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VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
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VLAWMO TECHNICAL COMMISSION MEETING
7:30 AM JUNE 12, 2020

Meeting will be held by WebEx video conferencing and phone:
For video conferencing on your computer, enter into your web browser:
https://meetingsamer9.webex.com/meet/tyler.thompson

For joining by phone, please dial +1-408-418-9388 and enter the access code: 626 368 138, followed by #, when prompted. Also, please note that this is not a toll-free number, and associated charges from your phone provider may apply. **Action items:**

I. **Call to Order – 7:30am –Chair Gloria Tessier**
II. **Approval of Agenda**
III. **Approval of Minutes (May 8, 2020)**
IV. **Administration & Operations**
  A. TEC Report to the Board, Financial Report for June & authorization for payment
V. **Programs**
  A. Education & Outreach – Nick
    1. General update: Summer projects and programs
  B. Cost Share – Tyler
    1. Landscape Level 1: 2020-09 Crosby Raingarden, WBL
    2. Landscape Level 1: 2020-10 Johnson Pond Shoreline Restoration, WBL
    3. Landscape Level 1: 2020-11 Kelsey Native & Drainage Restoration, VH
  C. WCA – Brian
    1. Anderson Woods wetland replacement plan, NO
VI. **Projects**
  A. East Goose Alum Grant Update – Phil
  B. Lambert Lake Update – Dawn
  C. Carp Project West Vadnais Lake Update – Dawn
  D. Pleasant Lake Sedimentation Study: Core Samples & Bathymetry – Dawn
  E. Wilkinson Feasibility Study Update – Dawn
  F. Birch Lake 4th & Otter Update – Tyler, Dawn
VII. **Commisioner Reports**
VIII. **NOHOA**
IX. **Ramsey Soil & Water Conservation Division:**
X. **St. Paul Regional Water Services**
XI. **Public Comment**
XII. **Next Meetings:** TEC: July 10, 2020, June Board of Directors Meeting: June 24, 2020.
XIII. **Adjourn**

Events: *vlawmo.org/events*

Workshops switched to online:

- Ramsey County Flooding Meeting: June 9
- Resilient Yards: June 11

EAW Lambert Lake Comment Period: May 19 - June 17

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

Vadnais Lake Area Water Management Organization
Technical Commission Minutes
May 8, 2020
Vadnais Heights City Hall, Lakes Room

Commission Members Present:

Gloria Tessier	Chair, Gem Lake (GL)
Jesse Farrell	Vice Chair, Vadnais Heights (VH)
Bob Larson	Treasurer, North Oaks (NO)
Paul Duxbury	White Bear Township (WBT)
Terry Huntrods	White Bear Lake (WBL)
Andy Nelson	Lino Lakes (LL)

Commission Members Absent: none.

Others in attendance: Phil Belfiori, Brian Corcoran, Dawn Tanner, Nick Voss, Tyler Thompson (VLAWMO); Jeremy Erickson (SPRWS); Connie Tailon (WBL); Diane Gorder (NO); Katherine Kanne, Ed Shapland (CAC); Patricia Youker (VLAWMO Board Director).

I. **Call to Order** Chair Tessier called the meeting to order at 7:31 am. A roll call was made for attending Commissioners of the electronic meeting: Farrell: present Larson: present Duxbury: present Huntrods: present Nelson: present Tessier: present.

II. **Approval of Agenda**
The agenda for the May 8, 2020 Technical Commission Meeting was presented for approval, as presented.
It was moved by Huntrods and seconded by Larson to approve the May 8, 2020 TEC agenda, as presented. Vote: Tessier: aye Farrell: aye Larson: aye Duxbury: aye Huntrods: aye Nelson: aye Motion passed.

III. **Approval of Minutes**
It was moved by Duxbury and seconded by Huntrods to approve the April 10, 2020 meeting minutes, as presented. Vote: Tessier: aye Farrell: abstain Larson: aye Duxbury: aye Huntrods: abstain Nelson: aye Motion passed.

IV. **Administration & Operations**

A. **Financial Report for May & Authorization for Payment**
Belfiori presented the May 2020 Financial Report for review and authorization of payments.
It was moved by Farrell and seconded by Larson to approve the May Treasurer's Report and authorization of payments. Vote: Tessier: aye Farrell: aye Larson: aye Duxbury: aye Huntrods: aye Nelson: aye. Motion passed.

V. **Programs**

A. **Education & Outreach**

1. **Lambert Meander Online Info-session**
Voss noted that an online webinar open house for the project on May 20th at 6:00 pm with SEH and VLAWMO staff will be held for presentation and discussion of the project. Belfiori thanked Farrell for his involvement and partnership of the City. He noted the multiple benefits in drainage relief and water quality benefits this project contains. Tanner updated that the EAW is still moving towards the final draft and the final draft is scheduled to be sent out the week of the 11th. SEH is working to submit the DNR and USACE permits. Updated plans were received on May 7th for the project, with plans to be included in the June TEC packet.

2. Community Blue scoring chart review

Voss updated that the revised CB scoring chart is ready for implementation for future incoming Community Blue grant applications. Voss noted that this new application will be more flexible for the varying types of grant proposals the program sees.

B. Cost Share

Thompson proposed that due to the high volume of LL1 cost share grant applications this month, the TEC could elect to hear their presentation, ask questions, and then vote to approve all in one motion, if all projects were agreed for approval. The TEC Commissioners agreed to one motion for the approval of the 4 Landscape Level 1 applications.

1. Landscape Level 1: 2020-05 Shapland Turf to Native Restoration, VH

   A LL1 application was received for replacing 390 square feet of yard turf with native plants, and is an expansion of the Shapland's raingarden project from 2019. Though the project is not an infiltration basin, it will be receiving 880 square feet of pervious drainage area. The project design has been completed by Greenspace LLC, and project installation, labor and management would be completed by the same contractor. The total project cost has been quoted at $3,421.81, and the applicants are requesting $2,000 in LL1 cost share funding.

   Staff recommends approval of application LL1 2020-05 in the amount of $2,000.00.

   Discussion: Farrell noted that the restoration area looked to be on the neighbor's property and asked to have a simple agreement signed by the neighbor agreeing to the project, and then attaching this to the grant agreement. Ed Shapland agreed to this and Thompson noted the agreement will be attached to the LL1 grant agreement.

2. Landscape Level 1: 2020-06 Schmidt Native Restoration, VH

   An application was received for a backyard native restoration next to the applicant's pond, and extending along their property line, providing understory revegetation totaling 600 square feet of restoration for habitat. The proposed project was designed and would be installed by Ecoscapes, for a total project cost of $4,200, of which, the applicants are requesting $2,000 in LL1 funding. The Schmidts are past LL1 grant recipients and have been good stewards of maintenance with their past projects (front yard infiltration basin and creek bed, combined with a native planting), as well as partners for past Landscape workshops.

   Staff recommends approval of application LL1 2020-06 in the amount of $2,000.00.

3. Landscape Level 1: 2020-07 Ribeiro Native Planting, WBL

   Staff was approached by Vici Ribeiro for interest in a native pollinator planting, and has quickly worked to submit an application for a LL1 grant. The applicant's proposed project is comprised of a 50 square foot pollinator garden with 11 species of wildflowers & grasses along with the dispersed planting of pollinator serviceberries, Redbud, and Hawthorn pollinator trees. Vici will be completing the native planting herself, but would be contracting the labor and delivery of the serviceberries and pollinator trees. The total estimated project cost is $1,356.71, and the applicant is requesting $1,017.43 in LL1 grant funding.

   Staff recommends approval of application LL1 2020-07 in the amount of $1,017.43.

4. Landscape Level 1: 2020-08 Piper Native Restoration, WBT

   An application for a LL1 grant was received by Sonja Piper to complete a native restoration and pollinator planting area where the power company had cut down several large pine trees on her front sideyard, several years ago. The total restoration area is 1,345 square feet and would revegetate a ditch that is tributary and partially drains to Rice Lake. The applicant would be completing the project herself with the total project estimated cost at $1,782, she is requesting a 75% cost share of the project at $1,337 for a LL1 grant. This is an excellent and visible location for educational purposes of native restorations.

   Staff recommends approval of application LL1 2020-08 in the amount of $1,337.00.

It was moved by Farrell and seconded by Larson for approval of application and funding in the amount of $2,000.00 for LL1 2020-05, as amended; $2,000.00 for LL1 2020-06; $1,017.43 for LL1 2020-07; and $1,337.00 for LL1 2020- 08. Vote: Tessier: aye Farrell: aye Larson: aye Duxbury: aye Huntrods: aye Nelson: aye. Motion passed.

5. **Landscape Level 2: 2020-04 Monda Lambert Creek Koehler Restoration Extension, VH**
   Tony Monda, property owner where the last Lambert Creek, Koehler restoration was completed in 2017, contacted staff with an interest on extending that restoration further down his property. The applicant contacted Outdoor Lab, the contractor that completed the last restoration, to use existing designs to extend the restoration approximately 60 linear feet down the creek bank on his property, and stabilize 800 square feet of the slope. This section of Lower Lambert Creek has very steep banks and is considered ideal and critical for restoration and stabilization.
   Staff recommends TEC recommendation to the Board for approval of application LL2 2020-04 in the amount of $4,416.30.
   Discussion: Farrell asked if the boulder hard armoring at the top of the bank was necessary for the project. Thompson addressed that the hard armoring is an important element of the project for permanent stabilization of the bank and has his recommendation.
   It was moved by Huntrods and seconded by Larson for recommendation to the Board for approval of application and funding in the amount of $4,416.30 for the LL2 2020- 04 grant application. Vote: Tessier: aye Farrell: aye Larson: aye Duxbury: aye Huntrods: aye Nelson: aye. Motion passed.

VI. Projects

A. East Goose Alum Grant Update

Belfiori noted that staff briefed the Board at their last April meeting on the progress and options for the East Goose Lake alum grant. Staff is in continuing conversations with BWSR on Barr's proposed assurance standards and metrics. BWSR has identified some level of concerns with the proposed assurances and metrics to date. The Board voted to move ahead and incur costs for supporting lake management projects including work on a boat launch and fish management. Staff has asked BWSR for an extension of the grant workplan deadline. The Board also voted to appoint Board members Lindner and Jones to a special "subcommittee" to hear and discuss the BWSR proposed project/grant assurances and discuss options, moving forward. The Board then authorized a Special May 27th meeting, to consider the recommendations related to the grant assurance agreement and workplan.
Discussion: none.

B. Lambert Lake Update

Tanner noted this update was covered in agenda item V. A. 1.

C. Carp Project West Vadnais Lake Update

Tanner updated that Carp Solutions is moving ahead with carp tracking, as they are now able to work on projects. The fish barrier in place on west Vadnais will be temporarily removed for work on the outlet, but will soon be put back in place after the project is completed.

D. Watershed Base Funding, Goose Subwatershed BMP

Thompson reported that the Board assigned Tyler to begin work to pursue BMP 14 for project selection at their April meeting, though staff is also keeping the possibility of other projects open for implementation, due to several complexities including the timing of the rush line construction, private property interests and budget factors. . There is another possible project location at Community of Grace Lutheran Church in White Bear Lake where the project parameters could be met.
Discussion: Tessier noted the issue of a basin flooding on County Road F and Hoffman Road. Staff will work with the County to pursue high water issues for this site.

E. Birch Lake 4th & Otter Update

Thompson updated that the 4th & Otter iron-enhanced sand filter project is moving along, as scheduled, and the limited precipitation thus far this spring has been fortunate for the project. Thompson anticipates the project will be nearly completed by the June TEC meeting and will update then.

VII. Commissioner Reports

Farrell thanked Tanner for her work on stabilization and planting plans for the Oak Creek Drive culvert rehabilitation in Vadnais Heights.

VII. NOHOA

Gorder noted that it's reassuring that carp solutions project is moving forward with their carp tracking project.

IX. St. Paul Regional Water Service (SPRWS) Report

None.

X. Ramsey Soil & Water Conservation Division (RCSWCD) Report

None.

XI. Public Comment

Tailon noted that the Polar Chevrolet phase 1 project is underway, including shoreline restoration. The County Rd F raingarden reconstruction will begin Monday, May 11th.

XII. Next Meetings

TEC: June 12th, 2020; Board: June 24th, 2020

XII. Adjourn

It was moved by Larson and seconded by Duxbury to adjourn at 8:45 am. Vote: Tessier: aye Farrell: aye Larson: aye Duxbury: aye Huntrods: aye Nelson: aye. Motion passed.

Minutes compiled and submitted by Tyler Thompson.

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%

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

2:24 PM

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

2:29 PM

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**

VLAWMO
Vadnais Lake Area
Water Management Organization

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

TEC Staff Memo – June 2020

IV. Administration & Operations

A. TEC Report to the Board & Financial Report for June – The June TEC Report to the Board is attached for review and the June Financial Report is attached in the June ePacket.

V. Programs

A. Education and Outreach:

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

2. General update: VLAWMO's summer projects and programs are continuing to adapt to COVID-19 while striving to strengthen volunteer participation. Upcoming items in the works that don't yet have dates set include:
   - Rainbarrel installation workshop (Master Water Steward, Community Blue)
   - Junior Water Steward initiative (Master Water Steward)
   - Trash pick-up, welcome-to-the-neighborhood, Leaf Pack monitoring (Master Water Steward, WAV)
   - Improved photos of cost-share projects, project comparisons over time (Master Water Steward)
   - Picture posts and phenology partnership with Tamarack Nature Center (VLAWMO, Tamarack volunteers)
   - Virtual and drive-along watershed tour (Master Water Steward, VLAWMO)
   - Lambert Pond and Meander video series, Goose Lake video series, story maps (VLAWMO)
   - Lawns to Legumes coaching (VLAWMO)
   - Healthy soils workshop with Blue Thumb, September (VLAWMO)

B. Cost Share

As recommended by the TEC at their May meeting, the LL2 2020-04 grant application was authorized for approval by the Board of Directors at their May 27th meeting, exhausting the Landscape Level 2 grant funding for 2020. Both Landscape cost share grant funding pools will be refilled beginning January 1st, 2021. With current grant approvals pending completion from 2019 & 2020, $11,345 remains uncommitted and available for Landscape Level 1 application funding in 2020.

1. Landscape Level 1: 2020-09 Crosby Raingarden, WBL

A LL1 application was received for a small raingarden by a resident in White Bear Lake for routing, infiltration, and treatment of their rooftop drainage (252 sq feet) with a basin totaling 35 square feet. The applicant will be doing the project themselves, resulting in low project cost and has been estimated to be $721. The applicant is requesting $540 (75% project total) in Landscape Level 1 cost share funding.

Staff is recommending approval of LL1 2020-09 for funding in the amount of $540.00

2. **Landscape Level 1: 2020-10 Johnson Pond Shoreline Restoration, WBL**
   After staff conducted a site visit with the Johnsons for cost share grant opportunities for a shoreline restoration around their pond to include pollinator habitat, they reached out to Natural Shore Technologies for a bid to restore the shoreline. The bid proposes restoring a 2-foot buffer around the circumference of the pond, including mulch in planted areas, and planting plugs at 1.5-foot spacing. Included in NST's proposal, but not included in the Johnson's asked cost share funding match is necessary maintenance for the 2021 growing season. The total estimated project cost (not including 2021 maintenance) is $2,223, and the applicant is requesting $1,667.25 (75%) in Landscape Level 1 cost share funding.
   Staff is recommending approval of LL1 2020-10 for funding in the amount of $1,667.25

3. **Landscape Level1: 2020-11 Kelsey Native & Drainage Restoration, VH**
   An application was received from the Kelseys for removal of existing landscaping and replacement with a 700 square foot native plant restoration. The project will improve drainage and increase infiltration to reduce sheet-flow drainage to their backyard and a wetland behind the property. Northland Grounds & Landscaping is being hired for removal of current landscaping and site preparation for the Kelseys, along with family & friends, to plant the area with native plugs. The project will be concurrently sequestering drainage that is making its way to the backyard and into a wetland. The total estimated cost of the project is $3,200, and the applicants are requesting $2,000 (62.5%) in Landscape Level 1 cost share funding.
   Staff is recommending approval of LL1 2020-11 for funding in the amount of $2,000.00

C. WCA

1. Anderson Woods wetland 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, **staff recommends approval of proposed impacts and recommendation to the Board for consideration at their June 24th, 2020 meeting.**

VI. Projects

A. East Goose Alum Grant Update

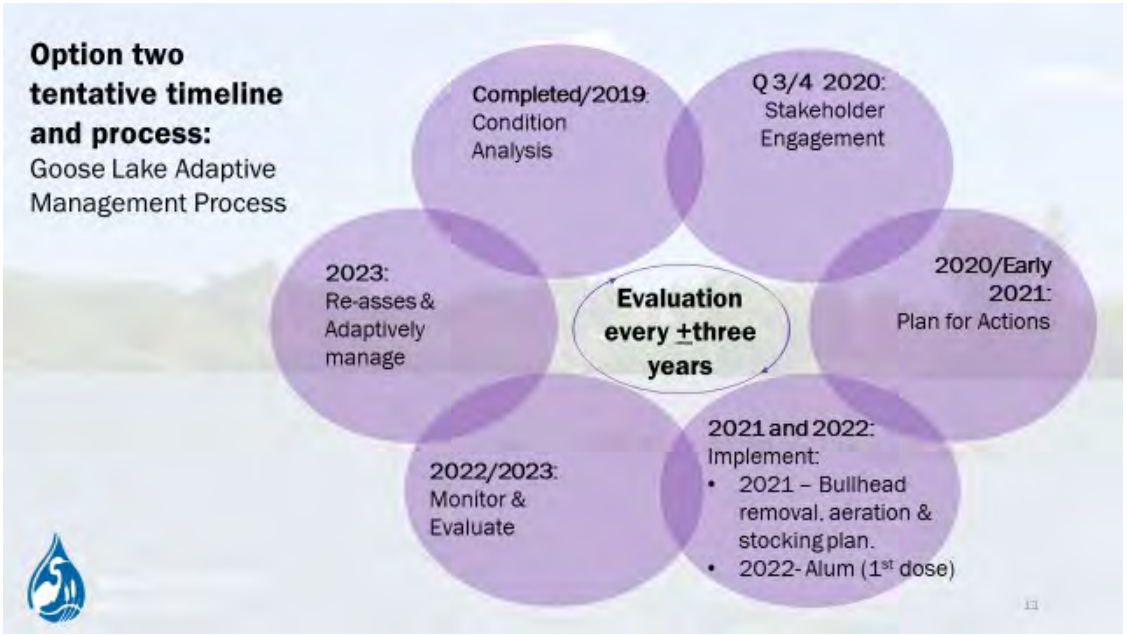
At the May Special Board meeting, staff provided the Board with a presentation with the background, analysis, options and recommendations (from both Board members Lindner and Jones as well as from staff) related to the proposed East Goose Lake Alum Treatment Grant and Project.

Staff provide 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. VLAWMO staff 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.

The following graphic below summarize Option 2:



Staff 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.

Staff 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 and upon further discussion came to a consensus to recommend

Option 2. 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:

• authorized 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".

• directed 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.

B. Lambert Lake Update

The Environmental Assessment Worksheet (EAW) was published in the EQB Monitor on May 18. A link to the EQB Monitor is provided here. The comment period runs from May 19-June 17. The full EAW is included in the packet and includes the most current engineering designs and construction plans.

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, through and ad in the Press Pubs, and direct postcards were sent to residents living in the area. View the meeting here.

Permit work is continuing with MN DNR and USACE. Both permits are currently in process.

C. Carp Project West Vadnais Lake Update

The barrier at West Vadnais is working well and doing its job. Carp were viewed by staff piling up at the barrier and jumping against it. Numbers have not yet reached a threshold that would make electroshocking for removal worth the effort and cost required. VLAWMO and RWMWD are keeping a close eye on the barrier and continuing to monitor carp abundance. Carp were also viewed gathering at the Wilkinson barrier, swimming into the culvert below the barrier. Carp Solutions detected movement at the antenna just 40 min. prior to their last visit to download data. Observations from residents and the data continue to inform the project.

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www.vlawmo.org; Office@vlawmo.org

D. 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.

E. 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.

F. Birch Lake 4th & Otter 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 just complete, except for the installation of a backflow-prevention valve, which is awaiting delivery and expected for installation later this month. The valve will be 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. Until the backflow-prevention filter is delivered, the filter will be kept off-line. A punch list of final items to button-up the project is being generated by Barr Engineering and staff will help coordinate the final items.

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

Vadnais Lake Area Water
Management Organization
800 County Road E East
Vadnais Heights, MN 55127
www.vlawmo.org
(651) 204-6071

LANDSCAPE LEVEL 1 GRANT APPLICATION FORM

Please submit form and required materials to: TYLER THOMPSON
tyler.thompson@vlawmo.org

Please fill in the application as best as possible and use additional pages if necessary. Refer to the Grant Guidance document for further information or contact Tyler Thompson with any questions.

APPLICANT INFORMATION

NAME: Samantha Crosby DATE: 5/29/20

ADDRESS: 4953 Division Ave CITY: WBL ZIP: 55110

PHONE: 954.599.9664 EMAIL: scrosby98@gmail.com

PROJECT SUMMARY

ESTIMATED TOTAL COST OF YOUR PROJECT: $ 721.00

AMOUNT OF GRANT REQUESTED: ($2,000 MAXIMUM) $ 540.00

WHEN DO YOU PLAN TO COMPLETE YOUR PROJECT?

I'd like to start as soon as the grant is approved - late June early July.

TYPE OF PROJECT THAT WILL BE COMPLETED:

Raingarden/ Infiltration Basin ☐ Shoreline Restoration ☐ Native Plant Restoration ☐ Other ☐

If other, please describe proposed project:

PROJECT BACKGROUND

Describe your property: Does your property connect to a lake, stream, ditch, or wetland? What issues are you hoping to address with your project?

No

Correct onsite drainage issues

Describe how your project will support the goals of the Landscape Grant Program (see guidance materials for more Information).

Property is located in the TVRZ

PROJECT SPECIFICATIONS

In order to determine the water quality benefit of your project (amount of stormwater and pollutants captured), specific information is required for VLAWMO staff to perform the calculations. If you are working with a professional landscaper, they should be able to provide you with this information.

TOTAL PROPERTY AREA (SQ.FT): 7,500¢

PROJECT SIZE (SQ.FT.): 35¢ bottom of RG

IMPERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): 252¢

PERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): Maybe 60¢

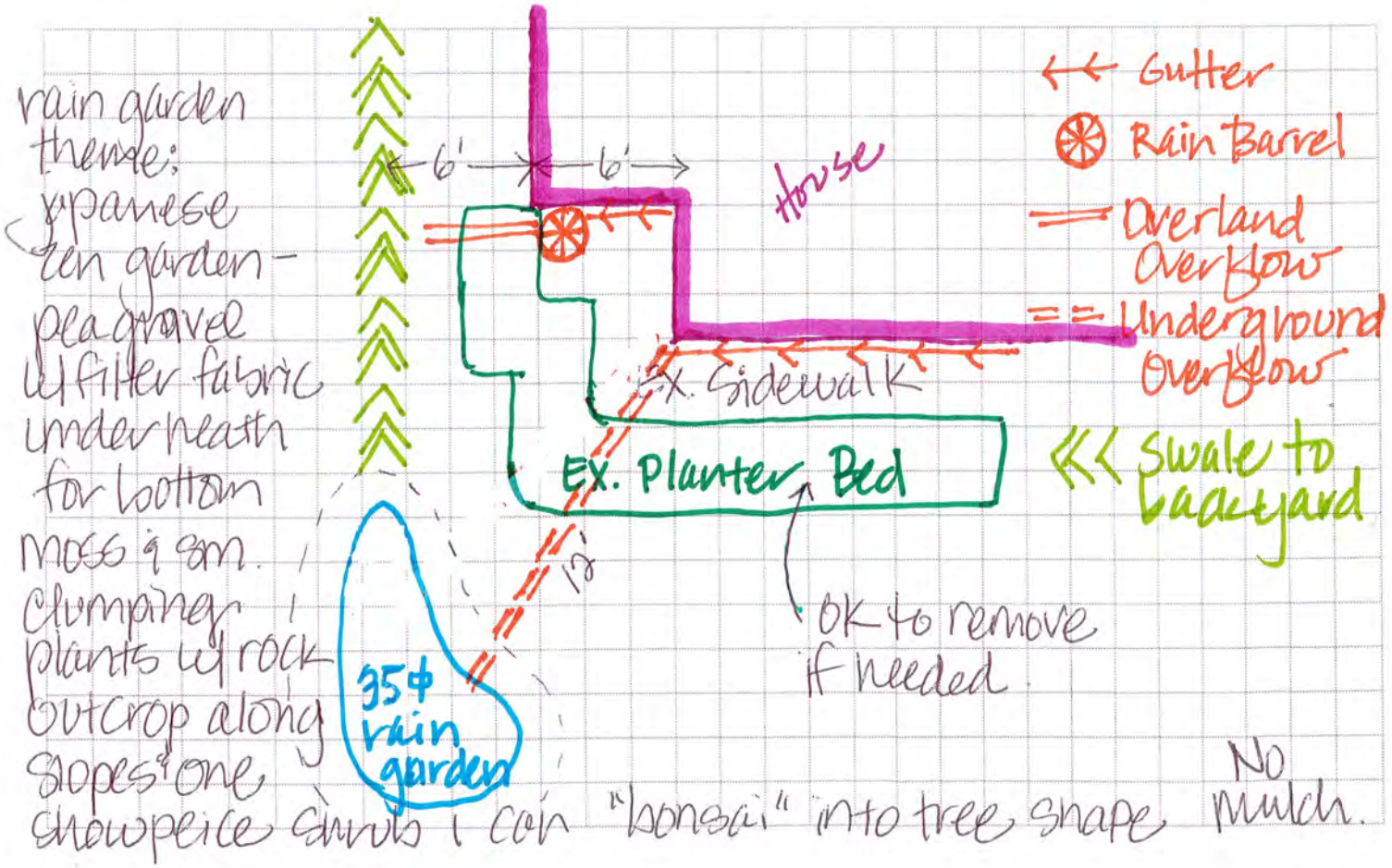
IF YOUR PROJECT **INCLUDES INFILTRATION,** PLEASE PROVIDE THE FOLLOWING INFORMATION

SOIL INFILTRATION RATE (INCHES/HR): sandy soil ≈ 1.63"/hr.

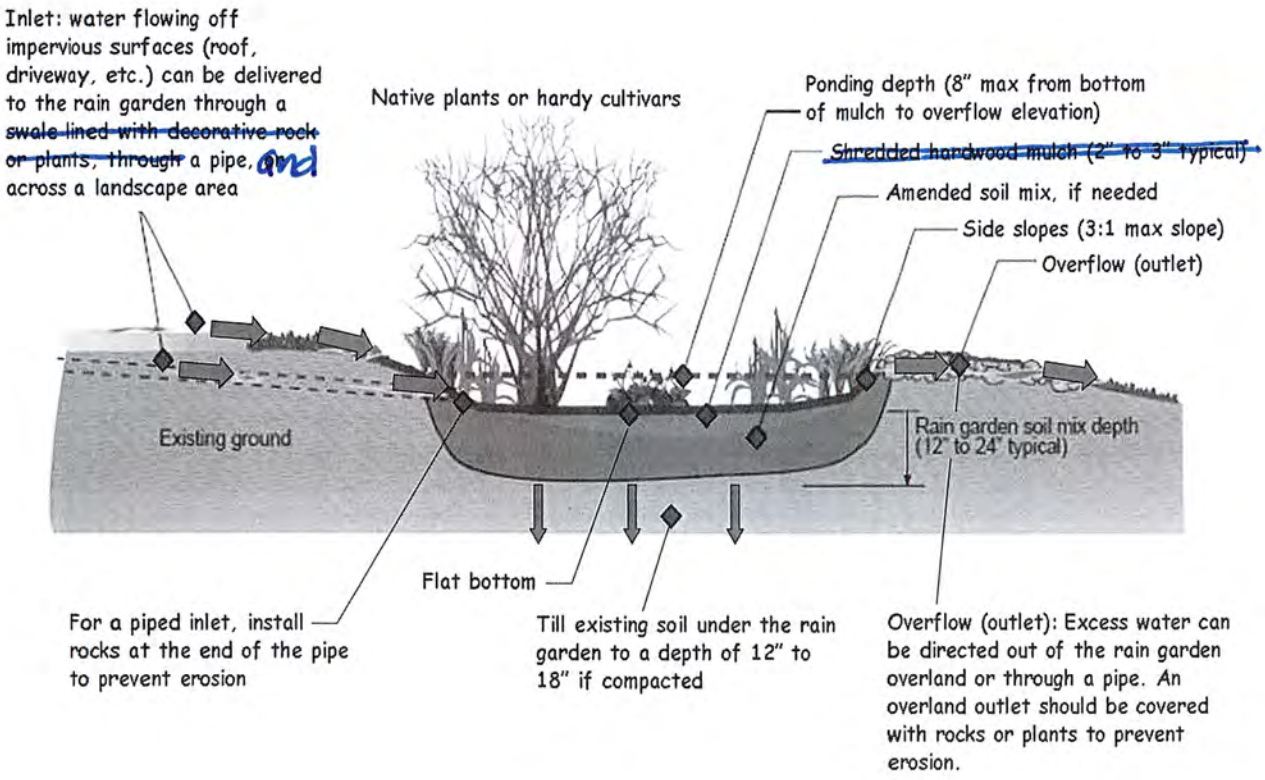
DEPTH OF RAINGARDEN (INCHES): 8 to 9 inches if poss.

ADDITIONAL REQUIRED MATERIALS

Include a detailed drawing and budget for your project compiled by either yourself or your contractor that provides information for how the project will be installed, lists the materials that will be purchased (see guidance regarding what can be included as part of the grant program) and a list of the plants that will be used. Native restoration projects are required to use ONLY plants that are native to this ecoregion. All other projects must include AT LEAST 50% native plants. Hybrids of native plants will not count towards this requirement. **This information may be scanned and emailed to VLAWMO GIS Watershed Technician, Tyler Thompson (tyler.thompson@vlawmo.org)**



Appendix B. Example Rain Garden Cross Section




2'4.5"
x4'10.5"
3'8"
2'4"
3'10"
5'2"
9'3"
2x2'9"
5'
4'4"
6x8=
48
topsoil
only
12'
18x8=144
DINING
2'5"
PORCH
6x12=72
6x6=
36
144+72+36=252

RESIDENTIAL RAIN GARDEN CALCULATION WORKSHEET

Property Owner: Sam Crosby

Site Address: 4853 Division Zone: _____

Step 1. Calculate the treatment volume

The treatment volume (b) is twice the volume of 1.1 inches of rain multiplied by the additional impervious surface area calculated in the impervious surface calculation worksheet. This is the volume you are required to capture in the rain garden (below the raingarden overflow) and infiltrate into the ground. This volume of runoff can be routed to the raingarden from any on-site impervious surface.

	Item	Total
(a)	Area of impervious surfaces requiring mitigation (square feet)	252
(b)	Treatment volume (cubic feet)	23.1

(a) from impervious surface calculation worksheet

(b) = [2 x (a) x 1.1/12]

Step 2. Determine the area and depth of your rain garden

The treatment volume calculated above in (b) will determine the area and depth of your rain garden. The rain garden ponding depth is also dependent on how fast water can infiltrate into the ground. The entire volume of water captured in your rain garden must infiltrate into the ground within 24 hours and the ponding depth may not exceed 8 inches.

	Item	Total
(c)	Infiltration rate of on-site soils beneath rain garden (inches/hour)	1.63
(d)	Ponding depth (inches) or 8", whichever is less	8
(e)	Surface area of bottom of rain garden (square feet)	354

(c) = infiltration test rate (preferred) or design rate from Appendix A

(d) = 24 hrs x (c)

(e) = [(b) / (d)] x 12

Further information

Rain Garden Manual http://dnr.wi.gov/topic/stormwater/documents/rgmanual.pdf

MN Stormwater Manual https://stormwater.pca.state.mn.us/index.php/Main_Page

Plants for Stormwater Design https://www.pca.state.mn.us/water/plants-stormwater-design

Calculated by: Sam **Date:** 5.5.20

Staff Approval by: _____ **Date:** _____

	REALLY Rough Cost Estimate	**DRAFT PLANT LIST**					
$180	18 to 20 plants, mostly native	Plant Name	Common Name	Innunadation	Location	Soils	Native
$160	Lots of moss (replaces mulch between plants)	*Polygonatum biflorum*	Solomon's Seal (varigated)	6" innundation	back & sides	loam	Y
$50	1 centerpeice plant	*Onoclea sensibilis*	Sensative Fern	12" innundation	bottom	loam, clay	Y
$100	Pebble rock (preferrably white/light grey in the bottom)	*Iris versicolor*	Blue Flag Iris (lots of it!)	12" innundation	bottom	loam, clay	Y
$80	Landscape edging & stakes	*Geranium maculatum*	Wild Geranium	3" innundation	front & sides	all soils	Y
$25	Landscape fabric & staples	*Dicentra spectabilis*	Bleeding Heart (purple)	3" innundation	sides	all soils	Y
$0	Soil amendment (if needed, compost from County Site)	*Chelone glabra*	Turtlehead	9" innundation	bottom & sides	all soils	Y
$60	Catch basin kit	*Adiantum pedatum*	Maidenhair Fern	6" innundation	bottom	loam	Y
$655	SUB TOTAL	*Thuidium delicatulum*	Fern Moss				
$66	10% contigency	*Sagina Subulata*	Irish Moss				
$721		*Hedwidia Ciliata*	Hedwigia Moss				
		Anopmodon Attenuatus	Tree Apron Moss				
	Labor will be me and friends. :)	*Mnium Hornum*	Carpet Moss				

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Please submit form and required materials
to: TYLER THOMPSON
tyler.thompson@vlawmo.org

Please fill in the application as best as possible and use additional pages if necessary. Refer to the Grant Guidance document for further information or contact Tyler Thompson with any questions.

APPLICANT INFORMATION

NAME: Johnson Dass & Nisha Johnson DATE: 06/02/2020

ADDRESS: 1560 Quast Ct CITY: White Bear Lake ZIP: 55110

PHONE: 847 997 4723 EMAIL: johnson.nisha@gmail.com

PROJECT SUMMARY

ESTIMATED TOTAL COST OF YOUR PROJECT: $ 2223.00

AMOUNT OF GRANT REQUESTED: ($2,000 MAXIMUM) $ 1667.25

WHEN DO YOU PLAN TO COMPLETE YOUR PROJECT? 7/3/2020

TYPE OF PROJECT THAT WILL BE COMPLETED:

Raingarden/ Infiltration Basin ☐ Shoreline Restoration ☑ Native Plant Restoration ☐ Other ☐

If other, please describe proposed project: Pollinator Friendly Garden

PROJECT BACKGROUND

Describe your property: Does your property connect to a lake, stream, ditch, or wetland? What issues are you hoping to address with your project?

The holding poind in our property connect to to a ditch, which is connected to a wetland that flows into Birch Lake. We are hoping to address receeding shoreline of the holding pond in our yard and promote eco system with pollinator friendly garden.

Describe how your project will support the goals of the Landscape Grant Program (see guidance materials for more Information).

Our project with "Natural Shore" will preserver, protect, and restore receeding shoreline with native plants that promote in creating insects, nees, birds & other wildlife, and increase plant diversity that attracts pollinators.

PROJECT SPECIFICATIONS

In order to determine the water quality benefit of your project (amount of stormwater and pollutants captured), specific information is required for VLAWMO staff to perform the calculations. If you are working with a professional landscaper, they should be able to provide you with thisinformation.

TOTAL PROPERTY AREA (SQ.FT): 20,470 Sq. Ft

PROJECT SIZE (SQ.FT.): 230 Sq. Ft. Circumference

IMPERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): -

PERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): -

IF YOUR PROJECT I**NCLUDES INFILTRATION, P**LEASE PROVIDE THE FOLLOWING INFORMATION

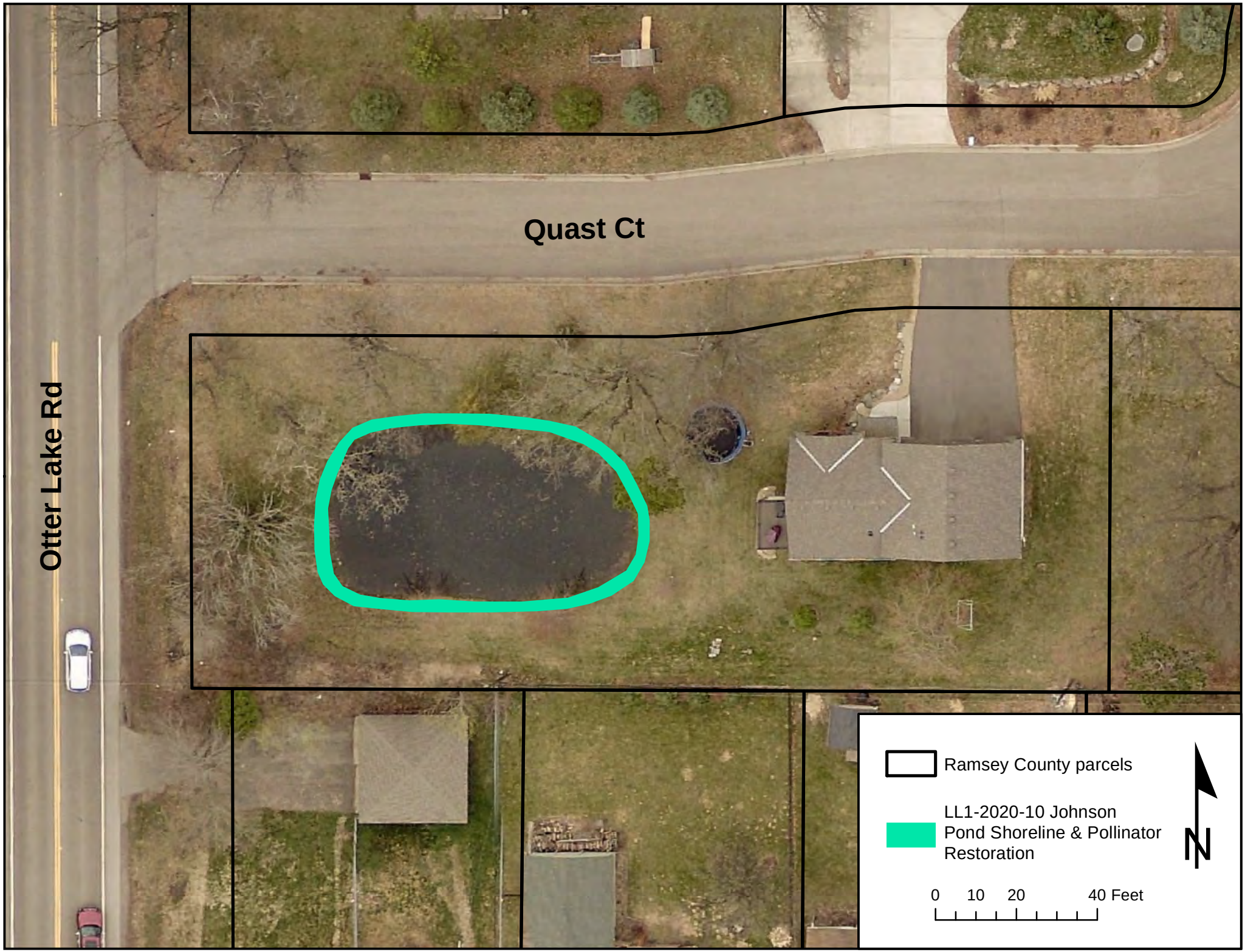
SOIL INFILTRATION RATE (INCHES/HR): N/A

DEPTH OF RAINGARDEN (INCHES): N/A

ADDITIONAL REQUIRED MATERIALS

Include a detailed drawing and budget for your project compiled by either yourself or your contractor that provides information for how the project will be installed, lists the materials that will be purchased (see guidance regarding what can be included as part of the grant program) and a list of the plants that will be used. Native restoration projects are required to use ONLY plants that are native to this ecoregion. All other projects must include AT LEAST 50% native plants. Hybrids of native plants will not count towards this requirement. **This information may be scanned and emailed to VLAWMO GIS Watershed Technician, Tyler Thompson (tyler.thompson@vlawmo.org)**

Two feet buffer around the holding pond.
Enclosed quote with details from "Natural Shore" for review.


Quast Ct
Otter Lake Rd
Ramsey County parcels
LL1-2020-10 Johnson Pond Shoreline & Pollinator Restoration
N
0 10 20 40 Feet

USING ECOLOGY TO RESTORE LAND AND WATER

NATURAL SHORE

Restoration Proposal for:

Ms. Nisha Johnson
1560 Quast Ct.
White Bear Lake, MN

Proposal Date: May 31, 2020

Prepared by:

Bill Bartodziej M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542 bill.b@naturalshore.com

NATURAL SHORE

USING ECOLOGY TO RESTORE LAND AND WATER

612.703.7581 | naturalshore.com | Office & Nursery 1480 County Rd 90 Independence, MN 55359

May 31, 2020

Dear Nisha:

Thank you again for giving Natural Shore Technologies the opportunity to bid on your project. Below is a *Project Summary* which outlines our *restoration methods* and *cost breakdown*. We would like to emphasize that we tailor our restoration approach to fit your site characteristics and specific objectives. We look forward to developing a partnership with you to produce an exceptional restoration that exceeds your expectations.

We would enjoy the chance to answer any questions that you have regarding this restoration proposal. We take great pride in our reputation and attention to customer satisfaction. After you have read through and are comfortable with the proposed plan and specified cost, please sign the contract that is provided. A down payment and a signed contract are required to book your project.

Best regards,

Bill Bartodziej, M.S.
Senior Restoration Ecologist
Natural Shore Technologies, Inc.

Project Summary

1. Project site: 228’ x 2’ buffer area around pond
2. Site assessment and plan development include: detailed site preparation methods, plant selection, and a project timeline and work schedule for our staff. Because most of projects involve the establishment of natural buffers, site drawings and planting plans are not necessary. We have found that over time, native plants will seek out the optimal micro-habitats and flourish. However, project plan drawings can certainly be provide at an additional cost upon client request.
3. Delineate and verify total restoration project area.
4. Kill selected turf and invasive weeds with an herbicide appropriate for upland or aquatic use. A licensed herbicide applicator from Natural Shore Technologies will apply the treatment.
5. Cut and remove any weedy plant material from planting area.
6. Apply a 2-3” layer of shredded hardwood mulch in areas that will be planted.
7. Lay out plants into plant zones per plan specifications.
8. We will use 277 – 3-4” containers for your planting – install at 1.5’ centers.
9. Move mulch aside and a light mulch layer will be returned around the base of the plants to hold moisture.
10. Site monitoring will be conducted and appropriate maintenance will be provided throughout the 2021 growing season.

Project Cost

This bid includes project design and management, all materials, labor, and a two year maintenance plan. This is a comprehensive bid estimate and valid for thirty days. We require a 50% down payment to schedule your project.

Cost Breakdown

Site Design, Project Management, Mobilization		$550.00
Site preparation, herb. trts, mulch		$652.00
Plants - 3" and 4" containers - 227		$1,021.00
Maintenance - 2 yr plan		$538.00
	TOTAL =	**$2,761.00**

Site maintenance

Site maintenance includes three visits per year during the growing season to monitor and conduct activities that will ensure proper restoration establishment. We use the most appropriate, up-to-date maintenance techniques such as targeted herbicide application, hand pulling, mowing, and spot weed whipping to effectively control invasive weeds. Our lead maintenance supervisor has a B.S. in Biology and 10 years of field experience.

Note we do offer long-term maintenance contracts. Over 90% of our clients use that service.

Staff Qualifications

Our company has over 50 years of combined ecological restoration experience. We are a local company that focuses on quality ecological restoration in the Metro area. Our clients vary from private estates on Lake Minnetonka, to large corporate headquarters in Eden Prairie. We also work with many city and county governments and watershed management organizations. We are fully insured.

Our specialty is lakeshore and wetland restoration. We have restored many miles of lakeshore in Minnesota, more than any other company. Please see our portfolio for examples of our restoration projects that include; shorelines, wetlands, prairies, savannas, and rain gardens.

Please see our ***project photo book*** at: http://www.blurb.com/books/6034090-natural-shore-technologies-inc-photobook

Natural Shore Technologies Plant Material

We have commercial and retail greenhouses in Maple Plain. Our plants are Minnesota native perennials that will flourish year after year. Utilizing our own plant material in our projects assure quality control. Our wetland and prairie plants are guaranteed to establish during the first growing season. Perennial plants put most of their energy into establishing root systems so please keep in mind that the first year of growth will be mainly underground. You will see some flowering the first year, but significantly more flowering during the second year of establishment.

Information about our ***retail native plant greenhouses*** located in Maple Plain is also available at: www.naturalshore.com

NATURAL SHORE	***Using Ecology to Restore Land and Water***

Guarantee

We stand by our native plant material and our ecological restoration services.

Native plants that we install are guaranteed to establish during the first growing season. Any plant material that does not make it through the first growing season will be replaced at no charge to the client.

On projects that we install and manage, we will guarantee successful establishment of your ecological restoration within three full growing seasons. This proposal provides a plan for accomplishing the restoration of the project site. If successful establishment does not occur within three growing seasons, all necessary steps will be taken to ensure the eventual success of the project, at no additional charge. For purposes of this guarantee, successful establishment is defined as follows: That the presence of at least 80% of the original seeded or planted species can be found on the site, and that the overall density of vegetation is comprised of no less than 80% native species.

The only exceptions to this guarantee have to do with plant death due to acts of God (floods or drought) the actions of others (vandalism), or animal herbivory (e.g., geese, muskrats). If these extreme circumstances do happen to occur, we will work with the client at a reduced rate to make all necessary repairs.

Our goal will always be to create successful, long-term partnerships with our clients. Our guarantee is the best in the business, and provides you with a clear understanding that we are here to fully support your ecological restoration endeavor.

Contract

A down payment of *$1,380.00* is required to schedule your project.

The remainder of the project cost is due at project completion.

Please note that this proposal is valid for 30 days from the date on this Contract.

If you would like to proceed with the above outlined project, please sign the contract below.

Client name: Ms. Nisha Johnson **Contract Value: $2,761.00**

Signed: _____ **Date** _____

Contractor: *Natural Shore Technologies, Inc*.

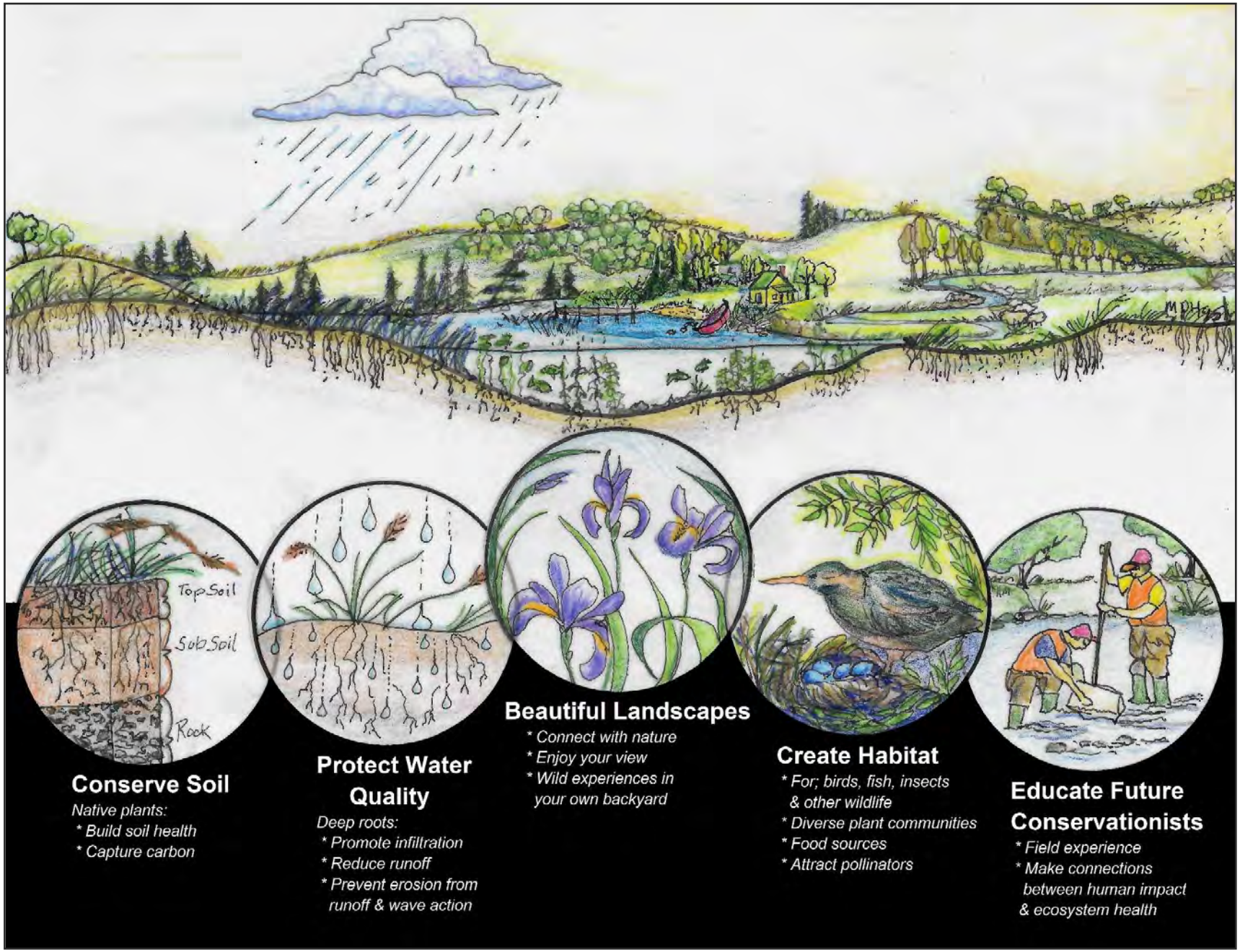
Signed: **Contract Date:** *Contract Date for 30 Day term*

William M. Bartodziej, M.S.
Senior Restoration Ecologist, Natural Shore Technologies

Please return a signed copy of this contract and a check to: Natural Shore Technologies, Inc.
6275 Pagenkopf Rd.
Maple Plain, MN 55359

Using Ecology to Restore Land and Water

Benefits of our quality restoration work.



Conserve Soil

Native plants:
* *Build soil health*
* *Capture carbon*

Protect Water Quality

Deep roots:
* *Promote infiltration*
* *Reduce runoff*
* *Prevent erosion from runoff & wave action*

Beautiful Landscapes

* *Connect with nature*
* *Enjoy your view*
* *Wild experiences in your own backyard*

Create Habitat

* *For; birds, fish, insects & other wildlife*
* *Diverse plant communities*
* *Food sources*
* *Attract pollinators*

Educate Future Conservationists

* *Field experience*
* *Make connections between human impact & ecosystem health*

Vadnais Lake Area Water
Management Organization
800 County Road E East
Vadnais Heights, MN 55127
www.vlawmo.org
(651) 204-6071

LANDSCAPE LEVEL 1 GRANT APPLICATION FORM

Please submit form and required materials
to: TYLER THOMPSON
tyler.thompson@vlawmo.org

Please fill in the application as best as possible and use additional pages if necessary. Refer to the Grant Guidance document for further information or contact Tyler Thompson with any questions.

APPLICANT INFORMATION

NAME: Katie and Jared Kelsey DATE: 06/05/2020

ADDRESS: 190 Woodridge Drive CITY: Vadnais Heights ZIP: MN

PHONE: 970-420-9571 EMAIL: katierosekelsey@gmail.com

PROJECT SUMMARY

ESTIMATED TOTAL COST OF YOUR PROJECT: $ 3200.00

AMOUNT OF GRANT REQUESTED: ($2,000 MAXIMUM) $ 2000.00

WHEN DO YOU PLAN TO COMPLETE YOUR PROJECT? 09/30/2020

TYPE OF PROJECT THAT WILL BE COMPLETED:

Raingarden/ Infiltration Basin ☐ Shoreline Restoration ☐ Native Plant Restoration ☑ Other ☐

If other, please describe proposed project:

PROJECT BACKGROUND

Describe your property: Does your property connect to a lake, stream, ditch, or wetland? What issues are you hoping to address with your project?

The northwest corner of our yard is feet away from a pond. We are hoping to stop the erosion of soil between our property and out neighbors property. The water an soil drains towards the pond and we would like to reestablish native plants that have more robust root systems where there is currently rock and non native bushes growing.

Describe how your project will support the goals of the Landscape Grant Program (see guidance materials for more Information).

Our project will support the goals of the Landscape Grant Program by reestablishing native plants in our yard and hopefully enhance the water quality of the pond in our back yard by adding native plants that will lessen the amount of runoff and erosion into the pond.

PROJECT SPECIFICATIONS

In order to determine the water quality benefit of your project (amount of stormwater and pollutants captured), specific information is required for VLAWMO staff to perform the calculations. If you are working with a professional landscaper, they should be able to provide you with thisinformation.

TOTAL PROPERTY AREA (SQ.FT): 17859.6

PROJECT SIZE (SQ.FT.): 700

IMPERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): 1800

PERVIOUS AREA DRAINING TO PROJECT (SQ.FT.): 2500

IF YOUR PROJECT I**NCLUDES INFILTRATION, P**LEASE PROVIDE THE FOLLOWING INFORMATION

SOIL INFILTRATION RATE (INCHES/HR): _____

DEPTH OF RAINGARDEN (INCHES): _____

ADDITIONAL REQUIRED MATERIALS

Include a detailed drawing and budget for your project compiled by either yourself or your contractor that provides information for how the project will be installed, lists the materials that will be purchased (see guidance regarding what can be included as part of the grant program) and a list of the plants that will be used. Native restoration projects are required to use ONLY plants that are native to this ecoregion. All other projects must include AT LEAST 50% native plants. Hybrids of native plants will not count towards this requirement. **This information may be scanned and emailed to VLAWMO GIS Watershed Technician, Tyler Thompson (tyler.thompson@vlawmo.org)**


916
917
918

Northland Grounds Maintenance & Design

ESTIMATE / 06/04/2020

Jake Brown
Stillwater, MN
jbrown@northlandgmd.com

Katie and Jared Kelsey
190 Woodridge Drive
Vadnais Heights, MN 55127

ESTIMATED COST
$2780.00

Kelsey - Removal of Rock and Trees

This project is to remove the rock and trees from the front yard of 190 Woodridge Drive in preparation for native plants to be installed.

Item Description	Cost per unit	Estimated Cost
Tree Removal/Stump Grinding of 6 trees	$150	$900
Shrub Removal of 6 shrubs	$50	$300
Rock Removal of 7 yards	$100	$700
Labor estimated at 28 hours	$60	$1680
- Discount		($800)
	Subtotal	$2780.00
	TOTAL	$2780.00

Cost Estimate for Plants

MN Native Landscapes

Date:	June 4, 2020
Valid Until	09/30/2020

Customer:

Katie and Jared Kelsey

190 Woodridge Drive
Vadnais Heights, MN 55127
970-420-9571

Quote/Project Description

Replanting of native plants on property 190 Woodridge Drive

Description	Line Total
Rusty Patch Bumble Bee Full Garden - Rain Garden	$139.00
Rusty Patch Bumble Bee Full Garden - Part Shade	$139.00
Rusty Patch Bumble Bee Full Garden - Full Sun	$139.00

Subtotal	$417.00
Discount	$0.00
Tax/VAT Rate	0.00%
Tax/VAT	$0.00
Total	**$417.00**

Special Notes and Instructions

See Descriptions of the plant species in links found in line items.

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

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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

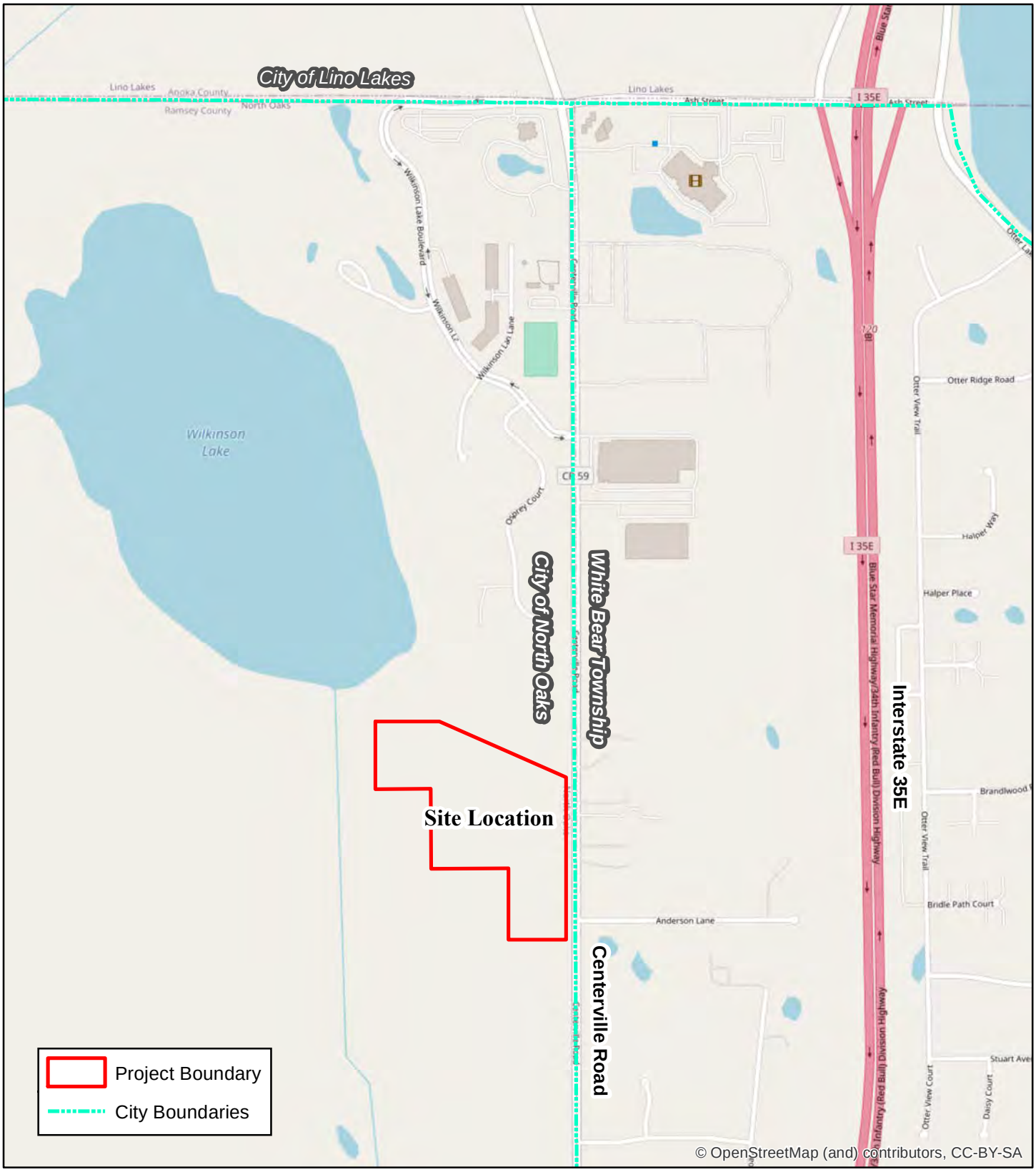


Figure 1 - Site Location

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.

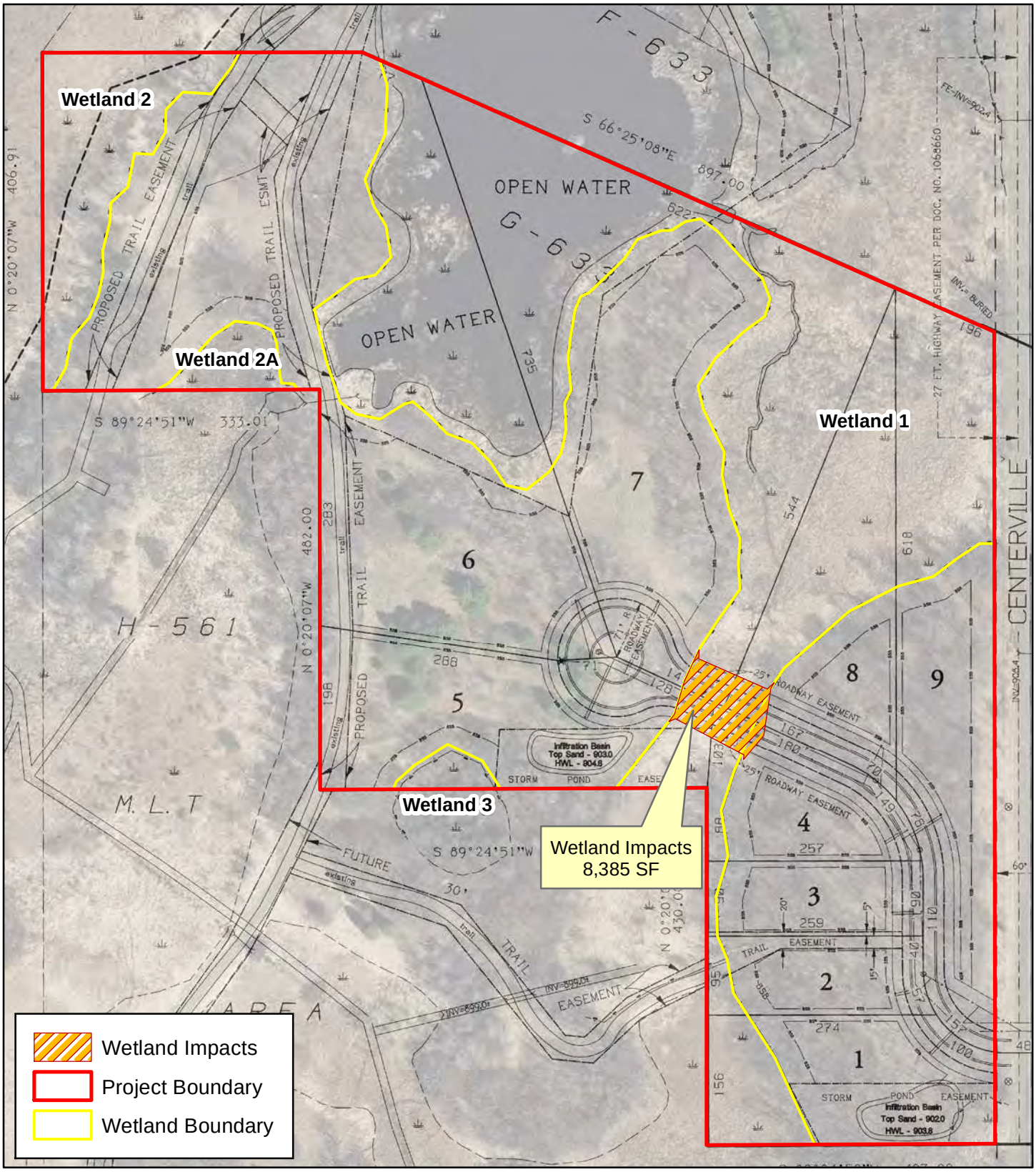


Figure 3 - Proposed Site Plan

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.

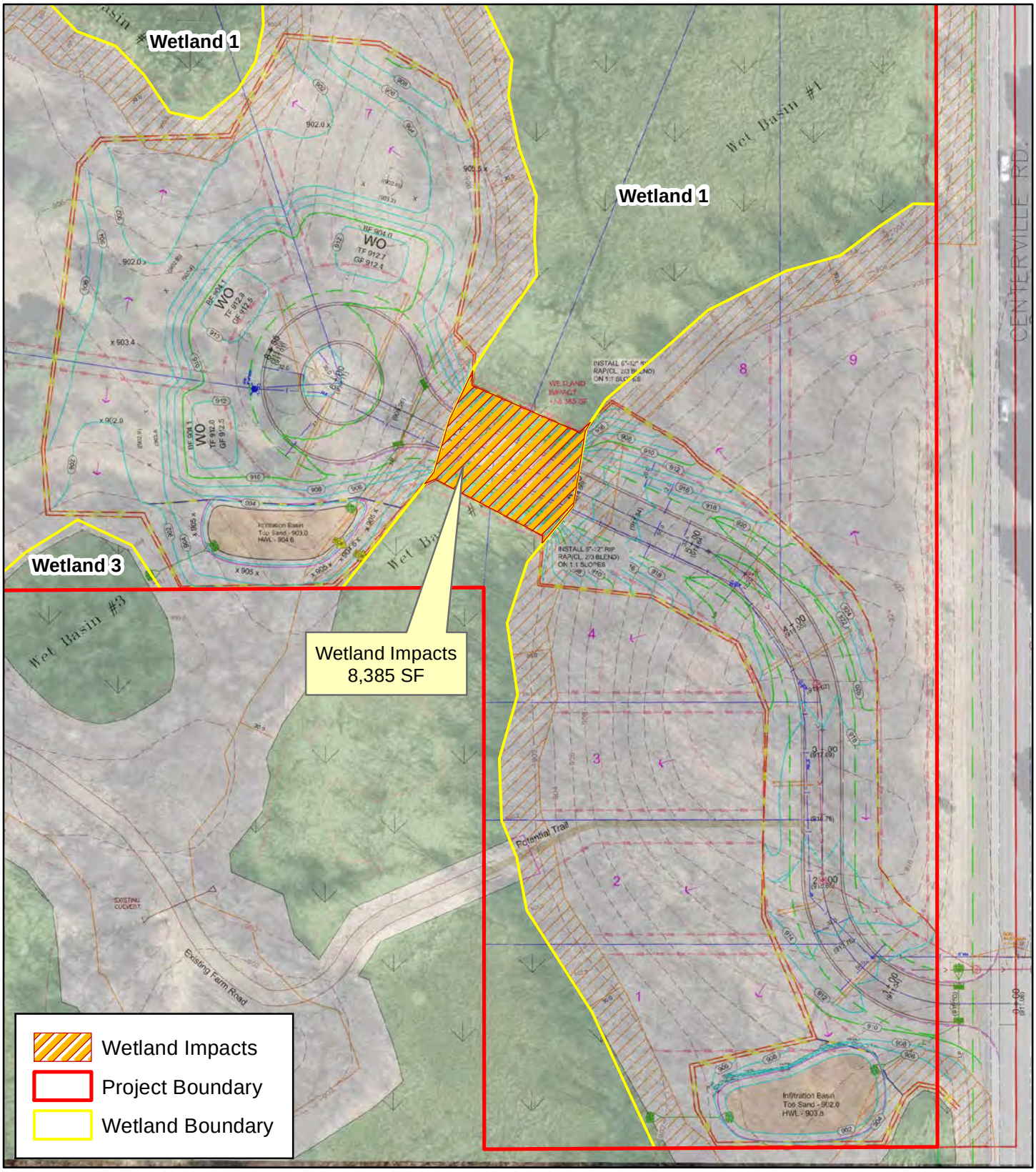


Figure 4 - Proposed Grading Plan

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.

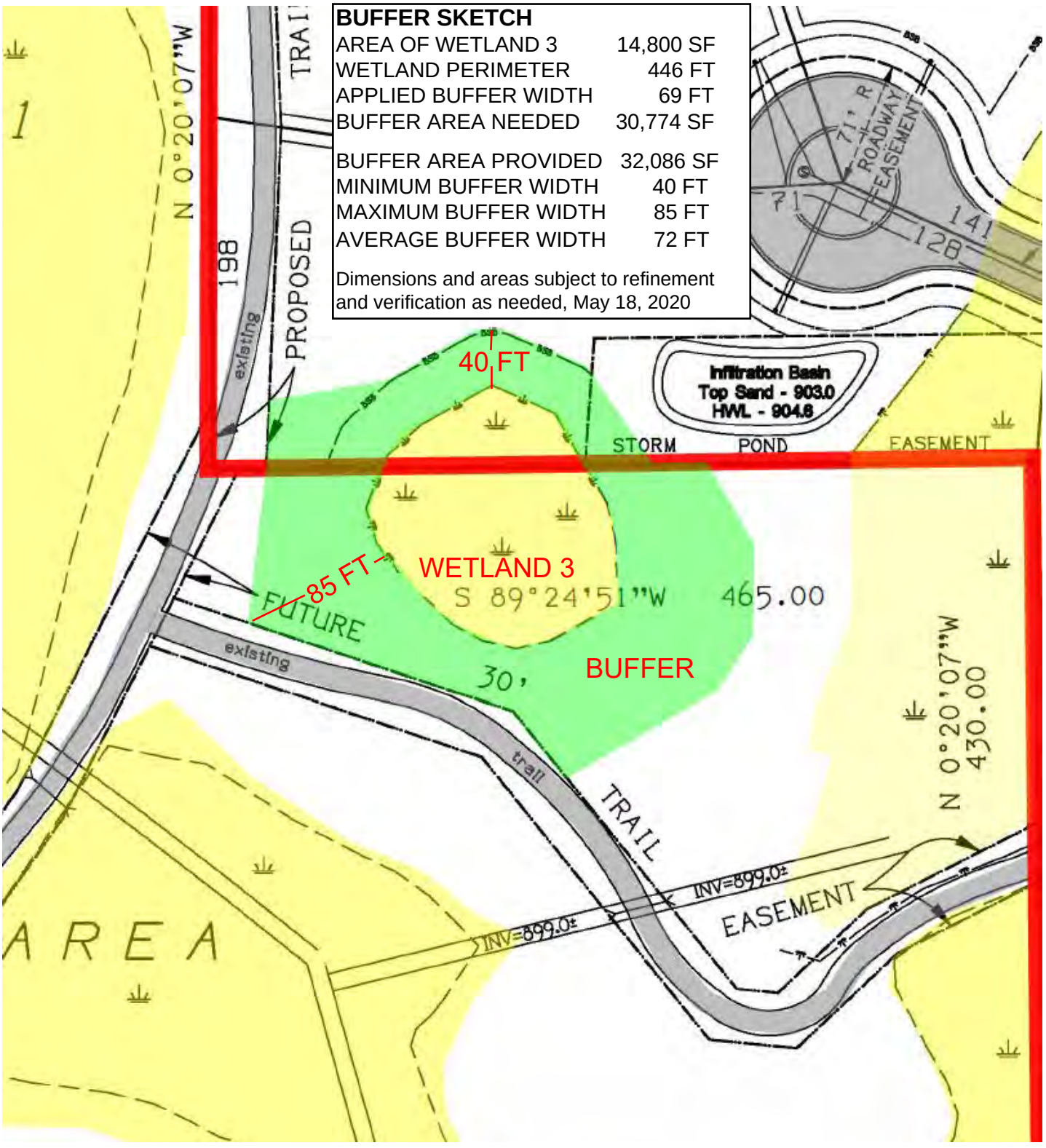


Figure 5 – Wetland 3 Buffer Sketch

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

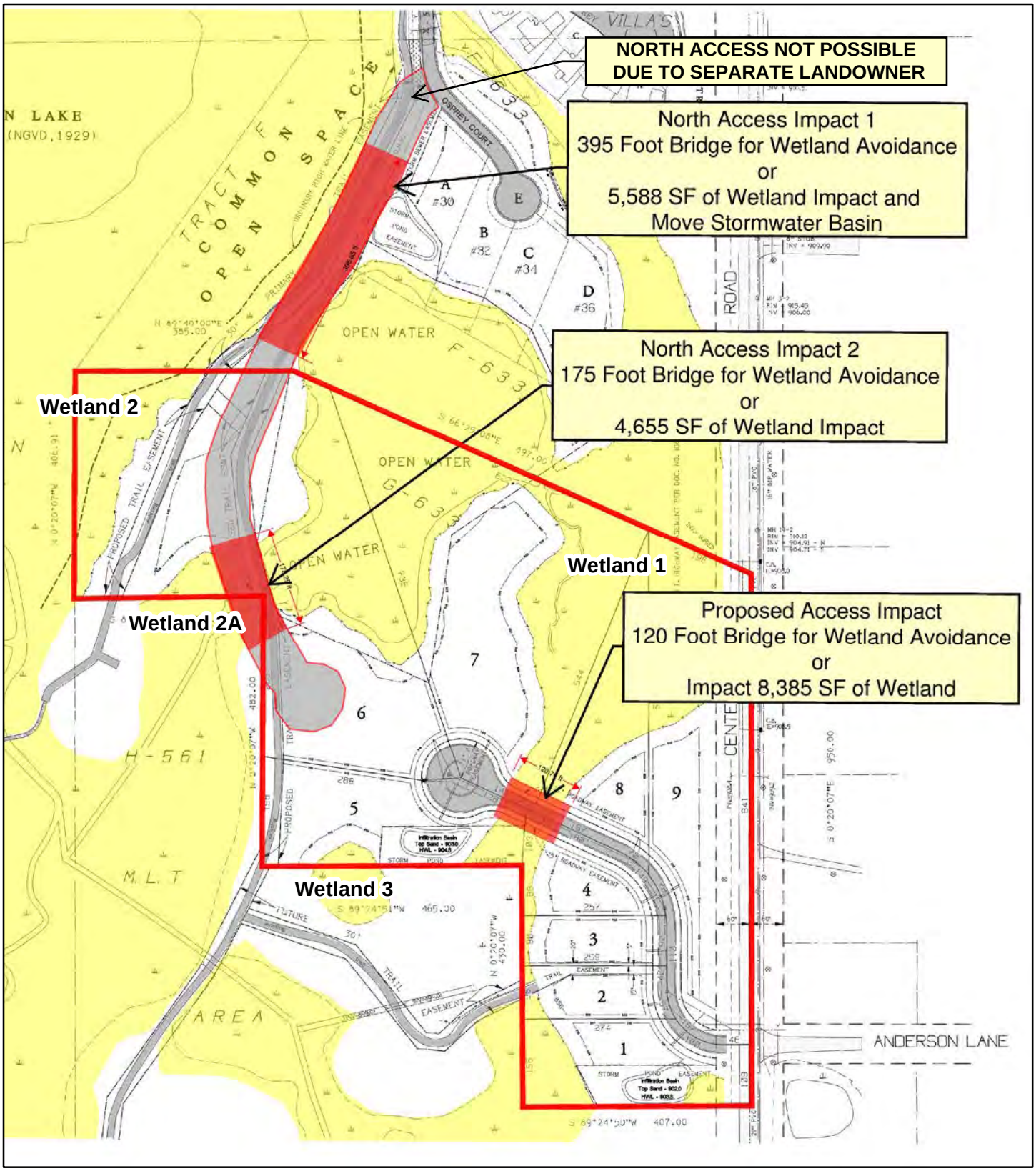


Figure 6 - Wetland Avoidance and Alternative Site Access

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.

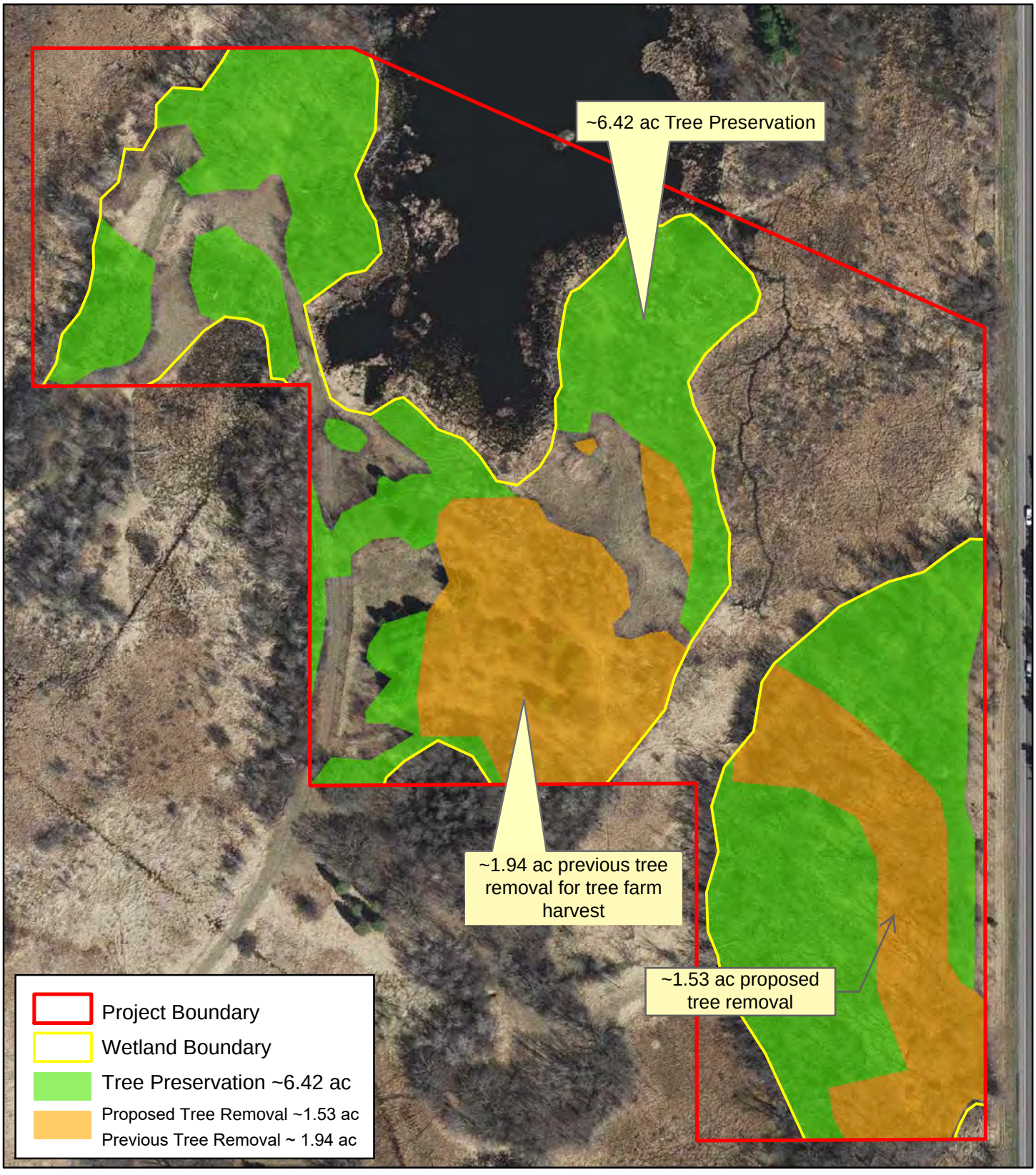


Figure 7 - Tree Removal and Preservation

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.

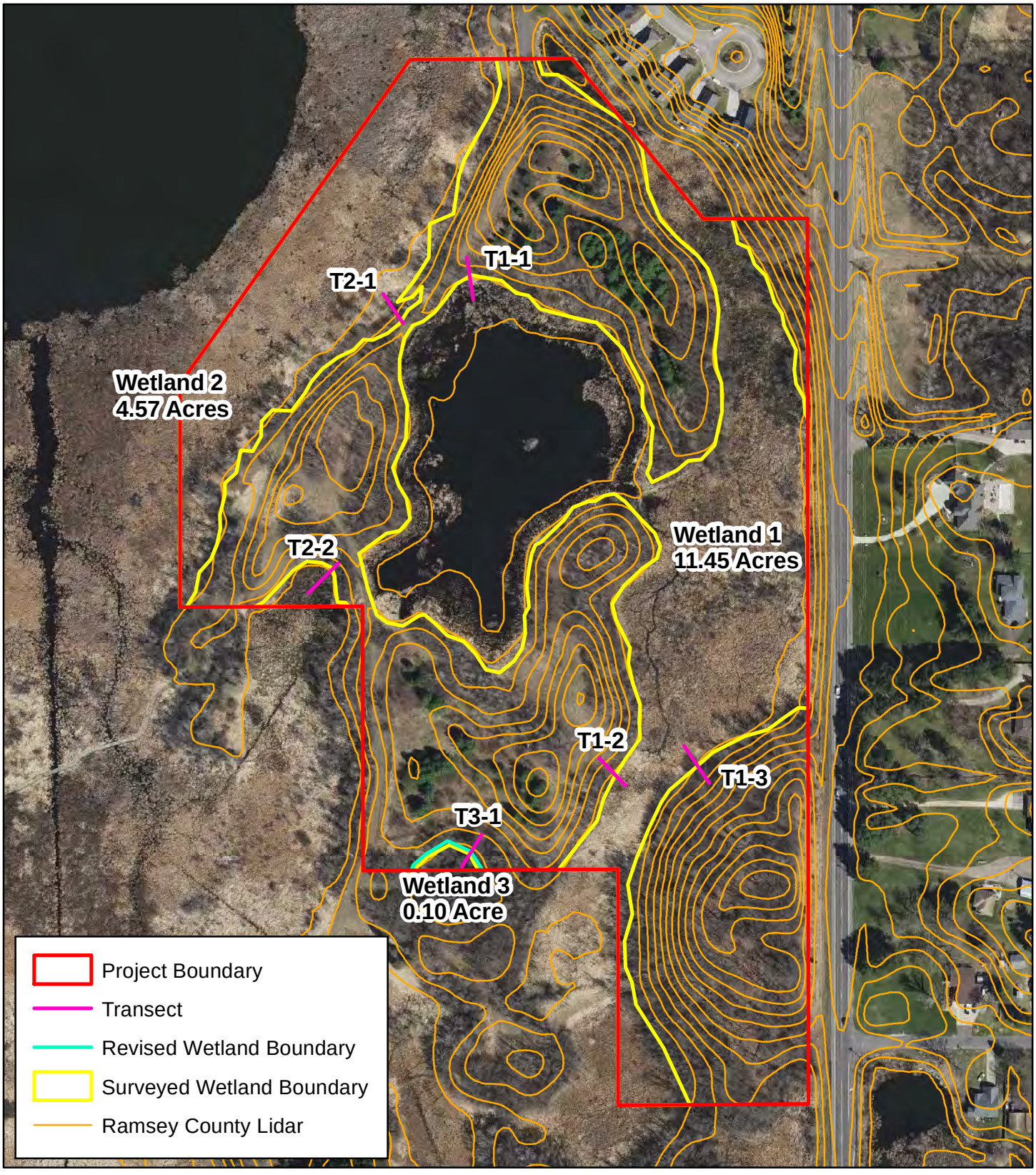


Figure 2 - Existing Conditions

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
WETLAND BUFFER
WETLAND 1
WETLAND 2
WETLAND 3
WILKINSON LAKE
N.O.H.W.-895.2 (NGVD,1929)
B - 565
CONSERVATION AREA
TRACT F COMMON OPEN SPACE
OPEN WATER
F-633
G-633
H-561
M.L.T AREA
OSPREY VILLAS COURT
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
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
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.

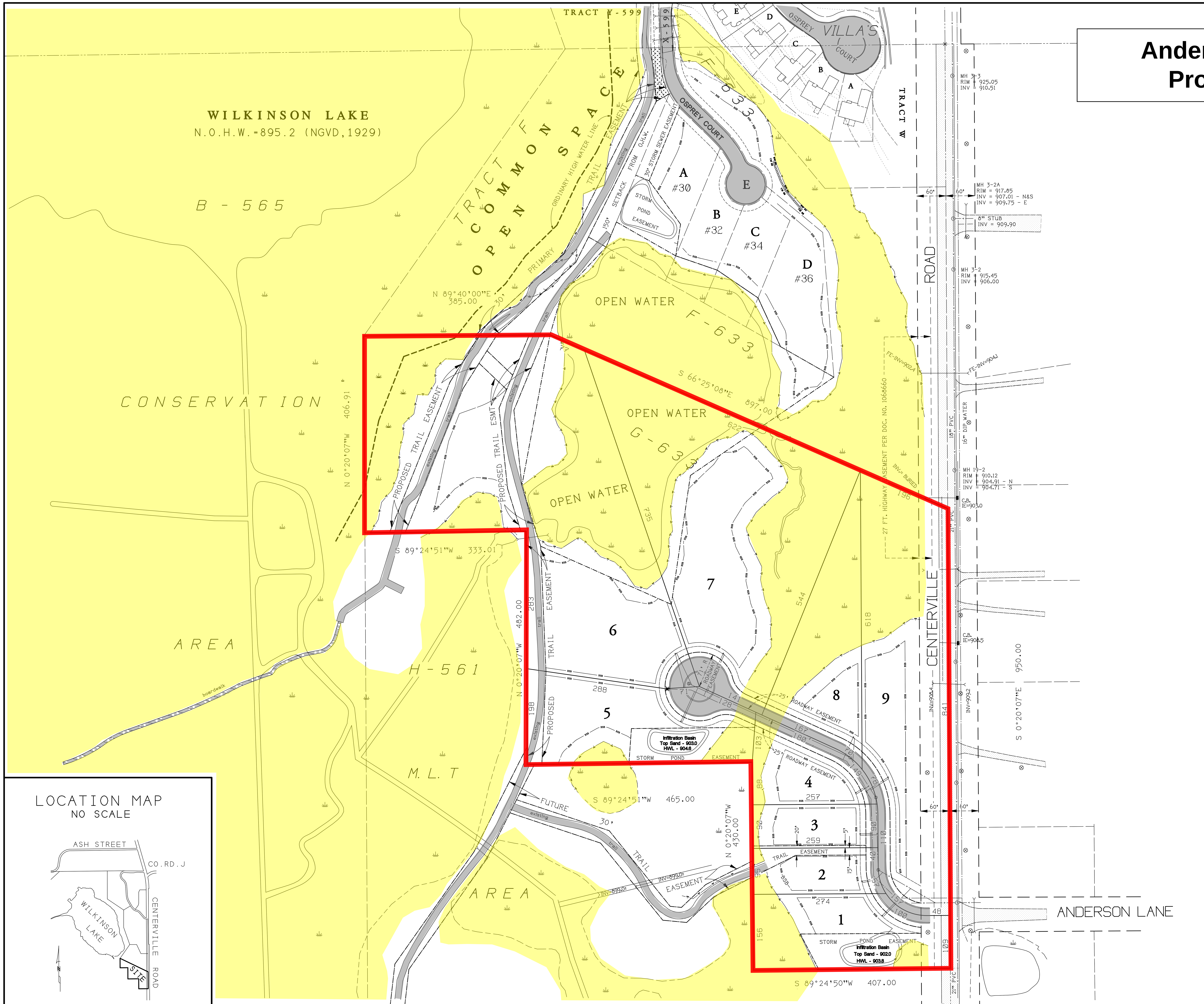
Anderson Woods South

Wetland Permit Application

APPENDIX F

Proposed and Alternative Project Plans

Anderson Woods South Proposed Site Plan



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
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

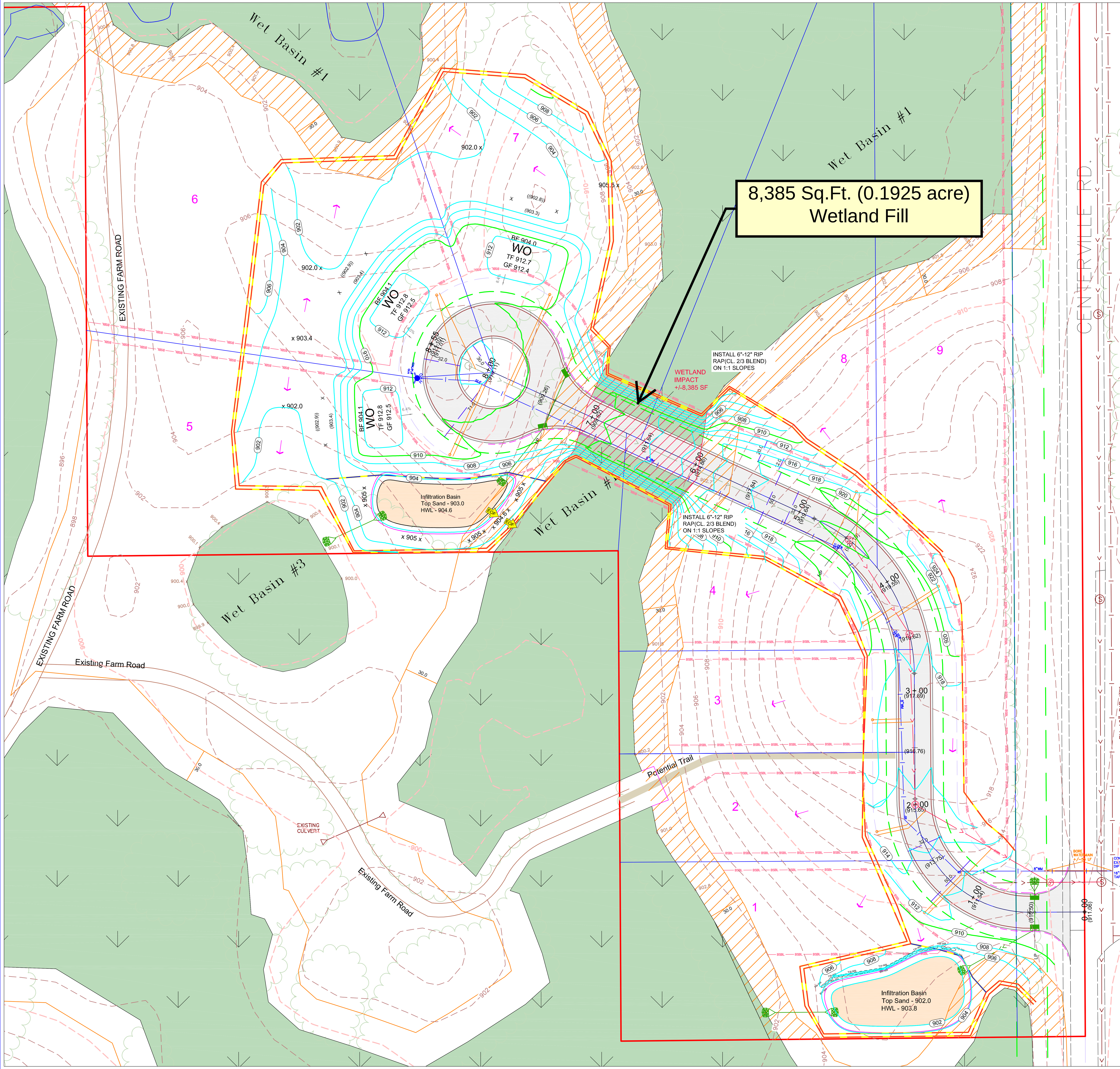
PROJECT: ANDERSON WOODS

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.

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



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)

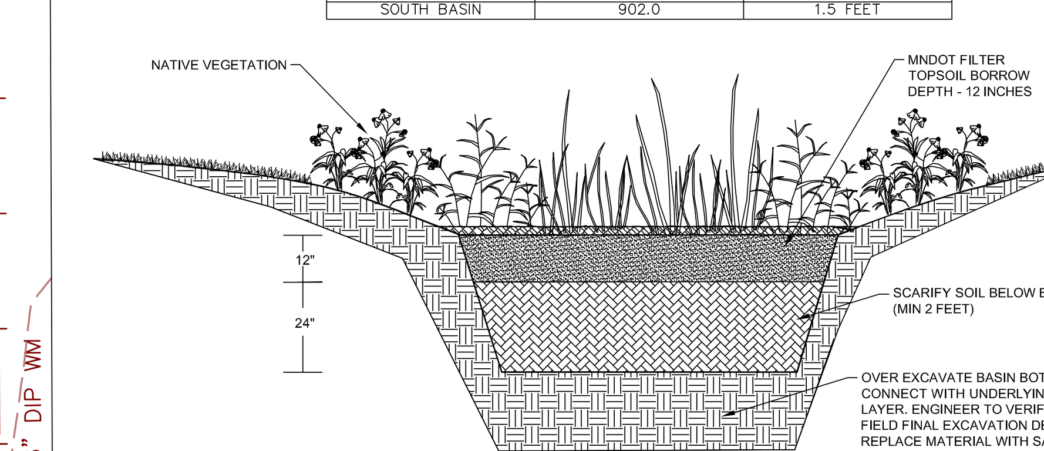
10. RESTORATION - 4.8 ACRES
   A. RESTORE ALL DISTURBED AREAS WITH 4" TO 6" OF TOPSOIL, OR EXISTING ON-SITE ORGANIC MTRL.
   B. SEED POND SLOPES AND DETENTION AREAS WITH MN/DOT 310 OR BWSR P8 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. SEED WETLAND BUFFER AREAS WITH 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

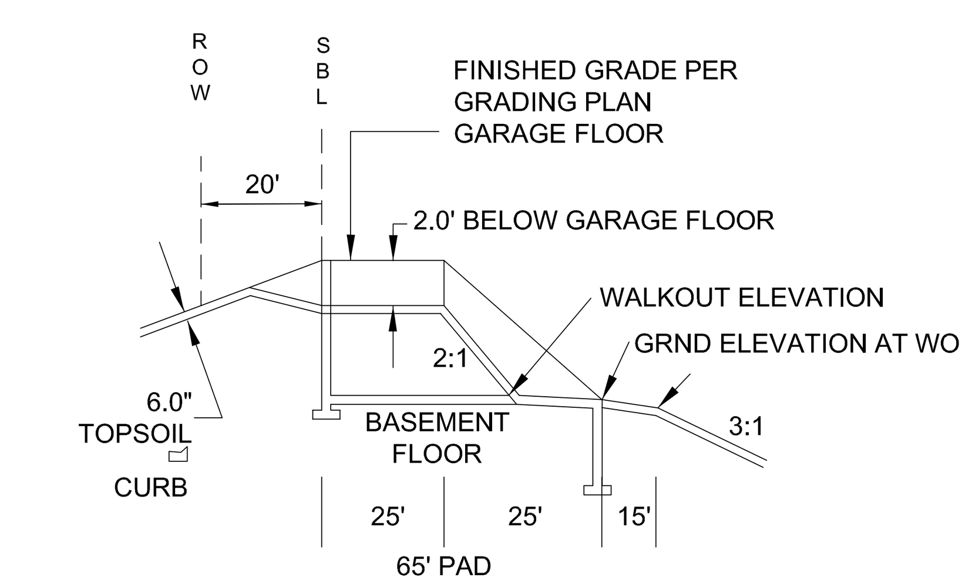
GENERAL NOTES:

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

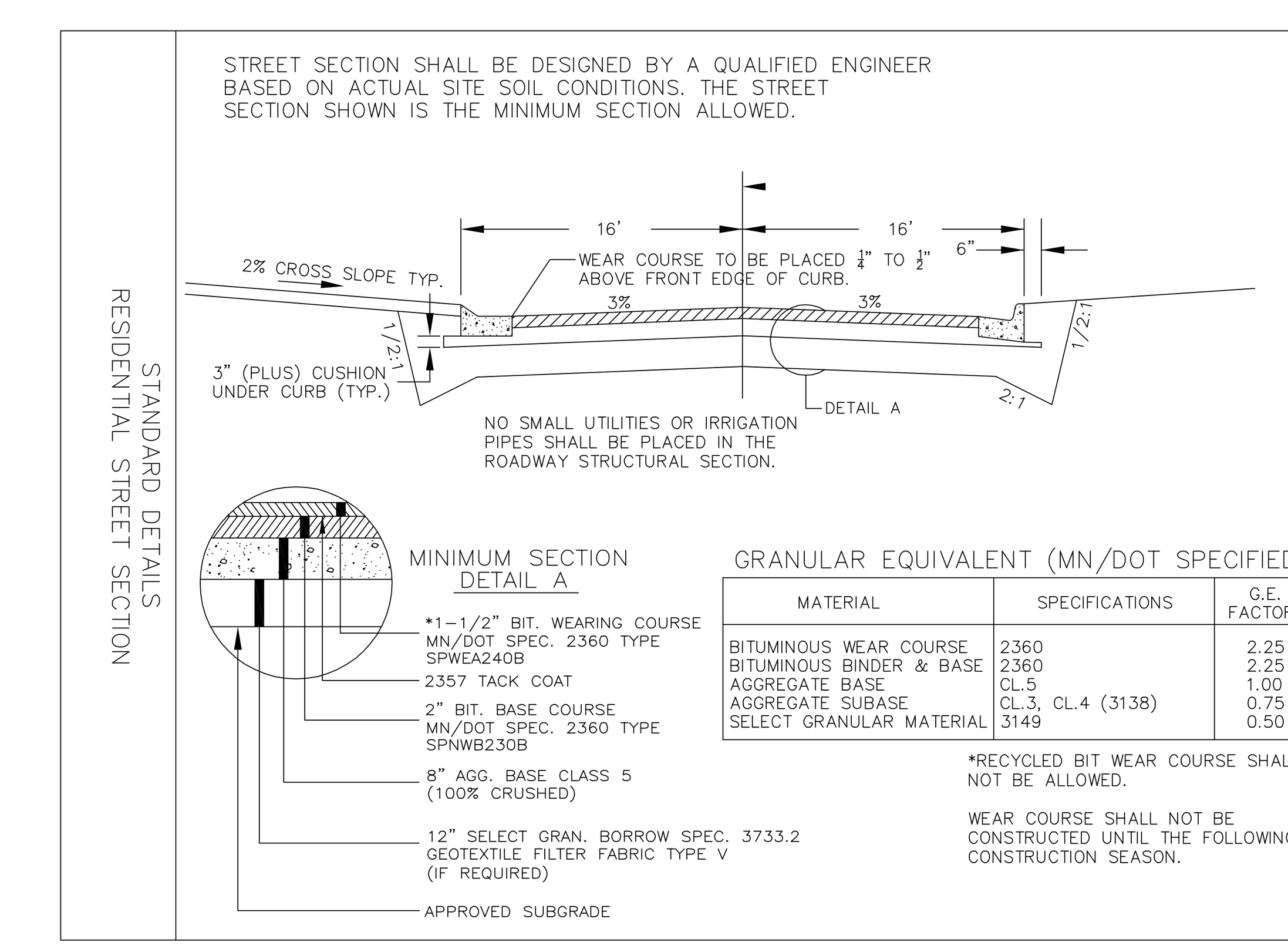
1. RIP RAP - RIP RAP WILL BE UTILIZED AT ALL APRONS FOR ENERGY DISSIPATION AND PROVIDE SEDIMENT CONTROL.
2. INLET PROTECTION - INLET PROTECTION WILL BE INSTALLED AND MAINTAINED IN ALL CATCH BASINS & REAR YARD STRUCTURES. REFER TO THE DETAILS ON THE EROSION CONTORL PLAN TO DETERMINE WHICH INLET PROTECTION 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.

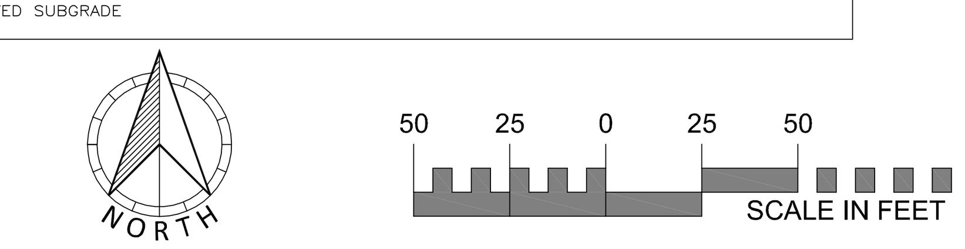


GRANULAR EQUIVALENT (MN/DOT SPECIFIED)

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.



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.

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

4 / 6

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 COMMON OPEN SPACE
B - 565
CONSERVATION AREA
H - 561
M. L. T
AREA
OPEN WATER
F - 633
G - 633
OSPREY VILLAS COURT
OSPREY COURT
ANDERSON LANE
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
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.
LOCATION MAP
NO SCALE
ASH STREET
CO. RD. J
WILKINSON LAKE
CENTERVILLE ROAD
SITE

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

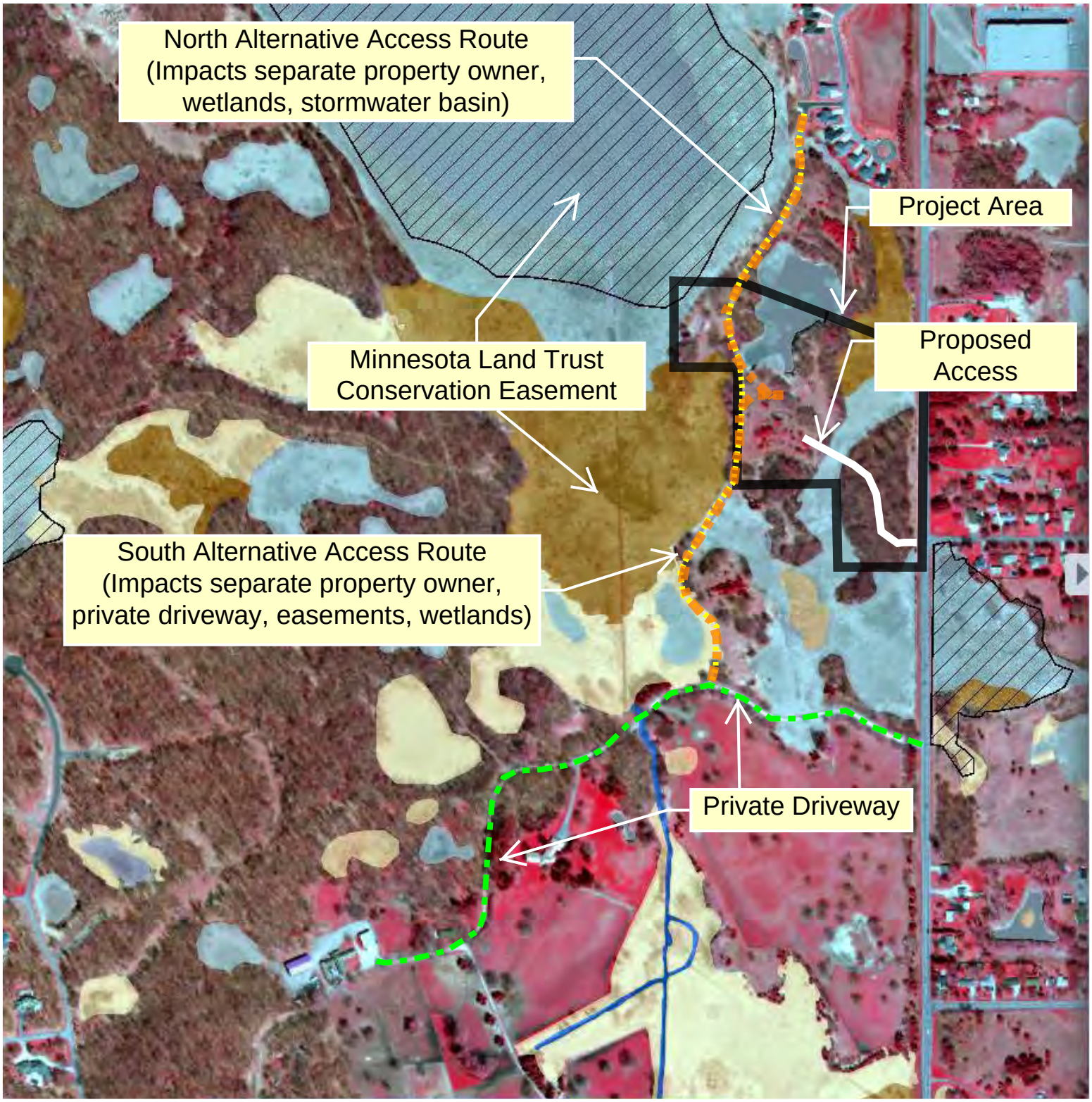
KURTH SURVEYING, INC.
4002 JEFFERSON ST. N.E.
COLUMBIA HEIGHTS, MN 55421
PHONE: (763) 788-9769 FAX: (763) 788-7602
E-MAIL: ksi@kurthsurveyinginc.com

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

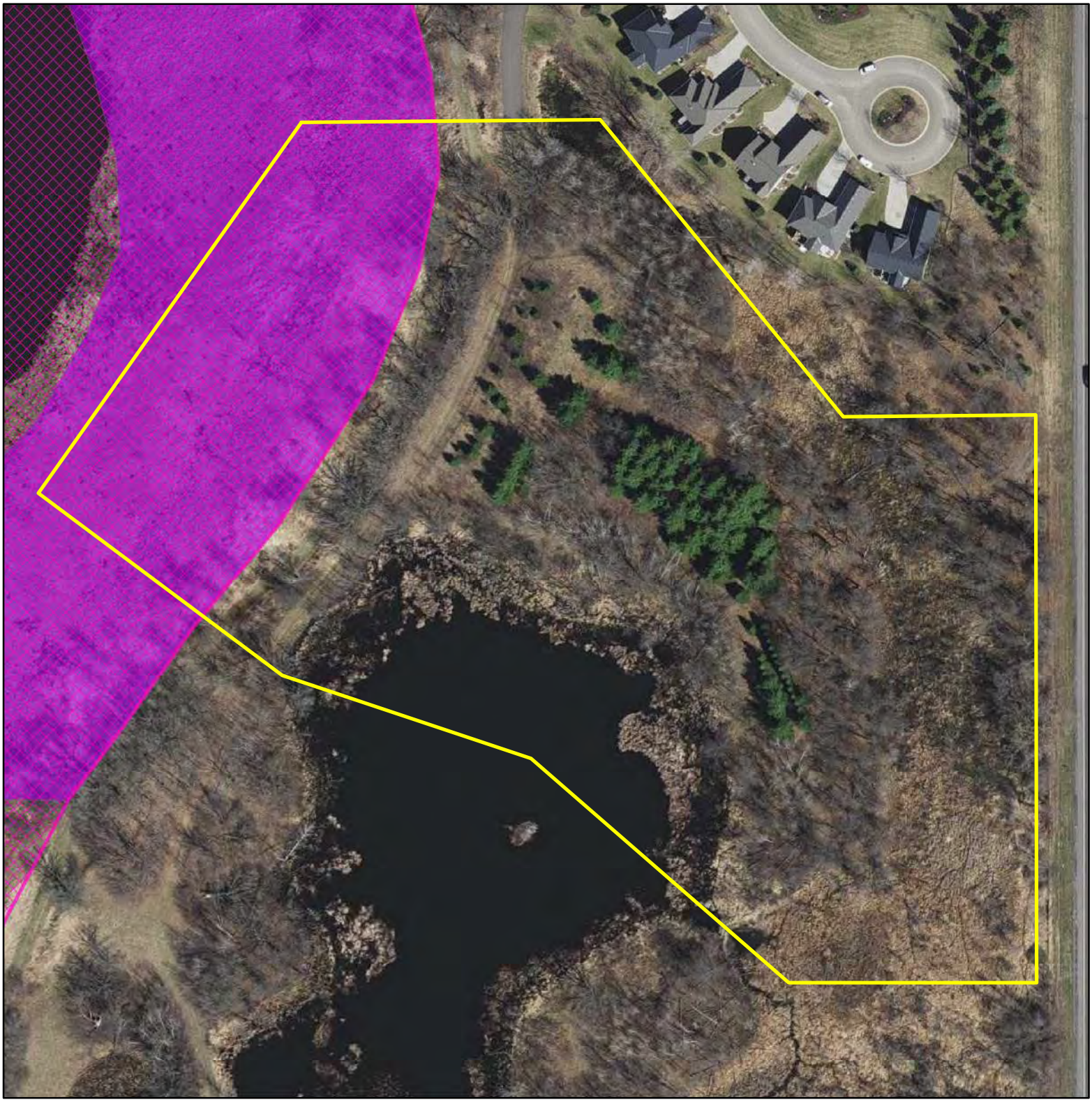
Samantha Bump
Natural Heritage Review Specialist
Samantha.Bump@state.mn.us

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

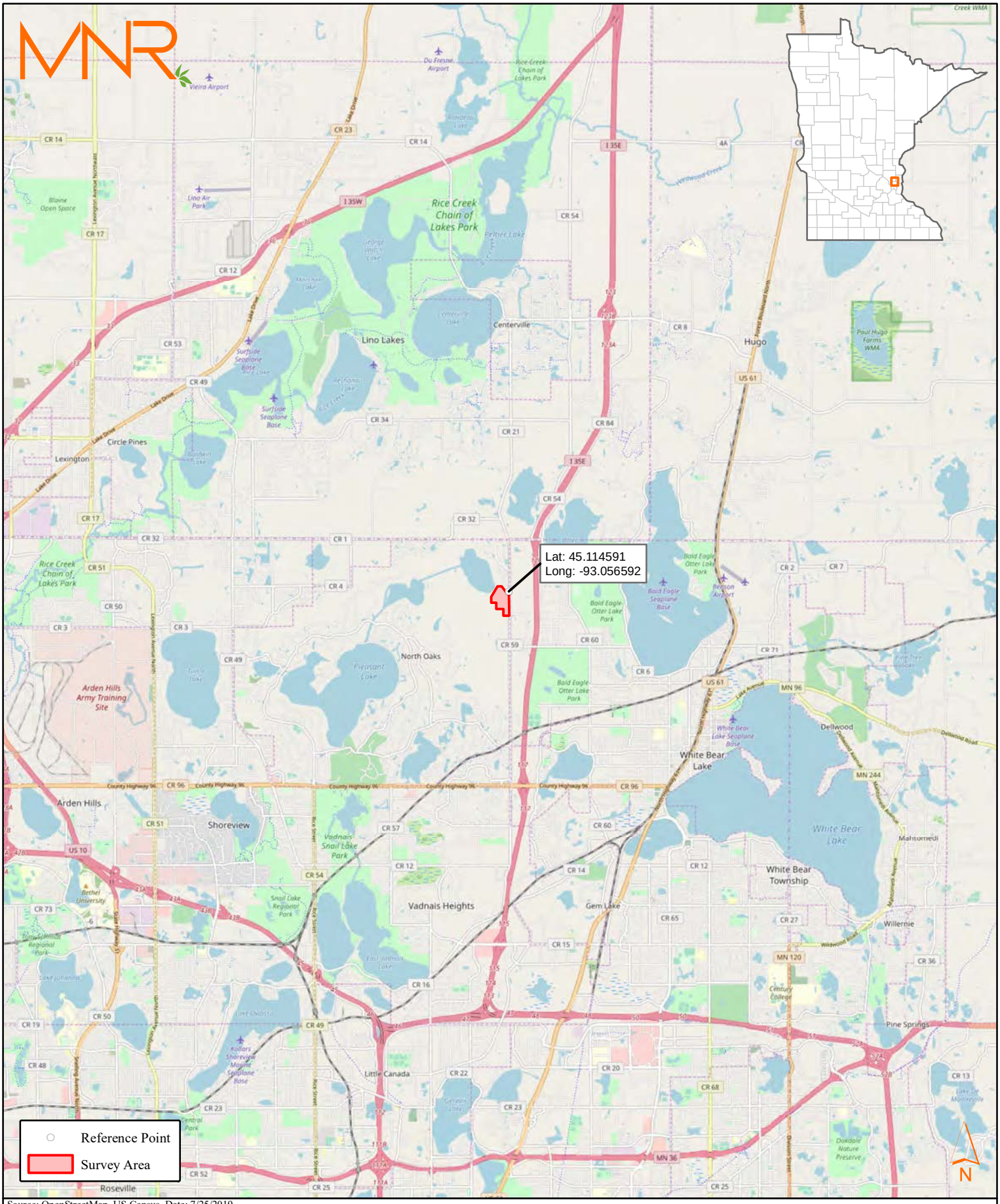
No state-listed species were observed during our field review. Based on the overall condition of the site, the potential for early season or late season flowering state-listed species is unlikely. With that, further surveys are not recommended.

Please feel free to contact us with any questions.

Respectfully submitted,

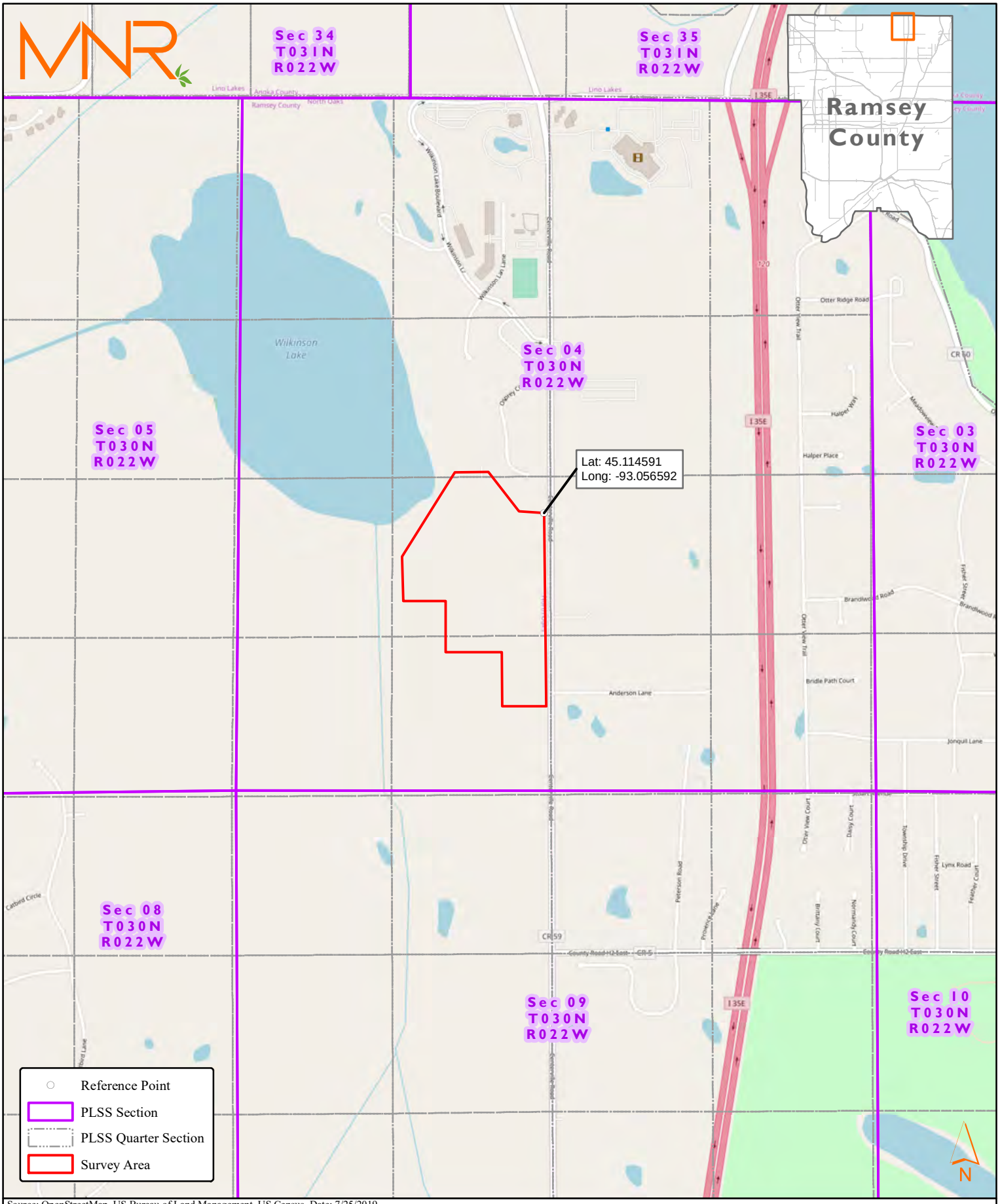
Scott A. Milburn, M.S., PWS
Sr. Botanist/President
Midwest Natural Resources, Inc.

Jake Walden
Biologist
Midwest Natural Resources, Inc.



Site Location
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 1

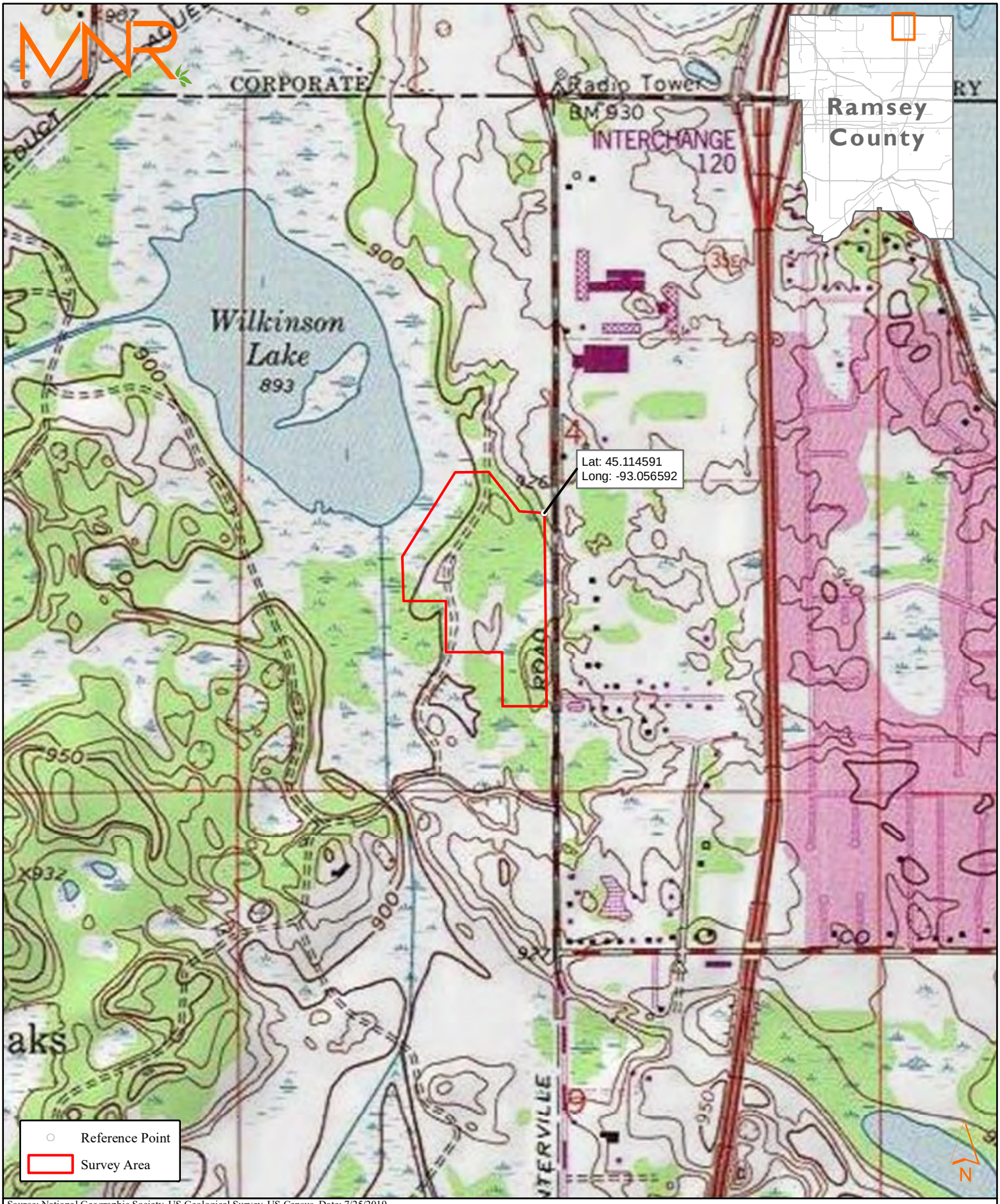


Source: OpenStreetMap, US Bureau of Land Management, US Census, Date: 7/25/2019

0 500 1,000 Feet

PLSS Survey Sections
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 2

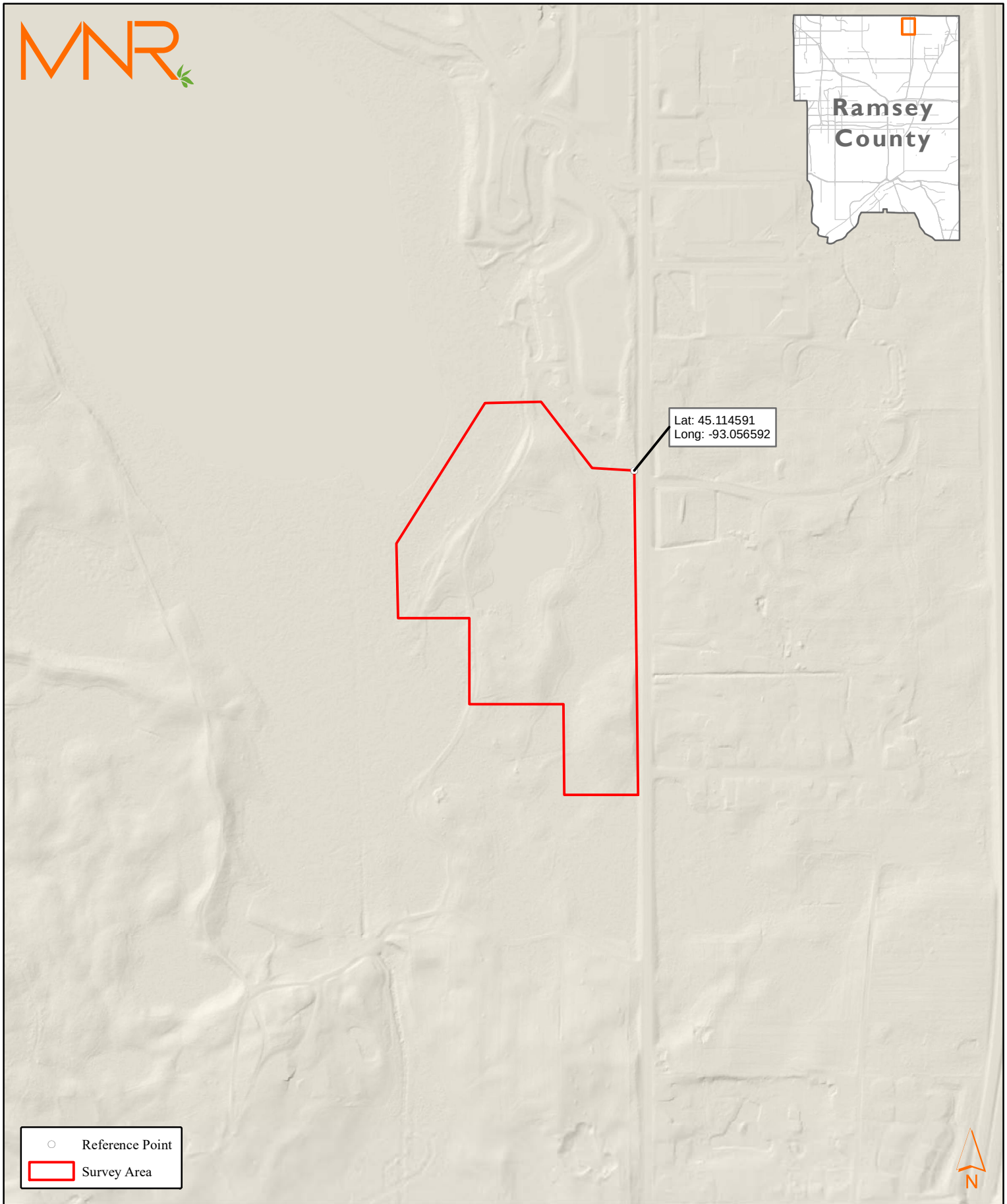


Source: National Geographic Society, US Geological Survey, US Census, Date: 7/25/2019

0 500 1,000 Feet

USGS Topographic Map
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 3

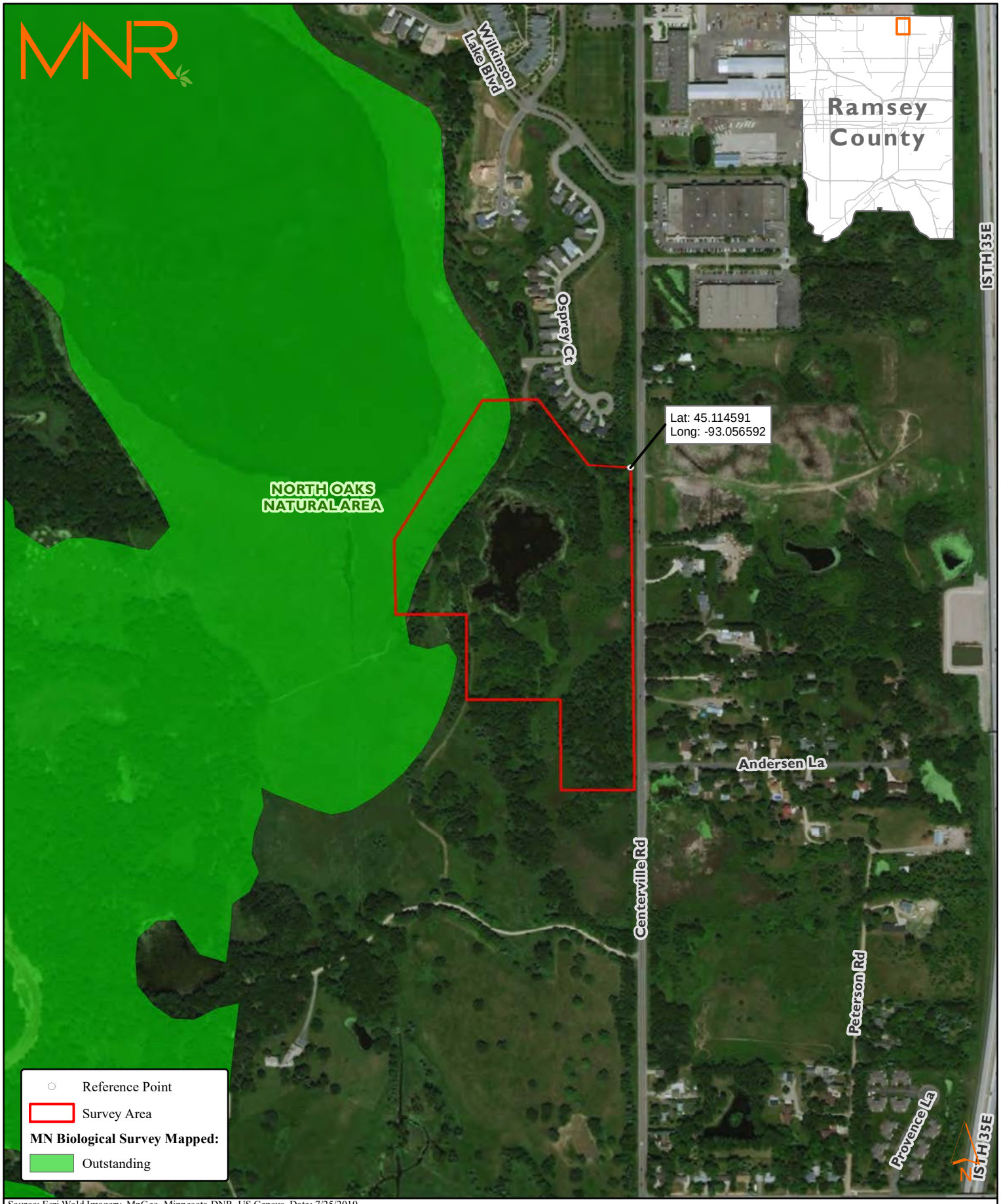


Source: MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

0 400 800 Feet

LiDAR Elevation Imagery
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 4

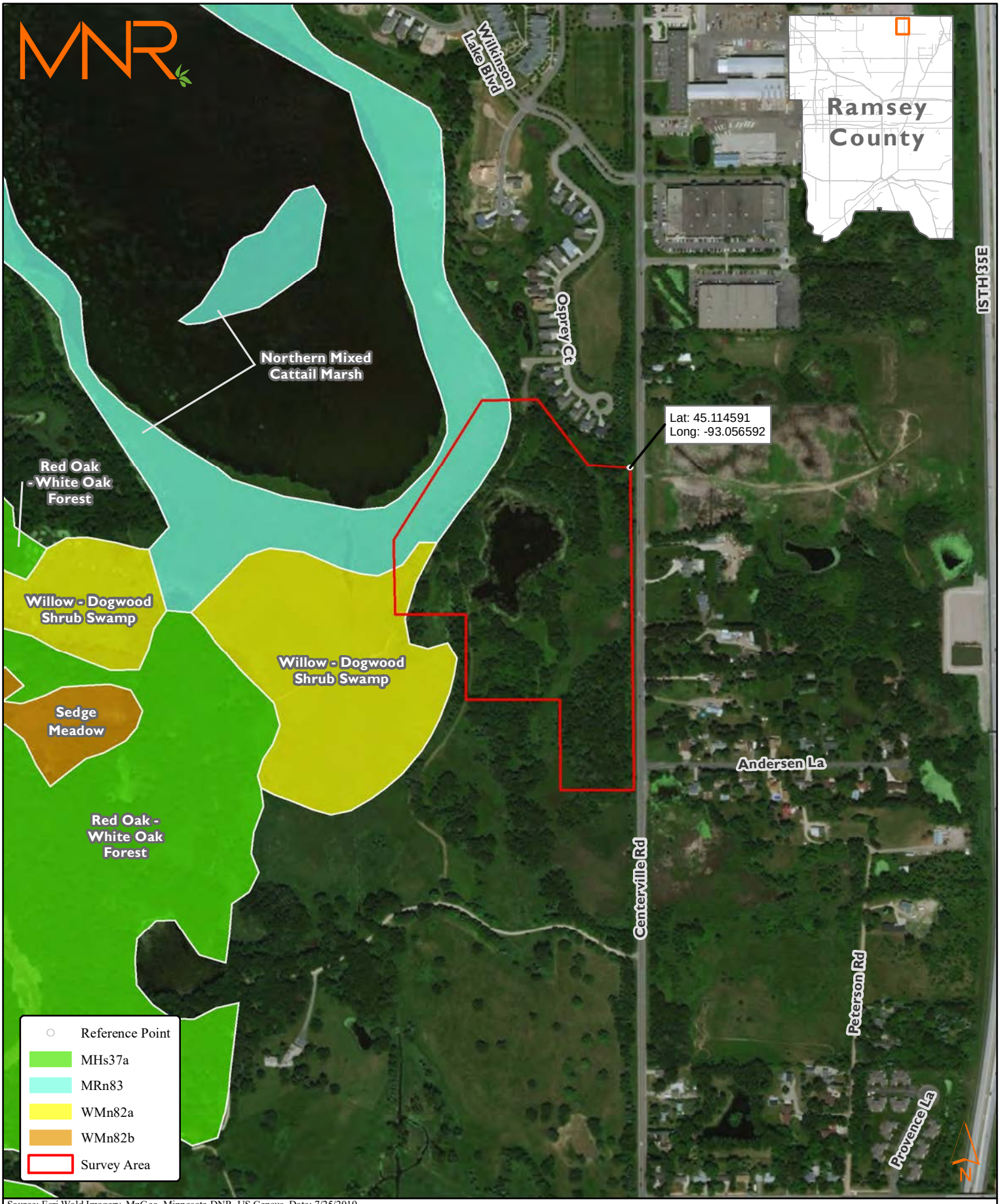


Source: Esri Wold Imagery, MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

0 400 800 Feet

Sites of Biodiversity Significance
Rare Plant Survey
Wilkinson Villas and Anderson Woods Developments
North Oaks, Minnesota

Figure 5

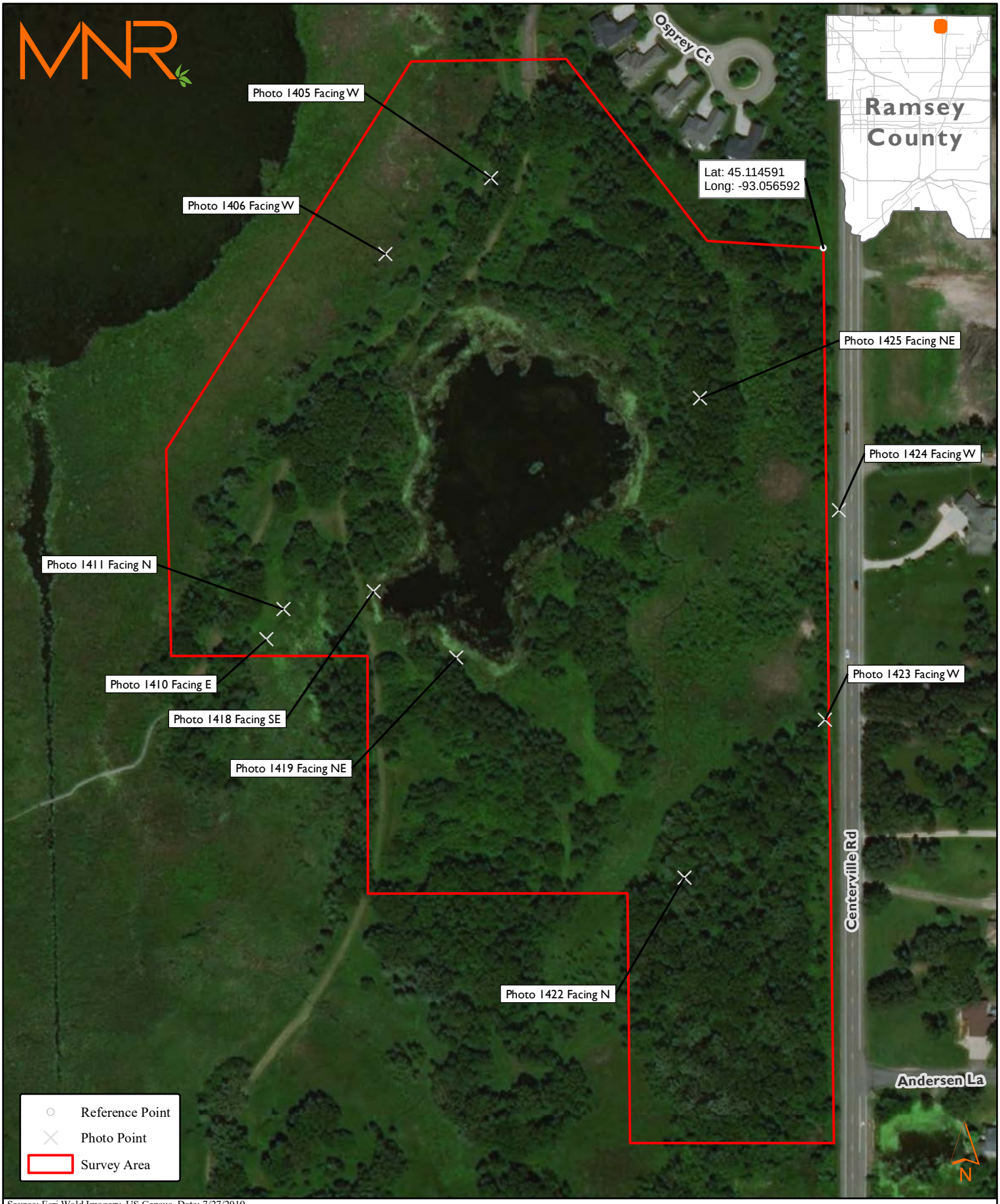


Source: Esri Wold Imagery, MnGeo, Minnesota DNR, US Census, Date: 7/25/2019

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

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).

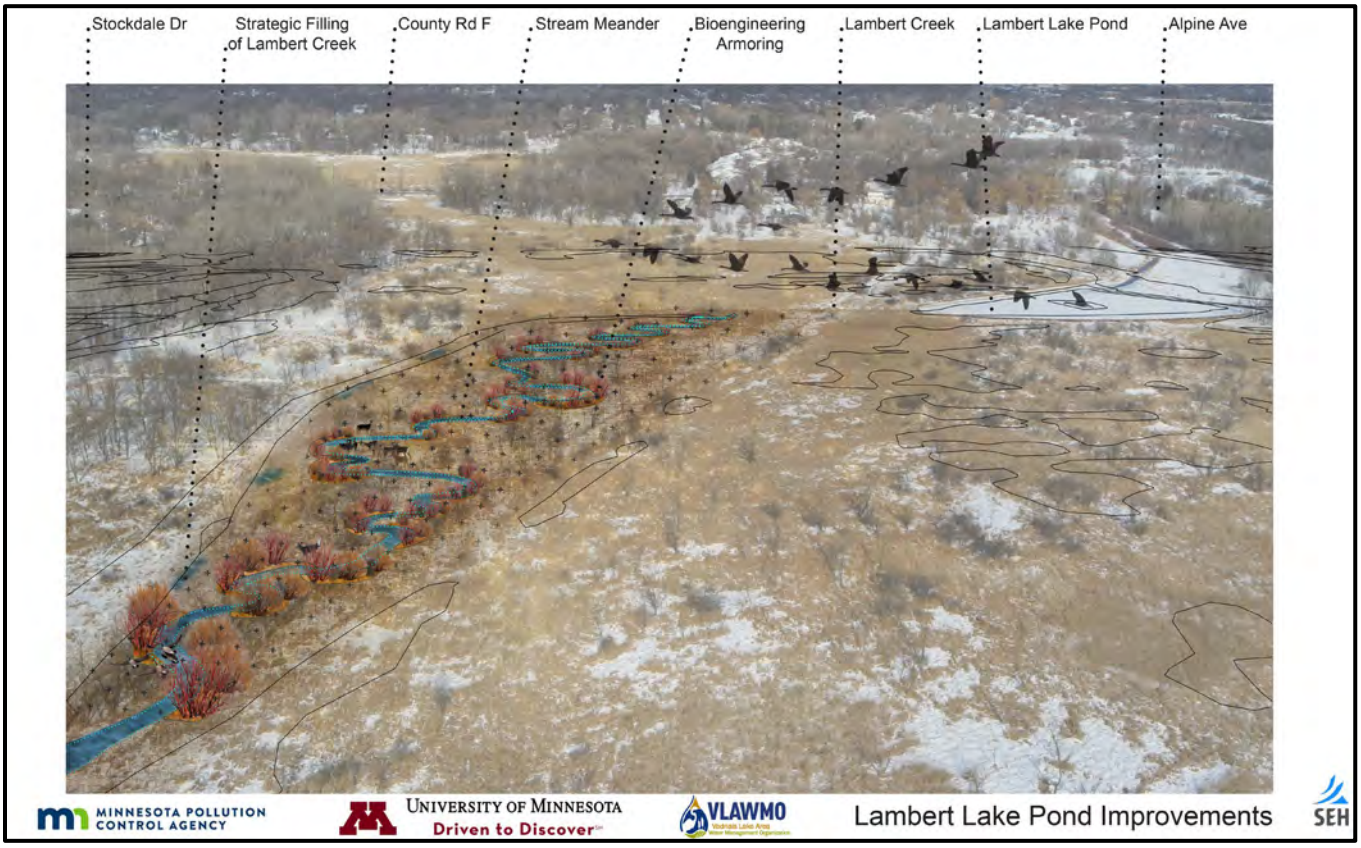
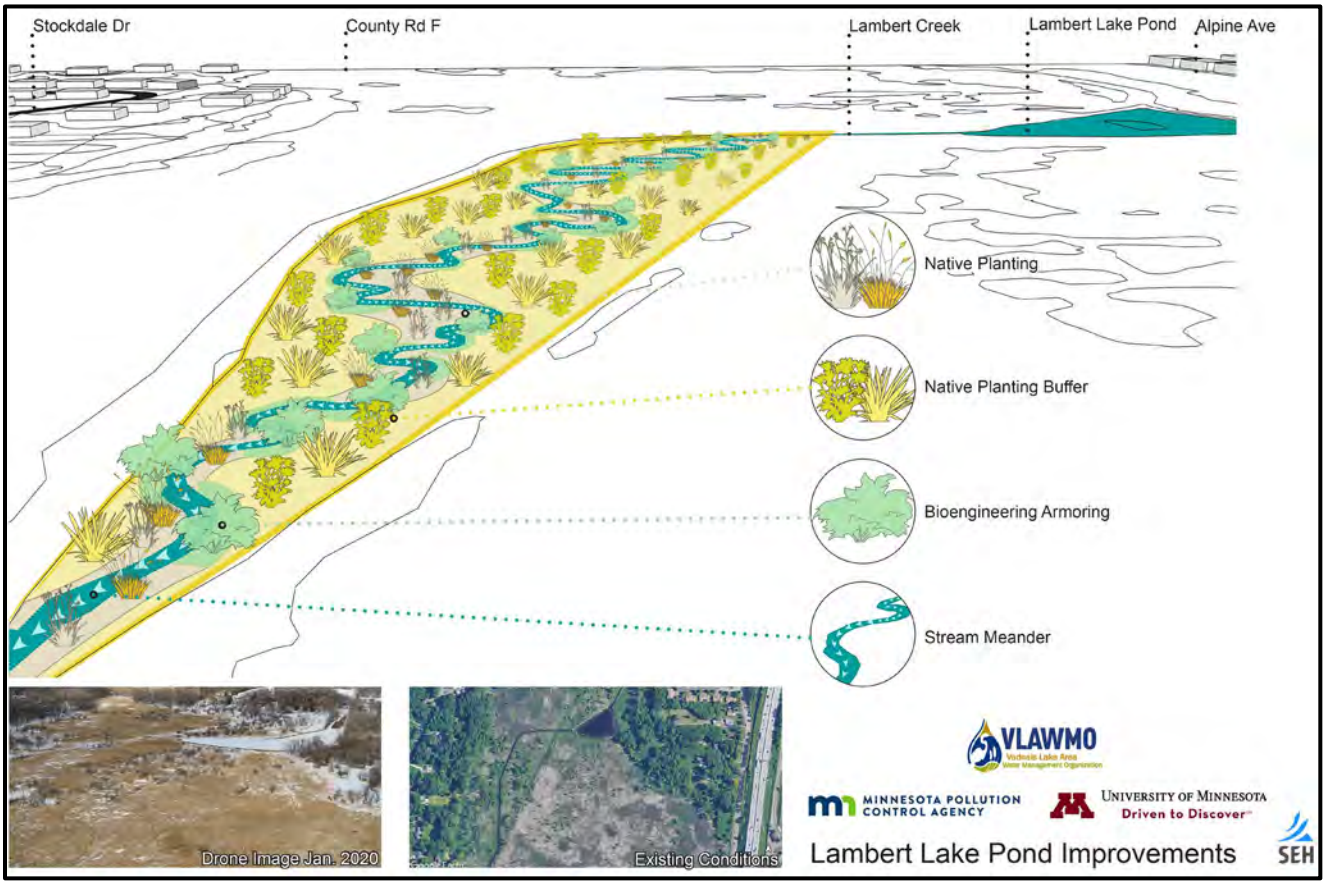


Figure 3: Schematic of new meander, simplified for easy viewing.



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.

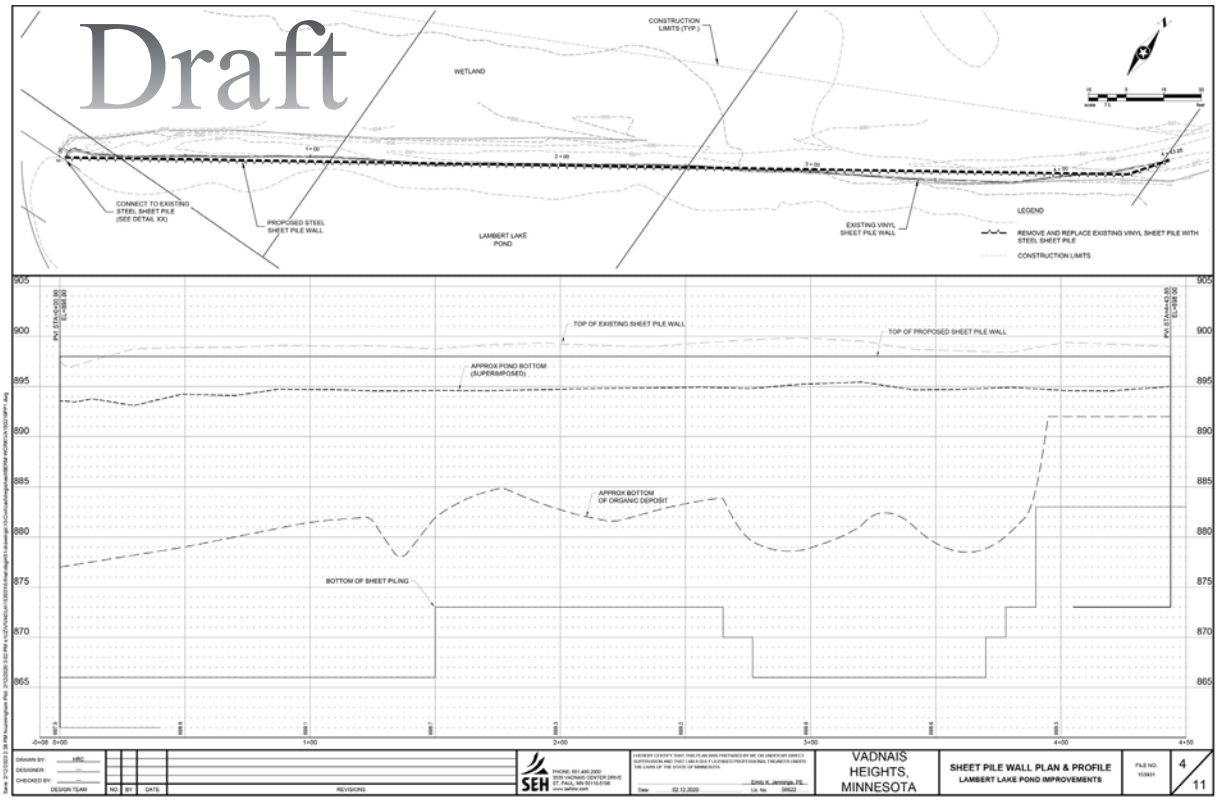
This Project is an amendment to a project that was completed at the same site in 2004. The earlier project included creating a new ditchline, attempting to install sheetflow across the wetland, building a stormwater retention basin that was reinforced with steel sheetpile on the south end and vinyl sheetpile 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

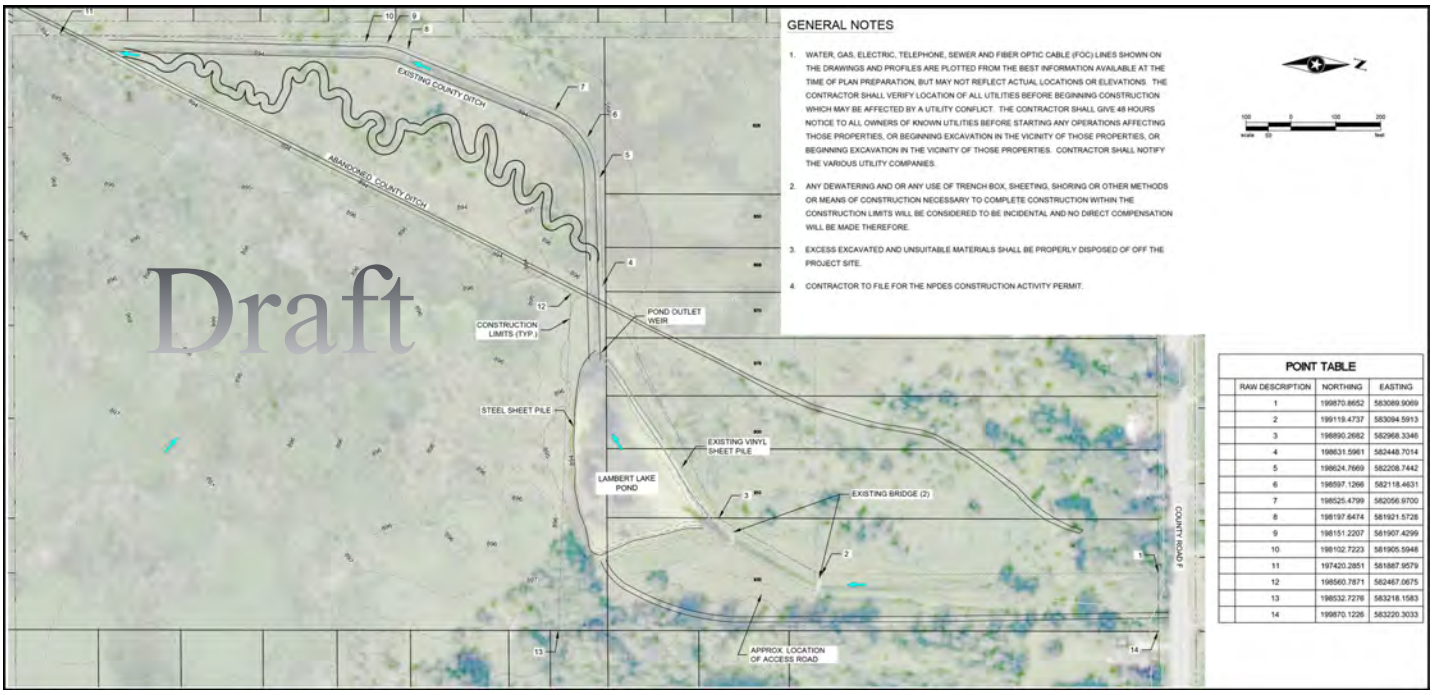


Table 1: New Creek Alignment Properties Compared to Stream Type E (Rosgen Classification)

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.

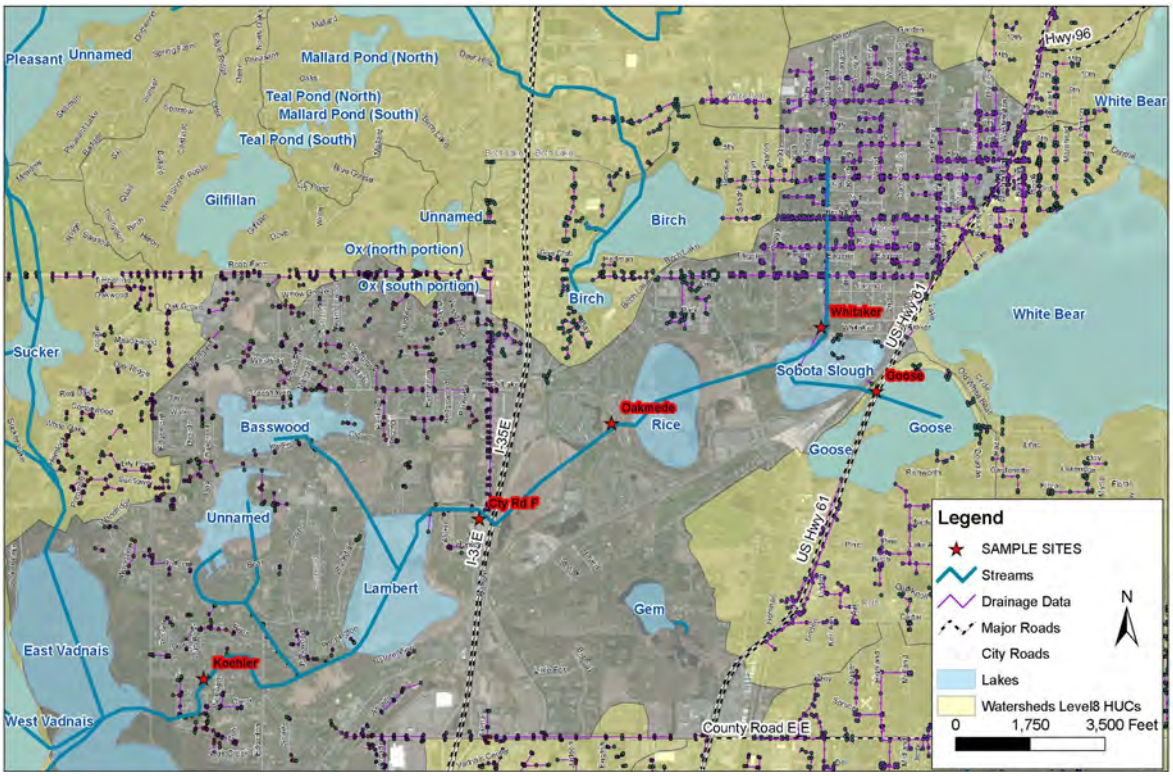
Bacteria loading to Lambert Creek is predominately from nonpoint urban stormwater with a small contribution to the load from wildlife and canine pet waste within the watershed. As part of the TMDL for Lambert Creek, recommendation for priority load reduction strategies included streambank restoration, 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

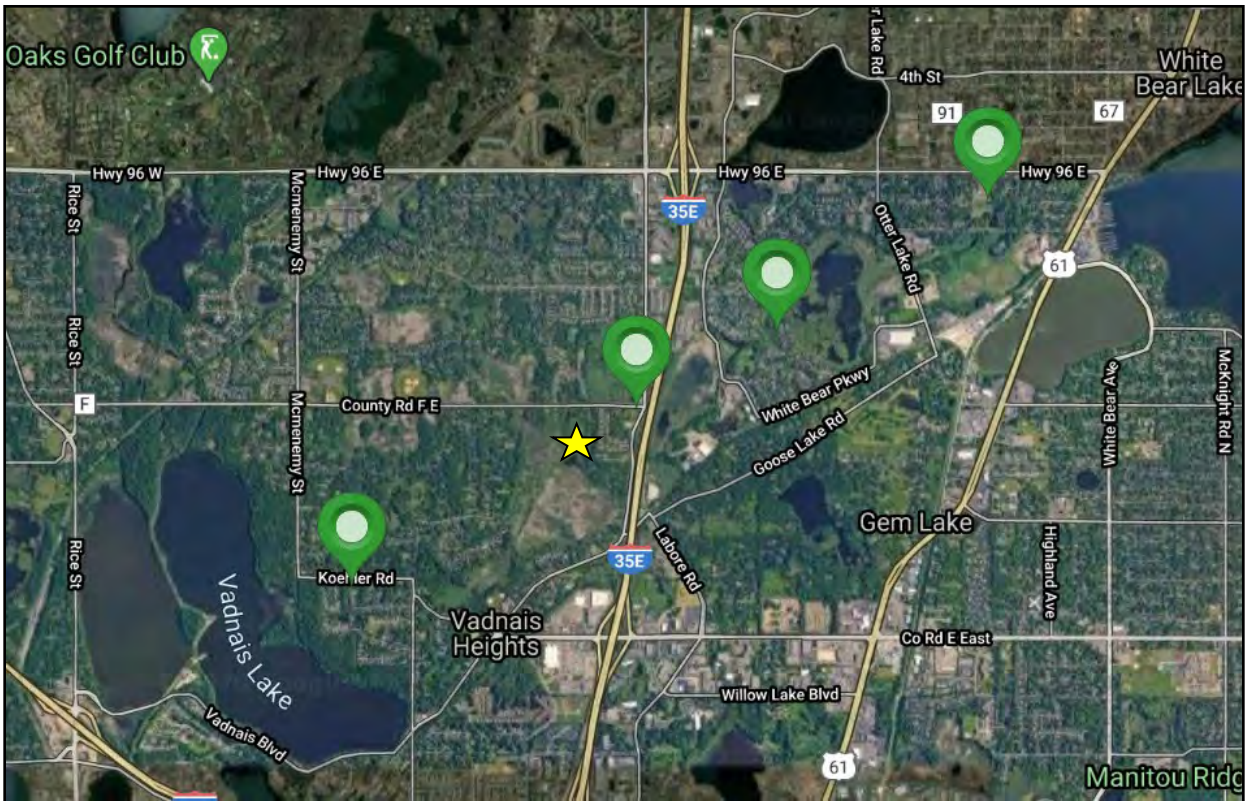


The Whitaker Treatment Wetlands is a large research project that was completed in 2018 with

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.

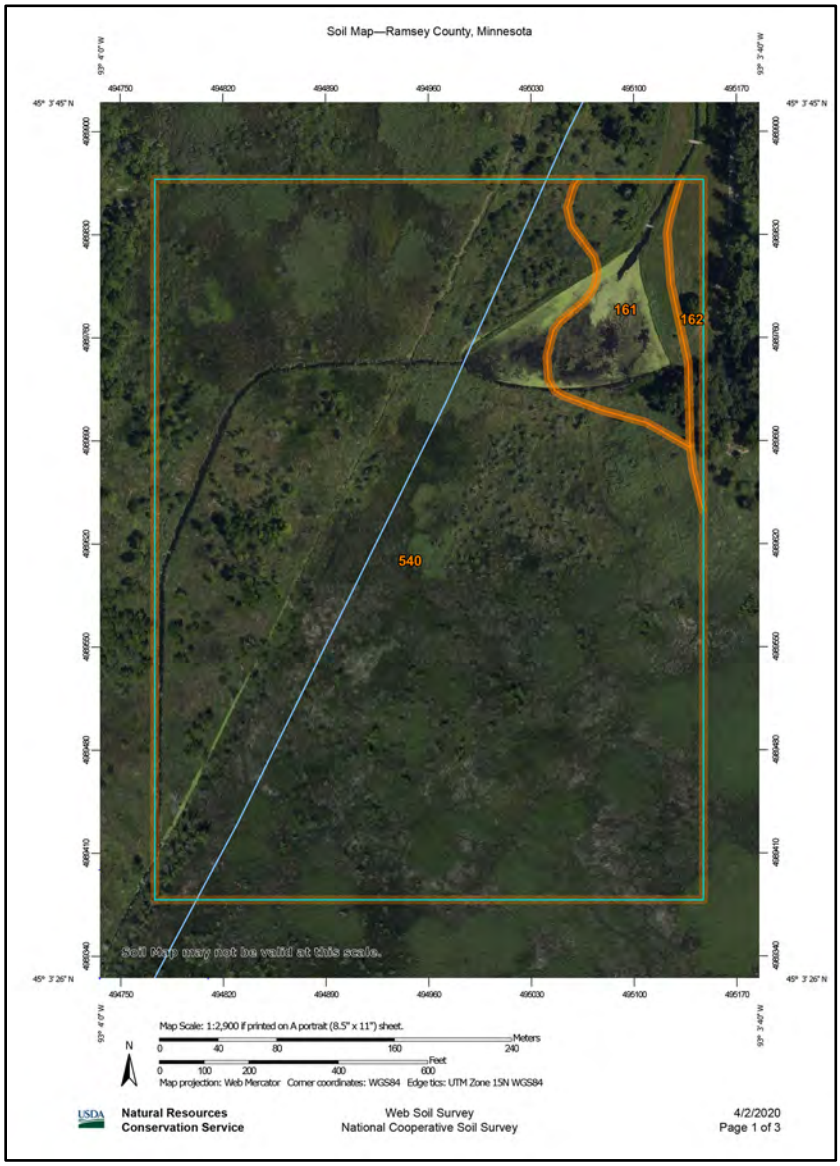
Thermal imaging was conducted with a drone at the site during winter 2020 to identify possible shallow aquifer and upwelling locations. No locations were identified that would pose a problem with upwelling to the project.

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.

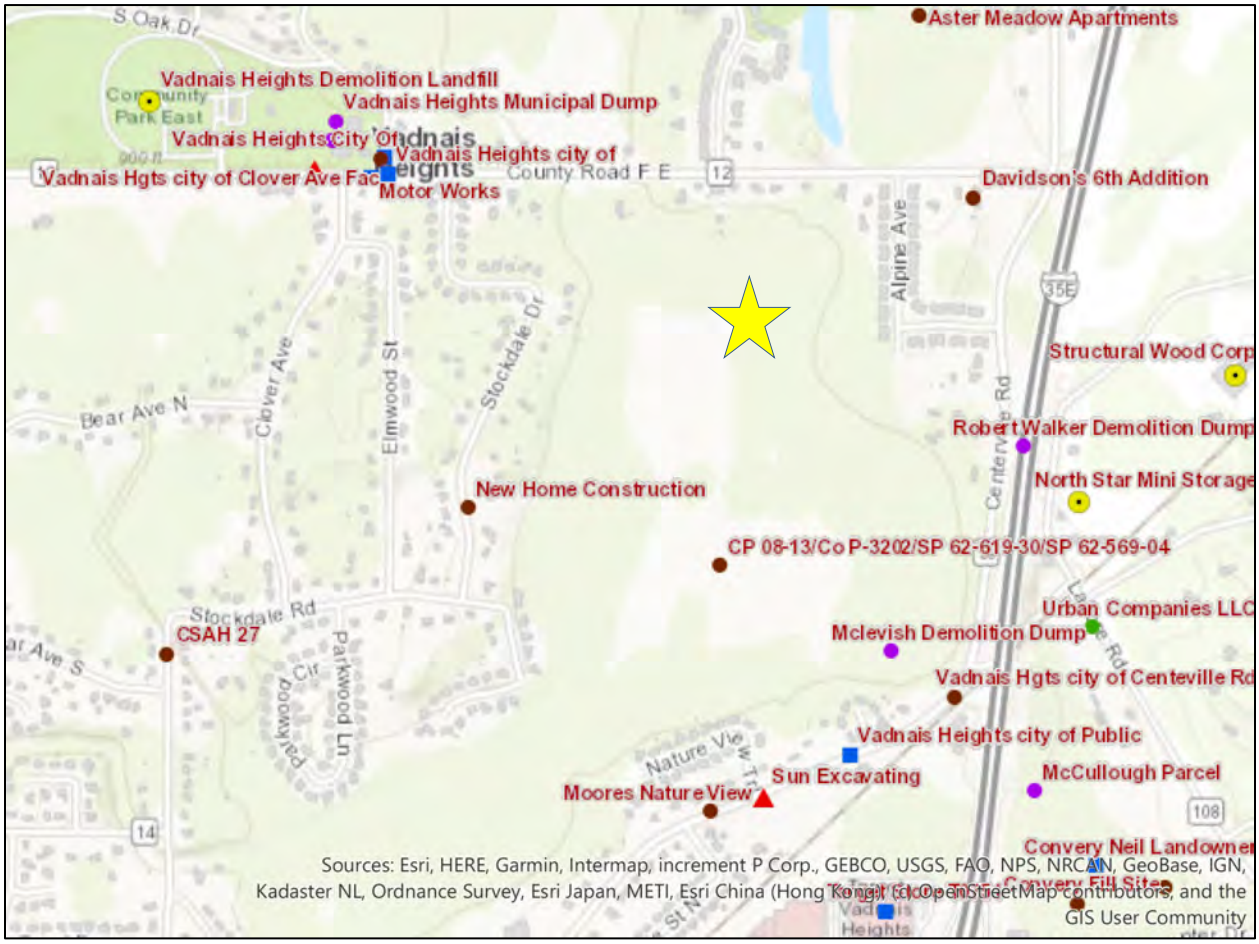
12. Contamination/Hazardous Materials/Wastes:

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.

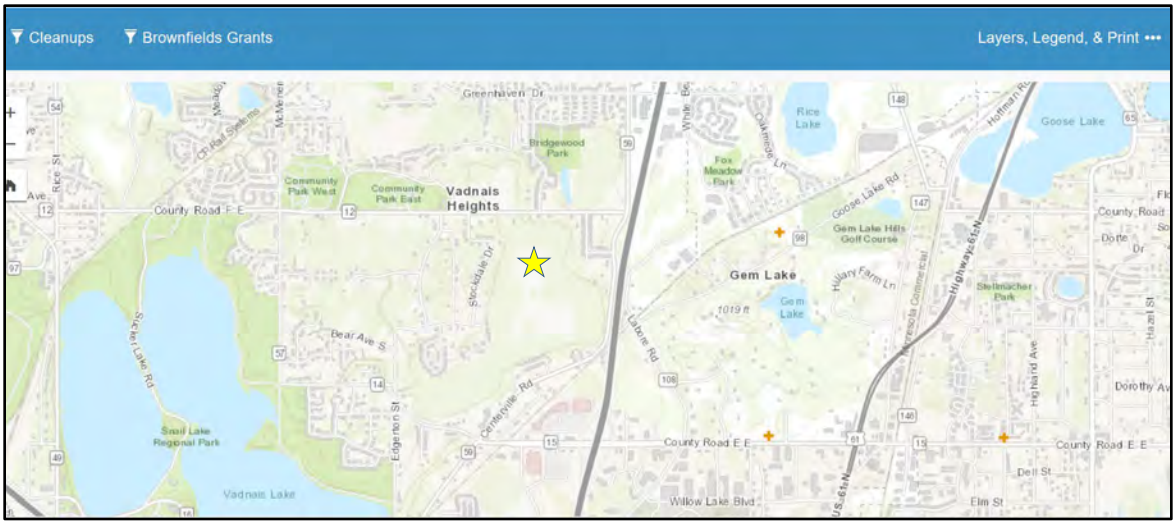
One site is identified within the study area (Figure 9). Site ID CP 08-13/COP-3202 is no longer an active construction site. The Mclevish Demolition Dump is located to the southeast of the project area. It is also inactive, according to Site Assessment SA008369.

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:

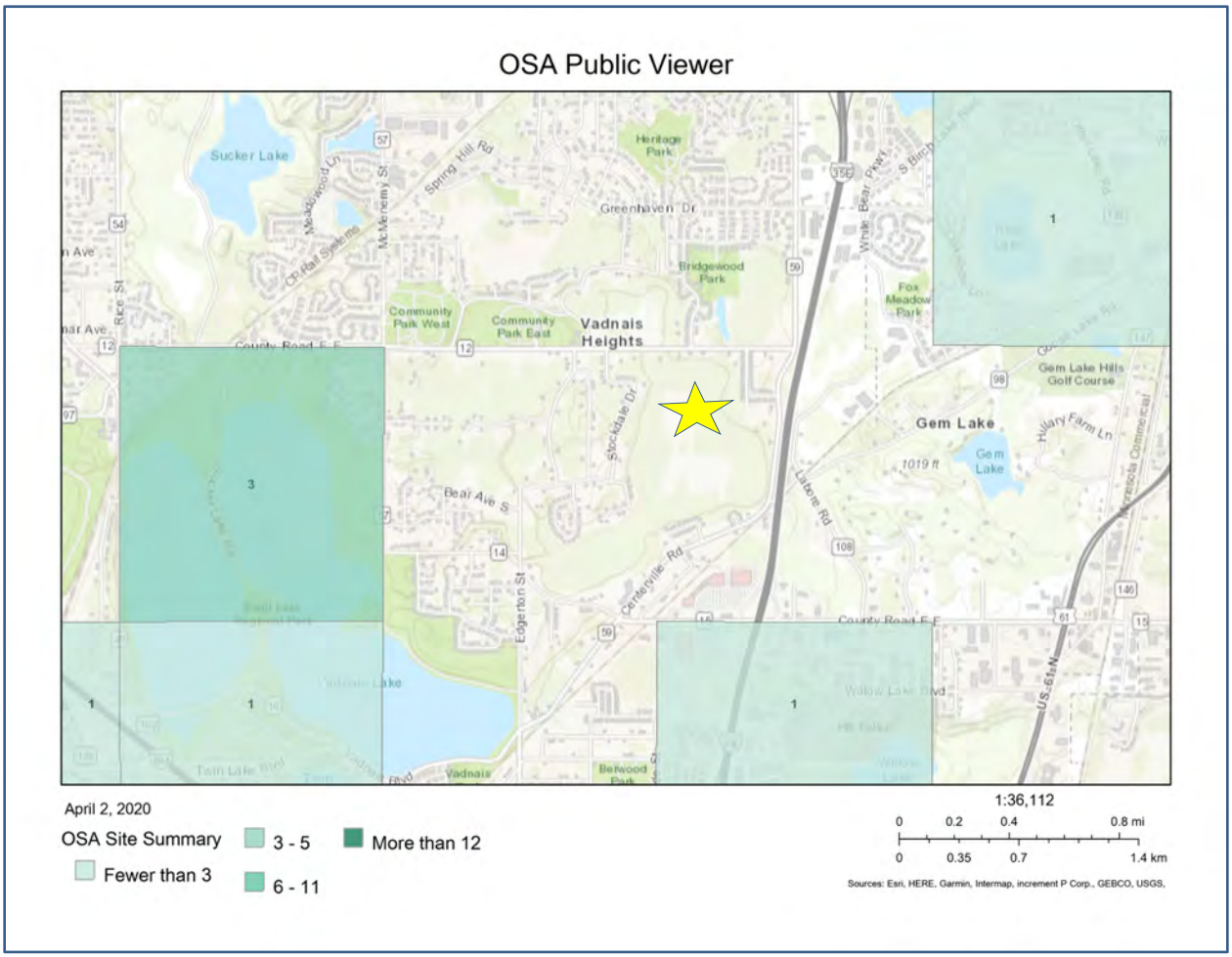
Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss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

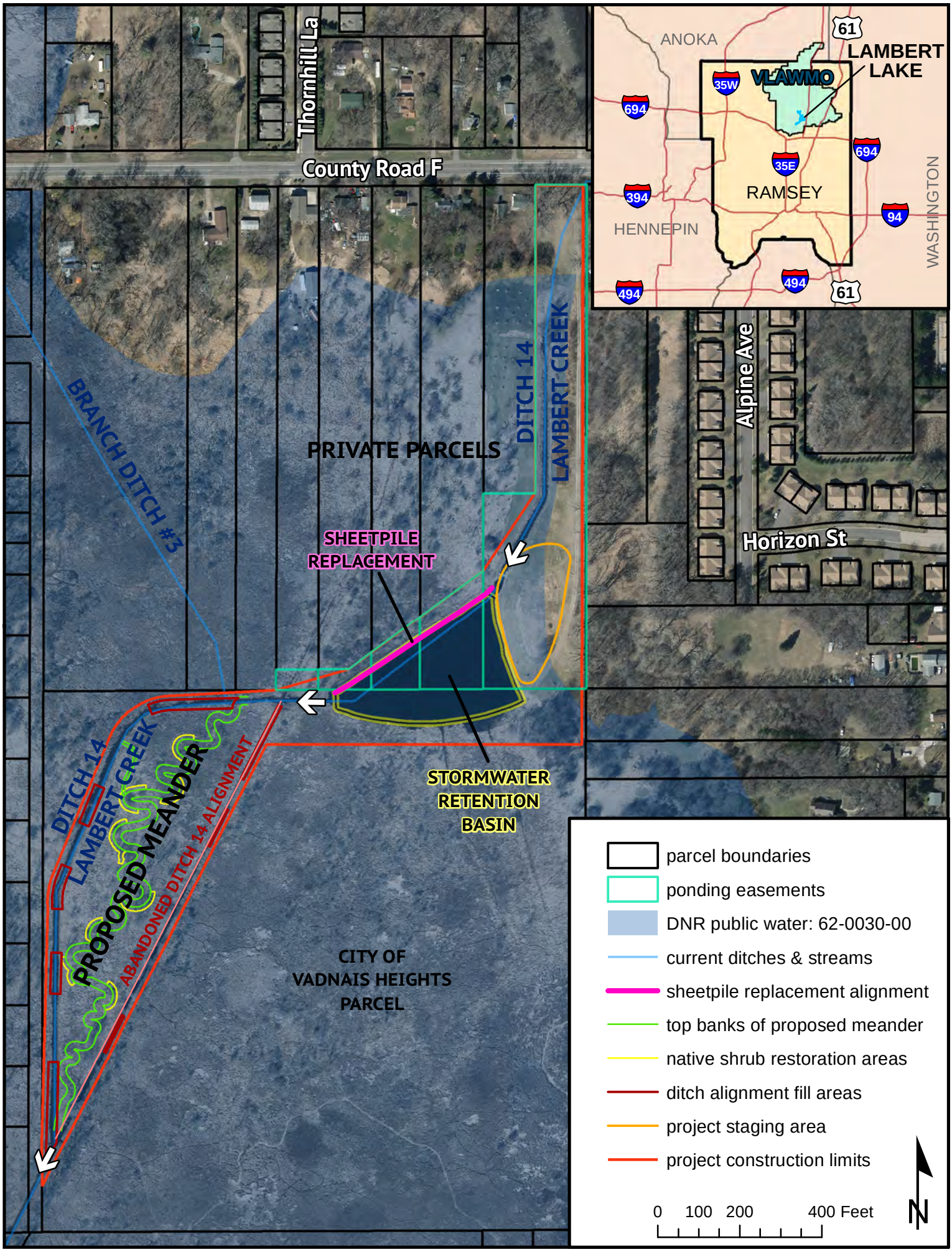
RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

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

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

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

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

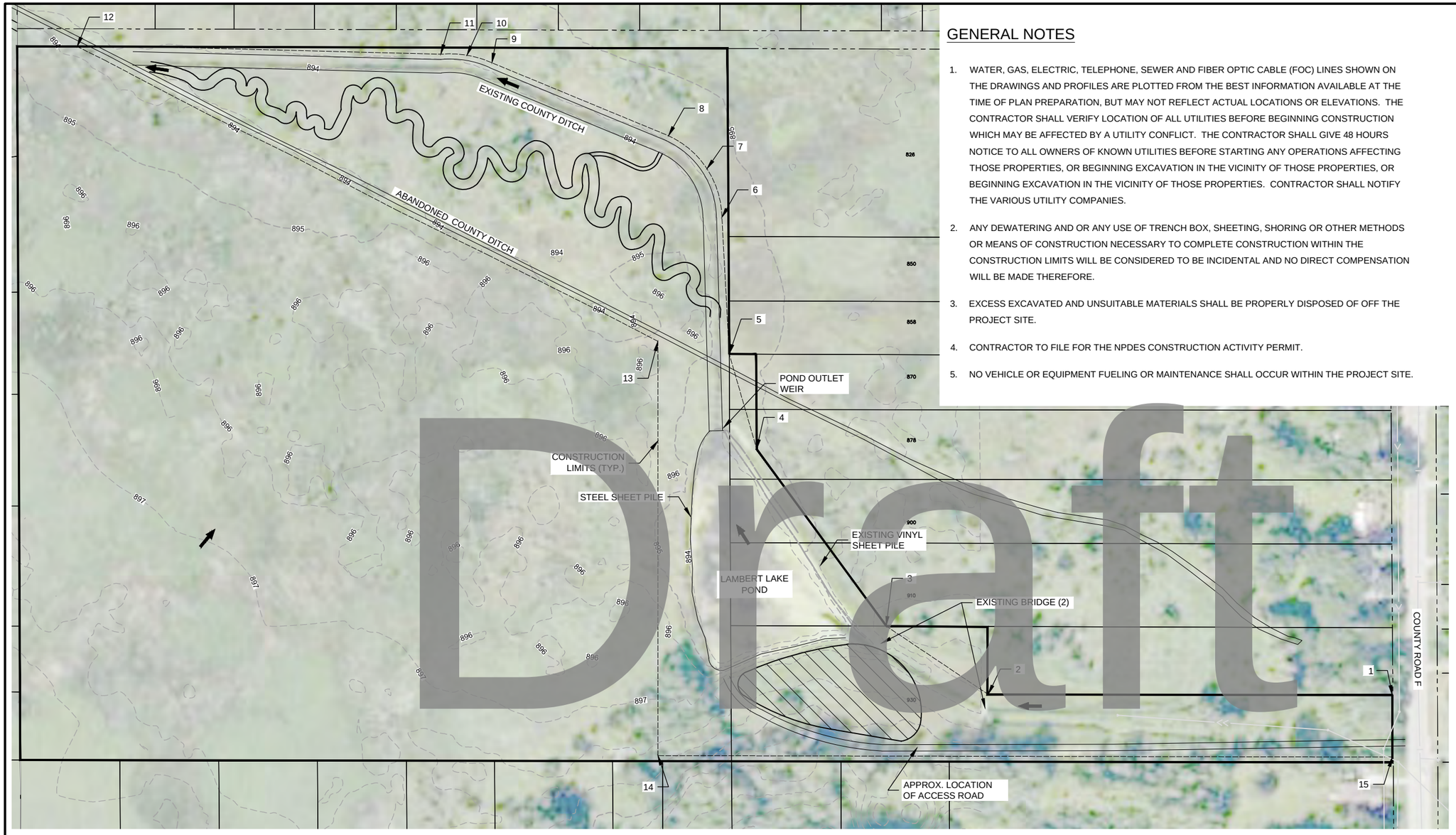
Emily Jennings, P.E.
Signature

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.



100 0 100 200
scale 50 feet

POINT TABLE

	RAW DESCRIPTION	NORTHING	EASTING
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	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:

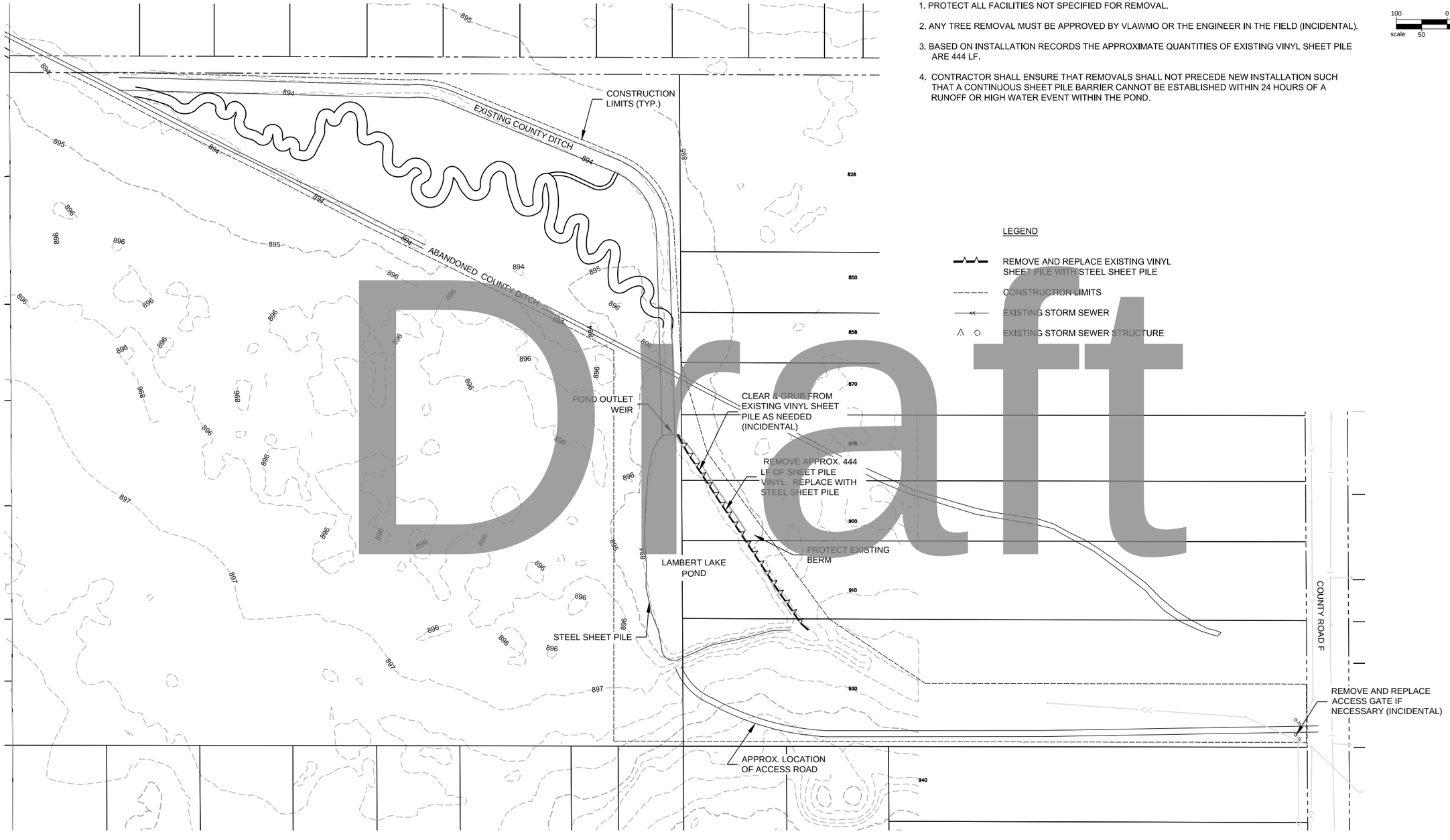
1. PROTECT ALL FACILITIES NOT SPECIFIED FOR REMOVAL.
2. ANY TREE REMOVAL MUST BE APPROVED BY VLAWMO OR THE ENGINEER IN THE FIELD (INCIDENTAL).
3. BASED ON INSTALLATION RECORDS THE APPROXIMATE QUANTITIES OF EXISTING VINYL SHEET PILE ARE 444 LF.
4. CONTRACTOR SHALL ENSURE THAT REMOVALS SHALL NOT PRECEDE 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



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

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Date: 04.15.2020 Lic. No. 56622

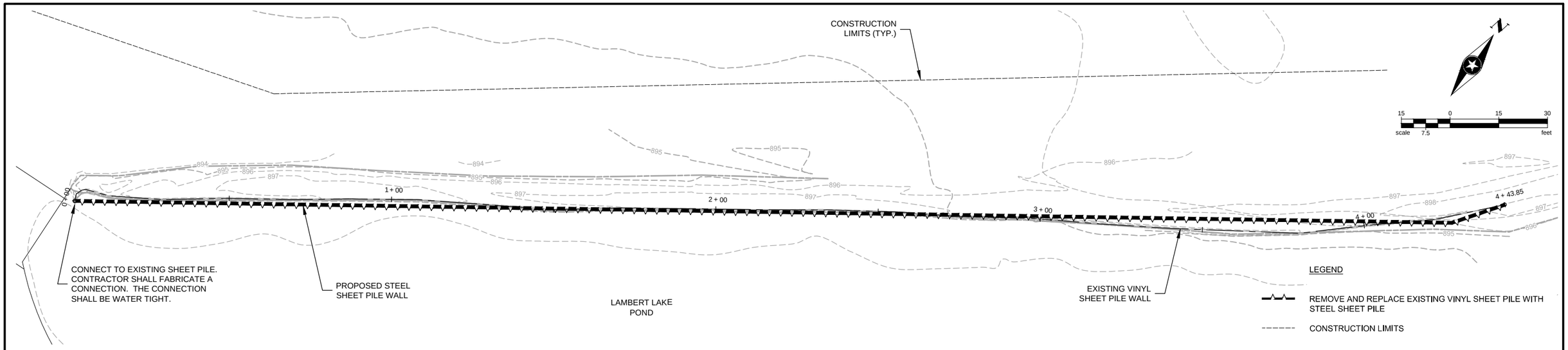
VADNAIS HEIGHTS, MINNESOTA

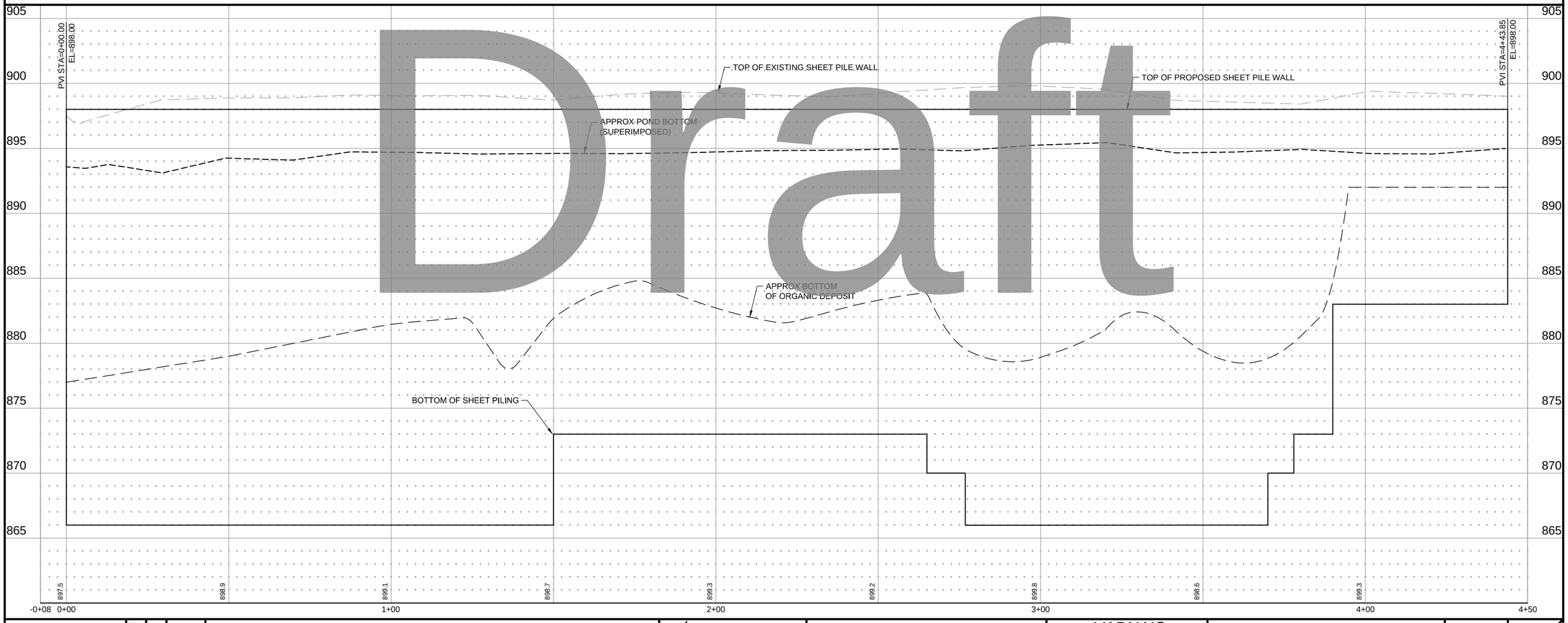
REMOVAL PLAN

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

3/10





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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

SHEET PILE WALL PLAN & PROFILE
LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

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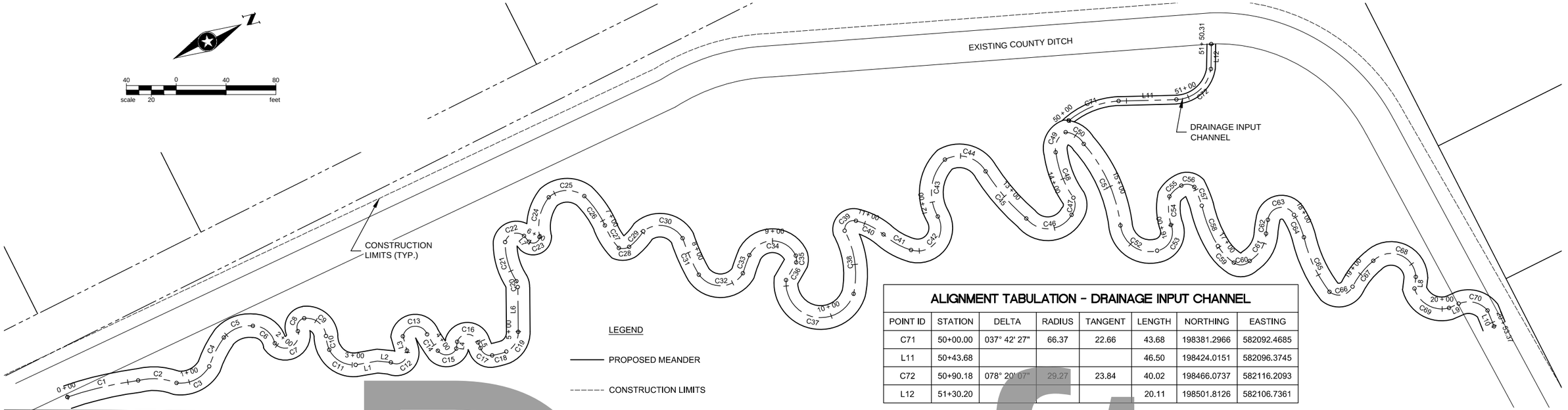


ALIGNMENT TABULATION - DRAINAGE INPUT CHANNEL

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
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

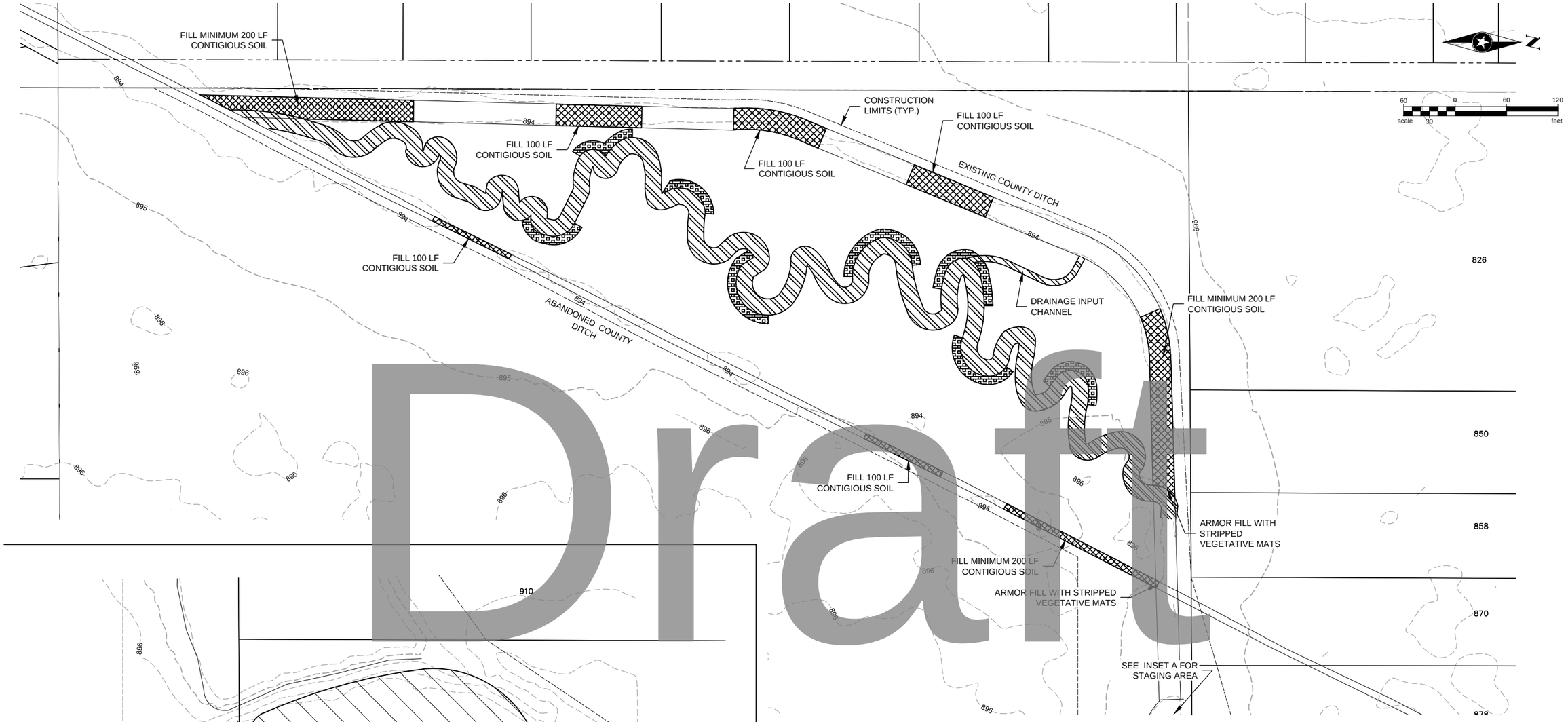
VADNAIS HEIGHTS, MINNESOTA

MEANDER PLAN

LAMBERT LAKE POND IMPROVEMENTS

FILE NO. 153931

5 / 10



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

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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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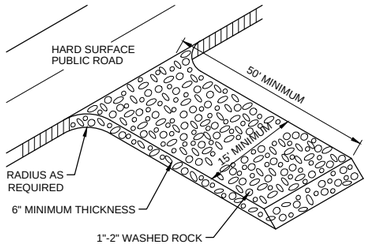
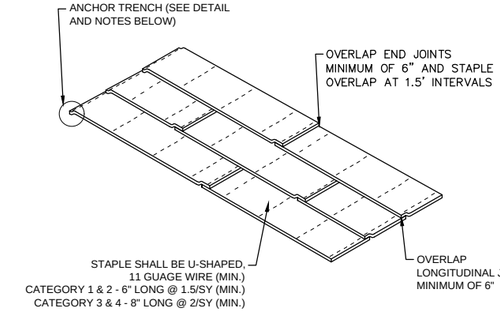


NOTE:
TO PREVENT TRACKING OF MUD ONTO PAVED ROADS, INSTALL ADDITIONAL ROCK OR REMOVE AND REPLACE THE PAD AS REQUIRED

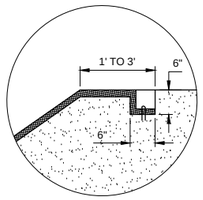
NTS

ROCK CONSTRUCTION ENTRANCE

Revised: Oct. 2011
SEH Plate No. ERO-35



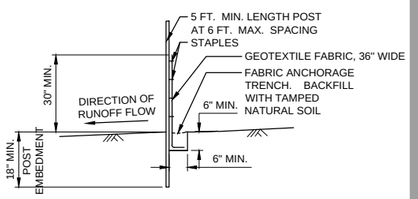
ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH



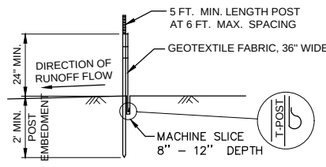
NTS

EROSION CONTROL BLANKET INSTALLATION

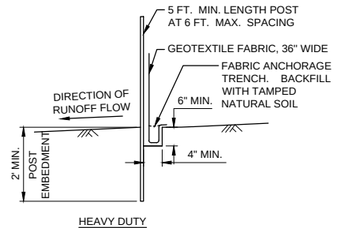
Revised: Oct. 2011
SEH Plate No. ERO-11



PREASSEMBLED



STANDARD MACHINE SLICED



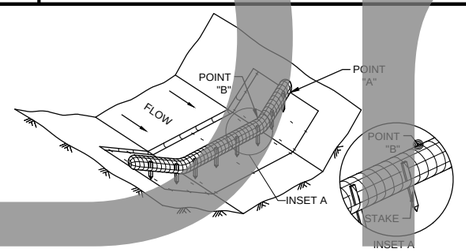
HEAVY DUTY

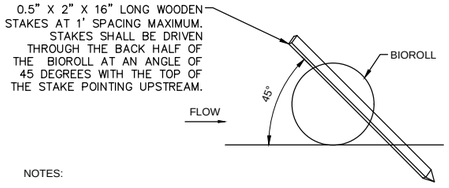
DESIGN GUIDELINES:
(SEE MNDOT SPEC. 2573.3C AND 3886)

NTS

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.

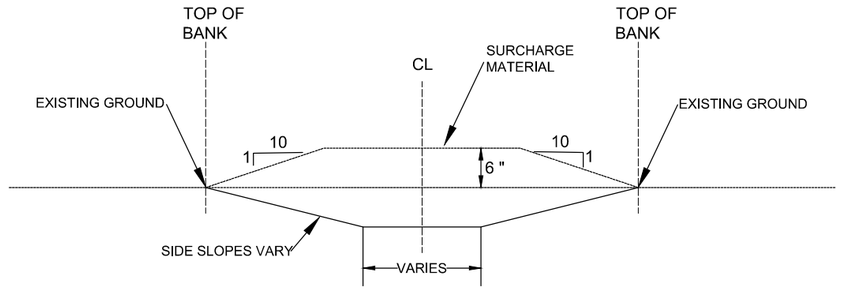
CHECK DAMS AND DIKES SHOULD BE LIMITED IN USE FOR DRAINAGE AREAS OF LESS THAN FIVE ACRES AND IN CHANNELS OF LESS THAT TEN PERCENT SLOPE.

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

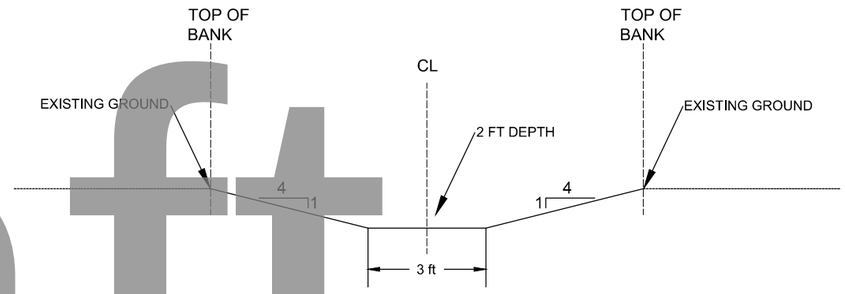
NTS

BIOROLL STAKING

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



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



TYPICAL PROPOSED MEANDER CROSS SECTION

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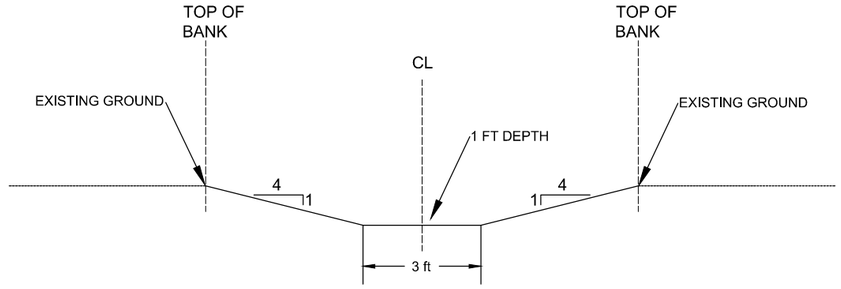

TYPICAL PROPOSED DRAINAGE INPUT CHANNEL CROSS SECTION

STA. 50+00 TO STA. 51+50.31

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

NO.	BY	DATE	REVISIONS

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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

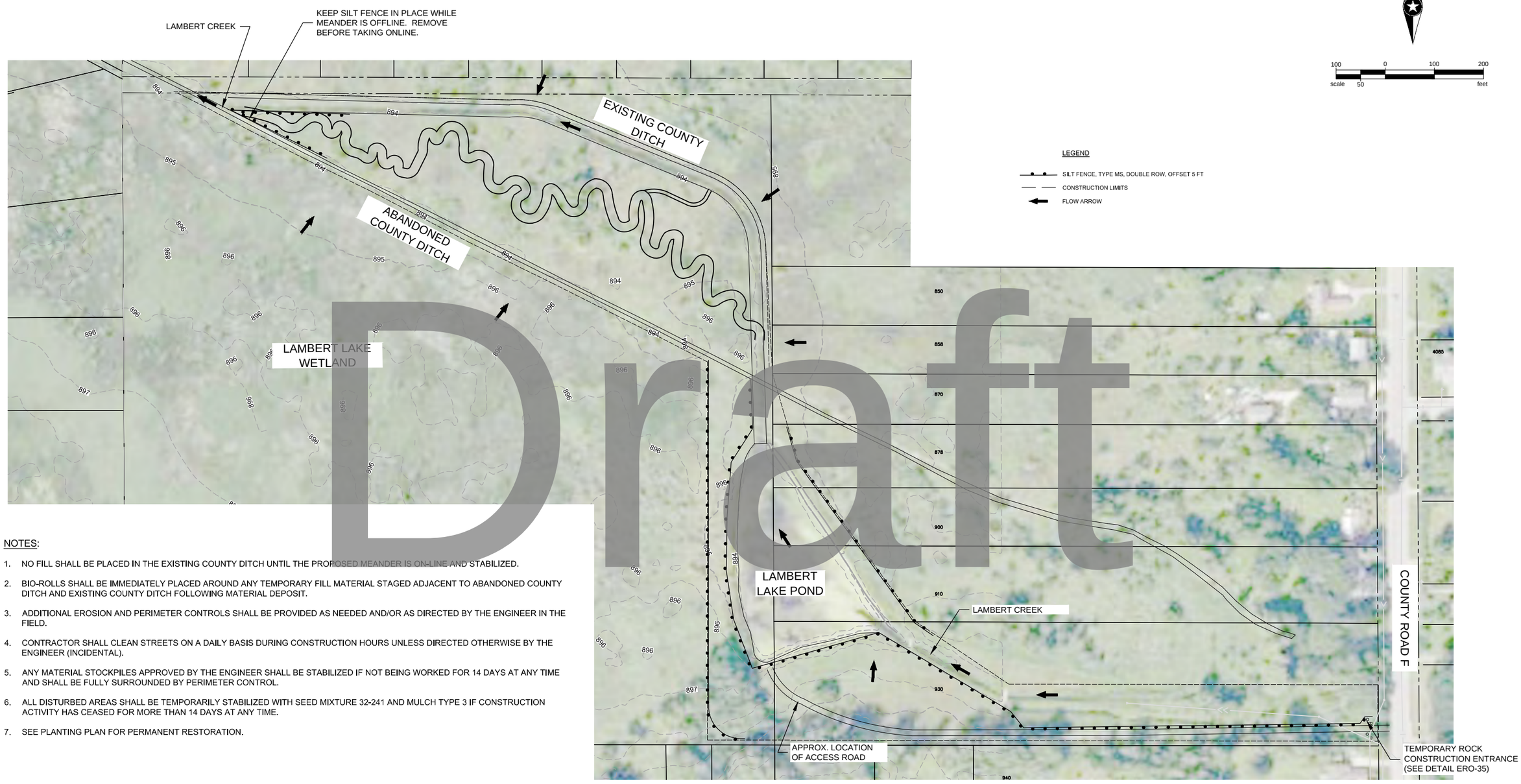
VADNAIS HEIGHTS, MINNESOTA

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

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.

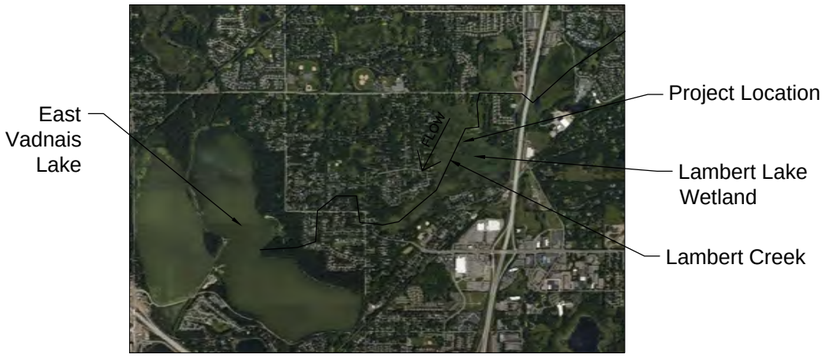
THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER 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

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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.

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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.

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

NO.	BY	DATE	REVISIONS

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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

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[Quoted text hidden]

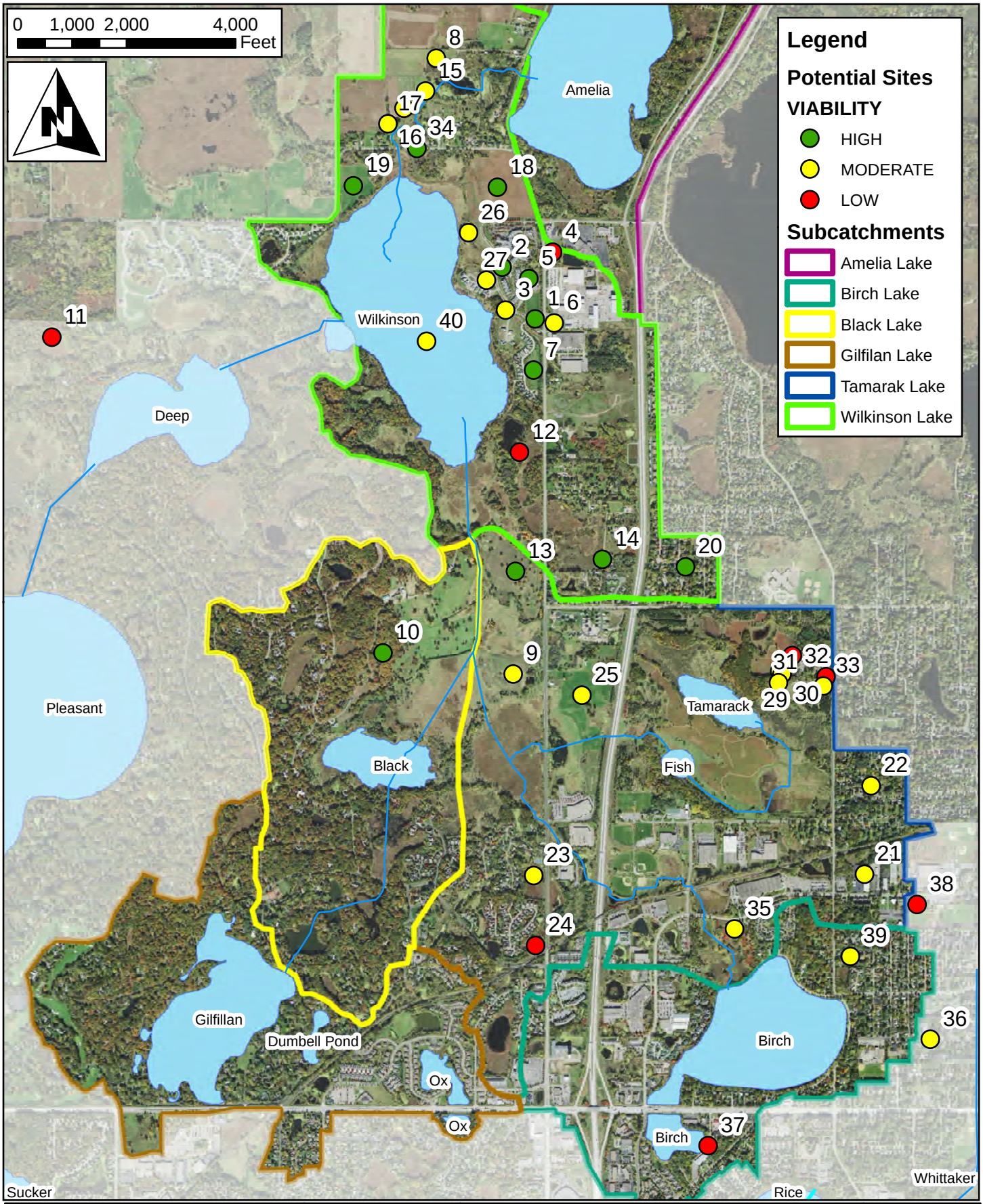
DAWN TANNER, PhD
Program Development Coordinator
651.204.6074 | www.vlawmo.org
800 E County Rd E Vadnais Heights, MN 55127
Vadnais Lake Area Water Management Organization

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



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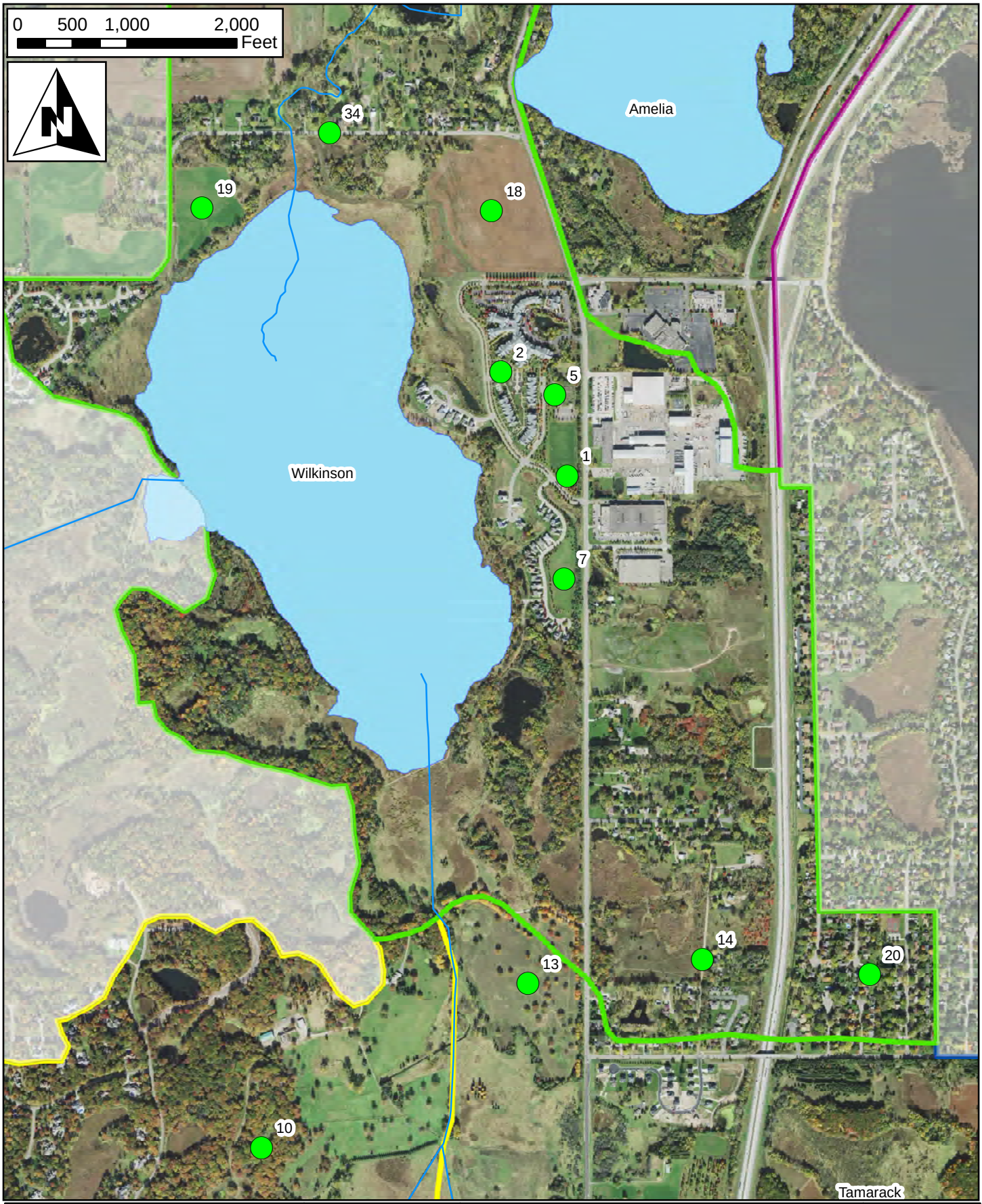
Project: VADLA-153927
Print Date: 5/8/2020

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



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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