minnesota Wetland Conservation Act (WCA) in the project area.

Anderson Woods South will require 0.1925 acre of permanent impact to one wetland. The need for a safe, efficient and functional site access street consistent with land use guidance and accepted engineering practices renders proposed wetland impacts unavoidable. The project has been designed to minimize wetland impacts to the extent practicable and includes construction practices to reduce or eliminate secondary wetland impacts.

Permanent wetland impacts will be replaced by withdrawing 0.3850 acre of wetland credit from the North Oaks Company wetland bank, Account #170. This wetland bank is owned by the Applicant and located within the same County, Major Watershed, and Bank Service Area as the wetland impact.

The following narrative describes the project, the site, wetland impact sequencing, and wetland replacement. Figures and appendices are referenced and attached. The Joint Application Form for Activities Affecting Water Resources in Minnesota is included in **Appendix A**.

Project Purpose and Need

The purpose of Anderson Woods South is to create a residential community with single-family homes connected to municipal utilities in the City of North Oaks. The project responds to the need for additional housing by providing for orderly growth consistent with the City of North Oaks Draft 2040 Comprehensive Plan, which forecasts up to 8.6% population growth in the City of North Oaks over the next 20 years. The City of North Oaks 2008 Comprehensive Plan shows the site guided for Mixed Residential Use and zoned for RMH-PUD (Residential Multiple Family High Density PUD) (**Appendix B**). The Comprehensive Plan provides a framework for

the North Oaks community to allocate land use and accommodate population growth while protecting special resources.

Project Goals and Requirements

The goals of Anderson Woods South are to:

1. fulfill the project purpose as described above;
2. provide nine single-family lots served by municipal water and sewer;
3. provide development consistent with City of North Oaks zoning standards;
4. provide a street to safely serve the new neighborhood;
5. provide effective drainage for the site while capturing and treating stormwater runoff in a manner consistent with local, state and federal standards;
6. avoid and minimize effects on wetlands and water resources to the extent practicable; and
7. replace unavoidable wetland impacts with wetland credits from the North Oaks Company wetland bank.

3. SITE DESCRIPTION

Project Location and Environmental Setting

The project is proposed on 21.43 acres of land located in the Southwest ¼ of Section 4, Township 30 North, Range 22 West, City of North Oaks, Ramsey County, Minnesota. The site is situated about 100 feet southeast of Wilkinson Lake on the west side of Centerville Road (CSAH 59) (**Figure 1**). The property corresponds to Ramsey County PID 043022310012. The site includes about 11.68 acres of woodland, 7.85 acres of wetland, 1.90 acres of grassland, and part of an old field road. Stormwater management practices will provide treatment of runoff before discharge to wetlands after development.

The project area is bordered by Wilkinson Lake (DNR public water 62-43P) to the northwest; the Villas of Wilkinson Lake residential development to the north; Centerville Road (CSAH 59), White Bear Township, and large residential lots to the east; and wetland, woodland, and grassland to the south and southwest.

The site falls in the Vadnais Lake Area Water Management Organization (VLAWMO) area, the Mississippi River Metro Major Watershed (20) and Bank Service Area 7. VLAWMO is the LGU administering the Minnesota Wetland Conservation Act in the project area.

The site drains overland to existing wetlands and Wilkinson Lake, which drains to Deep Lake, and then to Pleasant Lake and Vadnais Lake. The site has variable topography with elevations ranging from a high of 924 feet above mean sea level in the southeastern part of the site to a low elevation of 896 feet at the wetland edge in the northwestern part of the site near Wilkinson Lake.

Wetland Delineation and Jurisdictions

Kjolhaug Environmental Services (KES) delineated three wetlands on the site on September 13, 2018 (**Figure 2**). Characteristics of delineated wetlands are listed in **Table 1**. The site does not include any ditches, channels, watercourses, or streams.

Table 1. Characteristics of Wetlands at Anderson Woods South

Wetland ID	Wetland Type			Dominant Vegetation	
	Circ. 39	Cowardin	Eggers and Reed	Wetland	Upland
1	3/5/6	PEMC / PUBG / PSS1C	Shallow marsh / Open water / Shrub carr	Sedges, woolgrass, Joe-pie weed, cattail, rice cutgrass, smartweed	Quaking aspen, bur oak, common buckthorn, prickly ash, lady fern
2	3/6	PEMC / PSS1C	Shallow marsh / Shrub carr	Cattail, reed canary grass, willow, red osier dogwood	Green ash, quaking aspen, red oak, common buckthorn, hog peanut, Tatarian honeysuckle
3	7	PFO1B	Wooded swamp	Green ash, hop sedge	Quaking aspen, bur oak, common buckthorn, prickly ash, lady fern

Wetland 2 adjoins Wilkinson Lake (DNR public water 62-43P), which has an Ordinary High Water Level (OHW) of 895.2 feet (NGVD 29 Datum). The delineated boundary of Wetland 2 roughly corresponds to the 896-foot contour. The project will completely avoid Wilkinson Lake and will not require a DNR public waters work permit.

Other wetlands on the site fall under the jurisdiction of the Wetland Conservation Act (WCA), administered in the project area by the Vadnais Lake Area Water Management Organization (VLAWMO) and Section 404 of the Federal Clean Water Act, administered in the area by the U.S. Army Corps of Engineers (USACE), St. Paul District.

The Wetland Delineation Report was submitted on December 10, 2018. The VLAWMO issued a Notice of Decision approving the wetland boundaries for Application #12-2018 on December 28, 2018. The U.S. Army Corps of Engineers (Corps) followed by issuing a wetland boundary concurrence letter for file MVP-2008-01251-MJB, without a jurisdictional determination, on April 26, 2019. **Appendix C** includes a wetland delineation summary and agency decisions approving the wetland delineation.

4. PROPOSED PROJECT

Project Description and Schedule

North Oaks Company, LLC is proposing a 21.43-acre 9-lot single-family residential development to be known as Anderson Woods South and located in the City of North Oaks (**Figures 3 and 4**). The project will include a street and utilities. The existing site includes about 11.68 acres of woodland, 7.85 acres of wetland, and 1.90 acres of grassland.

Anderson Woods South will require 0.1925 acre of permanent impact to one wetland. The need for a safe and functional site access street and consistency with land use guidance and accepted engineering practices renders proposed wetland impacts unavoidable. The project has been designed to minimize wetland impacts to the extent practicable and includes construction practices to reduce or eliminate secondary wetland impacts.

The project will include additional housing to broaden residential living choices available for existing and future residents of the City of North Oaks. The one residential street will be about 32 feet wide and located within a 50-foot-wide easement. The street will include storm sewers to route runoff from impervious surfaces to stormwater basins for treatment before discharge to wetlands. Wilkinson Villas Phase 1A is located immediately north of the site, includes four residential lots, was approved for construction in 2019, and will not impact wetland.

Project construction is expected to start in July of 2020. The project will be graded in one phase and homes will be constructed in response to market conditions. Streets and infrastructure such as storm sewer will be installed during an early stage of construction. Major earthwork and seeding are expected to be completed in the fall of 2020 or spring of 2021. Completion of home sales and construction is expected to require 2 to 3 years.

VLAWMO Wetland Buffer Compliance Framework

Section 10 of the VLAWMO Water Management Policy (October 26, 2016) states that the base wetland buffer width is determined by the management class of the wetland, as evaluated by the current version of the MnRAM. Wetlands were evaluated using MnRAM 3.4 and assigned management classifications of Manage 1 and Preserve (**Table 2, Appendix D**). MnRAM results were submitted to VLAWMO in 2019 as part of the application for Wilkinson Villas Phase 1A, which avoided all wetlands. VLAWMO accepted the management classifications and approved the Wilkinson Villas Phase 1A application.

Table 2. Wetland Management Classifications and Buffer Widths

Wetland ID	MnRAM Classification	Base Buffer Width (Ft)	Minimum Applied Buffer With (Ft)	Applied Buffer Width Based on Soil Group (ft)
1	Manage 1	40	34	34
2	Manage 1	40	34	34
3	Preserve	75	67	69

VLAWMO Policy allows the Base Buffer Width to be reduced under certain conditions. The reduced Base Buffer Width is referred to as the Applied Buffer Width. The Base Buffer Width may be reduced:

1. by 2 feet for every 5% decrease in average buffer slope from 20%; or
2. by 2 feet for every grade of Hydrologic Soil Group above Group D for the predominant buffer soil condition.

Existing wetland buffer slopes range from 7% to 11% and average about 9%. The predominant wetland buffer soils are Zimmerman fine sand and Anoka loamy fine sand, which are in

Hydrologic Soil Group A. Therefore, the slopes allow the buffer width to be reduced by 4 feet, or the Hydrologic Soil Group allows the buffer width to be reduced by 6 feet. Reducing the Base Buffer Width by 6 feet results in an Applied Buffer Width of 34 feet for Wetlands 1 and 2 and 69 feet for Wetland 3.

VLAWMO Policy allows buffer width averaging, provided that the minimum width is at least 50% of the Applied Buffer Width (i.e., 17 or 34.5 feet), there is no reduction in the total buffer area, and habitat protection at least equals that of a uniform Applied Buffer Width.

Stormwater treatment basins are allowed in buffers as long as the stormwater basins provide the intended stormwater treatment functions. Buffers need to be documented by a declaration recorded at the County. Buffers can be graded as long as they are planted to a native seed mix after grading. Buffers disturbed during construction must be decompacted to a depth of 18 inches, and organic matter must be incorporated into soils before revegetation. Buffers must be monitored/maintained for 5 years, which can be shortened to 3 years if VLAWMO agrees.

Stormwater flows from development need to be managed to minimize water level bounces and inundation periods for Manage 1 wetlands and to match existing water level bounces and inundation periods for Preserve wetlands under various storm events.

Wetland Buffer Plan

The project includes wetland buffers that the meet buffer dimensional requirements as described above. Wetland buffer averaging will be implemented where necessary to allow for development of lots, roads, stormwater basins, and trails (**Figure 5, Appendix E**). The following factors indicate wetland buffer width averaging will provide the overall size, function, and value at least equal the applied buffer widths:

1. average buffer widths and buffer areas will be greater than required;
2. buffer proposed for Wetland 3 is over three times the size of Wetland 3; and
3. adjoining property to the west and south is covered under the Minnesota Land Trust conservation easement.

The Wetland Buffer Concept Plan included in **Appendix E** will be refined by project land surveyors as necessary, and then documented and recorded by declaration at Ramsey County in accordance with requirements Buffers will be planted with a native mesic seed mix as specified in **Appendix E** and monitored as required by VLAWMO.

The Applicant will monitor the wetland buffer and submit an annual Wetland Buffer Inspection Report to VLAWO for 5 years. Buffer monitoring may end after 3 years if buffers are well established and approved by VLAWMO.

Annual Wetland Buffer Inspection Reports will include:

1. A Site Plan showing:
   a. the location of the approved buffer,
   b. bare soil/erosion areas,

   c. invasive vegetation areas, and
   d. the location and type of buffer encroachments, if any (e.g., structures, unapproved mowing, trails, etc.).
2. Color photographs of the wetland buffer taken during the growing season from vantage points labeled on the Site Plan.
3. A description of buffer vegetation including:
   a. list of dominant plant species and their estimated percent cover, and
   b. comparison of the species present to the approved planting/seeding plan.
4. A written narrative identifying management strategies to be used during the next growing season to control invasive species, improve vegetative cover and species diversity, and mitigate any buffer encroachments.

5. SEQUENCING

The following narrative addresses wetland avoidance, impact minimization, impact reduction and elimination over time, and replacement in compliance with Minnesota Wetland Conservation Act (WCA) and Section 404 of the Federal Clean Water Act (CWA).

The sequencing discussion includes alternatives considered and practices proposed to minimize wetland impacts. Alternative designs were considered to evaluate wetland avoidance and minimization approaches as required under the WCA and CWA. The alternatives analysis demonstrates that there are no feasible and prudent alternatives available that would completely avoid wetland impacts while achieving project goals and requirements.

WCA Rules indicate that wetland avoidance alternatives are preferred over proposed alternatives only if they are feasible and prudent. WCA Rules require that local governments determine whether any proposed feasible and prudent alternatives are available that would avoid impacts to wetlands. As set forth under Minnesota Rules Part 8420.0520, Subp. 3.C(2), an alternative is considered feasible and prudent if it meets all of the following requirements:

1. it is capable of being done from an engineering point of view;
2. it is in accordance with accepted engineering standards and practices;
3. it is consistent with reasonable requirements of the public health, safety, and welfare;
4. it is an environmentally preferable alternative based on a review of social, economic, and environmental impacts; and
5. it would create no truly unusual problems.

No-Build Alternative

The No-Build Alternative was considered as a method to avoid wetland impacts associated with the project. Although the No-Build Alternative would avoid wetland impacts, it would not fulfill the project purpose, need, goals, or requirements. The No-Build Alternative is not consistent with:

1. the City of North Oaks 2008 Comprehensive Plan, which guides the site for Residential Use (**Appendix B**);
2. the Metropolitan Council's 2030 Regional Development Framework, which targets higher density in locations with convenient access to transportation corridors and adequate sewer capacity, and favors efficient and economical use of regional infrastructure;
3. a 1999 development agreement between North Oaks Company and the City of North Oaks, which shows the project area planned for development with municipal sewer; or
4. the East Oaks Planned Unit Development Environmental Assessment Worksheet, completed in 1998, which included 780 acres of development and 886 acres of open space protected under conservation and agricultural easements

Even if the No-Build Alternative was implemented, population growth and development pressure would continue to affect the proposed development site. This would likely cause a similar residential development proposal to arise for the property soon. When other land development proposals have been unsuccessful in the past, another development proposal has typically been brought forth as soon as market conditions become more favorable.

For the reasons discussed above, the No-Build Alternative was rejected as an approach to avoiding wetland impacts.

Wetland Avoidance Design

Consideration was given to a Wetland Avoidance Design that would completely avoid wetland impacts (**Figure 6**). One Wetland Avoidance Design would eliminate wetland impacts by installing a 120-foot-long bridge in the location where the proposed access street would cross the wetland. Although the Wetland Avoidance Design would physically avoid the 8,385 square feet of fill proposed in Wetland 1, the Wetland Avoidance Design is not feasible and prudent because:

1. constructing a 120-foot structured bridge to serve three residential lots is overdesign;
2. crossing 100 feet of Type 3 wetland with a bridge would not be prudent, as it would require unusual infrastructure to avoid a relatively small wetland impact;
3. building a bridge across a small unavoidable wetland would not be in accordance with accepted engineering standards and practices; and
4. utilities would still need to be installed in the wetland by open trench excavation or directional boring.

The Wetland Avoidance Design is not feasible and prudent because it is not in accordance with accepted engineering standards and practices. It has become an accepted practice to replace such small (±0.2 ac) wetland impacts that are necessary to provide reasonable access developable upland. As discussed below, the development area is otherwise inaccessible because alternative site access routes have more impacts than the Proposed Site Plan (**Figure 6, Appendix F**).

The Wetland Avoidance Design was rejected as an approach to avoiding wetland impacts because it is inconsistent with accepted engineering standards and practices, and because it would require unusual infrastructure to avoid a relatively small wetland impact.

No alternatives were identified that meet the project purpose and requirements while completely avoiding direct and indirect wetland impacts.

Alternative Site Access Routes

The proposed wetland impacts are necessary to construct the street access to three residential lots proposed on the west side of Wetland 1. It has been suggested that Alternative Access Routes from the north or south might minimize or avoid wetland impacts. However, each Alternative Access Route would impact more wetland than the Proposed Site Plan. Neither route is feasible and prudent for reasons explained below.

The North Access Route would require:

1. permission for construction on property controlled by a separate landowner;
2. construction of 1,200 feet (0.23 mile) of new roadway;
3. a total cul-de-sac length of 0.56 mile;
4. impacts to a Minnesota Land Trust conservation easement;
5. 10,243 square feet (0.2352 acre) of wetland impact, or bridges spanning 570 feet to avoid wetland impact;
6. impacts to or avoidance of an existing stormwater basin; and
7. inefficient use of infrastructure.

The South Access Route would require:

1. permission for construction on property controlled by a separate landowner and for use of a private driveway that leads to a private residence;
2. construction of 1,500 feet (0.28 mile) of new roadway;
3. a total cul-de-sac length of 0.50 mile;
4. impacts to a Minnesota Land Trust conservation easement, a future trail corridor, and wetlands; and
5. inefficient use of infrastructure.

Neither Alternative Access Route is justified from an environmental or economic perspective. Both alternative routes would require permission from separate landowners and the Minnesota Land Trust. The conservation easement land that would be impacted by alternative access routes was set-aside in 1999 as part of an agreement between North Oaks Company and the City of North Oaks. It includes 660 acres of conservation trust and 220 acres of agricultural land. This is the largest conservation easement held by the Minnesota Land Trust in the Twin Cities metro area.

Both Alternative Access Routes would require unacceptably long cul-de-sacs. Maximum allowable cul-de-sac lengths typically range from about 500 to 1,500 feet. The cul-de-sac in the Proposed Site Plan is 795 feet long, verses 2,970 feet (0.56 mile) for the North Access Route and 2,580 feet (0.50 mile) for the South Access Route (**Figure 6, Appendix F and G**).

The Alternative Access Routes were rejected as an approach to avoiding wetland impacts because they would impact more wetlands and conservation easements, and use infrastructure less efficiently, when compared to the Proposed Site Plan.

Proposed Alternative

The Proposed Alternative is shown on the Proposed Site Plan (**Figure 3**) and Grading Plan (**Figure 4**). The Proposed Alternative includes 97 single-family lots and 0.3139 acre of permanent impact distributed among three small wetlands. The need for a safe, efficient and functional site access street consistent with land use guidance and accepted engineering practices renders proposed wetland impacts unavoidable. The project has been designed to minimize wetland impacts to the extent practicable and includes construction practices to reduce or eliminate potential secondary wetland impacts.

The proposed 0.1925 acre of wetland impact is unavoidable for multiple reasons:

1. Wetland 1 spans across the entire project property, making it impossible to route the roadway around it;
2. Alternative Access Routes would impact more wetland than the Proposed Alternative; and
3. construction of a bridge in lieu of a wetland fill section is not feasible and prudent (see Wetland Avoidance Design).

The Proposed Alternative meets the project purpose, need, goals, and requirements as described previously and is compatible with the future land use envisioned by the City of North Oaks. The proposed project represents an orderly and logical use of the subject property and is consistent with applicable land use and policy plans.

There are no known feasible and prudent alternatives that would avoid the wetland impacts listed above. The wetland avoidance alternatives reviewed are not considered feasible and prudent.

Wetland Impact Minimization

A variety of site planning and design practices have been used to minimize wetland impacts. The Proposed Alternative completely avoids Wetlands 2 and 3 and the area below the OHW of Wilkinson Lake. The Proposed Alternative will minimize the area of wetland fill by steepening the side slopes of the street through the wetland fill section. Other practices to be deployed during project construction to minimize the potential for future and offsite wetland impacts include:

1. treating stormwater from impervious surfaces to remove sediment and nutrients prior to discharge to wetlands; and
2. using silt fence and other Best Management Practices to control erosion and stormwater runoff during construction.

The need for a feasible and prudent design that is consistent with local and regional policies, land use practices, and engineering standards causes further wetland impact minimization to be impracticable.

Wetland Impact Rectification

Temporary wetland impacts are not proposed and therefore wetland impact rectification does not apply.

Wetland Impact Reduction or Elimination Over Time

Several practices will be implemented to help reduce or eliminate wetland impacts over time, including:

1. establishing buffers and easements around avoided wetlands and stormwater features to help ensure their continued function;
2. constructing stormwater basins to manage and reduce potential effects of stormwater runoff; and
3. complying with the NPDES Stormwater Permit for construction activity to reduce pollutants in stormwater discharges.

Rare Species Considerations

State and federal wetland rules require that endangered and threatened species be considered in wetland permitting.

State

Minnesota Rules Part 8420.0515 specifies that endangered and threatened species must be considered when submitting a wetland replacement plan. The proposed project construction area includes wetland, woodland, and grassland. Woodland habitat is dominated by bur oak, white oak, and northern pin oak, with a canopy of that varies from patchy to interrupted. Common buckthorn is prevalent in both the shrub and ground layers, limiting competition from other species.

The MN DNR conducted a review of the Natural Heritage Information System (NHIS) for the project area on November 22, 2019. Results of the MN DNR NHIS review are included in **Appendix H**. The review identified an area of Outstanding Biodiversity Significance located on the west side of the project area. This area includes the edge of Wilkinson Lake and will not be impacted by the proposed project.

Midwest Natural Resources (MNR) conducted a rare plant field survey of the site on July 26, 2019. MNR identified 181 vascular plant species during the field survey. No state-listed endangered, threatened, or special concern plant species were found. The MNR Rare Plant Survey Report is provided in **Appendix H**.

The MN DNR indicated Blanding's turtles (*Emydoidea blandingii*) are a state-listed threatened species that has been documented in the direct vicinity of the proposed project. Blanding's turtles prefer calm shallow water, rich aquatic vegetation, and select open grassy uplands with sandy soils for nesting. In winter, Blanding's turtles hibernate beneath wetlands that have fairly deep and/or flowing water that remains liquid and aerated throughout the winter.

To minimize potential effects on Blanding's turtles, the project will minimize wetland impacts and use surmountable curbs on roadways. As suggested by the MN DNR, the Applicant will also implement the following mitigation measures to minimize potential effects on Blanding's turtles and other rare species:

1. give the Blanding's turtle flyer to project construction contractors;
2. ;
3. use erosion control blanket constructed of 'bio-netting' or 'naturalnetting' rather than plastic or plastic components;
4. avoid wetland impacts during turtle hibernation season (Oct 15-Apr 15), unless the wetland is unsuitable for hibernation (i.e., < 14 inches deep);
5. dewatering will take place between May 15 and Sep 15 except in areas unsuitable for hibernation; and
6. monitor for turtles during construction, move turtles away from imminent danger by hand, and report any Blanding's turtle sightings to the DNR Nongame Specialist.

Federal

Review of the USFWS Information for Planning and Consultation (IPaC) website with a polygon encompassing the project area identified the northern long-eared bat as the only threatened or endangered species with potential to occur in the project area. The U.S. Fish and Wildlife Service (USFWS) listed the northern long-eared bat as federally threatened on May 4, 2015. On February 2, 2017, the USFWS listed the rusty patched bumble bee as federally endangered. The rusty patched bumble bee occurs in Ramsey County, but was not identified by the IPaC website.

The northern long-eared bat hibernates in caves during winter and establishes maternity roosting colonies under the loose bark of trees during the summer. Minnesota DNR data from April 2019 indicate northern long-eared bat hibernacula and roost trees are not known to have occurred in the project vicinity. Constructing the street and the three lots on the end of the cul-de-sac will remove about 1.53 acres of trees and preserve about 6.42 acres of trees (**Figure 7**). About 1.94 acres of trees were previously removed from the site during a tree harvest in anticipation of

development. Constructing homes on six custom graded lots to be located near Centerville Road could remove about 1.06 acres of additional trees. Tree removal areas are dominated by bur oak, white oak, and northern pin oak. The project may affect potential bat habitat, but the northern long-eared bat is not known to breed or roost in the area, so the project is not expected to affect northern long-eared bat populations.

The USFWS Rusty Patched Bumble Bee Map does not show potentially occupied habitat in the project vicinity, but this species is known to occur in Ramsey County. The nearest High Potential Zone for the rusty patched bumble bee is located near White Bear Lake, about 2.75 miles southeast of the proposed project. The suitability of the project area for bumble bees is limited because the site does not contain native prairie or wildflower plantings or remnants. The project is not expected to affect the rusty patched bumble bee because the site lacks preferred habitat that provides nectar and pollen from flowers and because it falls in a Low Potential Zone.

6. WETLAND IMPACTS AND JURISDICTIONS

Proposed Wetland Impacts

Construction of the Anderson Woods South in a manner consistent with the project purpose, need, goals, and requirements will result in 0.1925 acre of permanent wetland impacts.

WCA and Federal Jurisdictional Status

The proposed wetland impacts are regulated under the WCA and are presumed to be regulated under Section 404 by the Corps. The Corps typically assumes jurisdiction over wetlands located adjacent to lakes and streams.

7. WETLAND REPLACEMENT PLAN

Compliance Framework

State

Minnesota Rules Part 8420.0117, Subp. 1, state that Ramsey County is in an area with less than 50% of presettlement wetlands remaining. Minnesota Rules Part 8420.0522, Subp. 4, state that the minimum replacement ratio for impacts to wetlands on nonagricultural land in a less than 50% area, when the replacement occurs via wetland banking in the same Bank Service Area, is 2 to 1.

Federal

This application assumes that wetlands to be impacted are waters of the U.S. and fall under Corps jurisdiction. Under such circumstances, the Corps typically requires compensatory mitigation at a ratio of at least 1 to 1 and usually at a ratio of 2 to 1.

Replacement Requirement

The replacement calculations for the project follow:

0.1925	acre of proposed Type 3 wetland impact
x 2.0	(2 to 1 ratio)
0.3850	acre of required replacement

Proposed Replacement Plan

Permanent wetland impacts will be replaced by withdrawing 0.3850 acre of wetland credit from the North Oaks Company wetland bank, Account #170. This wetland bank is owned by the Applicant and located within the same County, Major Watershed, and Bank Service Area as the wetland impact. **Appendix I** includes a Wetland Credit Statement for wetland bank Account #170 and a Wetland Credit Withdrawal Form.

8. APPROVALS REQUESTED

Developing the Anderson Woods South will require 0.1925 acre of permanent wetland impact. This application requests wetland replacement plan approval from the Vadnais Lake Area Water Management Organization, the Local Government Unit administering the Minnesota Wetland Conservation Act. This application also requests authorization from the Corps of Engineers under Nationwide Permit 29 (Residential Developments with less than 0.5 acre of impact) under Section 404 of the Federal Clean Water Act.

Anderson Woods South

Wetland Permit Application

FIGURES

1. Site Location
2. Existing Conditions
3. Proposed Site Plan
4. Proposed Grading Plan
5. Wetland 3 Buffer Sketch
6. Wetland Avoidance and Alternative Site Access
7. Tree Removal and Preservation

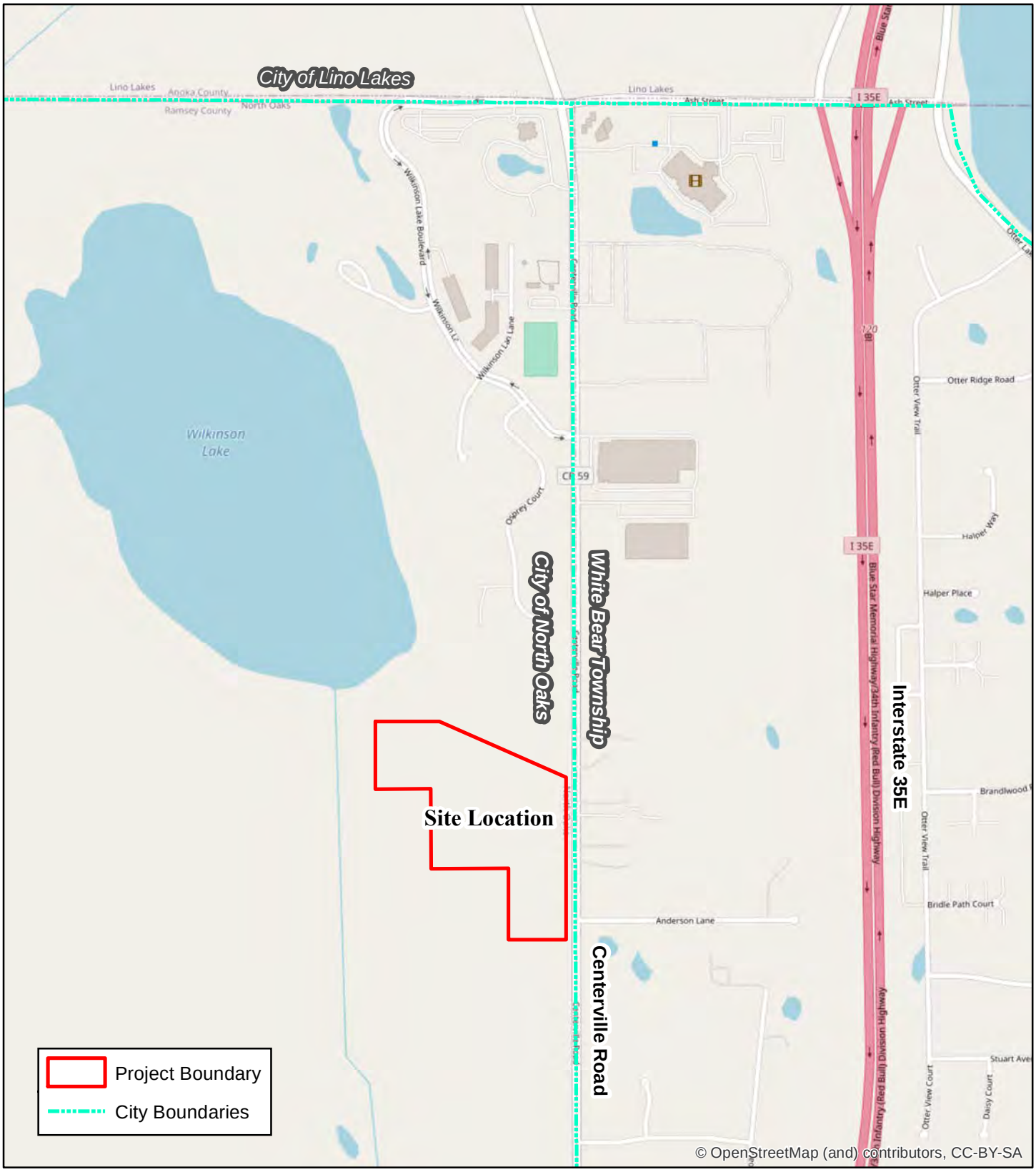


Figure 1 - Site Location

N

0 825 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: ESRI Streets Basemap

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

Figure 2 - Existing Conditions

N

0 325 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, Kjolhaug Environmental, Kurth Surveying, Inc.

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

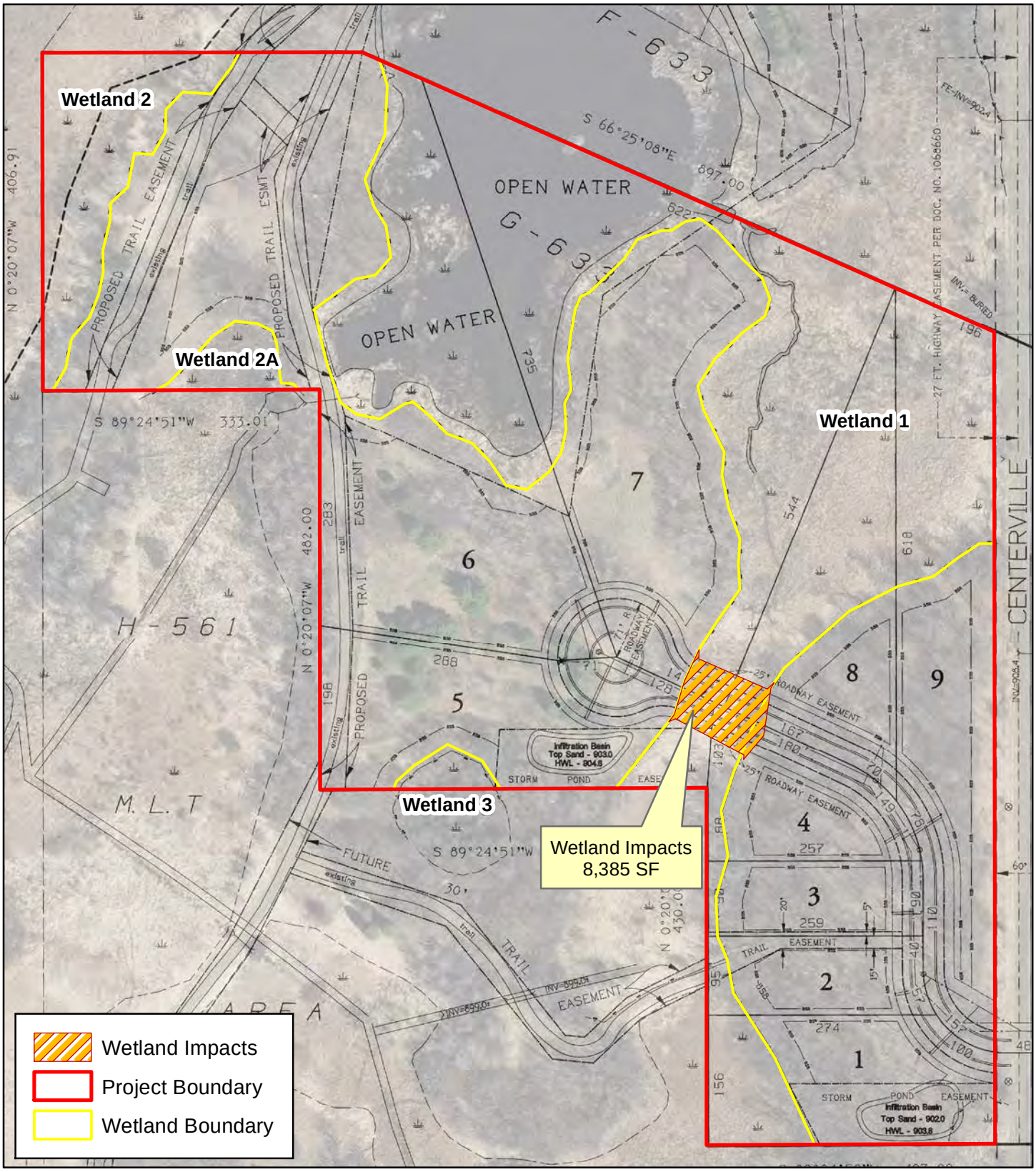


Figure 3 - Proposed Site Plan

N

0 165 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, Kjolhaug Environmental, Kurth Surveying, Inc.

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

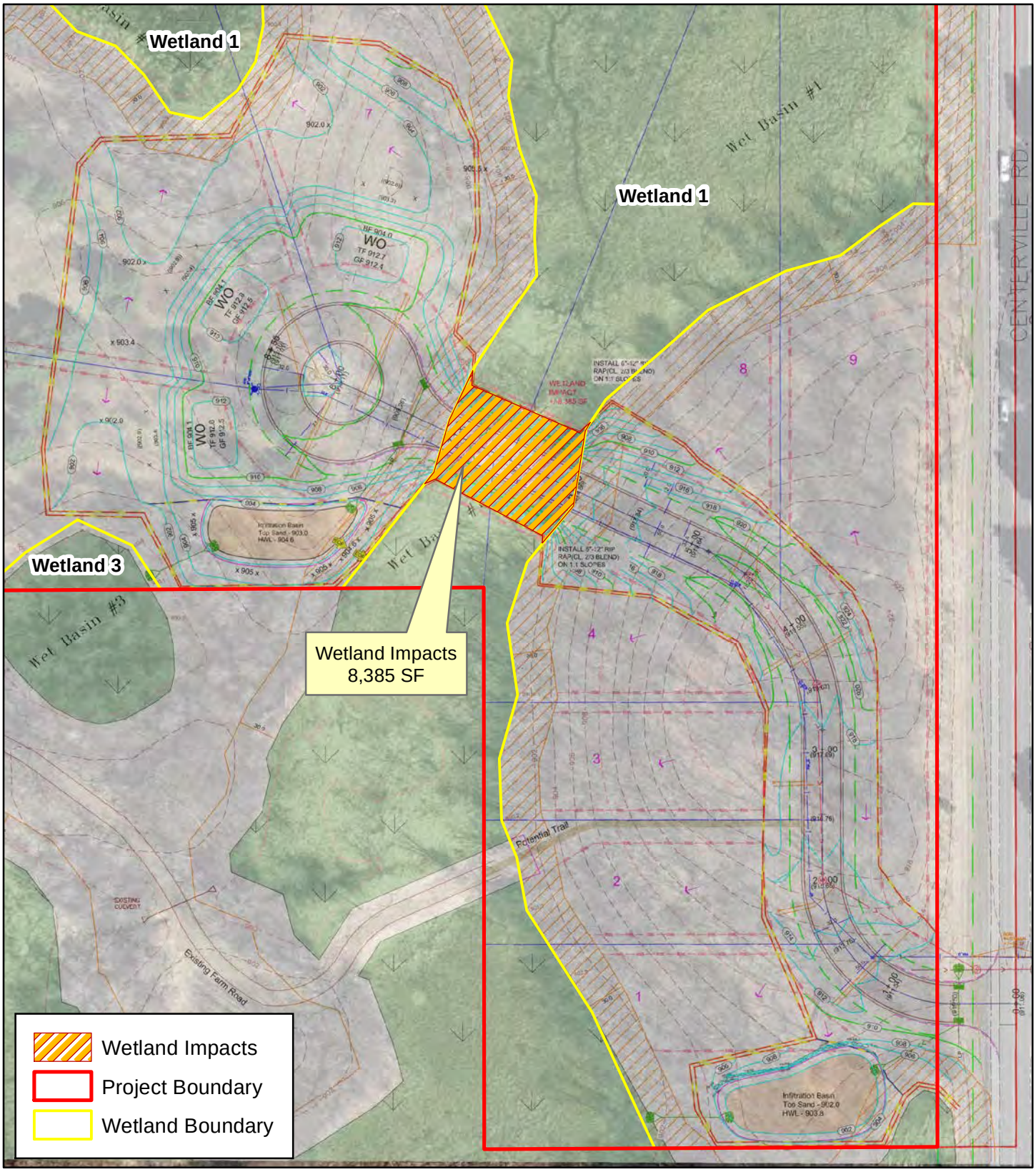


Figure 4 - Proposed Grading Plan

N

0 105 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, Kjolhaug Environmental, Sathre-Bergquist, Inc.

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

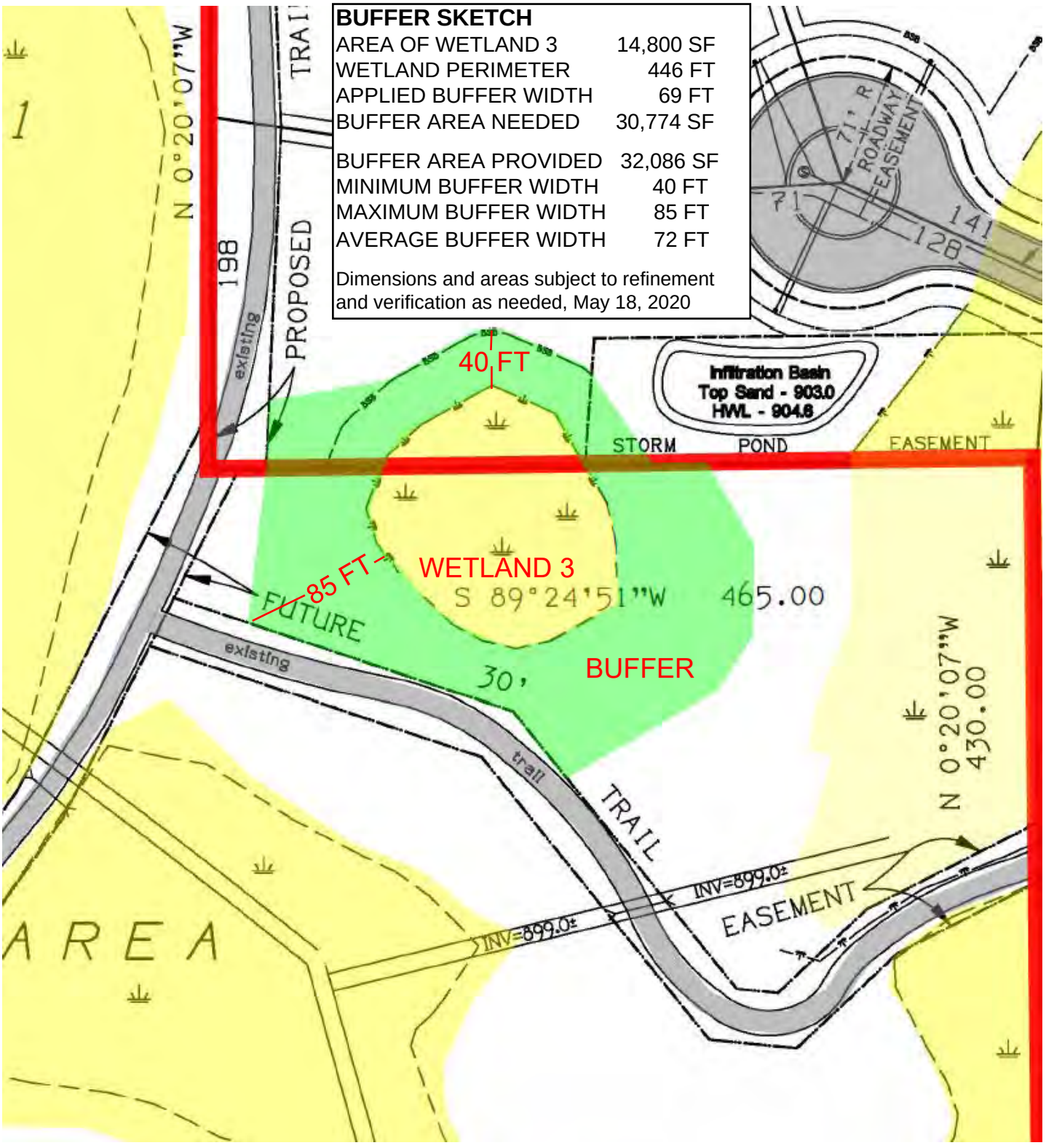


Figure 5 – Wetland 3 Buffer Sketch

N

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

Source: Kurth Surveying, Inc. and Kjolhaug Environmental

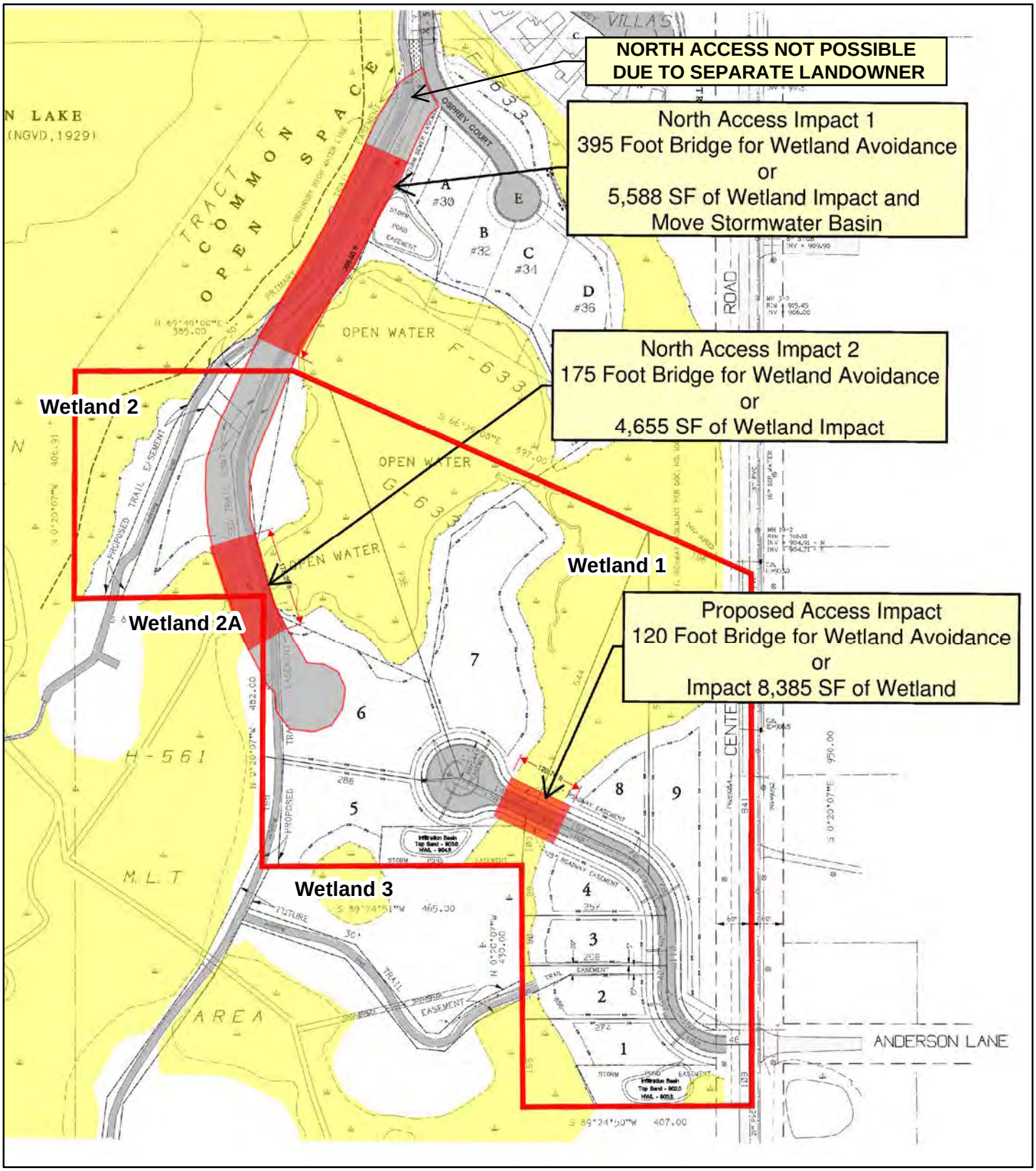


Figure 6 - Wetland Avoidance and Alternative Site Access

N

0 245 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, Kjolhaug Environmental, Kurth Surveying, Inc.

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

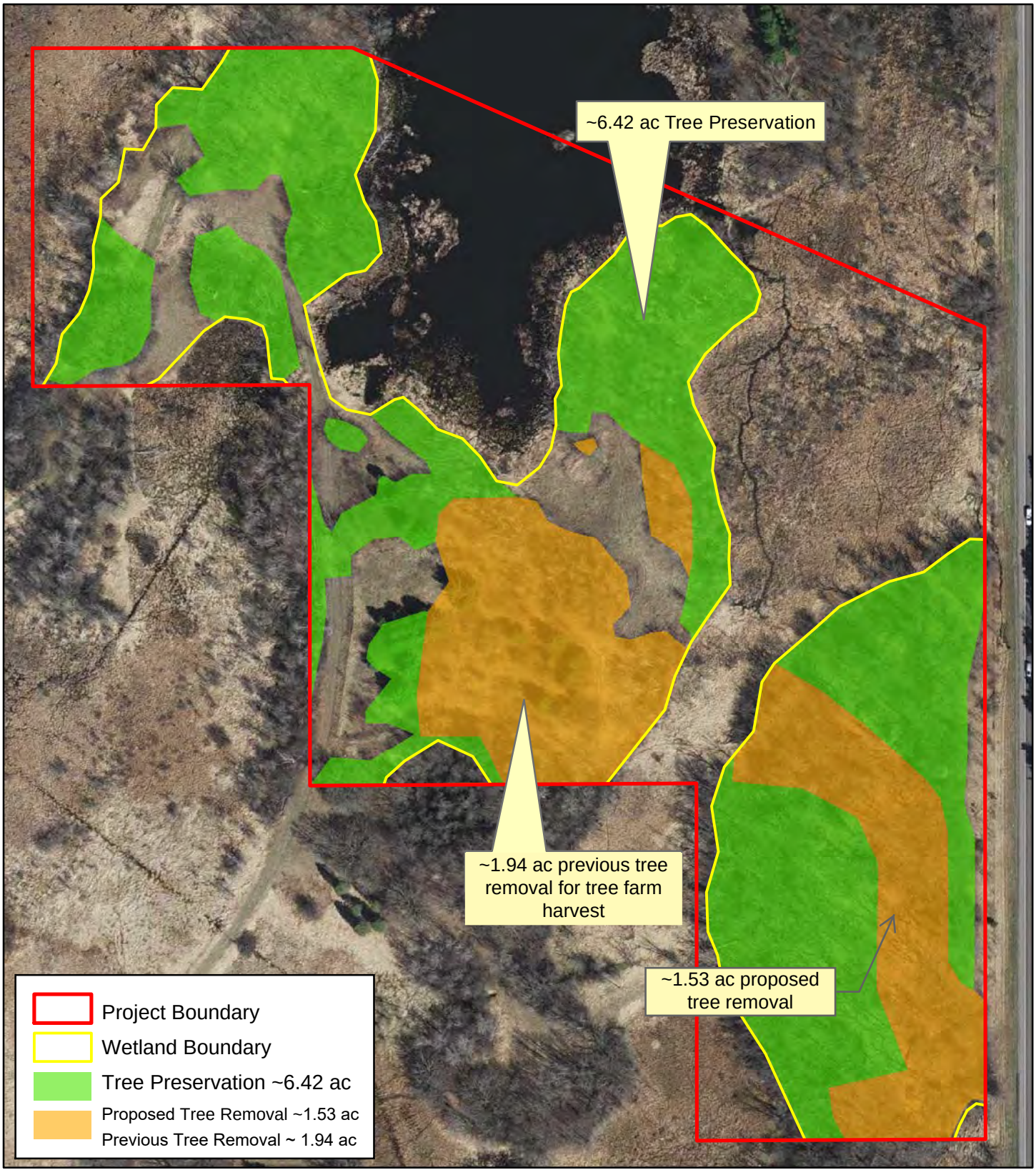


Figure 7 - Tree Removal and Preservation

N

0 165 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, Sathre-Bergquist, Inc.

Anderson Woods South (KES 2018-149)
North Oaks, Minnesota

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

Anderson Woods South

Wetland Permit Application

APPENDIX A

Joint Application for Activities Affecting Water Resources in Minnesota

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.

Project Name: **Anderson Woods South**

Applicant/Landowner Name: North Oaks Company, LLC; Attn: Gary Eagles
Mailing Address: 5959 Centerville Road Suite 200 North Oaks, MN 55127
Phone: (651) 484-3361
E-mail Address: gary@northoaks.com

Authorized Contact (do not complete if same as above): Rob Bouta, Kjolhaug Environmental Services Co.
Mailing Address: 2500 Shadywood Road, Suite 130, Orono, MN 55331
Phone: (612) 581-0546
E-mail Address: RobB@kjolhaugenv.com

Agent Name: Rob Bouta, Kjolhaug Environmental Services Co.
Mailing Address: 2500 Shadywood Road, Suite 130, Orono, MN 55331
Phone: (612) 581-0546
E-mail Address: RobB@kjolhaugenv.com

PART TWO: Site Location Information

County: Ramsey County **City/Township:** City of North Oaks
Parcel ID and/or Address: PID 043022310012
Legal Description (Section, Township, Range): SW ¼ of Section 4, T30N, R22W
Lat/Long (decimal degrees): 45.111733, -93.058382
Attach a map showing the location of the site in relation to local streets, roads, highways. See **attached Figure 1.**
Approximate size of site (acres) or if a linear project, length (feet): 21.43 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.

Residential development consisting of nine single-family lots. See attached Wetland Permit Application narrative for details.

PART FOUR: Aquatic Resource Impact[1] Summary

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

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2] (sq.ft.)	**Overall Size of Aquatic Resource** [3] (acres)	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Watershed, & Bank Service Area** [5]
Wetland 1	Wetland	Fill	P	8,385 (0.1925 ac)	6.8351	Shallow marsh / Open water / Shrub carr	Ramsey County; Watershed 20 (Miss. River, Metro); BSA 7
Wetland 2	Wetland	None	NA	0	0.9404	Shallow marsh / Shrub carr	
Wetland 3	Wetland	None	NA		0.0758	Wooded swamp	
Total				8,385	7.8513		

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each: No impacts have occurred.

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: HOBTH OAKS COMPANY LLC Gary M. Eagles VP Date: 05/14/2020

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 C
Avoidance and Minimization

Project Purpose, Need, and Requirements. Clearly state the purpose of your project and need for your project. Also include a description of any specific requirements of the project as they relate to project location, project footprint, water management, and any other applicable requirements. Attach an overhead plan sheet showing all relevant features of the project (buildings, roads, etc.), aquatic resource features (impact areas noted) and construction details (grading plans, storm water management plans, etc.), referencing these as necessary:

See attached Wetland Permit Application narrative.

Avoidance. Both the CWA and the WCA require that impacts to aquatic resources be avoided if practicable alternatives exist. Clearly describe all on-site measures considered to avoid impacts to aquatic resources and discuss at least two project alternatives that avoid all impacts to aquatic resources on the site. These alternatives may include alternative site plans, alternate sites, and/or not doing the project. Alternatives should be feasible and prudent (see MN Rules 8420.0520 Subp. 2 C). Applicants are encouraged to attach drawings and plans to support their analysis:

See attached Wetland Permit Application narrative.

Minimization. Both the CWA and the WCA require that all unavoidable impacts to aquatic resources be minimized to the greatest extent practicable. Discuss all features of the proposed project that have been modified to minimize the impacts to water resources (see MN Rules 8420.0520 Subp. 4):

See attached Wetland Permit Application narrative.

Off-Site Alternatives. An off-site alternatives analysis is not required for all permit applications. If you know that your proposal will require an individual permit (standard permit or letter of permission) from the U.S. Army Corps of Engineers, you may be required to provide an off-site alternatives analysis. The alternatives analysis is not required for a complete application but must be provided during the review process in order for the Corps to complete the evaluation of your application and reach a final decision. Applicants with questions about when an off-site alternatives analysis is required should contact their Corps Project Manager.

See attached Wetland Permit Application narrative.

Attachment D
Replacement/Compensatory Mitigation

Complete this part ***if*** your application involves wetland replacement/compensatory mitigation not associated with the local road wetland replacement program. Applicants should consult Corps mitigation guidelines and WCA rules for requirements.

Replacement/Compensatory Mitigation via Wetland Banking. Complete this section if you are proposing to use credits from an existing wetland bank (with an account number in the State wetland banking system) for all or part of your replacement/compensatory mitigation requirements.

Wetland Bank Account #	**County**	**Major Watershed #**	**Bank Service Area #**	**Credit Type** (if applicable)	**Number of Credits** (acres)
#170 (North Oaks Company)	Ramsey	20 (Mississippi River Metro)	7	Type 3 Shallow marsh	0.1925
#170 (North Oaks Company	Ramsey	20 (Mississippi River Metro)	7	Type 4 Deep marsh	0.1925
				Total	0.3850

Applicants should attach documentation indicating that they have contacted the wetland bank account owner and reached at least a tentative agreement to utilize the identified credits for the project. This documentation could be a signed purchase agreement, signed application for withdrawal of credits or some other correspondence indicating an agreement between the applicant and the bank owner. *However, applicants are advised not to enter into a binding agreement to purchase credits until the mitigation plan is approved by the Corps and LGU.*

Anderson Woods South

Wetland Permit Application

APPENDIX B

City of North Oaks Comprehensive Land Use and Zoning Maps

City of North Oaks Comprehensive Plan

MAP 10:
2008 Land Use Plan

- Commercial
- Historic Preservation
- Low Density
- Light Industrial
- Medium Density
- Mixed Residential
- Mixed Use
- Institutions
- Recreation/Open Space
- neighboring communities
- water

<u>NOTE</u>: The 2008 Land Use Plan is identical to the 1998 Land Use Plan. The City will continue to implement the East Oaks PUD approved in 1999 to govern development in accordance with this map over the next twenty years.

11-3-08

McCombs Frank Roos Associates

City of North Oaks Comprehensive Plan

MAP 7:
Existing Zoning Districts Map

- **OS** (Open Space)
- **RSL** (Residential Single Family - Low Density)
- **RSL-PUD** (Residential Single Family - PUD)
- **RSM** (Residential Single Family - Medium Density)
- **RMM** (Residential Multiple Family Medium Density)
- **RMM-PUD** (Residential Multiple Family Medium Density - PUD)
- **RMH-PUD** (Residential Multiple Family High Density - PUD)
- **RCM-PUD** (Residential-Commercial Mixed-PUD)
- **C** (Commercial)
- **C/S** (Commercial/Service)
- **LI** (Limited Industrial)
- **R** (Recreation)
- **HP** (Historic Preservation)
- Shoreland District Boundaries

5-7-09
Source: MFRA

McCombs Frank Roos Associates

City of North Oaks Comprehensive Plan

MAP 15:

Areas Served by Municipal Sewer

- Private sewer line
- Centerville Trunk Line
- Regional Interceptor
- Sanitary Sewer Connection Points
- Served by Sewer
- Future Service Areas
- Not Served
- North Oaks Boundary

5-7-09
Source: MFRA

McCombs Frank Roos Associates

City of North Oaks Comprehensive Plan

MAP 18:

Existing Recreation and Open Space

- Golf Course
- Other Land Uses
- Recreation/Open Space
- Historic Site
- water
- neighboring communities

\# Appendix "C" Park Summary Sheet

11-3-08

McCombs Frank Roos Associates

Anderson Woods South

Wetland Permit Application

APPENDIX C

Wetland Delineation Summary and Approvals

Anderson Woods Site

North Oaks, Minnesota

Wetland Delineation Report

Prepared for
North Oaks Company

by
Kjolhaug Environmental Services Company, Inc.
(KES Project No. 2018-149)

December 10, 2018

WETLAND DELINEATION SUMMARY

- The Anderson Woods Site was inspected on September 13, 2018 for the presence and extent of wetland.
- The NWI map showed one wetland mapped within the site boundaries.
- The Soil Survey map showed Seelyeville muck (Hydric), Isanti loamy fine sand (Predominantly Hydric), Rifle muck (Hydric), and Aquolls and histosols (Hydric) as the hydric soil types mapped on the property.
- The DNR Public Waters map showed one DNR Public Water (Wilkinson Lake, 62-43 P) on the northwestern portion of the site.
- The NHD map showed one Canal/Ditch and one Lake/Pond northwest of the site within Wilkinson Lake.
- Three wetlands were delineated within the site boundaries as described below in **Table 1**:

Table 1. Wetland delineated on the Anderson Woods Site

Wetland ID	Wetland Type			Dominant Vegetation	Area (Acres)
	Circular 39	Cowardin	Eggers and Reed		
1	Type 3/5/6	PEM1C/PUBG/PSS1C	Shallow Marsh, Open Water, Shrub-Carr	Sedges, woolgrass, Joe-pye weed, cattail, rice cutgrass, smartweed, beggartick, clearweed, Canada bluejoint, orange jewelweed, redosier dogwood, giant goldenrod, purple loosestrife and water plantain	11.45
2	Type 3/4/6	PEM1C/PEM1F/PSS1C	Shallow Marsh, Deep Marsh, Shrub-Carr	Cattail, reed canary grass, willow, redosier dogwood, duckweed, purple loosestrife	4.57
3	Type 7	PFO1B	Wooded Swamp	Green ash, hop sedge	0.10

IV. CERTIFICATION OF DELINEATION

The procedures utilized in the described delineation are based on the COE 1987 Wetland Delineation Manual as required by Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. Both the delineation and report were conducted in compliance with regulatory standards in place at the time the work was completed.

All site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation Completed by: Adam Cameron, Wetland Ecologist
Minnesota Certified Wetland Delineator No. 1321

Kyle Uhler, Project Assistant

Report Prepared by: Adam Cameron, Wetland Ecologist
Minnesota Certified Wetland Delineator No. 1321

Report reviewed by: _____ Date: December 10, 2018

Mark Kjolhaug, Professional Wetland Scientist No. 000845

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit (LGU)	Address
Vadnais Lake Area Water Management Organization	**800 County Road E, East, Vadnais Heights, MN 55127**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
North Oaks Company	**Anderson Woods Site**	**12/10/18**	**12-2018**

☐ Attach site locator map.

Type of Decision:

☒ Wetland Boundary or Type Sequencing ☐ No-Loss ☐ Exemption ☐

☐ Replacement Plan ☐ Banking Plan

Technical Evaluation Panel Findings and Recommendation (if any):

☒ Approve ☐ Approve with conditions ☐ Deny

Summary (or attach): Agree with LGU

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision: **12/28/18**

☒ Approved ☐ Approved with conditions (include below) ☐ Denied

LGU Findings and Conclusions (attach additional sheets as necessary):

LGU and TEP reviewed site and agree with delineation report. No changes are needed. See TEP F of F for details.

For Replacement Plans using credits from the State Wetland Bank:

Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)

Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

☐ **Financial Assurance:** For project-specific replacement that is not in-advance, a financial assurance specified by the LGU must be submitted to the LGU in accordance with MN Rule 8420.0522, Subp. 9 (List amount and type in LGU Findings).

☐ **Deed Recording:** For project-specific replacement, evidence must be provided to the LGU that the BWSR "Declaration of Restrictions and Covenants" and "Consent to Replacement Wetland" forms have been filed with the county recorder's office in which the replacement wetland is located.

☐ **Credit Withdrawal:** For replacement consisting of wetland bank credits, confirmation that BWSR has withdrawn the credits from the state wetland bank as specified in the approved replacement plan.

Wetlands may not be impacted until all applicable conditions have been met!

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.		
Name **Brian Corcoran**	Title **Water Resource Manager**	
Signature	Date **12/28/18**	Phone Number and E-mail **651-204-6073** **office@vlawmo.org**

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT. Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

Applicants proceed at their own risk if work authorized by this decision is started before the time period for appeal (30 days) has expired. If this decision is reversed or revised under appeal, the applicant may be responsible for restoring or replacing all wetland impacts.

This decision is valid for three years from the date of decision unless a longer period is advised by the TEP and specified in this notice of decision.

3. APPEAL OF THIS DECISION

Pursuant to MN Rule 8420.0905, any appeal of this decision can only be commenced by mailing a petition for appeal, including applicable fee, within thirty (30) calendar days of the date of the mailing of this Notice to the following as indicated:

Check one:

☐ Appeal of an LGU staff decision. Send petition and $_____ fee (if applicable) to: **800 County Rd EE** **Vadnais Heights, MN 551127**	☐ Appeal of LGU governing body decision. Send petition and $500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155

4. LIST OF ADDRESSEES

☒ SWCD TEP member: **Michael Schumann**
☒ BWSR TEP member: **Ben Meyer**
☐ LGU TEP member (if different than LGU Contact):
☒ DNR TEP member: **Becky Horton**
☐ DNR Regional Office (if different than DNR TEP member)
☐ WD or WMO (if applicable):
☐ Applicant and Landowner (if different)
☐ Members of the public who requested notice:

☒ Corps of Engineers Project Manager
☐ BWSR Wetland Bank Coordinator (wetland bank plan decisions only)

5. MAILING INFORMATION

➢ For a list of BWSR TEP representatives: www.bwsr.state.mn.us/aboutbwsr/workareas/WCA_areas.pdf

➢ For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢ Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol. Div. Ecol. Resources 2115 Birchmont Beach Rd. NE Bemidji, MN 56601	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1201 E. Hwy. 2 Grand Rapids, MN 55744	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1200 Warner Road St. Paul, MN 55106	Reg. Env. Assess. Ecol. Div. Ecol. Resources 261 Hwy. 15 South New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢ For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687 or send to:

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:

Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

In addition to the site locator map, list any other attachments:

- ☒ **TEP F of F**
- ☐
- ☐
- ☐
- ☐

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT
180 FIFTH STREET EAST, SUITE 700
ST. PAUL, MN 55101-1678

REPLY TO ATTENTION OF
REGULATORY BRANCH

April 26, 2019

Regulatory File No. MVP-2008-01251-MJB

North Oaks Company, LLC
c/o Gary Eagles
5959 Centerville Road, Suite 200
North Oaks, Minnesota 55127

Dear Mr. Eagles:

This letter is in response to correspondence submitted by Kjolhaug Environmental on your behalf, requesting Corps of Engineers (Corps) concurrence with the delineation of aquatic resources completed on the 35.9-acre parcel in the City of North Oaks. The project site is in Section 4, Township 30 North, Range 22 West, Ramsey County, Minnesota.

We have reviewed the wetland delineation report dated December 10, 2018, and determined that the limits of the aquatic resources have been accurately identified in accordance with current agency guidance including the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. This concurrence is only valid for the review area shown on the enclosed figures labeled MVP-2008-01251-MJB Page 1 of 2 through 2 of 2. The boundaries shown on the enclosed figures accurately reflect the limits of the aquatic resources in the review area.

This concurrence may generally be relied upon for five years from the date of this letter. However, we reserve the right to review and revise our concurrence in response to changing site conditions, information that was not considered during our initial review, or off-site activities that could indirectly alter the extent of wetlands and other resources on-site. Our concurrence may be renewed at the end of this period provided you submit a written request and our staff are able to verify that the determination is still valid.

No jurisdictional determination was requested or prepared for this project. While not required, you may request a jurisdictional determination from the Corps contact indicated below.

Please note that the discharge of dredged or fill material into waters of the United States without a Department of the Army permit could subject you to an enforcement action. Receipt of a permit from a state or local agency does not obviate the requirement for obtaining a Department of the Army permit.

If you have any questions, please contact me in our La Crescent office at (651) 290-5688 or Meghan.J.Brown@usace.army.mil. In any correspondence or inquiries, please refer to the Regulatory file number shown above.

Sincerely,

Meghan Brown
Project Manager

Enclosure

cc:
Adam Cameron, Kjolhaug Environmental
Brian Corcoran, LGU
Ben Meyer, BWSR

Figure 1 - Site Location Map

N

0 1,050 Feet

Project Boundary

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: ESRI Streets Basemap

Anderson Woods (KES 2018-149)
North Oaks, Minnesota

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

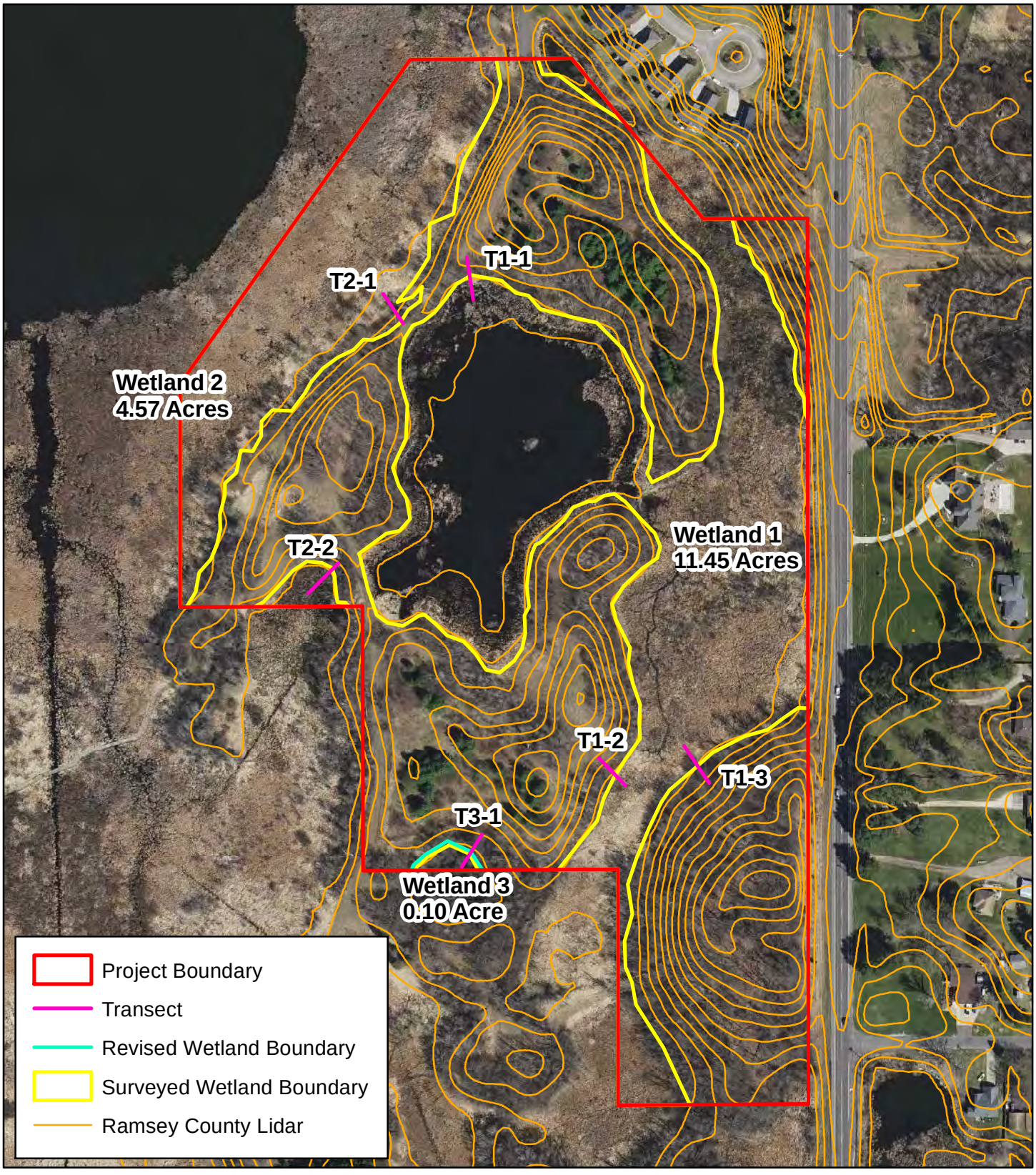


Figure 2 - Existing Conditions

N

0 250 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons

Anderson Woods (KES 2018-149)
North Oaks, Minnesota

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

Anderson Woods South

Wetland Permit Application

APPENDIX D

MnRAM Wetland Function Assessment Summaries

Management Classification Report for Anderson Woods WL 1 **Wilkinson Villas Phase 1A**

ID: 196

RAMSEY County
Mississippi (Metro) Watershed, #20
Corps Bank Service Area 7

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 1

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
High	Vegetative Diversity/Integrity	High
High	Habitat Structure (wildlife)	High
Moderate	Amphibian Habitat	Moderate
Moderate	Fish Habitat	High
Not Applicable	Shoreline Protection	Moderate
Moderate	Aesthetic/Cultural/Rec/Ed and Habitat	High / Moderate
High	Stormwater/Urban Sensitivity and Vegetative Diversity	High / Moderate
Moderate	Wetland Water Quality and Vegetative Diversity	High / Moderate
Moderate	Characteristic Hydrology and Vegetative Diversity	High / Moderate
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	High
High	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 1** was
Vegetative Diversity

Details of the formula for this action are shown below:

Vegetative Diversity **NA**

Question	*Value*	*Description*
NA	NA	NA

This report was printed on: Tuesday, July 09, 2019

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
Anderson Woods WL 1	Depressional/Tributary (outlet but no perennial inlet or drainage entering from upstream subwatershed)	0.63	0.55	0.69	0.61	0.00
		Moderate	Moderate	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
Anderson Woods WL 1	0.76	0.36	0.38	0.52	0.00	Discharge	0.00	1.00	0.61
	High	Moderate	Moderate	Moderate	Not Applicable		Not Applicable	High	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
Anderson Woods WL 1	62-030-22-04-001	PEMC	Type 3	Shallow Marsh	30	1	1.00	0.83	0.85
							High	High	High
		PSS1C	Type 6	Shrub Carr	30	1	1.00	0.83	0.85
							High	High	High
		PUBG	Type 5	Shallow, Open Water Communities	50	0.5	1.00	0.83	0.85
							High	High	High
					110		1.00	0.83	0.85

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: Anderson Woods WL 1

Location: 62-030-22-04-001

Wilkinson Villas Phase 1A

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Shrub Carr

Cowardin Classification: PSS1C — Circular 39: Type 6

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG — Circular 39: Type 5

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/Tributary

8-1	*Maximum water depth*	40 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	21 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil	Anoka Loamy Fine Sand, Zimmerman
11-Wetland Soil	Seelyeville, Rifle

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	B
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	C
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	500 feet

Adjacent area management

24-A	*Full*	0%
24-B	*Manicured*	85%
24-C	*Bare*	15%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	A
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	None
46	*Fish habitat quality*	C
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B

55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Discharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	11.45
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	B

Watershed Mississippi (Metro)

WS# 20 Service Area: 7

For functional ratings, please run the Summary tab report.

This report printed on: 7/9/2019

Management Classification Report for Anderson Woods WL 2 Revised **Wilkinson Villas Phase 1A**

ID: 203

RAMSEY County
Mississippi (Metro) Watershed, #20
Corps Bank Service Area 7

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 1

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Moderate	Vegetative Diversity/Integrity	High
High	Habitat Structure (wildlife)	High
Low	Amphibian Habitat	Moderate
High	Fish Habitat	High
Not Applicable	Shoreline Protection	Moderate
High	Aesthetic/Cultural/Rec/Ed and Habitat	High / Moderate
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	High / Moderate
Moderate	Wetland Water Quality and Vegetative Diversity	High / Moderate
High	Characteristic Hydrology and Vegetative Diversity	High / Moderate
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	High
High	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 1** was
Maintenance of Characteristic Wildlife Habitat Structure

Details of the formula for this action are shown below:

Maintenance of Characteristic Wildlife Habitat Str **(Q3e*2+Q39+Q37+Q38+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/10**

Question	*Value*	*Description*
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	1	Adjacent area Management
25	0.5	Adjacent area diversity
37	0.5	Vegetation cover interspersion
38	0.1	Community interspersion
39	1	Detritus

* The classification value settings for these functions are not adjustable

Management Classification Report for Anderson Woods WL 2 Revised **Wilkinson Villas Phase 1A**

ID: 203

RAMSEY County
Mississippi (Metro) Watershed, #20
Corps Bank Service Area 7

3e	0.5	<No Description Found>
40	1	Wetland interspersion/landscape
41	1	Wildlife barriers

This report was printed on: Wednesday, July 24, 2019

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
Anderson Woods WL 2 Revis	Lacustrine Fringe (edge of deepwater areas)/Shoreland	0.88	0.50	0.79	0.61	0.00
		High	Moderate	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
Anderson Woods WL 2	0.69	0.75	0.09	0.71	0.00	Discharge	0.00	0.50	0.61
	High	High	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
Anderson Woods WL 2 Revis	62-030-22-04-001	PEMC	Type 3	Shallow Marsh	50	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
		PSS1C	Type 6	Shrub Carr	50	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: Anderson Woods WL 2 Re

Location: 62-030-22-04-001

Wilkinson Villas Phase 1A

Plant Community: Shallow Marsh

Cowardin Classification: PEMC

Circular 39: Type 3

Plant Community: Shrub Carr

Cowardin Classification: PSS1C

Circular 39: Type 6

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Lacustrine
8-1	*Maximum water depth*	18 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	353 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Zimmerman
11-Wetland Soil		Isanti, Aquolls and histosols

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	100%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	C
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	500 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	100%
31	*Wetland in-water width*	195 feet
32	*Emerg. veg. erosion resistance*	A
33	*Erosion potential of site*	B
34	*Upslope veg./bank protection*	C
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	A
40	*Interspersion on landscape*	A
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	C
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	None
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	A
54	*Human influence on viewshed*	A
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Discharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	4.57
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	B

Watershed Mississippi (Metro)

WS# 20 Service Area: 7

For functional ratings, please run the Summary tab report.

This report printed on: 7/24/2019

Management Classification Report for Anderson Woods WL 3 **Wilkinson Villas Phase 1A**

ID: 197

RAMSEY County
Mississippi (Metro) Watershed, #20
Corps Bank Service Area 7

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Preserve

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
High	Vegetative Diversity/Integrity	Exceptional
High	Habitat Structure (wildlife)	Exceptional
High	Amphibian Habitat	High
High	Fish Habitat	Exceptional
Not Applicable	Shoreline Protection	High
Moderate	Aesthetic/Cultural/Rec/Ed and Habitat	Exceptional / High
Exceptional	Stormwater/Urban Sensitivity and Vegetative Diversity	Exceptional / Moderate
High	Wetland Water Quality and Vegetative Diversity	High / High
High	Characteristic Hydrology and Vegetative Diversity	High / High
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
High	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Preserve** was
Maintenance of Characteristic Amphibian Habitat

Details of the formula for this action are shown below:

Maintenance of Characteristic Amphibian Habitat **(Q43) * [(Q44 + 2*Q23wildlife + Q14 +Q 41 + Q20 reversed)/6]**

Question	*Value*	*Description*
14	1	Upland land use
20	1	Stormwater runoff
23	1	Buffer width
41	1	Wildlife barriers
43	1	Amphib breeding potential--fish presence
44	0.1	Amphib & reptile overwintering habitat

This report was printed on: Tuesday, July 09, 2019

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
Anderson Woods WL 3	Depressional/Isolated (no discernable inlets or outlets)	1.00	0.55	0.85	1.00	0.00
		High	Moderate	High	High	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
Anderson Woods WL 3	0.92	0.70	0.85	0.54	0.00	Recharge	0.00	1.00	1.00
	High	High	High	Moderate	Not Applicable		Not Applicable	Exceptional	High

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
Anderson Woods WL 3	62-030-22-04-001	PFO1A	Type 7	Hardwood Swamp	100	1	1.00	1.00	1.00
							High	High	High
					100		1.00	1.00	1.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: Anderson Woods WL 3

Location: 62-030-22-04-001

Wilkinson Villas Phase 1A

Plant Community: Hardwood Swamp

Cowardin Classification: PFO1A

Circular 39: Type 7

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	2.16 acre
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Anoka Loamy Fine Sand
11-Wetland Soil		Anoka Loamy Fine Sand

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	A
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	C
21	*Subwatershed wetland density*	C
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	500 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	100%
26-B	*Moderate*	0%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	A
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	None
46	*Fish habitat quality*	C
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	A
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Recharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	0.2
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	Exceptiona
72	*Additional treatment needs*	A

Watershed Mississippi (Metro)

WS# 20 Service Area: 7

For functional ratings, please run the Summary tab report.

This report printed on: 7/9/2019

Anderson Woods South

Wetland Permit Application

APPENDIX E

Wetland Buffer Concept Plan, Seeding and Management Plan

Anderson Woods South
Wetland Buffer Concept Plan
Wetland Buffer dimensions and areas subject to refinement and verification as needed
WILKINSON LAKE
N.O.H.W.=895.2 (NGVD,1929)
B - 565
CONSERVATION
AREA
TRACT F
COMMON OPEN SPACE
WETLAND 2
WETLAND 1
WETLAND 3
WETLAND BUFFER
OPEN WATER
F-633
G-633
H-561
M.L.T
OSPREY VILLAS
OSPREY COURT
TRACT W
CENTERVILLE ROAD
ANDERSON LANE
N 89°40'00"E 385.00
S 66°25'08"E 897.00
S 89°24'51"W 333.01
S 89°24'51"W 465.00
S 89°24'50"W 407.00
N 0°20'07"W 406.91
N 0°20'07"W 482.00
N 0°20'07"W 430.00
S 0°20'07"E 950.00
0 100 200 300
GRAPHIC SCALE IN FEET
1 INCH = 100 FEET
LEGEND
SPOT ELEVATION FROM MARK HURD AERIAL TOPO MAPPING
EXISTING CULVERT
UTILITY POLE
SWAMP SYMBOL
TREE FROM AERIAL MAPPING
EDGE OF WOODS
10 FOOT CONTOUR
2 FOOT CONTOUR
EDGE WET LAND AS DELINEATED BY KJOLHAUG ENVIRONMENTAL SERVICES
EXISTING WATER MAIN
EXISTING SANITARY SEWER AND DIRECTION OF FLOW
EXISTING STORM SEWER AND DIRECTION OF FLOW
EXISTING FORCE MAIN
BUILDING SETBACK LINE
EXISTING BITUMINOUS
BUILDING SETBACKS PER RMH-PUD ZONING
BUILDING TO BUILDING SETBACKS:
FRONT TO FRONT: 40 FT.-PRINCIPAL BLDG
FRONT TO SIDE: 15 FT.-PRINCIPAL BLDG
REAR TO REAR: 50 FT.-PRINCIPAL BLDG
ROAD RIGHT OF WAY SETBACKS:
FRONT: 15 FT.-PRINCIPAL BLDG
SIDE: 20 FT.-PRINCIPAL BLDG
REAR: 20 FT.-PRINCIPAL BLDG
WETLAND SETBACKS:
ALL BUILDINGS: 30 FT.
MAX. BUILDING HEIGHT:
35 FT. AT FRONT SETBACK LINE
45 FT. FOR WALKOUT LEVEL
DRIVEWAY REQUIREMENTS:
ONE CURB CUT PER DWELLING
MIN. SPACING: 10 FT. UNLESS SHARED
MAX. WIDTH AT CURB: 18 FT.
BUILDING SETBACKS PER PRE PLAN
FRONT YARD - 20 FT.
SIDE YARD - 7.5 FT.
WETLAND - 30 FT.
CENTERVILLE RD.- 30 FT.
PROPERTY DESCRIPTION
TRACT G, REGISTERED LAND SURVEY NO. 633
RAMSEY COUNTY, MINNESOTA
LOCATION MAP
NO SCALE
ASH STREET
CO.RD.J
WILKINSON LAKE
CENTERVILLE ROAD
SITE
DATE: January 23, 2020
SHEET 2 OF 6 SHEETS
SHEET DESCRIPTION
PRELIMINARY SITE PLAN
PROJECT:
ANDERSON WOODS
NORTH OAKS COMPANY
KURTH SURVEYING, INC.
4002 JEFFERSON ST. N.E.
COLUMBIA HEIGHTS, MN 55421
PHONE: (763) 788-9769 FAX: (763) 788-7602
E-MAIL: ksi@kurthsurveyinginc.com

Disturbed Wetland Buffer Seeding and Management Plan
Anderson Woods South, North Oaks, Minnesota

March 25, 2020 Kjolhaug Environmental Services Company

These Buffer Seeding, Maintenance, and Monitoring Notes pertain to Disturbed Wetland Buffer Areas to be Shown on Final Plans

1. CONSTRUCTION AND SEEDING NOTES

Construction

1. Silt fence shall be installed prior to construction and maintained until viable cover has established. Silt fence shall be removed upon final acceptance by the engineer.
2. Silt fence that is initially installed above wetland areas for grading shall be moved and reinstalled at the limits of the buffer after buffer areas are graded (where applicable) and accepted. Any soil ridge left at the initial silt fence location shall be removed.
3. Contractor shall verify or confirm graded elevations within disturbed buffer areas prior to initiating seeding.
4. Excess excavated soil shall be disposed of outside of wetlands.

Seed Mixture Suppliers and Approval

1. Contractor shall submit seed tags or written certification of seed mix contents and suppliers for approval by the wetland consultant prior to installation.
2. Substitutions of seed mixes or seed mix components must be approved by the wetland consultant.

Seedbed Preparation

1. After completion of final grading, soils will be decompacted to a depth of 18 inches and organic matter will be incorporated into soils.
2. Prior to seeding, the contractor shall kill and plow or disc vegetation that covers more than 20 percent of the ground in the area to be seeded.
3. Areas of existing vegetation that are not plowed or disked shall be killed by spraying an appropriate glyphosate herbicide at label rates.
4. The seedbed shall be prepared by loosening topsoil to a minimum depth of 3 inches.
5. Seeding shall not be conducted between June 30 and October 15.

Seeding Methods

1. The seed mixe shall be installed in accordance with the Minnesota Board of Water and Soil Resources Native Vegetation Establishment and Enhancement Guidelines (2019, https://bwsr.state.mn.us/sites/default/files/2019-07/Updated%20guidelines%20Final%2007-01-19.pdf).

2. Minnesota State Seed Mix 35-241 (Mesic Prairie General) shall be planted above wetland edges in disturbed parts of the buffer at the rates specified in https://bwsr.state.mn.us/seed-mixes.
3. Seed Mix 35-241 (Mesic Prairie General) shall be acquired from a reputable native seed supplier and the native seed supplier shall be subject to approval by the wetland consultant.
4. Seed Mix 35-241 (Mesic Prairie General) shall be installed with a native grass drill or broadcast evenly by hand or by use of a mechanical broadcast seeder.
5. Seeding shall not be conducted between June 30 and October 15.
6. All seeded areas shall be firmed with a rolling-type packer within two days after seeding. Packing will be considered adequate when only a slight footprint is left in the soil after walking across the area.
7. Seeded areas shall be mulched with MN/DOT Type 3 (MICA certified weed free grain straw) mulch at a rate of 2 tons per acre and the mulch shall be anchored with a disc or tackifier.

2. VEGETATION MANAGEMENT

Disturbed upland buffer areas will be seeded with seed mixes as specified in this document. Disturbed buffer areas will be assessed during annual monitoring site visits for the presence of noxious weeds and invasive species. If noxious weeds and/or invasive species are identified within the buffer areas, efforts will be made to control these species using appropriately timed herbicide applications or other methods. The following steps will be considered for treatment of invasive species during the five years after seeding, with the intention of developing plant communities with a predominance of non-invasive species.

Year 1 Maintenance

1. Where possible, the seeded buffer areas shall be mowed at a height of 6 to 8 inches a minimum of two times during the first growing season and before September 30.
2. Purple loosestrife shall be pulled by hand if it covers less than 5% of buffer, and spot sprayed with Rodeo herbicide during late August or September if it covers 5% or more of the buffer.
3. Other invasive species shall be spot sprayed twice annually at times that are effective given the growth cycle of the particular problem species.
4. Stands of reed canary grass shall be treated with Rodeo or Roundup herbicide in late October and again early the following spring before desirable species emerge.
5. Herbicide treatments shall be applied according to label instructions.

Year 2 Maintenance

1. Areas of invasive species such as reed canary grass and thistles shall be treated with herbicide early in spring prior to the emergence of desirable species.
2. Where possible, the seeded buffer areas shall be mowed to a height of 6 to 8 inches between June 1 and July 15 to allow for light penetration to seeded species and prevent seed set on weedy species.
3. Purple loosestrife shall be pulled by hand if it covers less than 5% of buffer, and spot sprayed with Rodeo herbicide during late August or September if it covers 5% or more of the buffer.
4. Other invasive species shall be spot sprayed twice annually at times that are effective given the growth cycle of the particular problem species.
5. Stands of reed canary grass shall be treated with Rodeo or Roundup herbicide early in the spring before desirable species emerge and again in late October.
6. Herbicide treatments shall be applied according to label instructions.

Year 3 to 5 Maintenance

1. Areas of bare ground or dead vegetation covering more than 20 square feet shall be reseeded (Year 3 only).
2. Spot spray perennial weeds as necessary.
3. Patches of problem species that represent more than 5% cover of buffer areas should be spot mowed to prevent seed set and treated with herbicide at appropriate times.
4. If possible and reasonably feasible, a controlled burn should be conducted once between Years 3 and 5.

3. MONITORING

The Applicant will submit an annual Wetland Buffer Inspection Report to VLAWMO for up to 5 years following vegetation establishment. The report shall include:

1. A site plan with locations of disturbed buffer areas;
2. Areas of bare or eroded soils;
3. Areas of invasive and noxious vegetation;
4. Location and type of encroachments on the buffer;
5. Color photos of the disturbed buffer areas taken during the growing season;
6. Description of the buffer vegetation including a list of dominant species, their estimated percent cover, and a comparison of species observed to the approved seed mix.
7. If necessary, the monitoring report will include management strategies proposed to control invasive species, improve native vegetation cover and species diversity, and/or mitigate encroachment on the buffer.

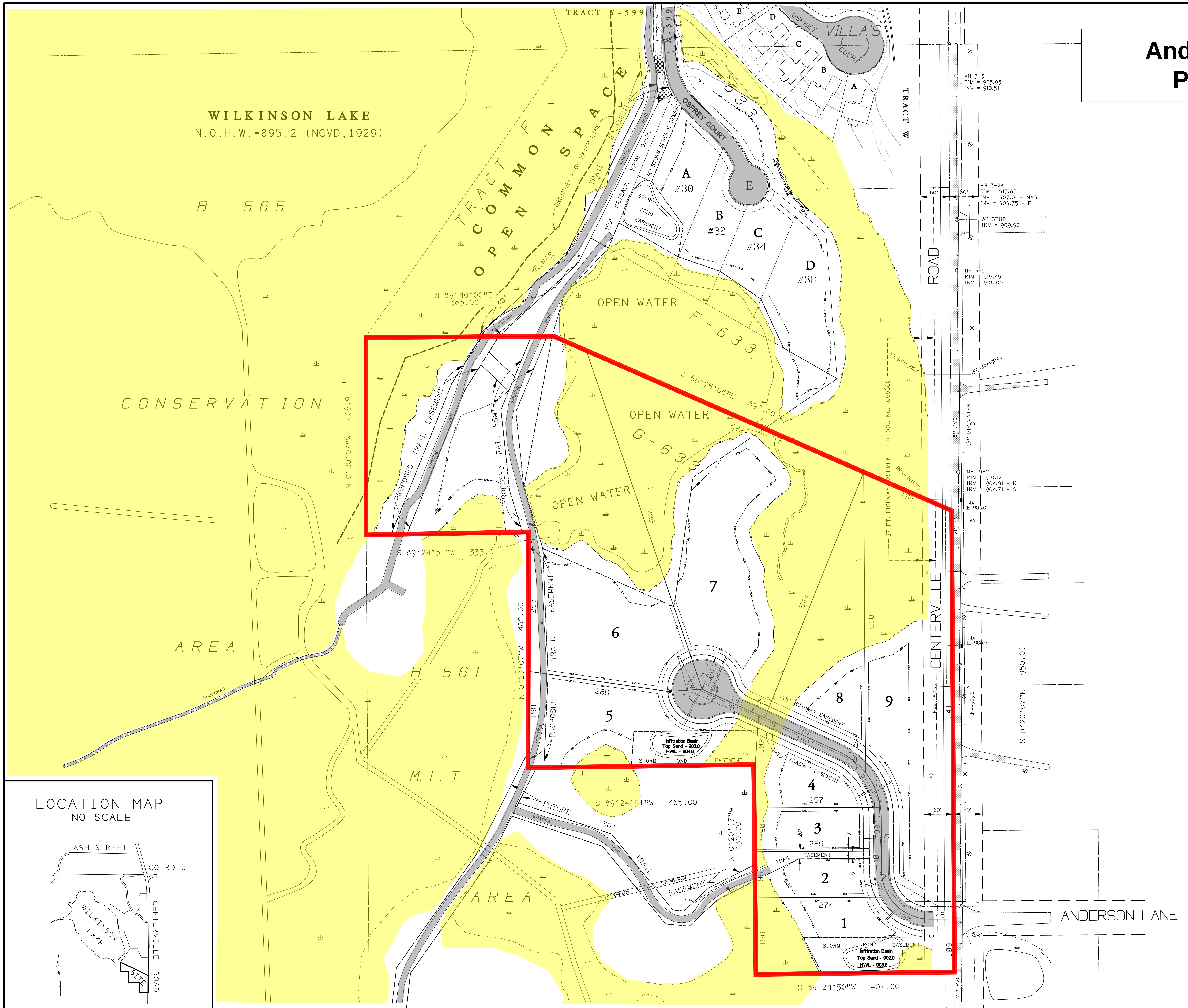
Anderson Woods South

Wetland Permit Application

APPENDIX F

Proposed and Alternative Project Plans

Anderson Woods South
Proposed Site Plan



GRAPHIC SCALE IN FEET

0 100 200 300

1 INCH = 100 FEET

LEGEND

- SPOT ELEVATION FROM MARK HURD AERIAL TOPO MAPPING
- EXISTING CULVERT
- UTILITY POLE
- SWAMP SYMBOL
- TREE FROM AERIAL MAPPING
- EDGE OF WOODS
- 10 FOOT CONTOUR
- 2 FOOT CONTOUR
- EDGE WET LAND AS DELINEATED BY KJOLHAUG ENVIRONMENTAL SERVICES
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER AND DIRECTION OF FLOW
- EXISTING STORM SEWER AND DIRECTION OF FLOW
- EXISTING FORCE MAIN
- BUILDING SETBACK LINE
- EXISTING BITUMINOUS

BUILDING SETBACKS PER RMH-PUD ZONING

BUILDING TO BUILDING SETBACKS:
FRONT TO FRONT: 40 FT.-PRINCIPAL BLDG
SIDE TO SIDE: 15 FT.-PRINCIPAL BLDG
REAR TO REAR: 50 FT.-PRINCIPAL BLDG

ROAD RIGHT OF WAY SETBACKS:
FRONT: 15 FT.-PRINCIPAL BLDG
SIDE: 20 FT.-PRINCIPAL BLDG
REAR: 20 FT.-PRINCIPAL BLDG

WETLAND SETBACKS:
ALL BUILDINGS: 30 FT.

MAX. BUILDING HEIGHT:
35 FT. AT FRONT SETBACK LINE
45 FT. FOR WALKOUT LEVEL

DRIVEWAY REQUIREMENTS:
ONE CURB CUT PER DWELLING
MIN. SPACING: 10 FT. UNLESS SHARED
MAX. WIDTH AT CURB: 18 FT.

BUILDING SETBACKS PER PRE PLAN

FRONT YARD = 20 FT.
SIDE YARD = 7.5 FT
WETLAND = 30 FT.
CENTERVILLE RD. = 30 FT.

PROPERTY DESCRIPTION

TRACT G, REGISTERED LAND SURVEY NO. 633
RAMSEY COUNTY, MINNESOTA

DATE: January 23, 2020

SHEET 2 OF 6 SHEETS

SHEET DESCRIPTION: PRELIMINARY SITE PLAN

PROJECT: ANDERSON WOODS

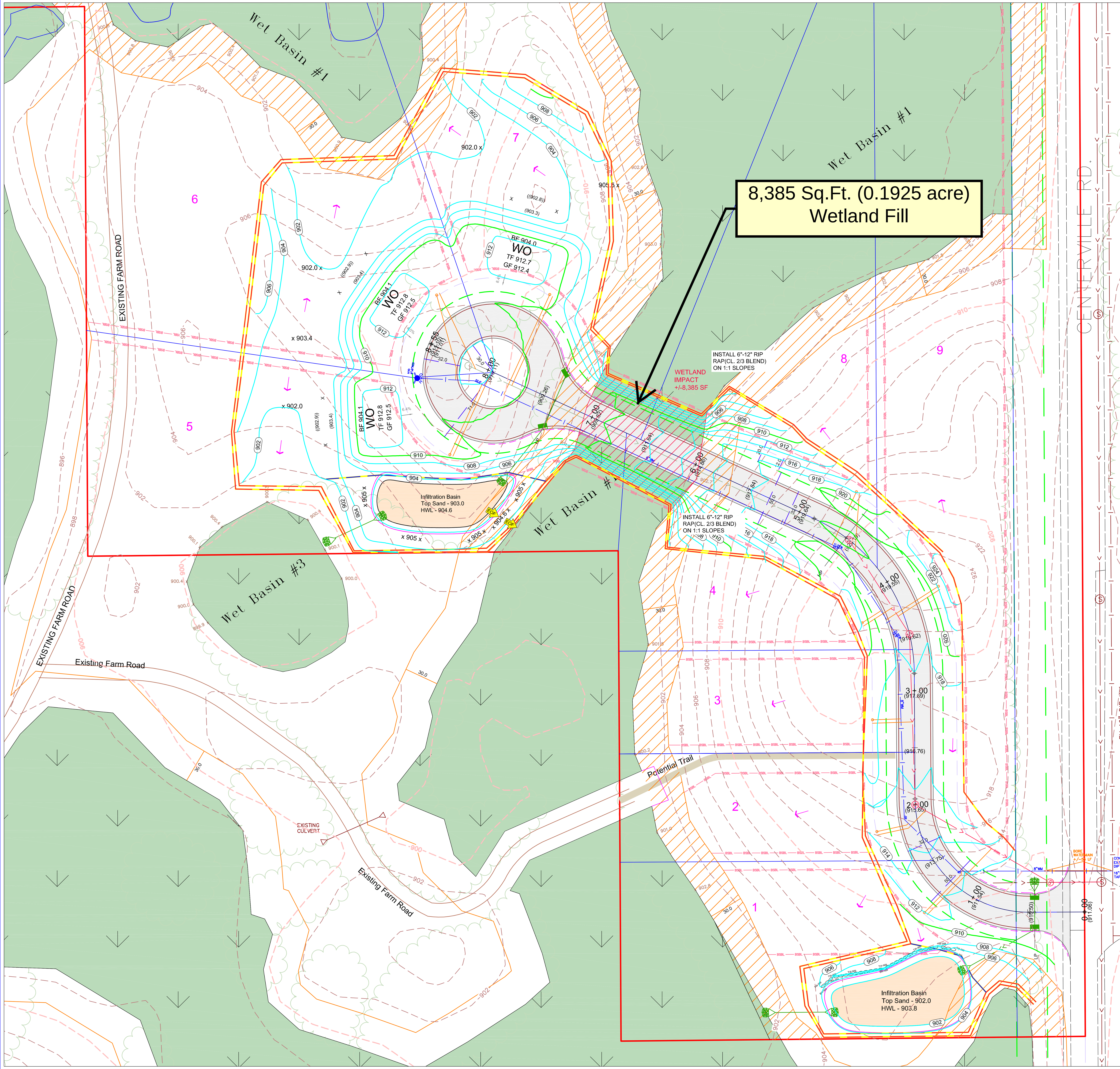
NORTH OAKS COMPANY

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Randy L. Kurth, RLS. No. 20270
Russell J. Kurth, RLS. No. 16113

KURTH SURVEYING, INC.
4002 JEFFERSON ST. N.E.
COLUMBIA HEIGHTS, MN 55421
PHONE: (763) 788-9769 FAX: (763) 788-7602
E-MAIL: ksi@kurthsurveyinginc.com

Anderson Woods South
Proposed Grading Plan



EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

CONSTRUCTION NOTES

1. INSTALL SILT FENCE AS SHOWN ON PLAN, AS REQUIRED BY THE CITY OF NORTH OAKS OR DIRECTED BY THE ENGINEER.

2. THE WATER QUALITY POND MUST BE EXCAVATED AT THE BEGINNING OF GRADING OPERATIONS TO PROVIDE TEMPORARY STORM WATER DETE... REMOVED FROM THE POND AS NECESSARY ... PROJECT.

3. BEGIN GRADING, INSTALL PERFORATED ... TEMPORARY DRAINAGE PIPE SHALL BE USE... CONSTRUCTION PERIOD AS NECESSARY AN... AROUND EXCAVATED PONDS.

4. INSPECT POND, SILT FENCE, AND ROCK ... REQUIRED BY THE NPDES PERMIT.

5. LINE ALL PONDS WITH A MINIMUM 6" ORGANIC SOILS & SEED SLOPES BETWEEN NWL AND 100 YR HWL WITH A WATER TOLERANT MIX. (OR AS NOTED)

6. REMOVE PERFORATED RISER PIPE WHEN STORM SEWER AND OUTLET STRUCTURE FOR PONDS ARE INSTALLED.

7. POND - 10:1 BENCH (1 FOOT) THEN 3:1 MAX

8. POND & FILTER BASIN TO BE CLAY LINED. (2' MINIMUM CLAY LINER)

9. WO PADS 3:1 MAX. ALL OTHER SLOPES 4:1 MAX (UNLESS NOTED)

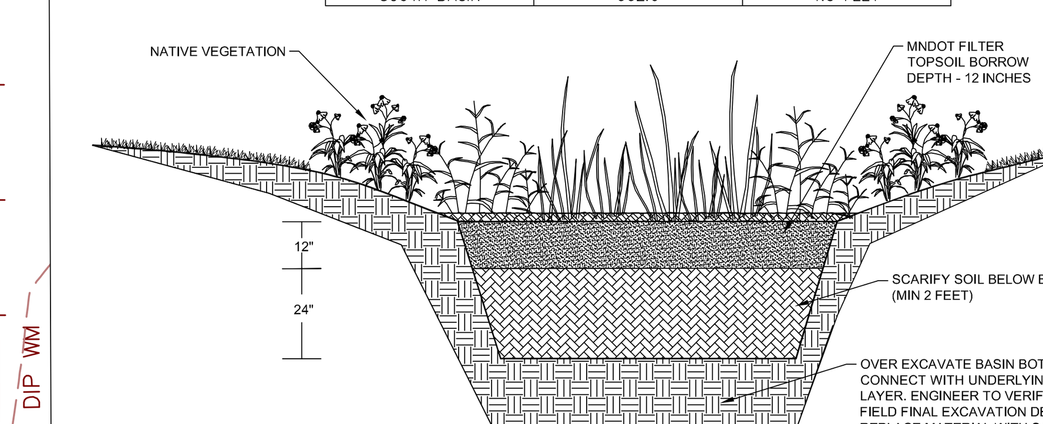
10. RESTORATION - 4.8 ACRES
    A. RESTORE ALL DISTURBED AREAS WITH 4" TO 6" OF TOPSOIL, OR EXISTING ON-SITE ORGANIC MTRL.
    B. SEED POND SLOPES AND DETENTION AREAS WITH MN/DOT 310 OR BWSR P8 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. SEED WETLAND BUFFER AREAS WITH MN/DOT 350-MESIC PRAIRIE (36.5 PLS LBS/AC) OR BWSR 35-241 SEED MIX AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (REFER TO WETLAND CREATION/BANKING PLAN FOR WETLAND SEED MIX REQUIREMENTS).
    C. SEED ALL OTHER DISTURBED AREAS WITH MNDOT 250 AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (UNLESS OTHERWISE NOTED)
    D. ONLY PHOSPHOROUS FREE FERTILIZER IS TO BE USED ON SITE.
    E. MULCH WITH TYPE 1 AT A RATE OF 2 TONS/ACRE AND DISC ANCHOR IMMEDIATELY AFTER PLACEMENT. USE WOODFIBER BLANKET ON ALL SLOPES 3:1 (FT) OR GREATER.
    F. PLACE APPROVED STORM SEWER INLET PROTECTION IN OR AROUND ALL STORM SEWER INLETS AND MAINTAIN UNTIL HOME CONSTRUCTION IS COMPLETED. REFER TO DETAILS FOR APPROVED DEVICES.
    G. MAINTAIN ALL SILT FENCE UNTIL TURF HAS BEEN ESTABLISHED.
    H. RESTORATION WORK WILL BE COMPLETED WITHIN 72 HOURS OF GRADING COMPLETION.

11. SILT FENCE - BEFORE GRADING - 5,110 LF
    AFTER GRADING - 280 LF
12. EROSION BLANKET - 8,600 SF

CONSTRUCTION SEQUENCING
1. INSTALL APPROPRIATE TEMPORARY EROSION CONTROL DEVICES TO PREVENT SEDIMENT FROM LEAVING OR ENTERING THE PRACTICE DURING CONSTRUCTION.
2. ALL DOWN-GRADIENT PERIMETER SEDIMENT CONTROL BMP'S MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITY BEGINS.
3. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES, ESPECIALLY AFTER EACH RAINFALL EVENT.
4. INSTALL ALL UTILITIES (WATER, SANITARY SEWER, ELECTRIC, NATURAL GAS, PHONE, FIBER OPTIC, ETC) PRIOR TO SETTING FINAL GRADE OF INFILTRATION BASIN.
5. INFILTRATION AREAS ARE NOT ALLOWED TO BE USED AS TEMPORARY SEDIMENT BASINS.
6. COMPLETE, STABILIZE, AND VEGETATE ALL OTHER SITE IMPROVEMENTS.
7. ONLY AFTER UPSTREAM CONSTRUCTION IS COMPLETED, CAN THE INFILTRATION BASIN BE CONSTRUCTED TO FINAL GRADE. ONCE GRADING IS COMPLETED, INSTALL FILTER TOPSOIL BORROW AND VEGETATE IN ACCORDANCE WITH THE RESTORATION PLAN.
9. MNDOT FILTER TOPSOIL BORROW SHALL BE TILLED AFTER INSTALLATION IN THE BASIN TO REDUCE COMPACTION DURING INSTALLATION.
10. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER THE CONTRIBUTING DRAINAGE AREA IS ADEQUATELY VEGETATED.

INFILTRATION BASIN DESIGN INFORMATION

INFILTRATION BASIN	TOP OF MEDIA	DEPTH OF FILTER TOPSOIL BORROW
NORTH BASIN	903.0	1.5 FEET
SOUTH BASIN	902.0	1.5 FEET



INFILTRATION BASIN DETAIL

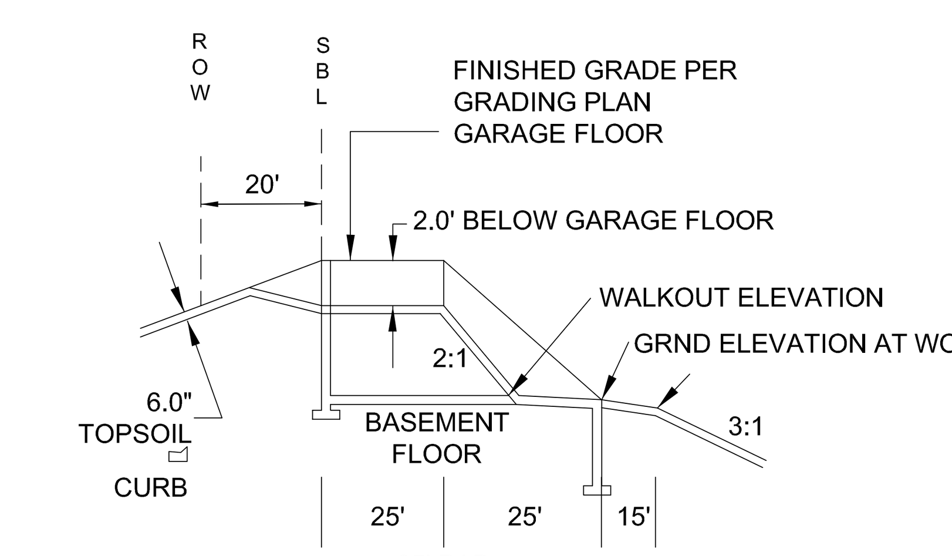
GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR ALL STORM WATER INSPECTIONS ACCORDING TO THE MPCA STORM WATER PERMIT. THIS INCLUDES BOTH WEEKLY INSPECTIONS AND INSPECTIONS DONE AFTER A 0.5" RAIN EVENT. A COPY OF THE INSPECTION REPORT MUST BE EMAILED TO THE ENGINEER, CITY ENGINEER, AND DEVELOPER ON A WEEKLY BASIS.
... D BY THE ENGINEER FOR ... ROL DEVICE. INLET ... ATION HAS BEEN
... NTRANCE, TO REPLACE ... SHALL BE THE WIDTH OF
... BUILDING PAD AND STREET
... AVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. HE SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
6. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.
7. BUILDING PADS ARE 65' DEEP, UNLESS OTHERWISE NOTED. THE FRONT AND REAR BUILDING PAD LINES ARE SHOWN ON THE PLAN. THE ENGINEER SHOULD BE CONTACTED IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING BUILDING PADS.
8. A TEST ROLL SHALL BE COMPLETED. SOIL CORRECTION SHALL BE COMPLETED BY THE CONTRACTOR IF REQUIRED BY THE SOILS ENGINEER.
9. ALL SMALL UTILITIES INCLUDING, BUT NO LIMITED TO GAS, TELEPHONE, ELECTRIC SHALL BE PLACED UNDERGROUND IN ACCORDANCE WITH THE PROVISIONS OF ALL APPLICABLE CITY ORDINANCES.
10. ALL UTILITIES TO BE LOCATED IN THE FLOOD PLAIN SHALL BE FLOOD PROOFED IN ACCORDANCE WITH THE BUILDING CODE OR ELEVATED ABOVE THE FLOOD PROTECTION ELEVATION.
11. SAND FILTER AND DRAINTILE FOR THE FILTER BASIN SHALL BE INSTALLED AFTER FINAL STABILIZATION.

ON-SITE BMPS

1. RIP RAP - RIP RAP WILL BE UTILIZED AT ALL APRONS FOR ENERGY DISSIPATION AND PROVIDE SEDIMENT CONTROL.
2. INLET PROTECTION - INLET PROTECTION WILL BE INSTALLED AND MAINTAINED IN ALL CATCH BASINS & REAR YARD STRUCTURES. REFER TO THE DETAILS ON THE EROSION CONTORL PLAN TO DETERMINE WHICH INLET PROTECTION DEVICE IS APPLICABLE.
3. SLOPE STABILIZATION - SILT FENCE WILL BE INSTALLED ALONG DOWN GRADIENT GRADING LIMITS AND WOODFIBER BLANKET WILL BE UTILIZED ON ALL SLOPES 3:1 OR GREATER TO PROVIDE ADEQUATE SLOPE STABILIZATION.
4. BIOROLLS - BIOROLLS WILL BE INSTALLED ALONG REAR YARD SWALES TO PREVENT SEDIMENT FROM REACHING THE NURP POND AND ULTIMATELY DOWNSTREAM WETLANDS.
5. INFILTRATION/RETENTION AREAS - INFILTRATION/RETENTION AREAS WILL BE UTILIZED TO REDUCE/RETAIN THE RUNOFF FROM THE INCREASED HARD SURFACE.
6. STREET SWEEPING - STREET SWEEPING WILL BE DONE A MINIMUM OF ONCE PER WEEK OR MORE FREQUENTLY TO CONTROL DUST AND VEHICLE TRACKING.
10. PHOSPHOROUS FREE FERTILIZER - PHOSPHOROUS FREE FERTILIZER WILL ALSO BE USED ON SITE.

HOLDDOWN DETAIL

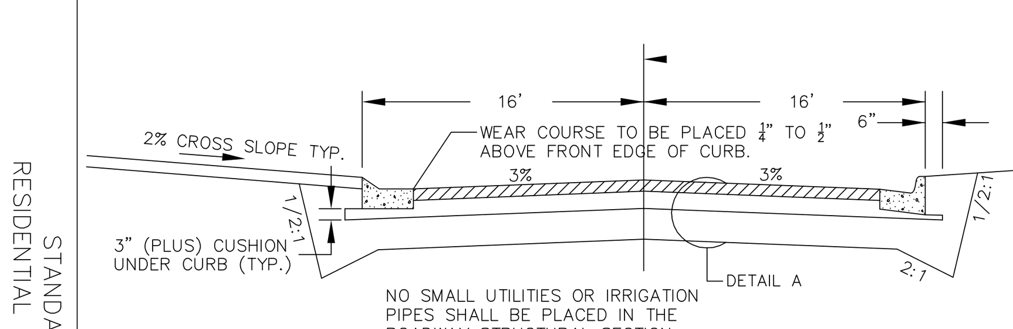


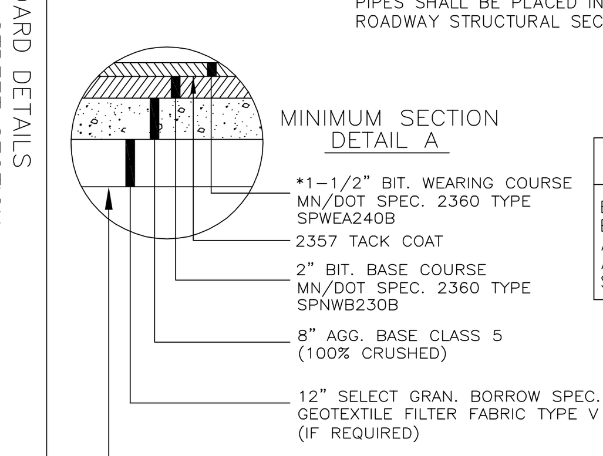
WALKOUT (WO)

NOTES:
1. GRADE (999.0) BEHIND EACH HOMESITE IS PROPOSED TOP OF TOPSOIL, SUBGRADE SHALL BE DOWN 0.50 FEET.
2. ESTABLISH FINISH GRADE AT ALL 12' FRONT YARD UTILITY EASEMENT LOCATIONS.

STANDARD DETAILS
RESIDENTIAL STREET SECTION

STREET SECTION SHALL BE DESIGNED BY A QUALIFIED ENGINEER BASED ON ACTUAL SITE SOIL CONDITIONS. THE STREET SECTION SHOWN IS THE MINIMUM SECTION ALLOWED.





MINIMUM SECTION
DETAIL A

GRANULAR EQUIVALENT (MN/DOT SPECIFIED)

MATERIAL	SPECIFICATIONS	G.E. FACTORS
BITUMINOUS WEAR COURSE	2360	2.25
BITUMINOUS BINDER & BASE	2360	2.25
AGGREGATE BASE	CL.5	1.00
AGGREGATE SUBASE	CL.3, CL.4 (3138)	0.75
SELECT GRANULAR MATERIAL	3149	0.50

*RECYCLED BIT WEAR COURSE SHALL NOT BE ALLOWED.

WEAR COURSE SHALL NOT BE CONSTRUCTED UNTIL THE FOLLOWING CONSTRUCTION SEASON.

NORTH

50 25 0 25 50 100
SCALE IN FEET

DRAWING NAME	NO.	BY	DATE	REVISIONS
AW-PRELIM SHEETS				
DRAWN BY				
ERJ				
CHECKED BY				
RSM				
DATE				
01/23/2020				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Eric R. Johnson
ERIC R. JOHNSON, P.E.
Date: 01/23/20 Lic. No. 56659

ENGINEERS SURVEYORS DESIGNERS PLANNERS
SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 476-6000

CITY PROJECT NO.

NORTH OAKS, MINNESOTA

PRELIMINARY GRADING PLAN
ANDERSON WOODS
NORTH OAKS

FILE NO.
64500-021

Anderson Woods South
Wetland Avoidance and Alternative Access Plan

NORTH ACCESS NOT POSSIBLE DUE TO SEPARATE LANDOWNER

North Access Impact 1
395 Foot Bridge for Wetland Avoidance
or
5,588 SF of Wetland Impact and
Move Stormwater Basin

North Access Impact 2
175 Foot Bridge for Wetland Avoidance
or
4,655 SF of Wetland Impact

Proposed Access Impact
120 Foot Bridge for Wetland Avoidance
or
Impact 8,385 SF of Wetland

WILKINSON LAKE
N.O.H.W.-895.2 (NGVD,1929)

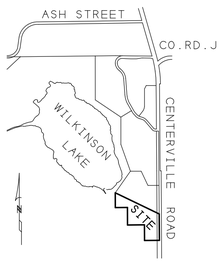
TRACT F-599
TRACT F
COMMON SPACE
OPEN WATER
F-633
G-633
B-565
CONSERVATION AREA
H-561
M.L.T
OSPREY COURT
OSPREY VILLA'S COURT
ANDERSON LANE
CENTERVILLE ROAD
ORDINARY HIGH WATER LINE
PRIMARY TRAIL EASEMENT
PROPOSED TRAIL EASEMENT
PROPOSED
existing
FUTURE
TRAIL
EASEMENT
ROADWAY EASEMENT
STORM POND EASEMENT
Infiltration Basin
Top Sand - 903.0
HWL - 904.6
Infiltration Basin
Top Sand - 902.0
HWL - 903.8
27' R.C.P. STORM SEWER EASEMENT
27 FT. HIGHWAY EASEMENT PER DOC. NO. 1196
21" PVC
A #30
B #32
C #34
D #36
E
1
2
3
4
5
6
7
8
9
257
259
274
288
544
618
841
950.00
482.00
406.91
430.00
333.01
465.00
407.00
385.00
396.85'
120'
175'
N 89°40'00"E
S 66°25'06"E
S 89°24'51"W
N 0°20'07"W
S 0°20'07"E
MH 3-2A
RIM = 917.85
INV = 907.01 - N&S
MH 19-2
RIM = 910.12
INV = 904.91 - N
INV = 904.71 - S
C.B.
IE=903.0
IE=904.5
INV=904.4
INV=903.2
INV=899.00
INV=899.00
INV=PERFO

0 100 200 300
GRAPHIC SCALE IN FEET
1 INCH = 100 FEET

LEGEND

- SPOT ELEVATION FROM MARK HURD AERIAL TOPO MAPPING
- EXISTING CULVERT
- UTILITY POLE
- SWAMP SYMBOL
- TREE FROM AERIAL MAPPING
- EDGE OF WOODS
- 10 FOOT CONTOUR
- 2 FOOT CONTOUR
- EDGE WET LAND AS DELINEATED BY KJOLHAUG ENVIRONMENTAL SERVICES
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER AND DIRECTION OF FLOW
- EXISTING STORM SEWER AND DIRECTION OF FLOW
- EXISTING FORCE MAIN
- BUILDING SETBACK LINE
- EXISTING BITUMINOUS

LOCATION MAP
NO SCALE



BUILDING SETBACKS PER RMH-PUD ZONING

BUILDING TO BUILDING SETBACKS:
FRONT TO FRONT: 40 FT.-PRINCIPAL BLDG
SIDE TO SIDE: 15 FT.-PRINCIPAL BLDG
REAR TO REAR: 50 FT.-PRINCIPAL BLDG

ROAD RIGHT OF WAY SETBACKS:
FRONT: 15 FT.-PRINCIPAL BLDG
SIDE: 20 FT.-PRINCIPAL BLDG
REAR: 20 FT.-PRINCIPAL BLDG

WETLAND SETBACKS:
ALL BUILDINGS: 30 FT.

MAX. BUILDING HEIGHT:
35 FT. AT FRONT SETBACK LINE
45 FT. FOR WALKOUT LEVEL

DRIVEWAY REQUIREMENTS:
ONE CURB CUT PER DWELLING
MIN. SPACING: 10 FT. UNLESS SHARED
MAX. WIDTH AT CURB: 18 FT.

BUILDING SETBACKS PER PRE PLAN

FRONT YARD - 20 FT.
SIDE YARD - 7.5 FT
WETLAND - 30 FT.
CENTERVILLE RD. - 30 FT.

PROPERTY DESCRIPTION

TRACT G, REGISTERED LAND SURVEY NO. 633
RAMSEY COUNTY, MINNESOTA

DATE: January 23, 2020

SHEET 2 OF 6 SHEETS

SHEET DESCRIPTION: PRELIMINARY SITE PLAN

PROJECT: ANDERSON WOODS

NORTH OAKS COMPANY

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed Land Surveyor under the laws of the State of Minnesota.
Randy L. Kurth, RLS. No. 20270
Russell J. Kurth, RLS. No. 16113

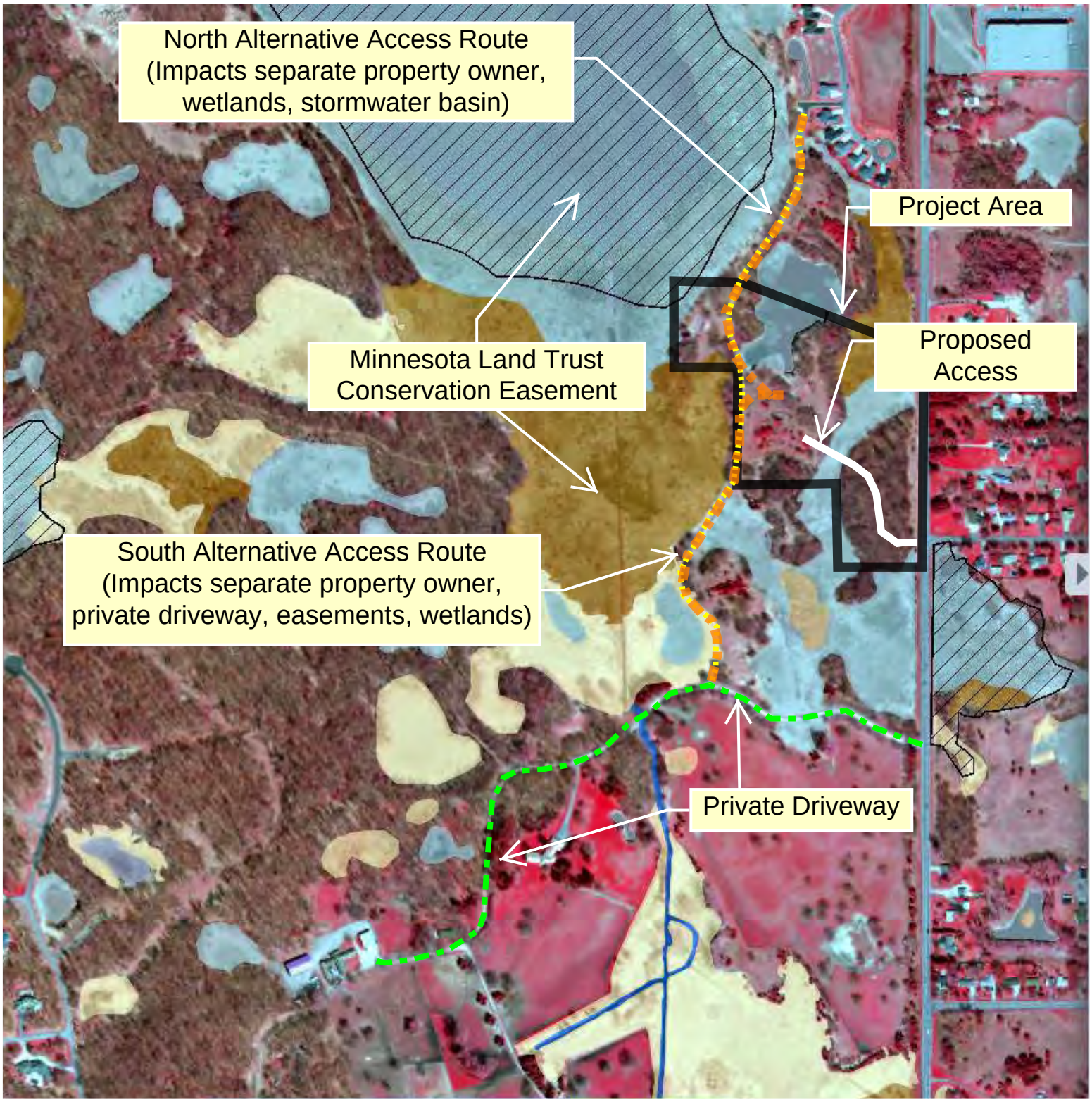
KURTH SURVEYING, INC.
4002 JEFFERSON ST. N.E.
COLUMBIA HEIGHTS, MN 55421
PHONE: (763) 788-9769 FAX: (763) 788-7602
E-MAIL: ksi@kurthsurveyinginc.com

Anderson Woods South

Wetland Permit Application

APPENDIX G

Alternative Site Access Routes



Site Access Alternatives

Anderson Woods South

Wetland Permit Application

APPENDIX H

MN DNR Natural Heritage Review and MNR Rare Plant Survey

DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

November 22, 2019
Correspondence # ERDB 20200122

Mr. Gary Eagle
North Oaks Company LLC
5959 Centerville Road, Suite 200
North Oaks, MN 55127

RE: Natural Heritage Review of the proposed Wilkinson Villas Phase 1A,
T30N R22W Section 4; Ramsey County

Dear Mr. Eagle,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, please visit the Rare Species Guide Website for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

Ecologically Significant Areas

- The Minnesota Biological Survey (MBS) has identified a Site of *Outstanding* Biodiversity Significance partially within the project area. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as *Outstanding* contain the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present in the state.

  This particular Site contains Northern Mixed Cattail Marsh native plant community in the vicinity of the project considered imperiled in Minnesota. Water-willow (*Decodon verticillatus* var. *laevigatus*), a state-listed species of special concern, has been documented within the community. (See the attached map. GIS shapefiles of MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be downloaded from the MN Geospatial Commons.) We encourage you to consider project alternatives that would avoid or minimize disturbance to this ecologically significant site. Actions to minimize disturbance may include, but are not limited to, the following recommendations:

  - Minimize vehicular disturbance in the MBS Site (allow only vehicles/equipment necessary for construction activities);

- Do not park equipment or stockpile supplies in the MBS Site;
- Do not place spoil within MBS Site or other sensitive areas;
- Retain a buffer between proposed activities and the MBS Site;
- If possible, conduct the work under frozen ground conditions;
- Use effective erosion prevention and sediment control measures;
- Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species;
- As much as possible, operate within already-disturbed areas;
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible; and
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern are birdsfoot trefoil (Lotus corniculatus) and crown vetch (Coronilla varia), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas.

- If the Wetland Conservation Act (WCA) is applicable to this project, please note that Northern Mixed Cattail Marsh native plant community may qualify as a "rare natural community" under this Act. Minnesota Rules, part 8420.0515, subpart 3 states that a wetland replacement plan for activities that modify a rare natural community must be denied if the local government unit determines the proposed activities will permanently adversely affect the natural community.

State-listed Species

- Blanding's turtles (*Emydoidea blandingii*), a state-listed threatened species, have been documented in the direct vicinity of the proposed project. Blanding's turtles use upland areas up to and over a mile distant from wetlands, waterbodies, and watercourses. Uplands are used for nesting, basking, periods of dormancy, and traveling between wetlands. Factors believed to contribute to the decline of this species include collisions with vehicles, wetland drainage and degradation, and the development of upland habitat. Any added mortality can be detrimental to populations of Blanding's turtles, as these turtles have a low reproduction rate that depends upon a high survival rate to maintain population levels.

  This project has the potential to impact this rare turtle through direct fatalities and habitat disturbance/destruction due to excavation, fill, and other construction activities associated with the project. 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 threatened or endangered species without a permit. As such, **the following avoidance measures are required:**

  - The Blanding's turtle flyer should be given to all contractors working in the area.
  - Use of erosion control blanket shall be limited to 'bio-netting' or 'naturalnetting' types, and specifically not products containing plastic mesh netting or other plastic components. Also be aware that hydro-mulch products may contain small synthetic (plastic) fibers to aid in its matrix strength. These loose fibers could potentially re-suspend and make their way into Public Waters. As such, please review mulch products and not allow any materials with synthetic (plastic) fiber additives in areas that drain to Public Waters.

- Avoid wetland impacts during hibernation season, between October 15th and April 15th, unless the area is unsuitable for hibernation (less than 14 inches deep).
- Timing of any dewatering must take place between May 15th and September 15th unless the area is unsuitable for hibernation.
- If turtles are in imminent danger they must be moved by hand out of harm's way, otherwise they are to be left undisturbed.
- Monitor for turtles during construction and report any sightings to the DNR Nongame Specialist, Erica Hoaglund at 651-259-5772 or Erica.Hoaglund@state.mn.us.

If the above avoidance measures are not possible, please contact me as further action may be needed.

For additional information, please see the Blanding's turtle fact sheet, which describes the habitat use and life history of this species. The fact sheet also provides two lists of recommendations for avoiding and minimizing impacts to this rare turtle. **Please refer to the both lists of recommendations for your project.** The fact sheet contains specific recommendations regarding roads, utilities, and landscaping that will pertain to this project. If further assistance is needed regarding the Blanding's turtle, please contact the DNR Regional Nongame Specialist.

- Tricolored bat (*Perimyotis subflavus*), state-listed as special concern, have been documented in the vicinity of the proposed project. During the winter these species typically hibernate in caves and mines. During the active season (approximately April-October) they roost underneath bark, in cavities, or in crevices of both live and dead trees; and in human structures such as buildings and bridges. Pup rearing is during June and July. Activities that may impact this species include, but are not limited to, wind farm operation, any disturbance to hibernacula, and destruction/degradation of habitat. As such, we recommend avoiding tree removal during pup rearing season, June 1st though July 31st.

Environmental Review and Permitting

- Please include a copy of this letter 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 rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within 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 (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or for an updated review if construction has not occurred within one year.

The Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. If needed, please contact your DNR Regional Environmental Assessment Ecologist to determine whether there are other natural resource concerns associated with the proposed project. Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

Samantha Bump

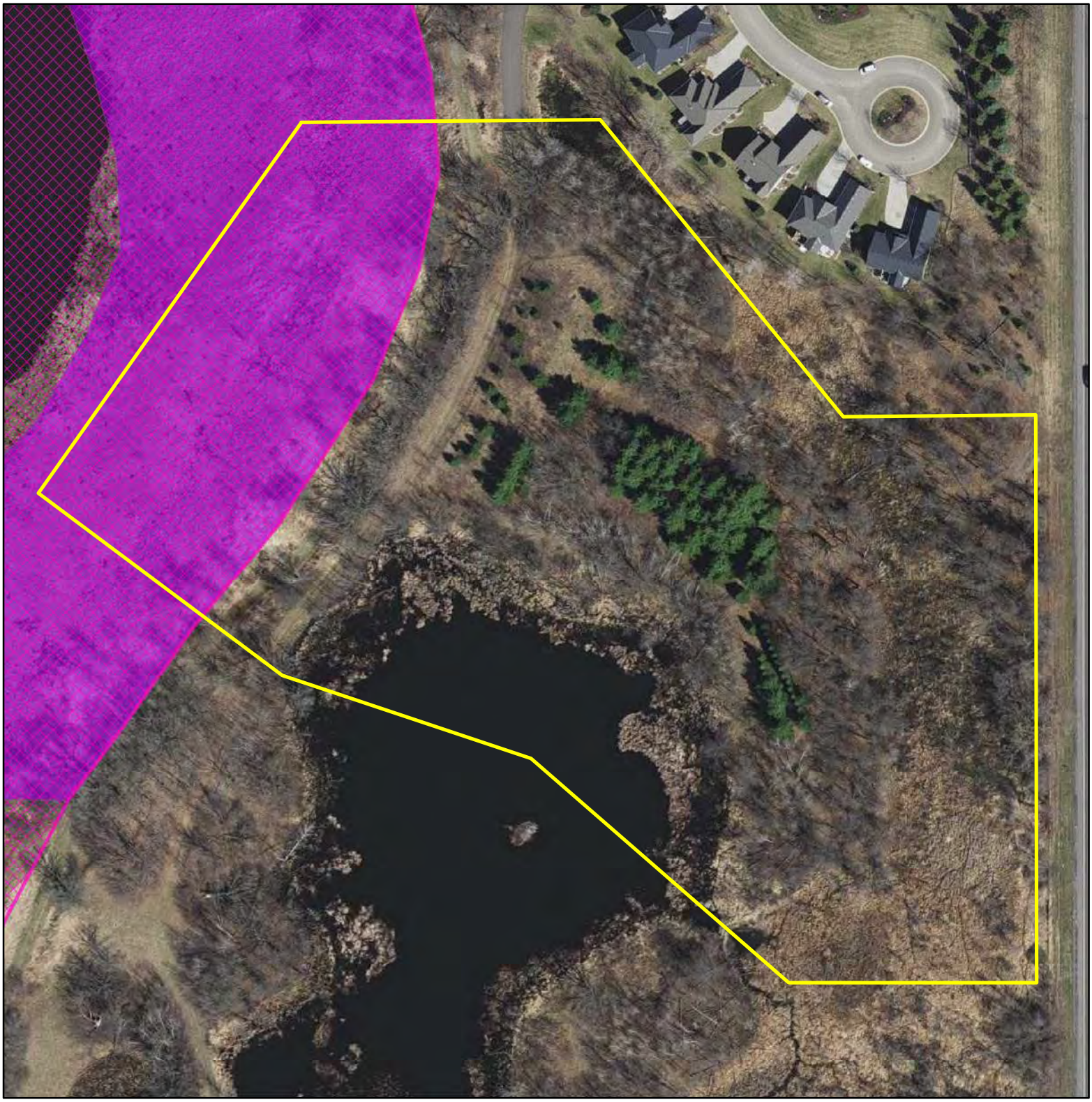
Samantha Bump
Natural Heritage Review Specialist
Samantha.Bump@state.mn.us

Enc. Map

Links: Rare Species Guide
http://www.dnr.state.mn.us/rsg/index.html
DNR Regional Environmental Assessment Ecologist Contact Info
http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html
MBS Sites of Biodiversity Significance
http://www.dnr.state.mn.us/eco/mcbs/biodiversity_guidelines.html
DNR Native Plant Communities
http://www.dnr.state.mn.us/npc/index.html
MN Geospatial Commons
https://gisdata.mn.gov/
BWSR Native Vegetation/Seed Mixes
http://www.bwsr.state.mn.us/native_vegetation/

Cc: Leslie Parris
Erica Hoaglund
Doug Norris
Kit Elstad-Haveles

ERDB# 20200122 - Wilkinson Villas Phase 1A
T30N R22W Section 4
Ramsey County



Villas Project Limits

MBS Sites of Biodiversity Significance

- Outstanding
- High
- Moderate
- Below

Native Plant Community

- Northern Mixed Cattail Marsh

0 0.01 0.02 0.04 Miles

DEPARTMENT OF NATURAL RESOURCES

N

Wilkinson Villas and Anderson Woods Developments
Rare Plant Survey
Ramsey County, Minnesota

Prepared for:
Mr. Gary M. Eagles
Vice President, Development
North Oaks Company LLC
5959 Centerville Road Suite 200
North Oaks, MN 55127

1032 Seventh Street West, Suite 150 | Saint Paul, MN 55102 | mnrinc.us | 612.310.6260

MIDWEST NATURAL RESOURCES

Mr. Gary M. Eagles
Vice President, Development
North Oaks Company LLC
5959 Centerville Road Suite 200
North Oaks, MN 55127

July 29, 2019

Mr. Eagles,

Midwest Natural Resources, Inc. (MNR) is pleased to provide the following rare plant survey report for the proposed Wilkinson Villas and Anderson Woods Developments located southeast of Wilkinson Lake along Centerville Road in North Oaks, Minnesota (**Figure 1)**.

Project Limits and Existing Background Data

The project area, which is approximately 35.0 acres, is located in Township 30 North, Range 22 West in the NESW, SENW, SESW Quarter Sections of Section 4 (**Figure 2)**. Available background data reviewed pertaining to the overall landscape included the USGS Topographic Map (**Figure 3**) and LiDAR imagery (**Figure 4**). Additionally, two Minnesota Department of Natural Resources (DNR) spatial data layers were evaluated prior to conducting field surveys: the Sites of Biodiversity Significance and the Native Plant Communities. A portion of the project area is classified as an Outstanding Site of Biodiversity Significance and is identified as the North Oaks Natural Area (**Figure 5**). The site additionally includes two mapped native plant communities, the Northern Mixed Cattail Marsh (MRn83) and the Willow-Dogwood Shrub Swamp (WMn82a) as depicted in **Figure 6**.

Methods

Prior to conducting field surveys, MNR submitted a rare plant survey protocol to the DNR Endangered Species Coordinator (**Appendix A**). This survey protocol identified six potential target species: the small white lady's slipper (*Cypripedium candidum*), autumn fimbry (*Fimbristylis autumnalis*), tubercled rein orchid (*Platanthera flava* var. *herbiola*), cross-leaved milkwort (*Polygala cruciata*), swamp blackberry (*Rubus semisetosus*), and lance-leaf violet (*Viola lanceolata*). This list was developed using a filtered search of the DNR's Online Rare Species Guide.

Field efforts, which involved meander surveys, were conducted on July 26, 2019 by the undersigned. A general species list was collected during field efforts (**Appendix B**) as were representative site photographs (**Appendix C**).

Results

The site includes a number of large wetland complexes and oak woodland systems. The wetland system located in the northwest portion of the site is the area identified as a Site of Biodiversity Significance. This area has been invaded by the hybrid cattail (*Typha* × *glauca*), but there is a fairly intact component located where image 1406 (**Appendix C**) was taken (**Figure 7**). This area is a sedge-dominated mat which includes

beaked sedge (*Carex utriculata*), lake sedge (*Carex lacustris*), tussock sedge *(Carex stricta*), fen wiregrass sedge (*Carex lasiocarpa*), bristly sedge (*Carex comosa*), Sartwell's sedge (*Carex sartwellii*), cyperus sedge (*Carex pseudocyperus*), marsh spikerush (*Eleocharis palustris*), slender cottongrass (*Eriophorum gracile*), hardstem bulrush (*Schoenoplectus acutus*), soft stem bulrush (*Schoenoplectus tabernaemontani*) as well as marsh bellflower (*Campanula aparinoides*), bulb-bearing water hemlock (*Cicuta bulbifera*), Loesel's twayblade (*Liparis loeselii*), broad-leaved arrowhead (*Sagittaria latifolia*), and marsh skullcap (*Scutellaria galericulata*). The slender cottongrass happens to be a county record of this species and a collection was made.

The other wetland components within the site vary in terms of hydrology and vegetative composition. The area of open water in the center of the site has a wetland fringe dominated by hybrid cattail, broad-leaved arrowhead, and reed canary grass (*Phalaris arundinacea*). This transitions in the eastern portion of the complex to fully vegetated and graminoid-dominated with bluejoint (*Calamagrostis canadensis*), tussock sedge, reed canary grass, and hybrid cattail. The shrub density of the complex increases in the northeast with speckled alder (*Alnus incana*) and poison sumac (*Toxicodendron vernix*).

The woodland systems are all oak-dominated with bur oak (*Quercus macrocarpa*), white oak (*Quercus alba*), and northern pin oak (*Quercus ellipsoidalis*) with a canopy of that varies from patchy to interrupted. Common buckthorn (*Rhamnus cathartica*) is prevalent in both the shrub and ground layers, limiting competition from other species. In general, the woodland systems are species depauperate. However, the woodland systems include three species that are county records: American spikenard (*Aralia racemosa*), downy agrimony (*Agrimonia pubescens*), and matricary grapefern (*Botrychium matricariifolium*). These species were collected for documentation purposes.

In addition to the wetlands and the woodland areas, the site includes several small open upland areas with a single species of bristle-berry. Several collections were made and further evaluated since there are number of state-listed *Rubus* species. The species collected is the Wisconsin blackberry (*Rubus wisconsinensis*), which does not have a protected status.

Overall, 181 vascular plant species were documented during the field survey and no state-listed plants were found. Habitat for the targeted species was lacking with the exception of the swamp blackberry and lance-leaf violet. These species would have been found during recent field efforts, so it is assumed that they are not present at the site.

Conclusion

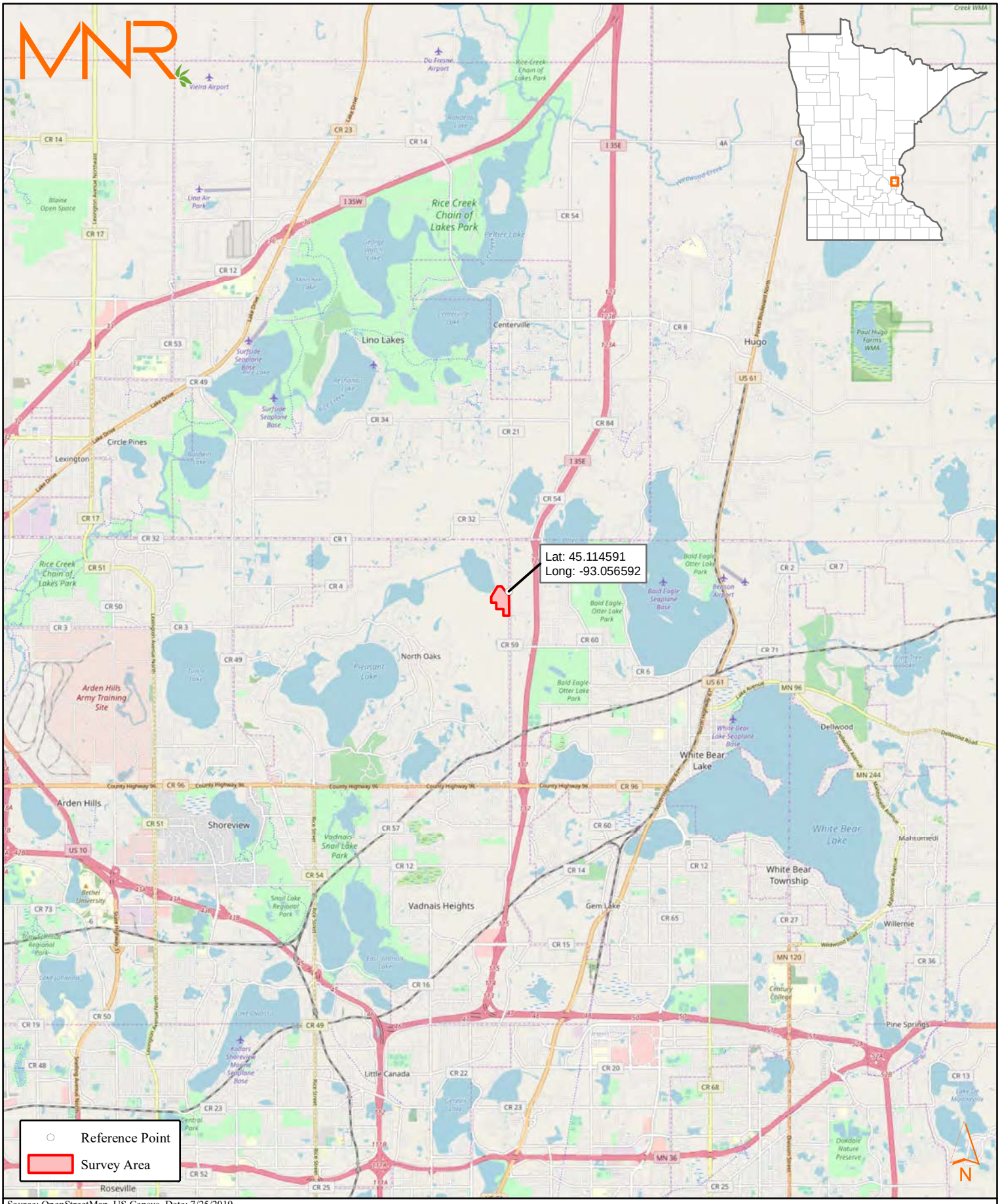
No state-listed species were observed during our field review. Based on the overall condition of the site, the potential for early season or late season flowering state-listed species is unlikely. With that, further surveys are not recommended.

Please feel free to contact us with any questions.

Respectfully submitted,

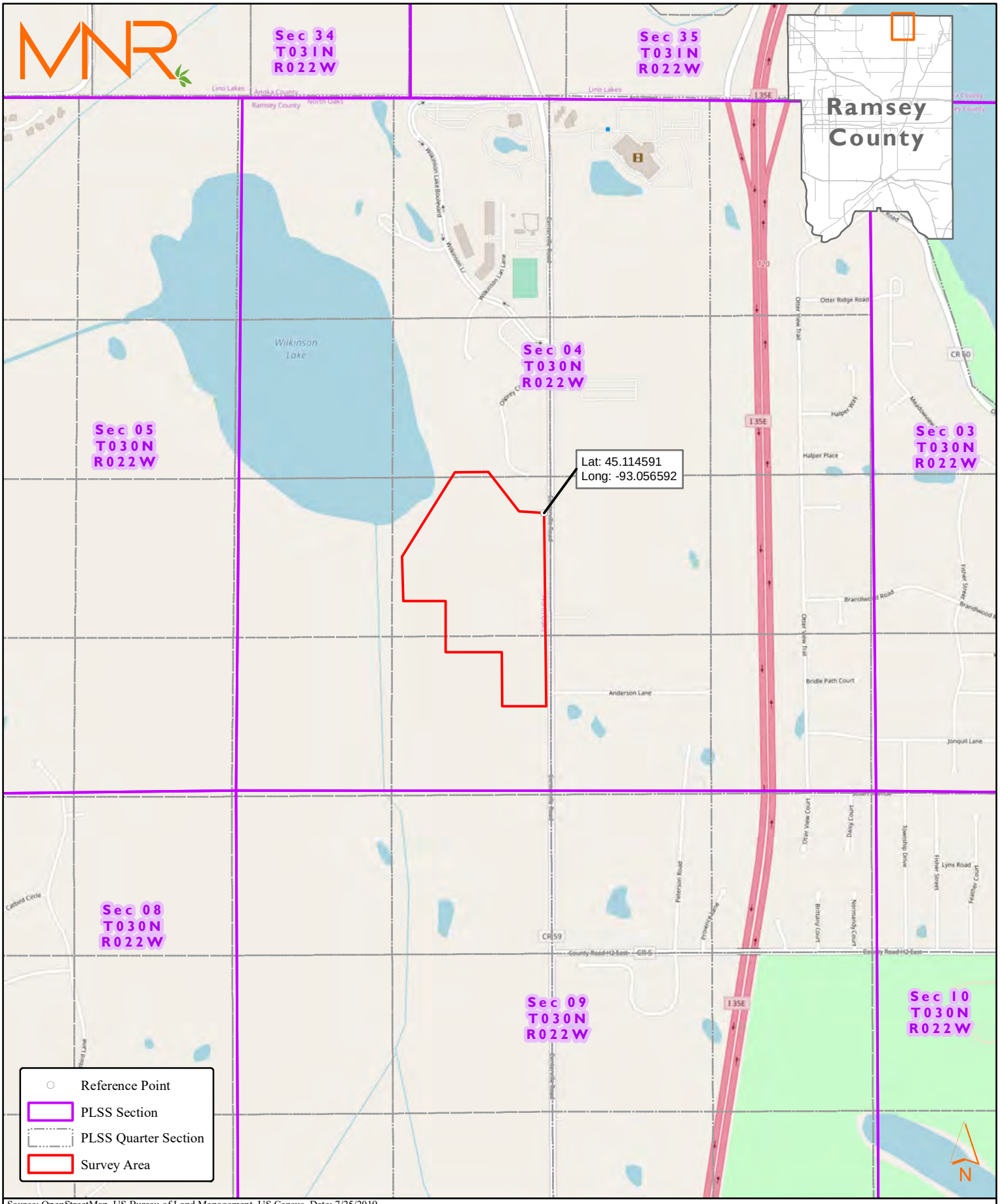
Scott A. Milburn, M.S., PWS
Sr. Botanist/President
Midwest Natural Resources, Inc.

Jake Walden
Biologist
Midwest Natural Resources, Inc.



Site Location
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 1

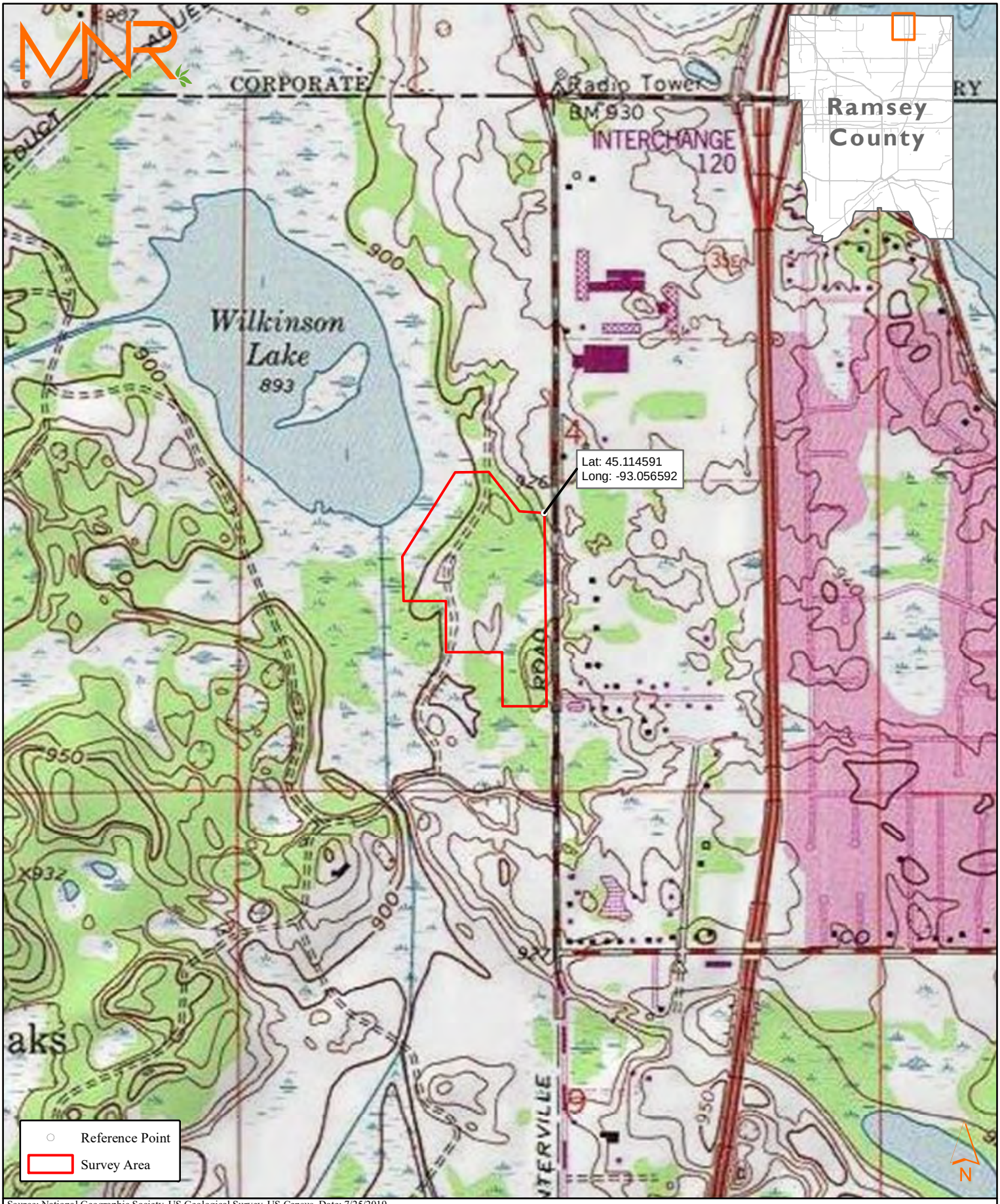


Source: OpenStreetMap, US Bureau of Land Management, US Census, Date: 7/25/2019

0 500 1,000 Feet

PLSS Survey Sections
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 2

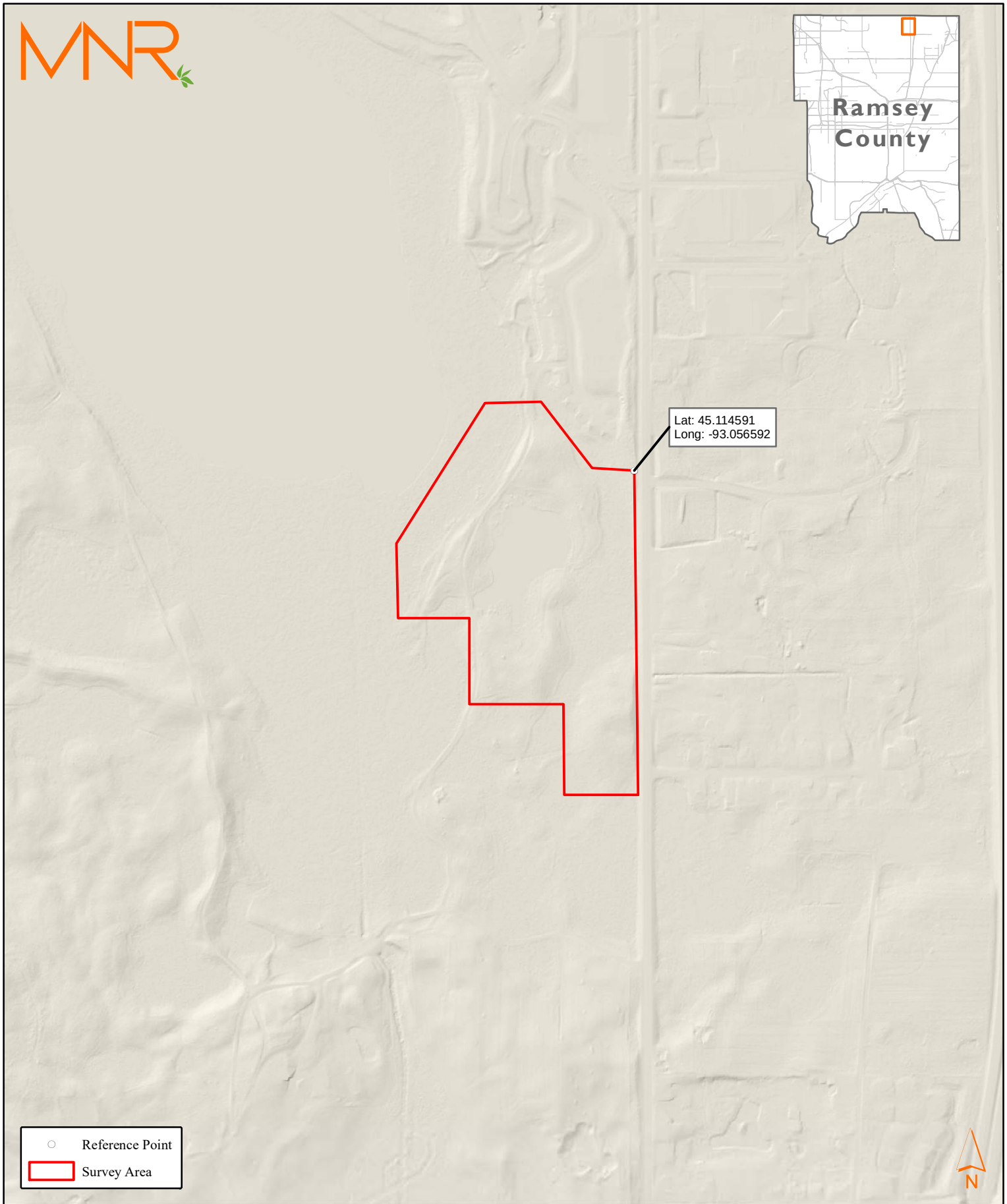


Source: National Geographic Society, US Geological Survey, US Census, Date: 7/25/2019

0 500 1,000 Feet

USGS Topographic Map
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 3

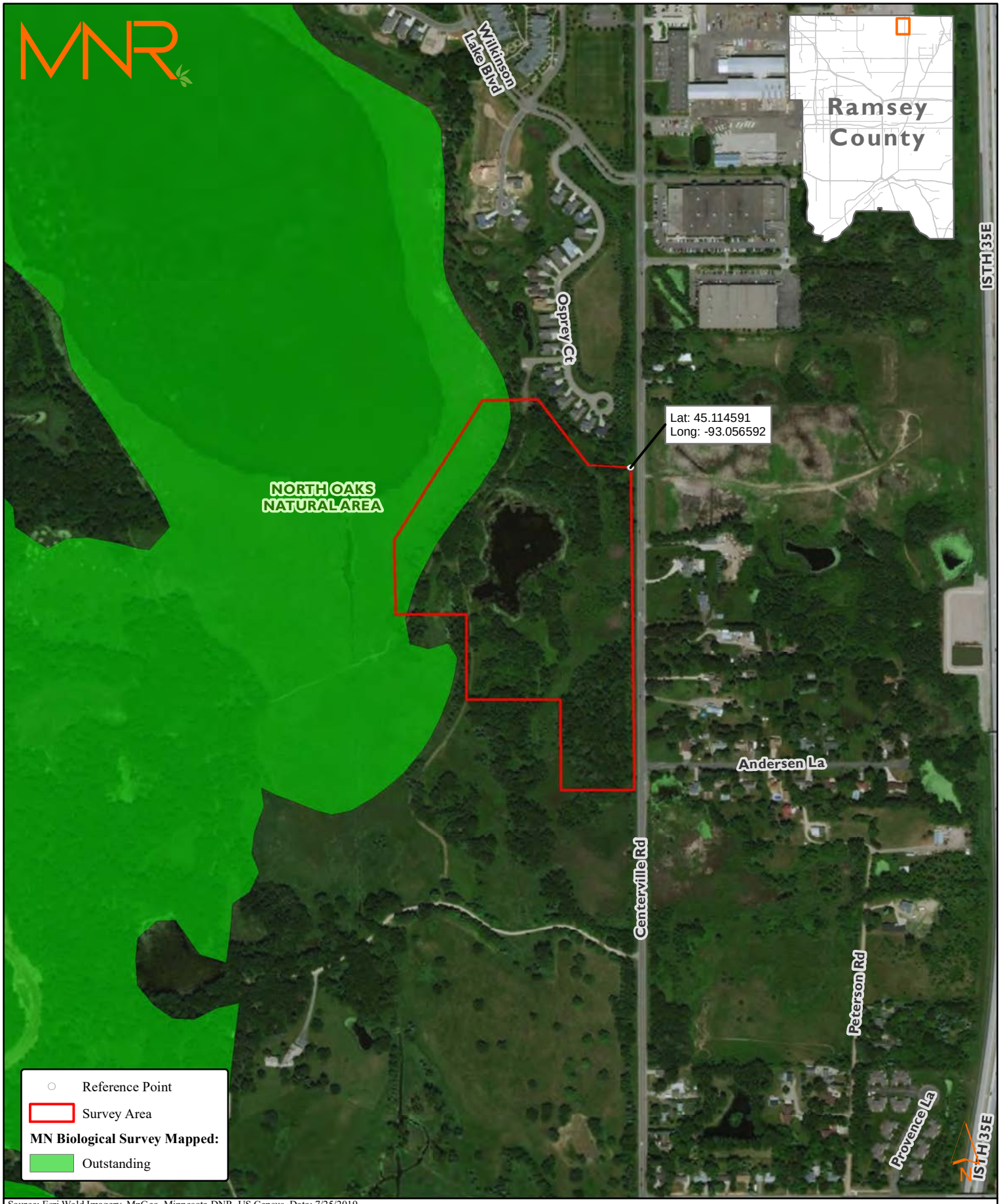


Source: MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

0 400 800 Feet

LiDAR Elevation Imagery
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 4

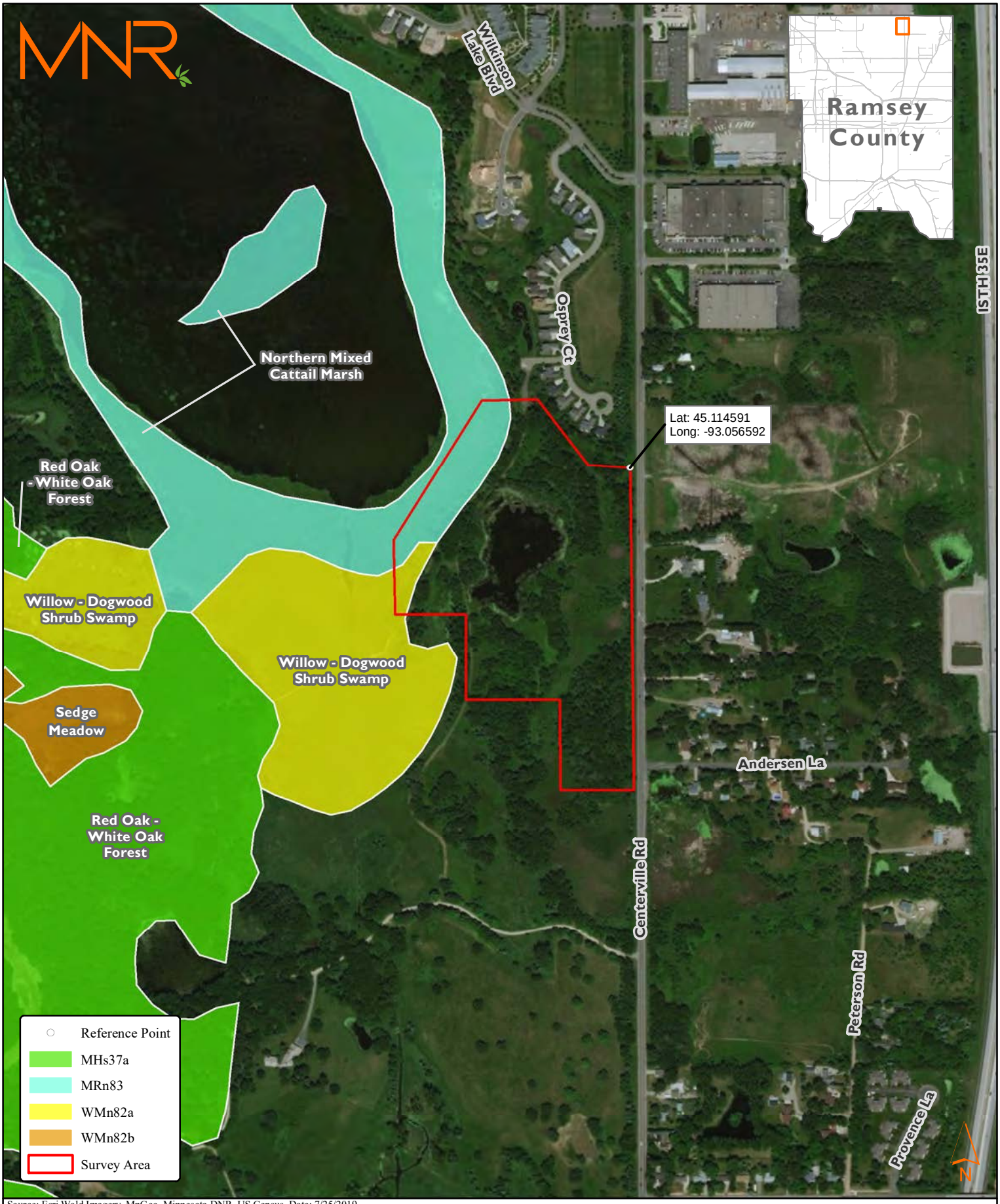


Source: Esri Wold Imagery, MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

0 400 800 Feet

Sites of Biodiversity Significance
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 5

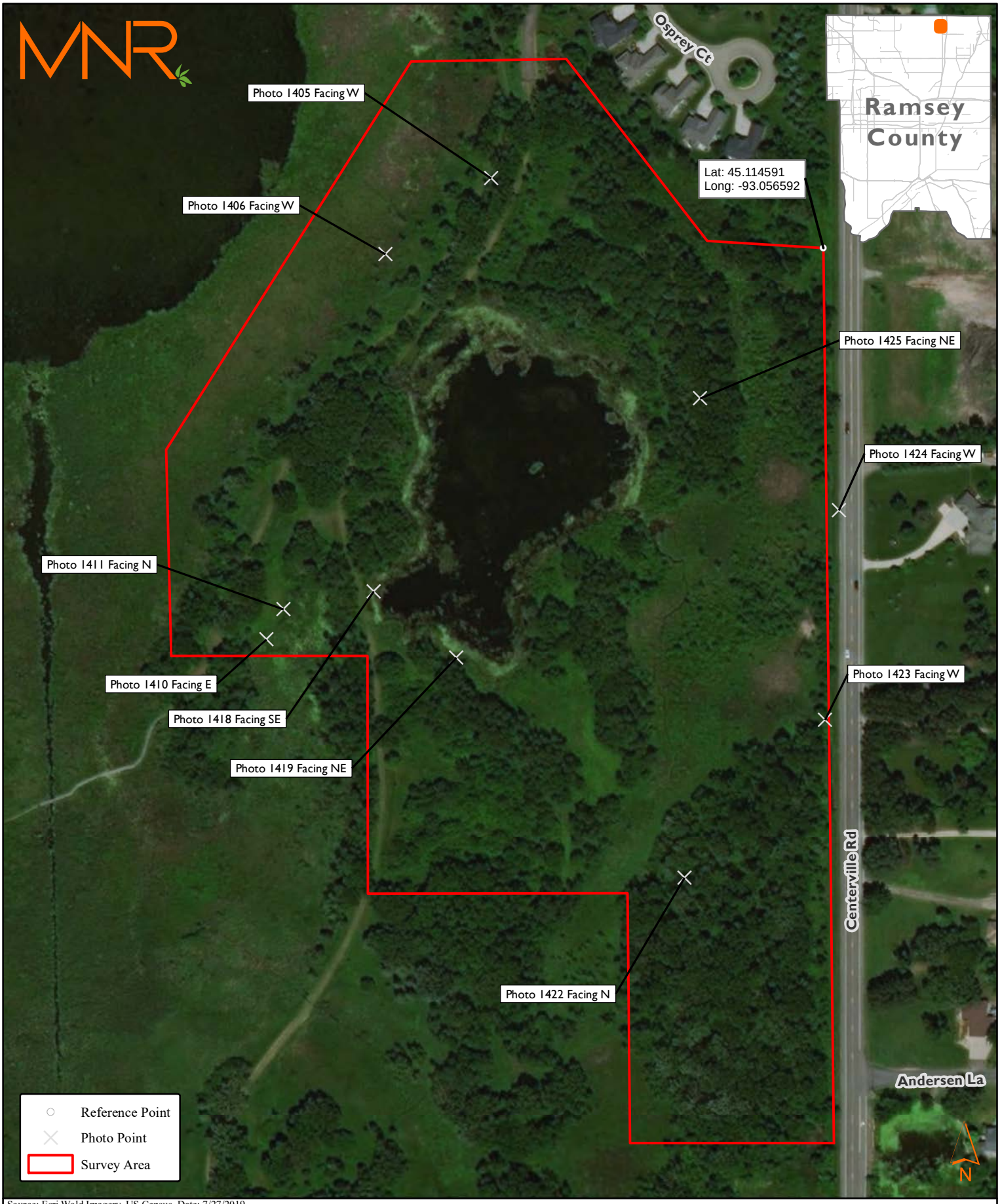


Source: Esri Wold Imagery, MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

0 400 800 Feet

Native Plant Communities
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 6



Source: Esri Wold Imagery, US Census, Date: 7/27/2019

0 100 200 Feet

Photo Locations
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 7

Appendix A

Survey Protocol Correspondence

MIDWEST NATURAL RESOURCES

Ms. Lisa Joyal
Endangered Species Review Coordinator
Minnesota Department of Natural Resources
Ecological & Water Resources
500 Lafayette Road
St. Paul, MN 55155

July 17, 2019

Ms. Joyal,

Midwest Natural Resources, Inc. (MNR) is proposing to conduct a rare plant survey for the proposed Wilkinson Villas and Anderson Woods developments located southwest of Wilkinson Lake along Centerville Road in North Oaks, Minnesota (**Figure 1)**. This work is being conducted on behalf of North Oaks Company LLC.

A formal request of the Natural Heritage Information System (NHIS) database has not been made at this time. However, we are proposing a field survey of the site in the near future. The site includes two native plant communities according to the DNR's Native Plant Community data layer. The two communities identified are the Northern Mixed Cattail Marsh (MRn83) and the Willow-Dogwood Shrub Swamp (WMn82a). These communities are collectively within a site of biodiversity significance with an outstanding ranking. Potential target species based on these two communities include the small white lady's slipper (*Cypripedium candidum*), autumn fimbry (*Fimbristylis autumnalis*), tubercled rein orchid (*Platanthera flava* var. *herbiola*), cross-leaved milkwort (*Polygala cruciata*), swamp blackberry *(Rubus semisetosus*), and lance-leaf violet (*Viola lanceolata*). The survey will be conducted by Otto Gockman and myself. Surveys will involve meander surveys and a general species list will be collected at this time. Due to the timing of surveys, we may suggest additional surveys next spring since the optimal survey window has passed for at least one of the species listed above.

Rare species, if encountered, will be documented spatially using sub-meter GPS units (Trimble GeoXT 6000 units). Species documentation will include notes on habitat, associate species, number of individuals observed within each population documented, and representative photos. Voucher collections will be made following the DNR's collection guidance procedure.

A summary report will be produced at the conclusion of field efforts. This document will include survey methods, survey results, report figures/graphics, and appendices (species list and representative photos). The report along with the GIS shapefile, associated spreadsheet, and an email from Welby Smith verifying specimen identification will be submitted to the designated NHIS email address should we have positive results.

Please let us know if you have any questions.

Scott A. Milburn, M.S., PWS
Sr. Botanist/President
Midwest Natural Resources, Inc.

Project Area
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 1

Appendix B

Species List

Species List		
Acer ginnala	*Carex sartwellii*	*Lycopus uniflorus*
Acer negundo	*Carex stipata*	*Lysimachia ciliata*
Acer saccharinum	*Carex stricta*	*Lysimachia thyrsiflora*
Achillea millefolium	*Carex utriculata*	*Lythrum salicaria*
Actaea rubra	*Centaurea stoebe*	*Maianthemum canadense*
Ageratina altissima	*Chelone glabra*	*Maianthemum racemosum*
Agrimonia pubescens	*Cicuta bulbifera*	*Medicago lupulina*
Agrostis gigantea	*Cicuta maculata*	*Melilotus alba*
Alisma triviale	*Circaea lutetiana*	*Monarda fistulosa*
Alnus incana	*Desmodium glutinosum*	*Morus alba*
Ambrosia artemisiifolia	*Eleocharis palustris*	*Myosoton aquaticum*
Amphicarpaea bracteata	*Elymus hystrix*	*Oenothera biennis*
Anemone canadensis	*Elymus repens*	*Onoclea sensibilis*
Apios americana	*Epilobium leptophyllum*	*Osmorhiza claytonii*
Apocynum androsaemifolium	*Equisetum arvense*	*Osmunda cinnamomea*
Apocynum cannabinum	*Equisetum fluviatile*	*Osmunda claytoniana*
Aquilegia canadensis	*Equisetum laevigatum*	*Osmunda regalis*
Aralia racemosa	*Erechtites hieraciifolius*	*Oxalis stricta*
Arctium minus	*Erigeron strigosus*	*Parthenocissus vitacea*
Arisaema triphyllum	*Eriophorum gracile*	*Persicaria amphibia*
Artemisia ludoviciana	*Eupatorium perfoliatum*	*Persicaria sagittata*
Asclepias incarnata	*Euphorbia corollata*	*Phalaris arundinacea*
Asclepias syriaca	*Euthamia graminifolia*	*Phleum pratense*
Athyrium filix-femina var. angustum	*Eutrochium maculatum*	*Phragmites australis*
Berteroa incana	*Fragaria virginiana*	*Phryma leptostachya*
Betula papyrifera	*Fraxinus pennsylvanica*	*Pilea sp.*
Bidens cernua	*Galium aparine*	*Pinus strobus*
Bidens frondosa	*Galium boreale*	*Plantago rugelii*
Boehmeria cylindrica	*Galium triflorum*	*Poa pratensis*
Botrychium matricariifolium	*Geranium maculatum*	*Populus tremuloides*
Bromus inermis	*Geum aleppicum*	*Potentilla argentea*
Calamagrostis canadensis	*Geum canadense*	*Potentilla palustris*
Campanula aparinoides	*Glyceria grandis*	*Potentilla simplex*
Cardamine pensylvanica	*Glyceria striata*	*Prunella vulgaris*
Carex atherodes	*Helianthus strumosus*	*Prunus americana*
Carex bebbii	*Impatiens capensis*	*Prunus serotina*
Carex comosa	*Iris versicolor*	*Quercus alba*
Carex cristatella	*Lactuca canadensis*	*Quercus ellipsoidalis*
Carex gracillima	*Lathyrus palustris*	*Quercus macrocarpa*
Carex intumescens	*Leersia oryzoides*	*Ranunculus abortivus*
Carex lacustris	*Lespedeza capitata*	*Rhamnus cathartica*
Carex lasiocarpa	*Lilium michiganense*	*Rhamnus frangula*
Carex pellita	*Liparis loeselii*	*Rhus typhina*
Carex pensylvanica	*Lonicera x bella*	*Ribes americanum*
Carex pseudocyperus	*Lotus corniculatus*	*Robinia pseudoacacia*
Carex retrorsa	*Lycopus americanus*	*Rubus idaeus*

Species List		
Rubus occidentalis		
Rubus pubescens		
Rubus wisconsinensis		
Rudbeckia hirta		
Rumex acetosella		
Rumex britannica		
Rumex crispus		
Sagittaria latifolia		
Salix discolor		
Salix petiolaris		
Schoenoplectus acutus		
Schoenoplectus tabernaemontani		
Scirpus atrovirens		
Scirpus cyperinus		
Scrophularia lanceolata		
Scutellaria galericulata		
Scutellaria lateriflora		
Setaria viridis		
Silene latifolia		
Sium suave		
Solanum dulcamara		
Solidago altissima		
Solidago gigantea		
Solidago speciosa		
Spartina pectinata		
Spiraea alba		
Stachys palustris		
Stellaria longifolia		
Triadenum fraseri		
Trientalis borealis		
Trifolium pratense		
Trifolium repens		
Typha _glauca		
Urtica dioica		
Uvularia sessilifolia		
Verbascum thapsus		
Viburnum lentago		
Viburnum opulus var. opulus		
Viburnum rafinesquianum		
Vicia americana		
Viola sororia		
Vitis riparia		
Zanthoxylum americanum		

Appendix C

Representative Photos

Photo 1405 – Facing W

Photo 1406 – Facing W

Photo 1410 – Facing E

Photo 1411– Facing N

Photo 1418 – Facing SE

Photo 1419 – Facing NE

Photo 1422 – Facing N

Photo 1423 – Facing W

Photo 1424 – Facing W

Photo 1425 – Facing NE

Anderson Woods South

Wetland Permit Application

APPENDIX I

Wetland Bank Credit Statement and Withdrawal Form

Account: 170

Account Profile / Transactions Report

Minnesota Wetland Bank

April 12, 2019

Account No 170 **Original Application Number** 170D **Date Approved** 07/24/1996 **Account Manager** Eagles, Gary (North Oaks
Land Use Type/s ALL **Annual Fee Paid for year:** 2014 **Account Established on** 07/24/1996 **Credits Available** N

Account Holder

North Oaks Company, LLC, Land Developer 5959 Centerville Rd #200 North Oaks, MN 55127 (651) 484-3361

Replacement Site Information

Site Number 170-Ramsey **Major Watershed** 20 Mississippi (metro) **Qtr T** **Section** 05
Site Name Rapp Farm and Anderson Slough **Corps SA** 7 Upper Mississippi River **Qtr F** NW **Township** 030
Last Monitored on: 08/04/2014 **Corps #** **Qtr Q** NE **Range** 22 W

Account Groups	COE	Credit Type	Wetland Type	Topography	Acres Deposited	Balance
A	Y	SWC	3	Isolated	0.5000	0.1452
B	Y	SWC	4	Isolated	5.1000	4.2670

Account Transactions

							IMPACT		
Trans Date	Type	Grp	Amount	App No	Landowners	Site No.	Watershed	Wetland Type(s)	Topography
07/24/1996	Deposit	A	0.5000	170D					
		B	5.1000						
07/24/2006	Withdrawal	A	0.0860	4257W	North Oaks Company, LLC,	170-Ramsey	20 Mississippi (metro)	1	Flow-through
05/14/2013	Withdrawal	B	0.8330	7736W	North Oaks Company, LLC,	6212-Ramsey		R	.
07/24/2014	Withdrawal	A	0.2688	8488W	North Oaks Company, LLC,	6861-Ramsey			

Transaction Form to Withdraw Credits

Minnesota Wetland Bank Program

BOARD OF WATER AND SOIL RESOURCES

If the layout of this form looks incorrect, click on *View, Edit Document,* then save it to your computer.

1. Credit User		*This space for BWSR use only.*
Name: Attn: Gary Eagles	**Organization:** North Oaks Company, LLC.	
Address: 5959 Centerville Rd, Ste 200 North Oaks, MN 55127	**Email:** gary@northoaks.com **Phone:** (651) 484-3361	
Consultant: Rob Bouta	**LGU File #:** TBD	
Kjolhaug Environmental; (612) 581-0546; robb@kjolhaugenv.com		

2. Wetland Impact Information

To be completed for the project impacting wetlands intended to be replaced by this withdrawal.

Project Name: Anderson Woods South	**Impact Size (acres):** 0.1925 acre
Impact County: Ramsey	**Impact Wetland type:** 3 Seasonally flooded basin
Impact Major Watershed/BSA: 20 / 7	**Replacement Ratio:** 2:1

Sec/Twp/Range: SW ¼ of Section 4, Township 30 North, Range 22 West

*Projects with multiple locations should use the most central location in relation to the project as a whole.

Are Federally authorized credits required for this impact? (Yes) No (assumed)

Corps Regulatory File Number: MVP-2008-01251-MJB

Comments:.

3. Credits to be Withdrawn To be completed by the seller of the credits (account holder)

Account Information

Account: #170 (North Oaks Company) **County:** Ramsey **Bank Service Area:** 7

Credit Subgroup	Wetland Type/Plant Community Type	Federally Approved?	Cost per Acre Credit	Credit Amounts
A	Shallow Marsh	Yes	$NA	0.1925
B	Deep Marsh	Yes	$NA	0.1925

Per Credit Withdrawal Fee by BSA

BSA 1	$520	BSA 6	$1,083
BSA 2	$371	BSA 7	$1,992
BSA 3	$725	BSA 8	$2,577
BSA 4	$1,412	BSA 9	$2,628
BSA 5	$685	BSA 10	$3,099

Enter the Withdrawal Rate for the BSA of the account: **$1,992**

Easement Stewardship Rate: **$302**

Total Credits:	0.3850
(Withdrawal Rate x total credits)	
Withdrawal Fee:	$ 766.92
(Easement Stewardship rate x total credits)	
Stewardship Fee:	$ 116.27
Total Fees:	$ 883.19

Please make checks payable to the Minnesota Board of Water and Soil Resources. BWSR does not accept cash.

BWSR fee policy: http://www.bwsr.state.mn.us/wetlands/wetlandbanking/fee_and_sales_data/Wetland_Banking_Fee_Policy_Effective_June1_2017.pdf

Project Name: Anderson Woods South

Confirmation email will be emailed to the user, seller, and regulatory representative when the transaction is complete. If anyone else should be notified please indicated their emails below:

4. Regulatory Authorization

By signing below, the identified agency and authorized representative hereby certifies that they have: a) verified that the subject wetland credits are deposited in the account of the owner/seller, **b)** approved a wetland replacement plan or similar agreement under their jurisdiction, and **c)** approve the proposed use of the wetland bank credit described above.

WCA LGU/Agency: Vadnais Lake Area WMO

LGU Representative(s): Brian Corcoran

Email Address(es): brian.corcoran@vlawmo.org

Signature _____ Date _____

For NRCS, DNR, etc. as applicable

Agency Name and Location: NA

Representative: NA

Email Address:

Signature _____ Date _____

5. Credit User Signature

By signing below the proposed credit user attests that he/she owns or has purchased the credits identified in this form and has received approval from the regulatory authority(ies).

Signature _____ Date _____

6. Account Holder Signature

By signing below, I, the seller and holder of the aforementioned account in the State of Minnesota Wetland Mitigation Bank, certify that:

1) The credits described in this transaction form have been sold to the credit user or will be used for my own project;
2) I have received payment in full from the buyer (if applicable);
3) The credits described in this transaction form have not been sold or used in any way to mitigate wetland losses other than for the project and location identified in the wetland impact information block on the previous page;
4) The credits described in this application should be withdrawn from my account; and
5) I will not have a negative balance of credits after the subject credits are debited from my account.

Name/Representative: _____ Email Address: gary@northoaks.com

Signature _____ Date _____

Send complete forms and fee payments to:
Wetland Bank Administration
Minnesota Board of Water and Soil Resources
520 Lafayette Road North
Saint Paul, MN 55155