Pioneer-
Sarah Creek
Watershed Management Commission
ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
763.553.1144 • Fax: 763.553.9326

September 9, 2022

Representatives
Pioneer-Sarah Creek Watershed
Management Commission
Hennepin County, Minnesota

The meeting packet for this meeting may be found on the Commission's website: http://www.pioneersarahcreek.org/minutes--meeting-packets.html

Dear Representatives:

A regular meeting of the Pioneer-Sarah Creek Watershed Management Commission will be held Thursday, September 15, 2022, at 6:00 p.m. This will be an **in-person** meeting held at Maple Plain City Hall, 5050 Independence Street, Maple Plain, MN.

A light supper will be served. RSVPs are requested so that the appropriate amount of food is available. At the time of your response, please let us know if you will be eating supper with us.

In order to ensure a quorum for the regular meeting, please telephone 763.553.1144 or email me at amy@jass.biz to indicate if you or your Alternate will be attending. It is your responsibility to ascertain that your community will be represented at the meeting

Regards,

Amy A. Juntunen, Administrator
AAJ:tim

cc:	Alternates	Andrew Vistad, Hakanson-Anderson	
	Paul Stewart, Kris Guentzel, HCEE	City Clerks	MPCA
	Brian Vlach, TRPD	Met Council	BWSR
	Joel Jamnik, Attorney	official newspapers	DNR

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Pioneer-
Sarah Creek
Watershed Management Commission

ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
763.553.1144 • Fax: 763.553.9326 • judie@jass.biz • www.pioneersarahcreek.org

REGULAR MEETING AGENDA
September 15, 2022 ● 6:00 p.m.
The meeting packet can be found on the Commission's website:
http://pioneersarahcreek.org/pages/Meetings/

1. Call to Order.
2. Approve Agenda.*
3. Consent Agenda.
   a. August meeting minutes.*
   b. September Claims/Treasurer's Report.*
4. Open forum.
5. Action Items.
   a. 2022-013 Promise Hill Residence, Independence.*
   b. 2022-014 Hidden Lake Channel Excavation, Independence.*
   c. 2022-015 Schaffer Residence, Greenfield.*
   d. 2022-016 West Lindgren Channel Excavation, Indpendence.*
6. Old Business.
7. New Business.
8. Watershed Management Plan.
9. Education.
10. Grant Updates.
    a. Whaletail South Alum Treatment CWF Grant.*
11. Communications.
12. Staff Reports.
    a. Engineer's Report.*
    b. HCEE Report.
    c. TRPD Report.
13. Commissioner Reports.
14. Other Business.
15. Adjournment. (Next scheduled meeting: October 20, 2022). Z:\Pioneer-SarahCreek\Meetings\Meetings 2022\8 agenda.docx

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ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
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REGULAR MEETING
Minutes
August 18, 2022

1. CALL TO ORDER. A regular meeting of the Pioneer-Sarah Creek Watershed Management Commission was called to order by Chair Joe Baker at 6:01 p.m., Thursday, August 18, 2022, at Maple Plain City Hall, 5050 Independence Street, Maple Plain, MN.

Present: Mark Workcuff, Greenfield; Joe Baker, Independence; Brenda Daniels, Loretto; Caitlin Cahill, Maple Plain; Pat Wulff, Medina; John Tschumperlin, Minnetrista; Paul Stewart and Kris Guentzel, Hennepin County Environment and Energy (HCEE); Brian Vlach, Three Rivers Park District (TRPD); Andrew Vistad, Hakanson-Anderson; and Amy Juntunen, JASS.

Also present: Scott Johnson, Medina.

2. AGENDA. Motion by Daniels, second by Cahill to approve the agenda* as presented. *Motion carried unanimously.*

3. CONSENT AGENDA. Motion by Tschumperlin, second by Daniels to approve the Consent Agenda with a change to the minutes as noted below.

a. July Regular Meeting Minutes.* Change item 13.c. last sentence to: "Plans have been submitted for a new grocery store just north of Highway 7 east of St. Bonifacius."

b. August Treasurer's Report/Monthly Claims * totaling $40,022.30.

OPEN FORUM.

4. ACTION ITEMS.

a. 2022-011 Burgess Residence, Greenfield.* This is an application for the construction of a driveway, residential dwelling, and septic system. The residential lot is located along Greenfield Road just south of County Road 10 (Woodland Trail). The southwest shoreline of Schwappauff Lake is located in the northeast corner of this lot. The dwelling, septic system, and driveway construction will result in over one acre of disturbance. Silt fencing is provided downstream from the driveway construction adjacent to the wetlands. The Commission's management plan requires compliance for Erosion Control (Rule E). Staff recommends approval with no contingency.

Motion by Workcuff, second by Wulff to approve project 2022-11. *Motion carried unanimously.*

5. OLD BUSINESS.

6. NEW BUSINESS.

7. WATERSHED MANAGEMENT PLAN.

8. EDUCATION.

** Included in meeting packet.*

9. GRANT UPDATES.

a. Dance Hall Creek BMP CWF Grant. At the July meeting the Commission approved up to $5,000 to contract with Stantec to complete a grant application for projects identified in the new Dance Hall Creek Subwatershed Assessment (SWA). After review, Diane Spector from Stantec recommended delaying the grant application until formal agreements with adjacent landowners are secured and the project design is further developed. This will be a good candidate for a 2023 Clean Water Fund grant.

b. Whaletail South Alum Treatment CWF Grant. This project is on the Commission's CIP for 2023. TRPD has completed the required feasibility study and sent it to MPCA for review. The TMDL for Whaletail identified that 80% of phosphorus loading in the south basin is internal. The south basin has a very small watershed. The TMDL recommended an alum treatment to achieve water quality goals for the south basin. The north basin has been meeting TP and clarity standards for three of the past five years. Treating the south basin is expected to have a positive impact on the north basin as well. Modeling shows that the anticipated response to alum treatment is estimated at a 90% reduction in internal loading (381 lbs) which would bring the lake within state standards.

When treating with more than 330 gallons of alum per acre, which will be the case with this treatment, it is possible that the alum dosage can lower the pH level in the lake to a level that harms aquatic life. Sodium aluminate is an additional treatment option to minimize the drop in the pH level. However, it won't be known whether sodium aluminate will be needed until more testing can be done. The current price for alum is $2.35/gallon and for sodium aluminate is $8.32/gallon. For the alum treatment alone, the cost is $410,204.18. Staff recommends a contingency as the price of alum may increase, which would bring the project cost to $451,000 including a 10% contingency. If sodium aluminate is needed, the project cost will increase to $506,250 including a five percent contingency. The Commission will need to decide at what level to apply for funding. The Commission and Partners are required to match 25% of the grant amount, whether or not the entire grant amount is expended. This can increase the cost to the Commission and Partners. However, if the smaller amount is requested, the Commission and Partners will then be responsible for the additional $70,000 in cost for sodium aluminate.

Motion by Tschumperlin, second by Cahill to apply for the Clean Water Fund grant for the South Whaletail alum treatment in the amount of $405,000, resulting in a total required match of $101,250 and a five percent contingency. *Motion carried unanimously.*

10. COMMUNICATIONS.

11. STAFF REPORTS.

a. Engineer's Report.* An overview of items is provided in the report. Adam's Pest Control had submitted a project review application and the project was approved in 2019. They did not move forward with the project and recently submitted plans for the same project that have been altered slightly from what was approved. The applicant asked if they are required to re-submit the full project review fee or if the prior review would cover the new review changes. Vistad estimated 25 hours to review the plans.

Motion by Cahill, second by Daniels to adjust the "re-review" fee based on estimated hours needed to complete the process, or $2,625. *Motion carried unanimously.*

**Included in meeting packet.*

b. **HCEE Report.*** The **McCombs project** at 2772 Becker Road has been completed, along with the **White Wetland Restoration** project. Photos of both projects were included in the meeting packet and shown at the meeting. These projects were funded through the remaining funds in the Baker Park Ravine grant.

Buffer inspections are expected to be completed by Monday. There are no outstanding violations in the Pioneer Sarah Creek Watershed area.

The **Lake Rebecca SWA** is nearing completion. Feedback from the draft did result in some edits needed. Fieldwork for the SWA is complete.

Paul Stewart's last day with HCEE will be August 31. The Commissioners wished him well in his new position. HCEE will be filling the position within the next few months.

12. COMMISSIONER REPORTS.

a. **Baker.** Lake Sarah experienced a fish kill of over 10,000 crappies. Most were younger fish. The DNR is investigating the cause of the fish kill. The event did not affect other species of fish. The warm conditions may have stressed the fish and contributed to expedited growth of a bacteria or virus.

Some owners on Lake Sarah are petitioning to raise the weir due to the low water levels. Stewart from HCEE completed a survey in August that suggests the profile of the structure has changed slightly. The DNR will need to complete a survey and issue a permit prior to any change to the weir structure. LSIA is requesting a flexible structure that can be opened or closed as needed. The City of Greenfield will need to work with LSIA and the DNR since the weir structure is located on city property.

b. **Tschumperlin** presented the Whaletail alum treatment to the Minnetrista City Council on Monday, August 15. The presentation was well received, but did not include the potential need for sodium aluminate and its added cost.

c. **Wulff.** The Medina Celebration event will be held on September 17 at Hamel Legion Park.

d. **Daniels.** Loretto's Fun Fest will be held on September 10 from 4:00-8:00 p.m. at the Loretto Ballfields.

13. OTHER BUSINESS.

The **next regular meeting** is scheduled for September 15, 2022 at Maple Plain City Hall.

14. ADJOURNMENT. There being no further business, motion by Daniels, second by Wulff to adjourn. *Motion carried unanimously.* The meeting was adjourned at 8:25 p.m.

Respectfully submitted,

Amy Juntunen
Administrator
AAJ:tim

Z:\Pioneer-SarahCreek\Meetings\Meetings 2022\8 Minutes PSC.docx

**Included in meeting packet.*

Pioneer-Sarah Creek Watershed
Cash Disbursements Journal
For the Period From Sep 1, 2022 to Sep 30, 2022

Filter Criteria includes: Report order is by Date. Report is printed in Detail Format.

Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
9/15/22		50100	Engineering / Consulting - Koch Farm Sanctuary	551.25	
		50100	Engineering / Consulting - Creekside Meadows	2,520.00	
		50100	Engineering / Consulting - General Engineering	760.00	
		10100	Hakanson Anderson Associates, Inc.		3,831.25
9/15/22		51100	Administration	766.19	
		51100	Meeting-related	1,015.53	
		51100	Bookkeeping	363.29	
		51120	Project Review Support	285.91	
		10100	Judie Anderson's Secretarial Service		2,430.92
9/15/22		51300	Insurance	2,930.00	
		10100	League of MN Cities Insurance Trust		2,930.00
	Total			**9,192.17**	**9,192.17**

INVOICE SUMMARY

PIONEER SARAH WATERSHED MANAGEMENT COMMISSION

INVOICES FOR JULY 2022

Project ID & Description	Invoice Number	Invoice Date	Amount
PSC210 2022-05 KOCH FARM SANCTUARY	49072	08/18/22	551.25
PSC211 2022-06 CREEKSIDE MEADOWS	49073	08/18/22	2,520.00
PSC901-2022 GENERAL ENGINEERING FOR PIONEER SARAH WMC 2022	49074	08/18/22	760.00
			3,831.25

Hakanson Anderson

3601 Thurston Avenue
Suite 101
Anoka, MN 55303

Pioneer Sarah Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

Invoice number 49072
Date 08/18/2022

Project **PSC210 2022-05 KOCH FARM SANCTUARY**

Professional Services Provided Through 07/31/2022

MUNICIPAL REVIEW

Professional Fees

	Date	Hours	Rate	Billed Amount
Andrew Vistad *REVIEW CROSSING INFORMATION*	07/06/2022	2.00	105.00	210.00
Andrew Vistad *UPDATE REVIEW MEMO CREEK CROSSING*	07/13/2022	2.00	105.00	210.00
Andrew Vistad *DEVELOPMENT REVIEW/ISSUE PERMIT*	07/26/2022	1.25	105.00	131.25
			PROFESSIONAL FEES SUBTOTAL	**551.25**
			MUNICIPAL REVIEW SUBTOTAL	**551.25**
			AMOUNT DUE THIS INVOICE	**551.25**

Invoice Summary		Current Billed	Prior Billed	Total Billed
	Total	551.25	3,885.00	4,436.25

Hakanson Anderson

3601 Thurston Avenue
Suite 101
Anoka, MN 55303

Pioneer Sarah Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

Invoice number 49073
Date 08/18/2022

Project **PSC211 2022-06 CREEKSIDE MEADOWS**

Professional Services Provided Through 07/31/2022

MUNICIPAL REVIEW

Professional Fees

	Date	Hours	Rate	Billed Amount
Andrew Vistad *REVIEW OPERATIONS AND MAINTENACE PLAN*	07/07/2022	3.00	105.00	315.00
Andrew Vistad *REVIEW DEVELOPER O&M*	07/08/2022	1.50	105.00	157.50
Andrew Vistad *DEVELOPMENT REVIEW NO 2*	07/11/2022	8.75	105.00	918.75
Andrew Vistad *DEVELOPMENT REVIEW NO 2*	07/12/2022	5.50	105.00	577.50
Andrew Vistad *DEVELOPMENT REVIEW NO 2*	07/13/2022	4.00	105.00	420.00
Andrew Vistad *DEVELOPMENT REVIEW/ISSUE PERMIT*	07/26/2022	1.25	105.00	131.25
			PROFESSIONAL FEES SUBTOTAL	**2,520.00**
			MUNICIPAL REVIEW SUBTOTAL	**2,520.00**
			AMOUNT DUE THIS INVOICE	**2,520.00**

Invoice Summary		Current Billed	Prior Billed	Total Billed
	Total	2,520.00	1,916.25	4,436.25

Hakanson Anderson

3601 Thurston Avenue
Suite 101
Anoka, MN 55303

Pioneer Sarah Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

Invoice number 49074
Date 08/18/2022

Project **PSC901-2022 GENERAL ENGINEERING FOR PIONEER SARAH WMC 2022**

Professional Services Provided Through 07/31/2022

GENERAL ENGINEERING

Professional Fees

	Date	Hours	Rate	Billed Amount
Andrew Vistad *DEVELOPMENT QUESTION REGARDING WATERSHED RULES*	07/01/2022	0.50	105.00	52.50
Andrew Vistad *DISCUSS SCHEFFERS WETLAND VIOLATION* *2022-09 GALE WOODS FARM ADA REVIEW*	07/07/2022	3.50	105.00	367.50
Andrew Vistad *CONVERSATION REGARDING PROJECTS WITHIN WATERSHED*	07/08/2022	1.00	105.00	105.00
Andrew Vistad *MONTHLY WATERSHED MEETING*	07/21/2022	1.50	105.00	157.50
Andrew Vistad *GENERAL PERMIT QUESTIONS*	07/28/2022	0.50	105.00	52.50
			PROFESSIONAL FEES SUBTOTAL	**735.00**

Reimbursables

	Date	Units	Rate	Billed Amount
MILEAGE	07/21/2022	40.00	0.625	25.00
			REIMBURSABLES SUBTOTAL	**25.00**
			GENERAL ENGINEERING SUBTOTAL	**760.00**
			AMOUNT DUE THIS INVOICE	**760.00**

Invoice Summary		Current Billed	Prior Billed	Total Billed
	Total	760.00	5,036.76	5,796.76

Your Virtual Administrator

3235 Fernbrook Lane
Plymouth MN 55447

Pioneer-Sarah Creek Watershed Management Commission
3235 Fernbrook Lane Plymouth, MN 55447

September 9, 2022

					Total Project Area
General Administration					
Administrative		65.00	0.000		
Administrative	1.50	70.00	105.000		
Administrative - virtual		75.00	0.000		
Office Support	8.00	70.00	560.000		
Public storage	1.00	101.08	101.080		
Data Processing/File Mgmt		70.00	0.000		
Archiving		60.00	0.000		
Reimbursable Expense	0.11	1.00	0.110	766.190	Administration
Meeting packets, attendance, Minutes and Meeting follow-up					
Administrative		65.00	0.000		
Administrative	8.08	70.00	565.600		
Admin - offsite	4.00	75.00	300.000		
Reimbursable Expense	149.93	1.00	149.930	1,015.530	Meeting-related activitie
Bookkeeping					
Bookkeeping		65.00	0.000		
Bookkeeping, budget, audit requests	3.58	70.00	250.600		
Treasurer's Reports	1.50	70.00	105.000		
Audit Prep		65.00	0.000		
Audit Prep		70.00	0.000		Bookkeeping/TRs
Reimbursable Expense	7.69	1.00	7.690	363.290	Bookkeeping/TRs
Project Reviews					
Administrative		65.00	0.000		
Administrative	3.75	70.00	262.500		
File Management/Archiving		65.00	0.000		
Reimbursable Expense	23.41	1.00	23.410	285.910	Project Reviews
			2,430.920	**2,430.920**	

LEAGUE OF MINNESOTA CITIES

CONNECTING & INNOVATING
SINCE 1913

Notice of Past due Bill and Notice of Cancellation

Date of Mailing: 09/06/2022

Member:
Pioneer-Sarah Creek Watershed Management Commission
3235 Fernbrook Lane N.
Plymouth, MN 55447-5325

For Coverage Questions or Changes Call:
Arthur J Gallagher Risk Management Services Inc
3600 American Blvd W Ste 500
Bloomington, MN 55431-4502
(952)358-7500

Agreement Number	Effective Date	Expiration Date	Policy Type
CMC 1003094-6	06/01/2022	06/01/2023	Package

Payment for premium on agreement number CMC 1003094-6 is now past due. In accordance with the LMCIT Board of Trustees' Collection Policy, unless payment is received before **20 days after 09/06/2022** a 10% penalty will be applied. If payment, including penalty is not received before **35 days after 09/06/2022** your coverage will be cancelled. This is the only cancellation notice you will receive.

A minimum premium payment amount of $2,930.00 must be received prior to **20 days after 09/06/2022** , in order to prevent the 10% penalty fee that will be applied to the past due premium of this coverage.

Payment that does not include any applicable penalties is considered non-payment.

	Amount	Original Due Date
Past Due Installment(s)	$2,930.00	09/01/2022
Current Due Installment	$0.00	
Total Amount Due	$2,930.00	

If your payment for the Past Due Installment(s) and this notice has crossed in the mail, **please consider this a bill for your Current Due Installment(s). You will not receive another billing statement for the Current Due Installment(s) shown above.**

Remit payment to:
League of MN Cities Insurance Trust
c/o Berkley Risk Administrators
PO Box 581517
Minneapolis, MN. 55458-1517
Billing Questions: Call 612-766-3260
Lou Ann Gulbranson / Cash Management Supervisor
lgulbranson@berkleyrisk.com

Retain This Part For Your Records

DETACH AND RETURN THIS PAYMENT COUPON WITH YOUR PAYMENT

Account Number	Invoice Date	Agreement Number
40000782	09/06/2022	CMC 1003094-6

Payment Due 20 days after	Policy Balance
09/06/2022	$ 2,930.00
Minimum Amount Due	**Total Amount Due**
$ 2,930.00	$ 2,930.00
Amount Enclosed	

Please include Agreement Number on your check. Make checks payable to League of MN Cities Insurance Trust P&C.

This Notice Mailed To:

Pioneer-Sarah Creek Watershed Management Commission
3235 Fernbrook Lane N.
Plymouth, MN 55447-5325

Pioneer-
Sarah Creek
Watershed Management Commission

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763.553.1144 • Fax: 763.553.9326 • Email: judie@jass.biz
TECHNICAL OFFICE: 3601 Thurston Avenue • Anoka, MN 55303
Phone: 763-427-5860 • Fax: 763-427-0520 •
Email: andrewv@haa-inc.com

Promise Hill Residence
Independence, Project #2022-013

Project Overview: Promise Hill is a residential dwelling that is to be constructed along Pioneer Creek South of Highway 12. The project consists of removing the existing single family residence and constructing a new single family residence, garage, pool, and driveway. The project is expected to remove 0.75 acres of existing impervious surfacing and construct 0.70 acres of impervious surfacing resulting in a net decrease. The dwelling, septic system, and driveway construction will result in over 1 acre of disturbance. Silt fence is provided downstream from the driveway construction adjacent to the wetlands. Areas of steeply graded slopes will be protected with erosion control blanket and seeded with vegitation. The Commission's management plan requires compliance for Erosion Control (Rule E).

Applicant: Cramer Builders att Brandon Jurmy, 5500 Linoln Drive Unit 180, Edina, MN 55436. Phone: 612-772-8599. Email: brandon@lcramer.com

Agent/Engineer: Pierce Pini + Associates, Inc. Att Rhonda Pierce, PE, 9298 Central Ave NE, Blaine, MN 55434. Phone: 763-537-1311. Email: rhonda@piercepini.com

Exhibits:
1) PSCWMC Request for Plan Review received September 1, 2022
2) Project review fees for project, $300.00
3) Promise Hill Site Plan, dated August 31, 2022

Findings:
1) A complete application was received September 2, 2022. The initial 60-day decision period expires on November 1, 2022.

2) The applicant proposes to construct a residential dwelling, septic site, and driveway.

3) The City of Independence is the LGU in charge of administering the 1991 Wetland Conservation Act on this site.

   - No wetland impacts are proposed as part of this construction.

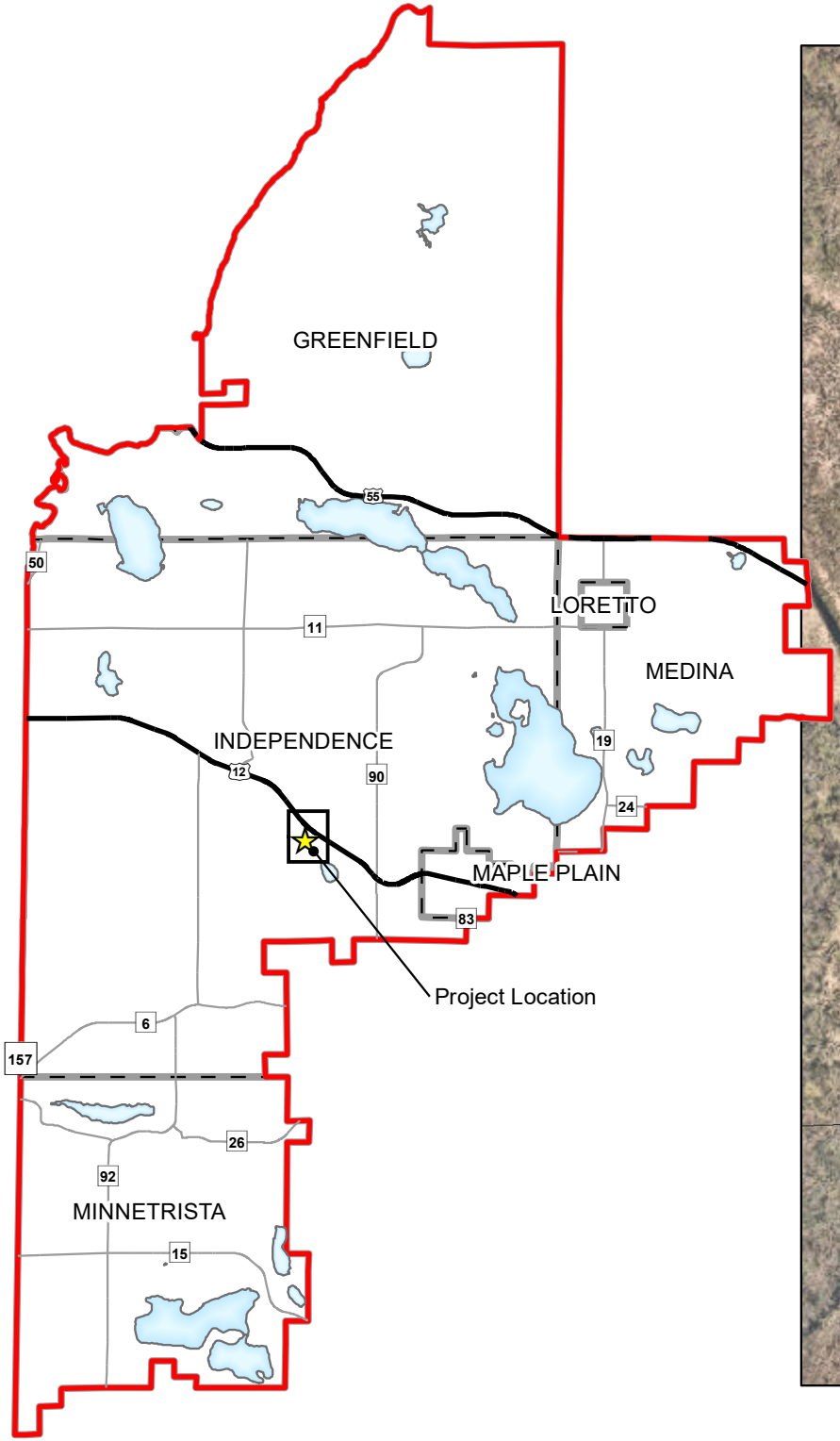
Erosion and Sediment Controls (Rule E):

4) Erosion and sediment control is required for land disturbing activities. The site is proposing to install sediment control in a permitter around the building and septic construction site. Erosion Control Blanket is to be installed on steeply sloped areas to mitigate erosion. Disturbed soils will be seeded/sodded following construction prior to the removal of sediment control BMPs. There are no proposed impacts to wetland buffers, nor are there proposed wetland impacts.

Recommendation: Approval.

Advisor to the Commission

Andrew Vistad, PE September 6, 2022


GREENFIELD
LORETTO
MEDINA
INDEPENDENCE
MAPLE PLAIN
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Project Location
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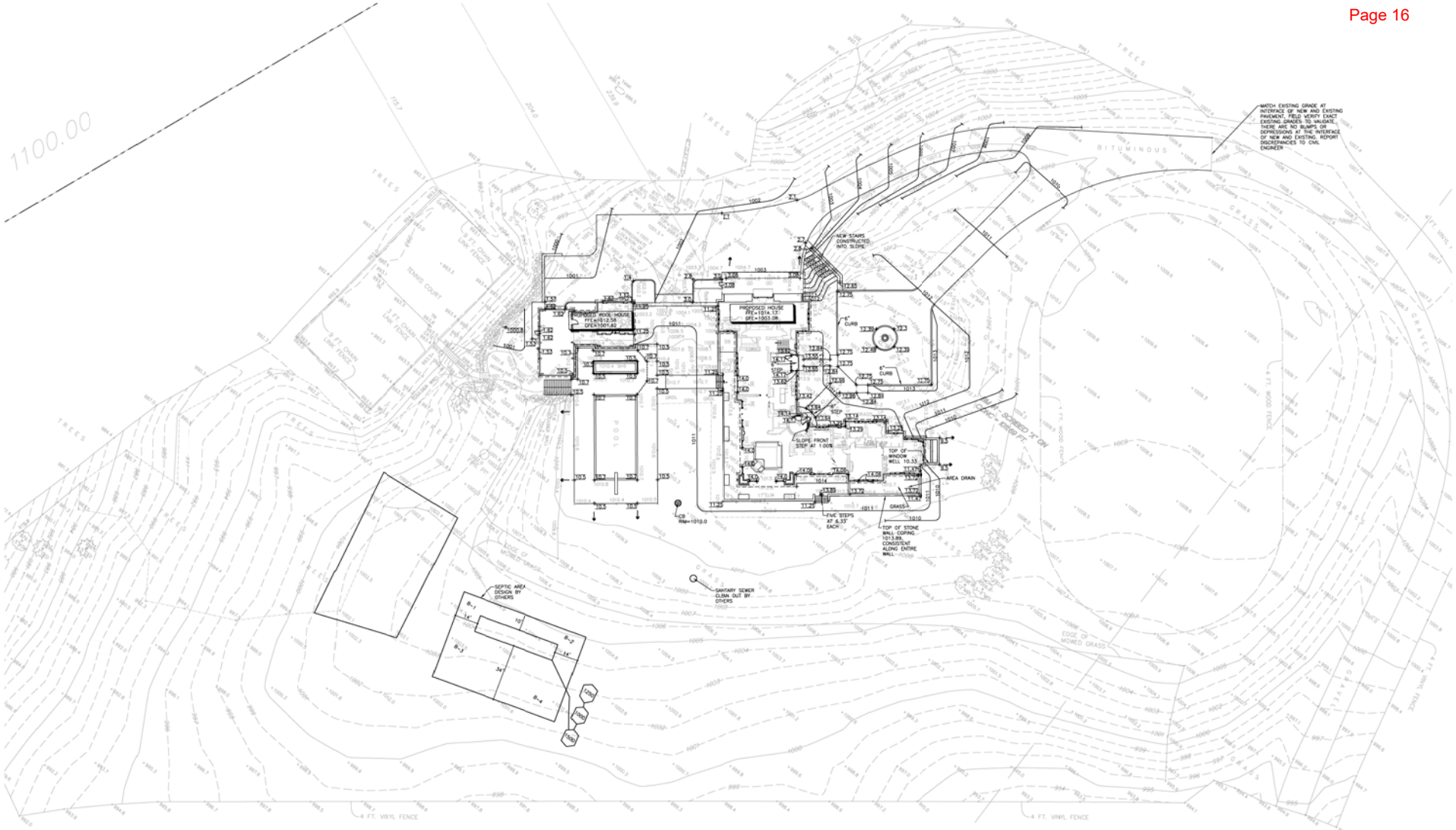
Highway 12
Project Location



TRUE NORTH PLAN NORTH

1 C400 GRADING AND DRAINAGE PLAN

0' 20' 40' 60'

1"=20'

TEA2 ARCHITECTS

PIERCE PINI & ASSOCIATES

Permit Issue

Project Name

Promise Hill Residence

7075 Highway 12 Independence, MN

Sheet Title

GRADING AND DRAINAGE PLAN

Issuances

PERMIT SET	08.31.22

Sheet Number

C400

Pioneer-
Sarah Creek
Watershed Management Commission

ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
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TECHNICAL OFFICE: 3601 Thurston Avenue • Anoka, MN 55303
Phone: 763-427-5860 • Fax: 763-427-0520 •
Email: andrewv@haa-inc.com

Hidden Lake Channel Excavation
Independence, Project #2022-014

Project Overview: Hidden Lake Channel Excavation is a project located within Lake Independence on the western shore line. A channel was permitted and excavated in the 1960s with provisions for future maintenance. Sediment has accumulated within the channel and maintenance is proposed. The accumulated sediment will be removed and land applied on adjacent property. The channel will be excavated from 0.8 feet to 2.1 feet to produce a channel bottom elevation of 952.8. It is estimated that 2,138 cubic yards of sediment will be removed. The chosen location was reviewed by the DNR area hydrologist to ensure that the sediment is placed outside the 100-year floodplain. The Commission's management plan requires compliance for Erosion Control (Rule E).

Applicant: Christian Dahlberg, 3010 Lindgren Lane, Independence, MN 55359. Phone: 651-402-5999 Email: chris@dahlbergs.net

Agent/Engineer:

Exhibits:
1) PSCWMC Request for Plan Review received September 7, 2022
2) Project review fees for project, $400.00
3) Hidden Lake Site Plan, dated September 6, 2022

Findings:
1) A complete application was received September 7, 2022. The initial 60-day decision period expires on November 6, 2022.

2) The City of Independence is the LGU in charge of administering the 1991 Wetland Conservation Act on this site.

   - No wetland impacts are proposed as part of this construction.

Erosion and Sediment Controls (Rule E):

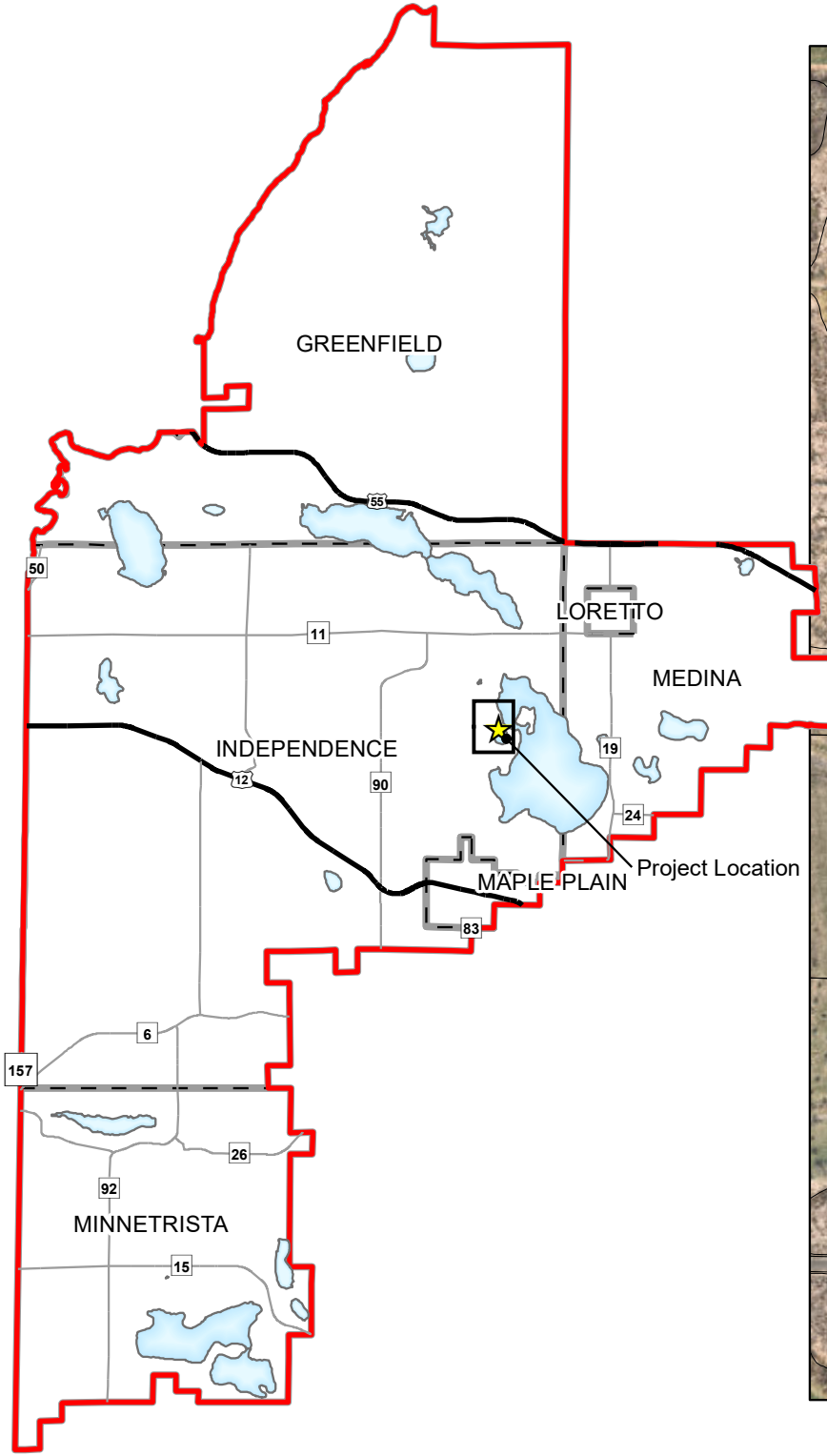
3) Erosion and sediment control will be provided for the proposed channel excavation. Work within Lake Independence will be protected with floating silt curtain to contain any sediment that is generated during excavation. The provided plan depicts industry accepted BMPs according to accepted placement.
4) Removed sediment will be placed adjacent to the excavated channel out side the 100-year flood plain. The spoils pile will have permitter silt fence to contain any sediment until vegetation is established.

Recommendation: Approval.

Advisor to the Commission

Andrew Vistad, PE

September 7, 2022
Date


GREENFIELD
LORETTO
MEDINA
INDEPENDENCE
MAPLE PLAIN
MINNETRISTA
Project Location
55
50
11
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157
26
92
15

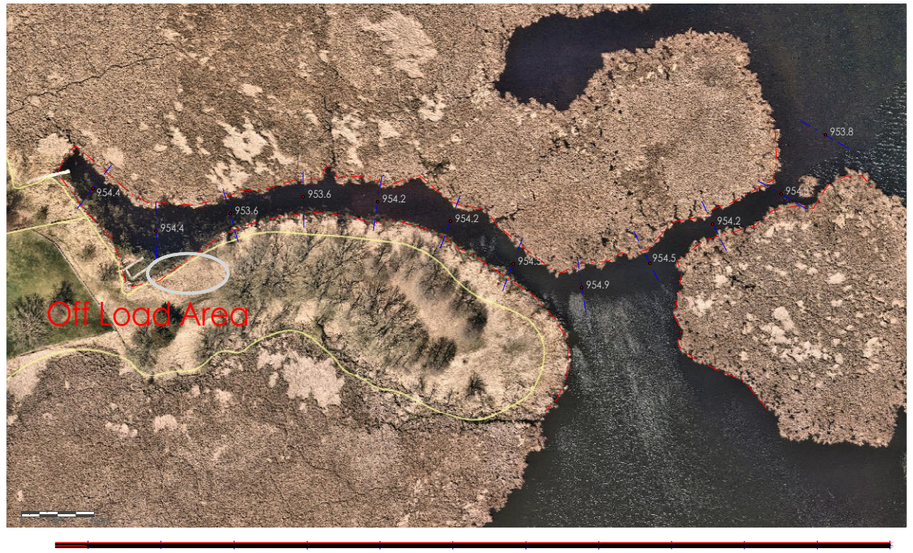

Pete Drive
Independence
Project Location
Lindgren Lane
Island Drive

Channel 1

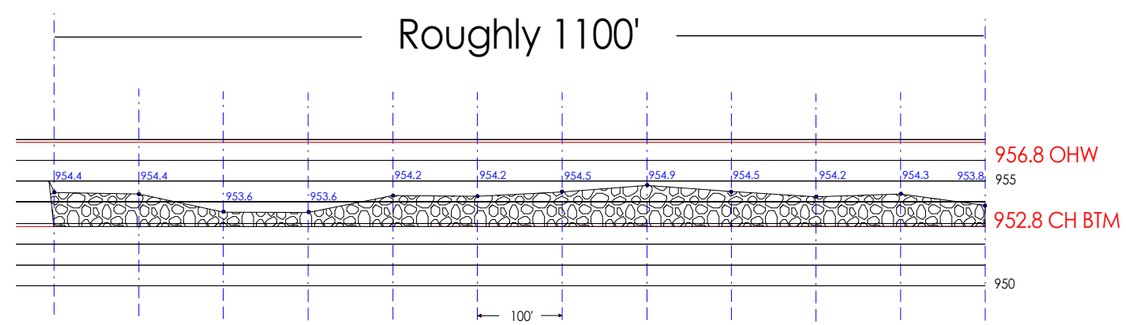
Collected Points

To Scale

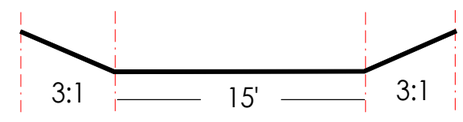
GIS



Not to Scale



2138yards of Dredged Material



Bottom of Channel

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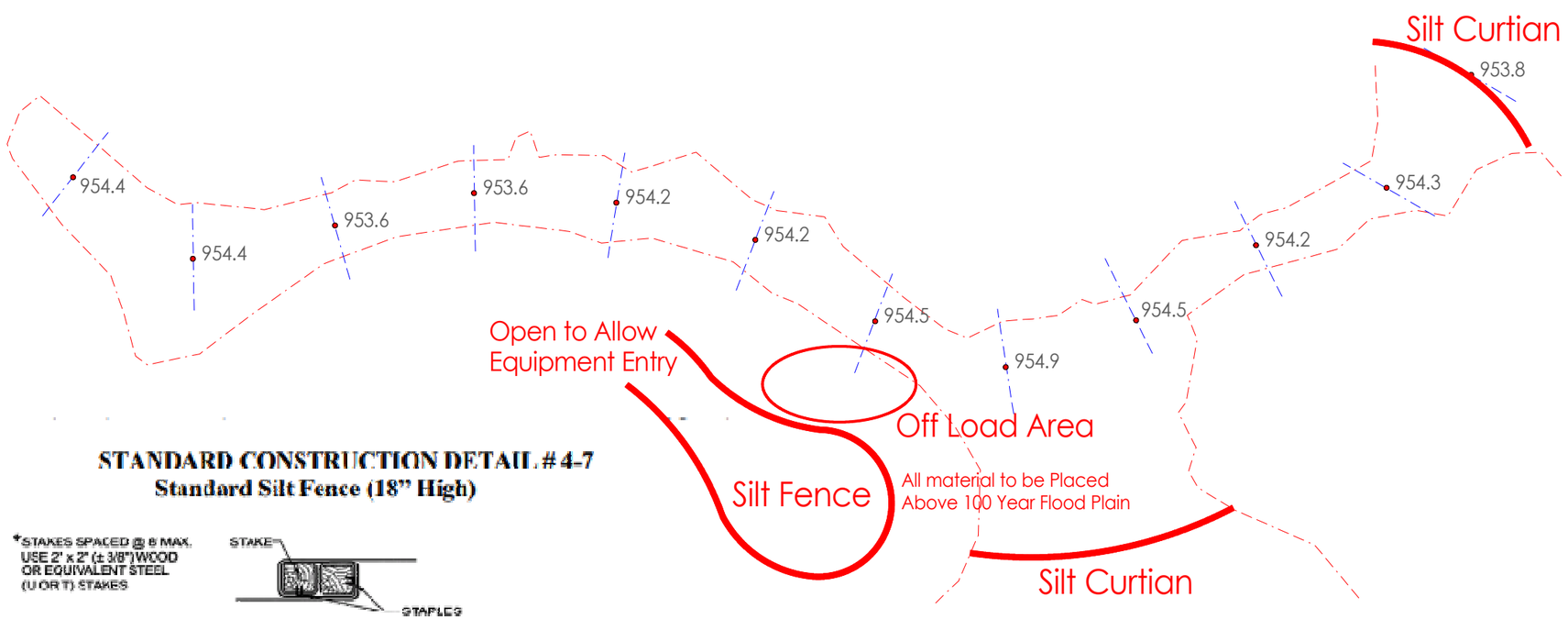
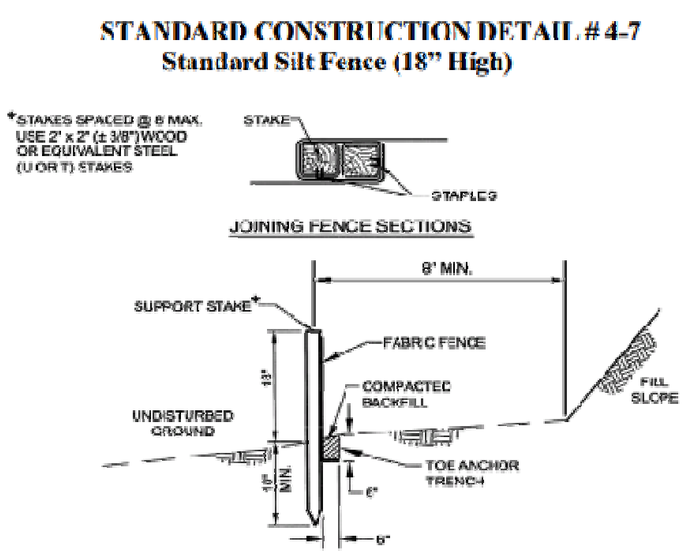
Revision #: Date: 6/15/2022	Landscape Plan: Lake Independence
Scale: 1:2500	Landscape Design by: Austen Adriaens NS Waterways

Erosion Plan





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NSWATERWAYS.COM

Revision #: Date: 9/6/2022	Landscape Plan: Lake Independence
Scale: 1" = 100'	Landscape Design by: Austen Adriaens NS Waterways

Pioneer-
Sarah Creek
Watershed Management Commission

ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
763.553.1144 • Fax: 763.553.9326 • Email: judie@jass.biz
TECHNICAL OFFICE: 3601 Thurston Avenue • Anoka, MN 55303
Phone: 763-427-5860 • Fax: 763-427-0520 •
Email: andrewv@haa-inc.com

Schaffer Residence
Greenfield, Project #2022-015

Project Overview: Gordon James Construction have submitted a permit application for the construction of a driveway, residential dwelling, lot grading, and septic system. The residential lot is located along 78th Lane west of Greenfield Road. The property is located on the northern shore of Hafften Lake. The dwelling, septic system, lot grading, and driveway construction will result in over 1 acre of disturbance. Silt fence is provided downstream from the driveway construction adjacent to the wetlands. The Commission's management plan requires compliance for Erosion Control (Rule E).

Applicant: Gordon James Construction att Jeremy, 5159 Main Street East, Maple Plain, MN 55359. Phone: 952-215-2763. Email: Jeremy@gordon-james.com

Agent/Engineer:

Exhibits:
1) PSCWMC Request for Plan Review received September 8, 2022
2) Project review fees for project, $300.00
3) Burgess Site Plan, dated September 1, 2022

Findings:
1) A complete application was received September 8, 2022. The initial 60-day decision period expires on November 7, 2022.

2) The applicant proposes to construct a residential dwelling, septic site, and driveway.

3) The City of Greenfield is the LGU in charge of administering the 1991 Wetland Conservation Act on this site.

   - No wetland impacts are proposed as part of this construction.

Erosion and Sediment Controls (Rule E):

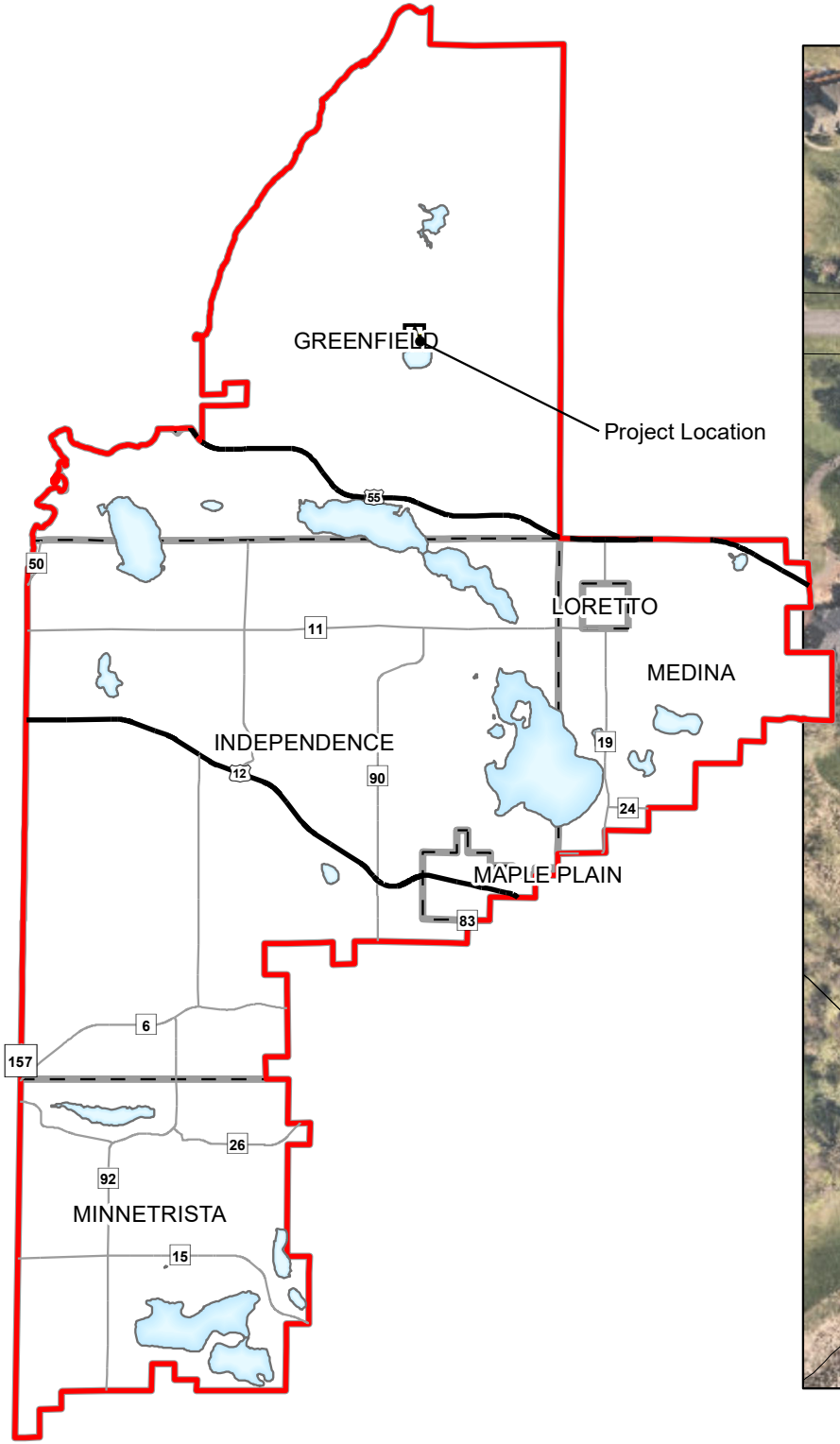
4) Erosion and sediment control is required for land disturbing activities. The site is proposing to install sediment control in a permitter around the building and septic construction site. A portion of the lot will be graded and silt fence is proposed down gradient of the proposed disturbed area. Disturbed soils shall be seeded following construction prior to the removal of sediment control BMPs. There are no proposed impacts to wetland buffers, nor are there proposed wetland impacts.

Recommendation: Approval.

Advisor to the Commission

Andrew Vistad, PE

September 8, 2022
Date


GREENFIELD
Project Location
55
50
11
LORETTO
MEDINA
INDEPENDENCE
12
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MAPLE PLAIN
83
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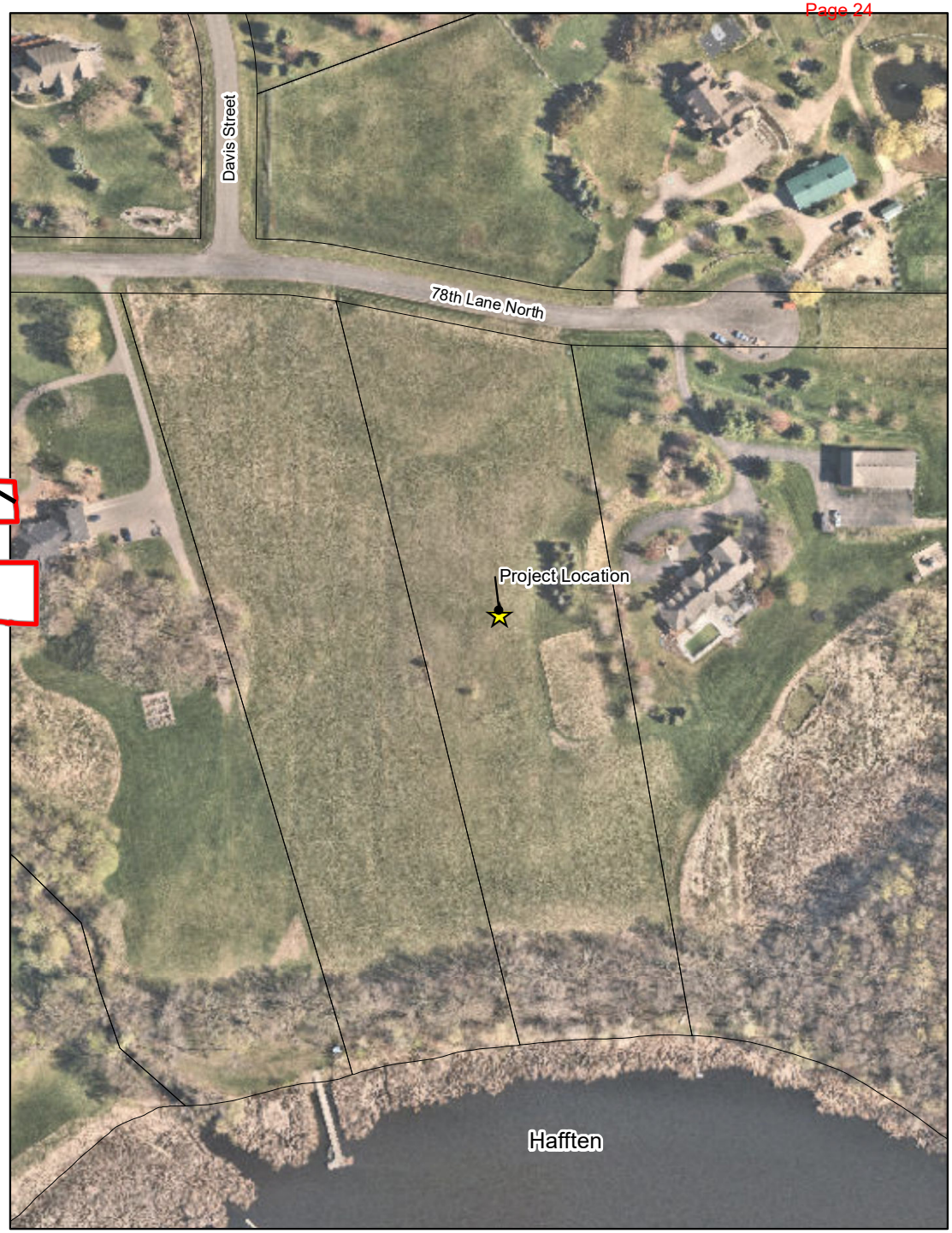
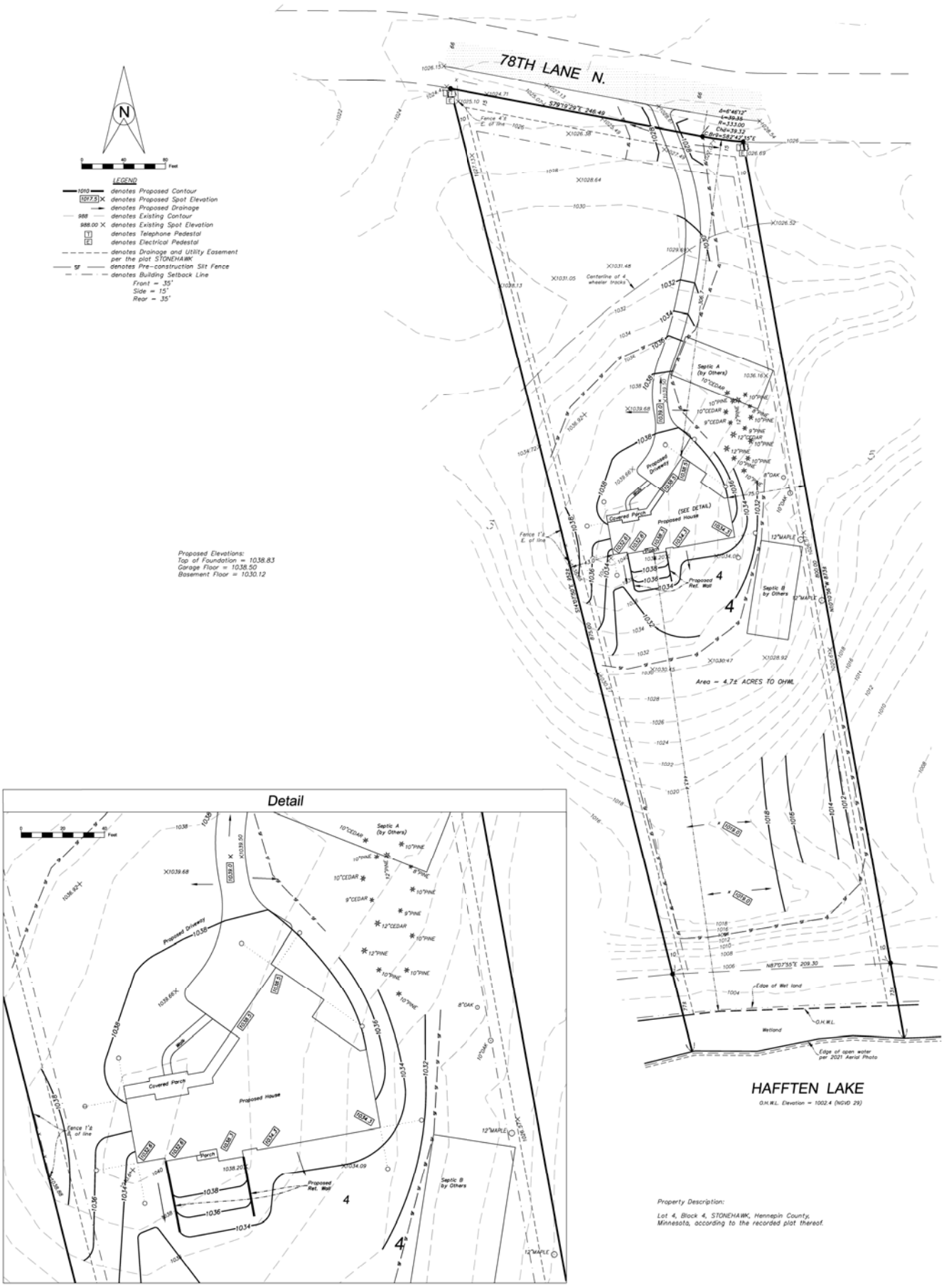

Davis Street
78th Lane North
Project Location
Hafften

Building Permit Survey



Building Permit Survey on Lot 4, Block 4 STONEHAWK, Hennepin County, Minnesota

Revised:
7-22-22 – T.R.K. – UPDATE HOUSE
9-01-22 – B.M.H. – SILT FENCE

I hereby certify that this survey, plan, or report 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.

Paul E. Otto
License #40062 Date: 9-1-22

Requested By: Gordon James Construction

Date:	Drawn By:	Scale:	Checked By:
3-2-22	T.R.K.	1"=40'	P.E.O.

OTTO ASSOCIATES
Engineers & Land Surveyors, Inc.
www.ottoassociates.com
9 West Division Street
Buffalo, MN 55313
(763)682-4727
Fax: (763)682-3522

● denotes iron monument found
○ denotes 1/2 inch by 14 inch iron pipe set and marked by License #40062/53642

Project No. 22-0135

Pioneer-Sarah Creek Watershed Management Commission

ADMINISTRATIVE OFFICE: 3235 Fernbrook Lane N • Plymouth, MN 55447
763.553.1144 • Fax: 763.553.9326 • Email: judie@jass.biz
TECHNICAL OFFICE: 3601 Thurston Avenue • Anoka, MN 55303
Phone: 763-427-5860 • Fax: 763-427-0520 •
Email: andrewv@haa-inc.com

West Lindgren Channel Excavation
Independence, Project #2022-016

Project Overview: West Lindgren Channel Excavation is a project located within Lake Independence on the western shore line. A channel was permitted and excavated in the 1960s with provisions for future maintenance. Sediment has accumulated within the channel and maintenance is proposed. The accumulated sediment will be removed and land applied on adjacent property. The channel will be excavated from 0.2 feet to 1.9 feet to produce a channel bottom elevation of 952.8. It is estimated that 1,338 cubic yards of sediment will be removed. The chosen location will be reviewed by the DNR area hydrologist to ensure that the sediment is placed outside the 100-year floodplain. The Commission's management plan requires compliance for Erosion Control (Rule E).

Applicant: Christian Dahlberg, 3010 Lindgren Lane, Independence, MN 55359. Phone: 651-402-5999 Email: chris@dahlbergs.net

Agent/Engineer:

Exhibits:
1) PSCWMC Request for Plan Review received September 8, 2022
2) Project review fees for project, $400.00
3) Hidden Lake Site Plan, dated September 6, 2022

Findings:
1) A complete application was received September 8, 2022. The initial 60-day decision period expires on November 7, 2022.

2) The City of Independence is the LGU in charge of administering the 1991 Wetland Conservation Act on this site.

   - No wetland impacts are proposed as part of this construction.

Erosion and Sediment Controls (Rule E):

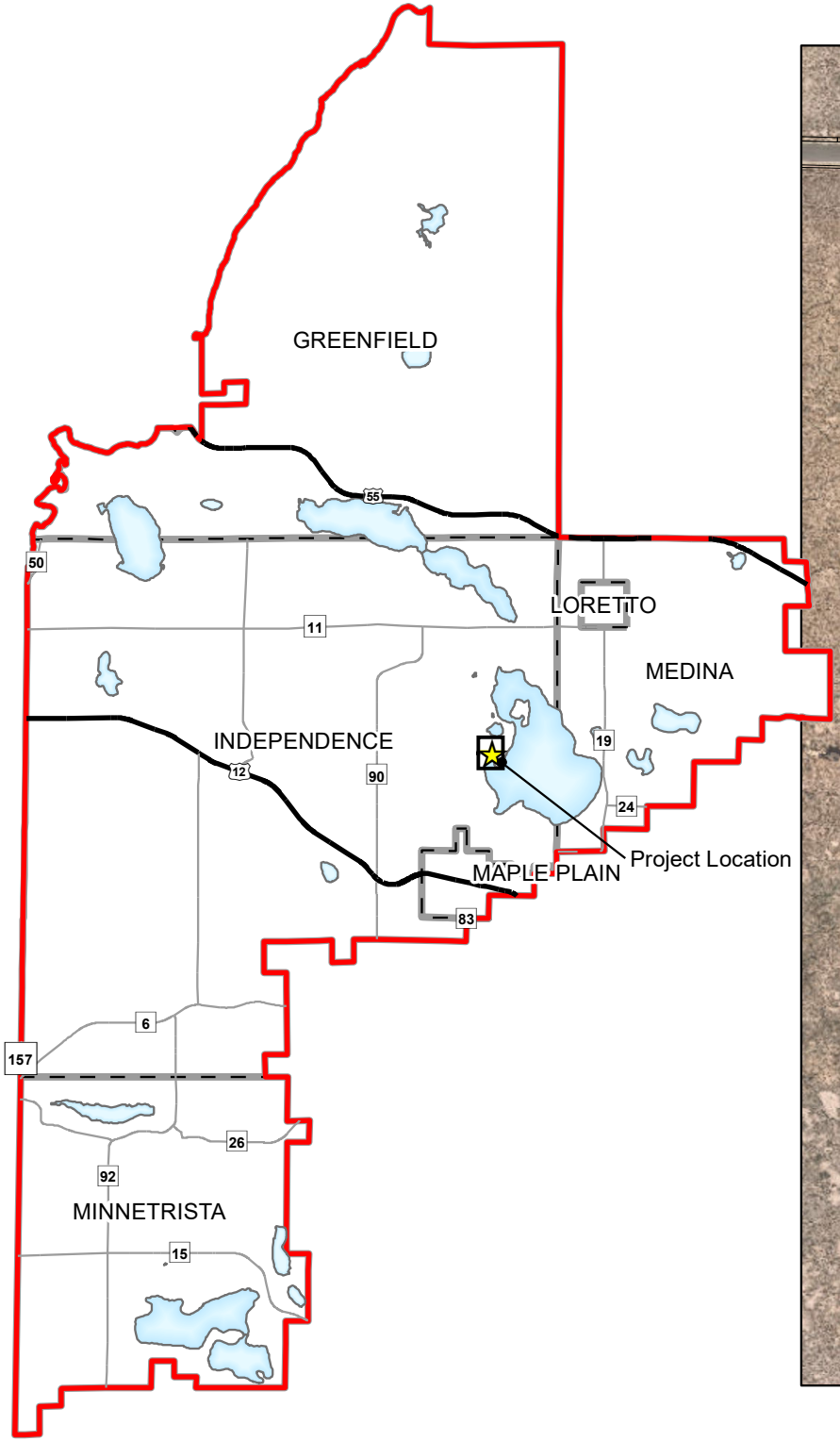
3) Erosion and sediment control will be provided for the proposed channel excavation. Work within Lake Independence will be protected with floating silt curtain to contain any sediment that is generated during excavation. The provided plan depicts industry accepted BMPs according to accepted placement.
4) Removed sediment will be land applied at an adjacent location yet to be determined. The location of the land applied spoils will be reviewed by the DNR area hydrologist to ensure the fill is not placed within the 100-year floodplain.

Recommendation: Approval contingent upon removed sediment location to be reviewed by DNR area hydrologist.

Advisor to the Commission

Andrew Vistad, PE

September 8, 2022
Date


GREENFIELD
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INDEPENDENCE
MAPLE PLAIN
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Project Location
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Lindgren Lane
Island Drive
Project Location
Independence

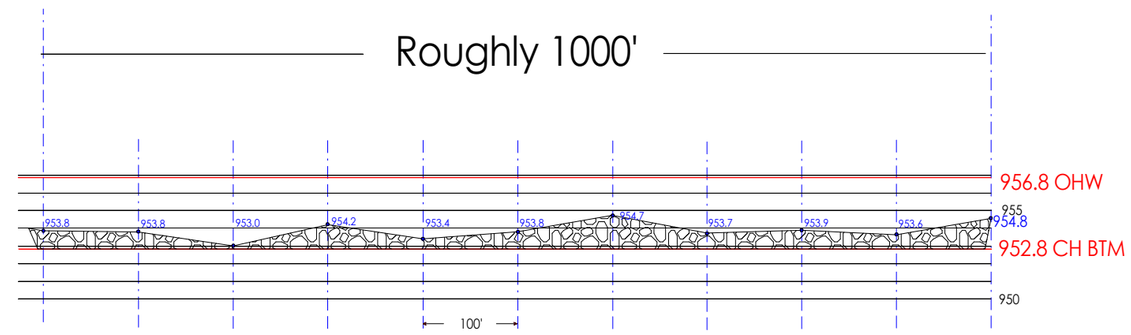
Channel 3

To Scale

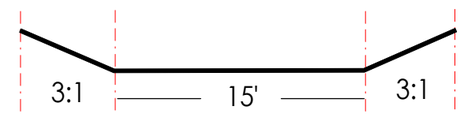
Collected Points

GIS

Not to Scale



1338yards of Dredged Material

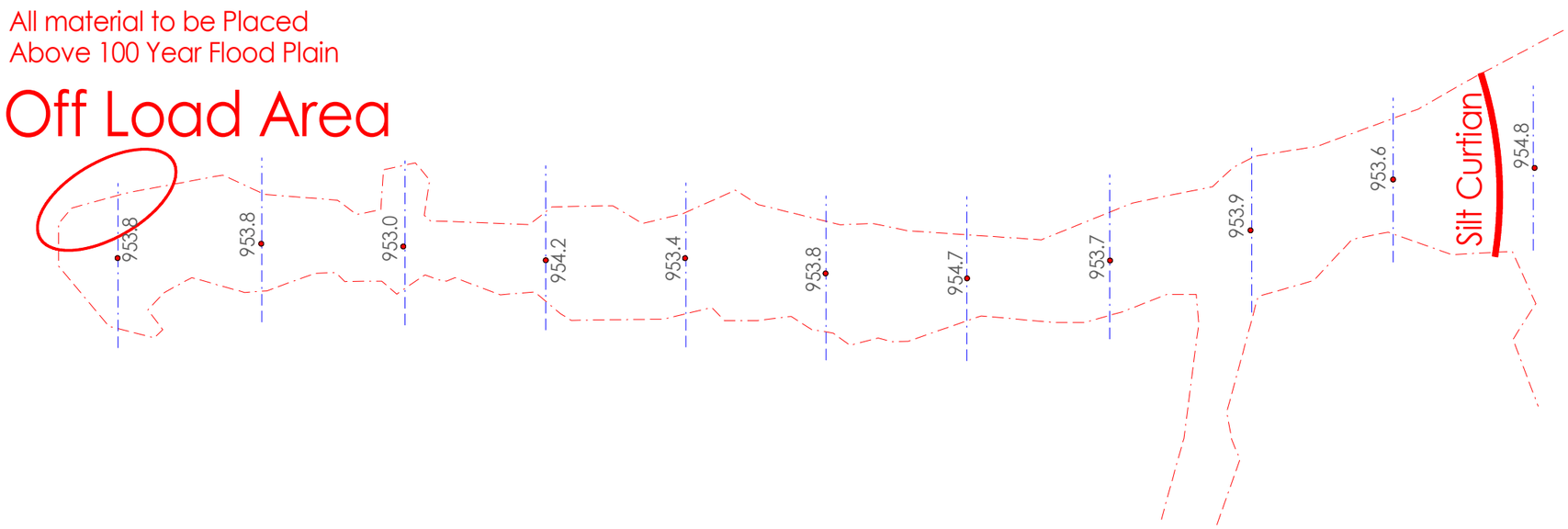


Bottom of Channel

NSWATERWAYS.COM

Revision #: Date: 6/15/2022	Landscape Plan: Lake Independence
Scale: 1:2500	Landscape Design by: Austen Adriaens NS Waterways

Erosion Plan



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NSWATERWAYS.COM

Revision #: Date: 9/6/2022	Landscape Plan: Lake Independence
Scale: 1" = 10'0'	Landscape Design by: Austen Adriaens NS Waterways

ThreeRivers
PARK DISTRICT

To: Pioneer-Sarah Creek Watershed Management Commissioners

From: Brian Vlach
Senior Manage of Water Resources

Date: September 8, 2022

Subject: Clean Water Fund Grant Application

Recommended Action	Informational Item that requires no action

Three Rivers Park District is requesting Board of Water and Soil Resources (BWSR) Clean Water Legacy Grant Funds on behalf of Pioneer-Sarah Creek Watershed Management Commission (PSCWMC) to secure funding on implementation of the Whaletail Lake-South Basin Alum Treatment. The BWSR requires an alum feasibility study to be submitted as an attachment with the grant application. The project has been identified in the PSCWMC Capital Improvement Program and will be a partnership with the City of Minnetrista, Hennepin County, and Three Rivers Park District. Three Rivers Park District will be the lead on implementation and administration of the alum treatment.

Documents for the Commission review and provide additional information about the project include the following:

- Whaletail Lake-South Basin Alum Treatment Feasibility Study. The feasibility study determined alum dosage, application area/strategy, load reduction, in-lake response, alum longevity, and alum application cost benefit analysis. **The feasibility study has received preliminary approval from the MPCA to implement the alum treatment**.

- BWSR Clean Water Legacy Grant Fund Application – Submitted

The feasibility study was included as an attachment to the BWSR Clean Water Legacy Grant Fund Application that was submitted on August 19, 2022. The board packet includes the submitted grant application and the feasibility study will be posted on the Commission's website.

BWSR

Projects and Practices Application

Grant Name - Whaletail Lake-South Basin Alum Treatment
Grant ID - C23-4975
Organization - Pioneer-Sarah Creek WMC

Allocation	**Projects and Practices 2023**	**Grant Contact**	**Brian Vlach**
Total Grant Amount Requested	$405,000.00	**County(s)**	Hennepin
Grant Match Amount	$101,250	**12 Digit HUC(s)**	070102050704
Required Match %	25%	**Applicant Organization**	Pioneer-Sarah Creek WMC
Calculated Match %	25%	**Application Submitted Date**	
Other Amount			
Project Abstract	Whaletail Lake (MDNR 27-018400) is located within the jurisdictional boundaries of Pioneer-Sarah Creek Watershed Management Commission (PSCWMC). The lake is considered having two distinct basins relative to the Minnesota water quality nutrient standards with the South basin (MDNR 27-018402) classified as a deep lake (156 acres; max depth 23 feet; & 66% littoral) and the North basin (MDNR 27-0180401) classified as a shallow lake (370 acres; max depth 10 feet; & 100% littoral). The lake was listed on the MPCA's 303(d) impaired list for aquatic recreation due to excessive nutrients (South basin-2006 & North Basin-2008). Whaletail Lake was included in the Watershed Restoration and Protection Strategies (WRAPS) and Total Maximum Daily Load (TMDL) study completed by the PSCWMC in 2017. The WRAPS/TMDL studies identified internal loading as comprising approximately 80% of the total phosphorus load affecting surface water quality of the Whaletail Lake-South basin and recommended an alum treatment to achieve the MPCA water quality standards. The goal of treating Whaletail Lake-South basin with alum is to reduce the phosphorus by at least 180 pounds/year to meet the load reductions identified in the WRAPS/TMDL report. The alum treatment will reduce internal P-load (381 pounds) to achieve in-lake water quality standards for at least a 20-year period. As a secondary benefit, improvements to		

	the in-lake phosphorus concentration for the South basin would effectively reduce the phosphorus load to the North basin by 52 pounds/year. The estimated cost of the Whaletail Lake-South basin alum treatment project is $506,250. The project will be completed as a partnership between the PSCWMC (grant applicant) ($50,313), Three Rivers Park District (TRPD-project lead) ($29,363), and City of Minnetrista ($21,575). The PSCWMC is requesting $405,000 from CWF Project & Practices Grant Program with a 25% match ($101,250) of the requested funds shared among the three project partners.
Proposed Measurable Outcomes	The Whaletail Lake-South basin alum treatment will reduce internal phosphorus load by at least 180 pounds/year to meet the required load reduction necessary to achieve MPCA in-lake water quality standards for a period of 20-years.

Narrative

Questions & Answers
Does your organization have any active CWF competitive grants? If so, specify FY and percentage spent. Also, explain your organization's capacity (including available FTEs or contracted resources) to effectively implement additional Clean Water Fund grant dollars.
The PSCWMC received $416,000 in Clean Water Grant funding from the Board of Water and Soil Resources (BWSR) for the Baker Park Reserve Campground Ravine Stabilization Project (Grant ID #: C18-9941) in 2018. The term of the original grant agreement was from April 19, 2018 to December 31, 2020. Three Rivers Park District (TRPD) was the project lead that administered the completion of the project on behalf of the PSCWMC. The project was approved for final completion following site inspection on May 29, 2020. The project spent $498,628.21 (96%) of the budgeted amount of $520,000. The PSCWMC requested a grant extension to use the remaining funds ($21,371.79) for installation of additional projects identified in the Lake Independence watershed. BWSR approved two amendments extending the Original Grant Agreement expiration date to December 31, 2021 and 2022. Hennepin County has been using the remaining funds on projects that provide additional load reduction to Lake Independence. The final reporting for these projects will complete the extension of the grant contract in 2022. **The TRPD will be administering the Whaletail Lake-South basin alum treatment project on behalf of the PSCWMC. The Senior Water Resources Manager for TRPD successfully completed the Fish Lake Alum Treatment project (Grant ID #: C17-1501) that received $200,000 in Clean Water Grant funding from BWSR. Fish Lake is meeting state water quality standards and will be removed from the MPCA impaired water's list for excessive nutrients in 2024. TRPD has the resources (staff with technical expertise) and capacity to effectively administer/implement additional BWSR Clean Water Grant Funds. TRPD completed the Whaletail Lake-South basin alum feasibility study as part of the grant application. TRPD has 5 FTE staff dedicated to the administration/monitoring of an alum treatment. The alum application would be contracted with a consultant that has successfully provided similar services on past projects.**
Water Resource: Identify the water resource the application is targeting for water quality protection or restoration.
Whaletail Lake (MDNR #27-018400) is located in the City of Minnetrista within the jurisdictional boundaries of Pioneer-Sarah Creek Watershed

Questions & Answers
Management Commission (PSCWMC). The lake is considered as having two distinct basins relative to the MPCA water quality nutrient standards with the South basin (MDNR #27-018402) classified as a deep lake (156 acres; maximum depth of 23 feet; and littoral area of 66%) and the North basin (MDNR #27-0180401) classified as a shallow lake (370 acres; maximum depth of 10 feet; and littoral area of 100%). The lake was listed on the MPCA's 303(d) impaired list for aquatic recreation due to excessive nutrients (South basin-2006 & North Basin-2008). A WRAPS/TMDL study was completed for Whaletail Lake as part of the Pioneer-Sarah Creek Watershed WRAPS/TMDL that was approved in 2017. The approved WRAPS/TMDL study recommended an alum treatment to control internal phosphorus load as a management approach to improve water quality of Whaletail Lake-South basin. This project proposes an alum treatment that will target the long-term control of internal load due to sediment phosphorus release in the South basin of Whaletail Lake. The alum treatment will significantly reduce internal load to meet the required TMDL load reduction necessary to achieve MPCA in-lake water quality standards. Since the completion of the TMDL, the water quality of the Whaletail Lake-North basin has noticeably improved and has been meeting the phosphorus standard the past 5-years. The long-term improvement/restoration of the water quality for the South basin would effectively reduce the phosphorus load to the North basin of Whaletail Lake. The improved water quality of the South basin would provide a secondary benefit that ensures the North basin will continue to meet phosphorus standards. The project will essentially target the restoration of the water quality for the South basin while further protecting the water quality of the North basin.
Prioritization (Relationship to Plan): Question 1. (17 points): (A) Describe why the water resource was identified in the plan as a priority resource. For the proposed project, identify the specific water management plan reference by plan organization (if different from the applicant), plan title, section, and page number.
Whaletail Lake is identified as a sentinel lake within the recently approved PSCWMC 4th Generation Watershed Management Plan (2020). The lake has a DNR operated public access located on the North basin. Three Rivers Park District operates Gales Woods Farm Regional Park located on the South basin consisting of 1.9 miles of undeveloped natural shoreline (29% of the entire lake shoreline) providing canoe access, a fishing pier, and hiking trails. The lake has become a popular fishing and boating destination in the western Hennepin County area near the City of Minnetrista. A WRAPS/TMDL study was completed for Whaletail Lake as part of the Pioneer-Sarah Creek Subwatershed WRAPS and TMDL Study that was approved by EPA in 2017. The proposed alum treatment project has been identified in the PSCWMC 4th Generation Plan as an approved CIP project to improve water quality. PSCWMC 4th Generation Watershed Management Plan (2020) Executive Summary 4th Generation Management Plan Priorities - Delist South Whaletail Lake (pgs. ES-4-ES-6) Section 2.2.2 Fish & Wildlife (pg. 2-5) Section 2.3.2 Recreation (pg. 2-8) Section 2.4.1 Lakes (pg. 2-12 - 2-14) Section 3.4.3 TMDL Implementation (pg. 3-10 - 3-12) Section 4.1.1 Problem ID (pg. 4-1 - 4-2) Section 4.1.2 Priority Delist South Whaletail Lake (pgs. 4-3)

Questions & Answers
Section 4.2.2 Water Quality (pg. 4-6) **Section 4.3.2 Monitoring (pg. 4-10 - 4-11)** **Section 4.3.7 CIP South Whaletail Alum Treatment (pg. 4-14 - 4-15)** **Pioneer-Sarah Creek Subwatershed WRAPS Report** **Section 2.1 Lakes (pg. 12-14)** **Section 2.3 Stressors & Sources (pg. 16-17)** **Section 2.4 TMDL Summary (pg. 17-18)** **Section 4.0 Monitoring (pg. 46)** **Pioneer-Sarah Creek Subwatershed TMDL Report** **Executive Summary (pg. X)** **Section 1.2 Waterbody ID (pg. 3)** **Section 3.2 Lakes (pg. 7)** **Section 3.4 Land Use & Subwatershed (pg. 9-11)** **Section 3.6 Water Quality (pg. 16-17)** **Section 4.2.6 TMDL Summary (pg. 36-38)** **Section 7.1 Lake Monitoring (pg. 51)** **Appendix A-F (pg. 64-275)**
Prioritization (Relationship to Plan): Question 1, continued: (B) In addition to the plan citation, provide a brief narrative description that explains whether this application fully or partially accomplishes the referenced activity.
The project proposal treating the South basin of Whaletail Lake with alum will fully accomplish the load reductions (180 pounds of phosphorus) called for as part of the WRAPS/TMDL study. The decrease in internal loading generated by the project (estimated 381 pounds of P-load reduction) will have significant lake-wide benefits. The alum dosage was estimated as the concentration required to bind at least 90% of the redox-sensitive phosphorus released from the upper 6-cm sediment layer to ensure the long-term effectiveness of the treatment for a period of at least 20-years. The alum treatment will bring the South basin of Whaletail Lake into compliance with state water quality standards. The alum treatment for the South basin will also provide a secondary water quality benefit for the North basin of Whaletail Lake. The long-term water quality improvements for the South basin would effectively reduce the phosphorus load (52 pounds) to the North basin of Whaletail Lake. The phosphorus load reduction due to the alum treatment in the South basin represents approximately 24% of the load reduction (identified in the WRAPS/TMDL study) necessary for the North basin to meet state phosphorus standards. Since the completion of the WRAPS/TMDL study, the most recent monitoring data for the North basin has been meeting state phosphorus standards the past 5-years despite still being impaired for chlorophyll-a and water clarity. The long-term water quality improvement of the South basin will help ensure

Questions & Answers
that the North basin will continue to meet phosphorus standards.
Prioritization (Relationship to Plan): Question 1, continued: (C) Provide weblinks to all referenced plans.
Pioneer-Sarah Creek Watershed Management Commission 4th Generation Watershed Management Plan http://www.pioneersarahcreek.org/uploads/5/8/3/0/58303031/psc_4th_gen_plan_final_december_2020.pdf Pioneer-Sarah Creek Subwatershed Watershed Restoration and Protection Strategy Report (North and South Fork Crow Major Watersheds) https://www.pca.state.mn.us/sites/default/files/wq-ws4-32a.pdf Pioneer-Sarah Creek Watershed Total Maximum Daily Load Study https://www.pca.state.mn.us/sites/default/files/wq-iw8-55e.pdf
Prioritization (Relationship to Plan): Question 2. (3 points): (A) Describe how the resource of concern aligns with at least one of the statewide priorities referenced in the Nonpoint Priority Funding Plan (also referenced in the "Projects and Practices" section of the RFP). (B) Describe the public benefits resulting from this proposal from both a local and state perspective.
A) The project statewide priorities include: 1) Restore those waters that are closest to meeting state water quality standards. 2) Restore and protect water resources for public use and public health. The mean June-September total phosphorus concentration for the South basin of Whaletail Lake from 2017-2021 was 42 ug/L compared to the state standard of 40 ug/L for deep lakes in the North Central Hardwood Forest Ecoregion. The range of yearly summertime mean phosphorus concentrations over that period was 35-50 ug/L. These concentrations suggest that water quality in the South basin varies moderately from year to year and it is appropriate to take management measures to assure the lake will continue to meet water quality standards even at the high end of future year-to-year fluctuations. B) Whaletail Lake is a key feature of Gale Woods Farm-Regional Park that is a 410-acre park operated by Three Rivers Park District near the City of Minnetrista. Metropolitan Council annual use estimate for Gale Woods Farm was approximately 98,000 public visitors in 2021. Gale Woods Farm features a unique educational opportunity that offers public programs for visitors to gain an understanding of agriculture, food production, and land stewardship. The park includes water based recreational features consisting of 1.9 miles (29%) of undeveloped natural shoreline providing canoe access, a fishing pier, and hiking trails. Other park amenities that have a spectacular view of the lake include picnic areas, a pavilion, and numerous hiking trails. TRPD recently just received approval to provide handicap accessibility for the canoe access and fishing pier area. The lake has become a popular fishing and boating destination in the western Hennepin County area. The lake has excellent fishing opportunities for largemouth bass, northern pike, crappie, and sunfish. The project will remove the lake from the impaired water's list providing both statewide and local community benefit.

Questions & Answers
Targeting: Question 3. (15 points): Describe the methods used to identify, inventory, and target the root cause (most critical pollution source(s) or threat(s)). Describe any related additional targeting efforts that will be completed prior to installing the projects or practices identified in this proposal.
The PSCWMC WRAPS/TMDL study included an analysis of phosphorus (P) loading sources to Whaletail Lake. The watershed load/water budget for each basin was estimated using the Generalized Watershed Loading Function (GWLF) model. The internal load was estimated using the Nurnberg approach based on P-sediment release rates calculated from the incubation of intact sediment cores. Atmospheric P-loads were set to a default value (0.27 lbs/yr/acre) of lake surface area. Estimated source P-load was input into an in-lake response model (BATHTUB) and calibrated to water quality monitoring data using the Canfield-Bachman algorithm. The in-lake response model indicated internal P-loading (423 lbs) represented 80% of the total P-load (523 lbs) affecting the surface water quality for the South basin; and internal P-loading (291 lbs) for the North basin was less significant representing 36% of the total P-load (801 lbs). Based on sediment core P-release rates and P-fractionation chemistry analysis, the South basin has a higher redox-sensitive P-flux that is ideal to target with an alum treatment application. In contrast, the North basin has a lower redox-sensitive P-flux and a higher P-sediment organic matter content that is not suitable for long-term alum effectiveness. The TMDL study identified an alum treatment as the recommended most cost-effective management approach to improve the water quality of the South basin. Additional management activities targeting other sources of P-loading (watershed loading, curly-leaf pondweed senescence, and carp) were considered, but monitoring data was shown to have negligible impact on the longevity of a prescribed alum treatment or affecting surface water quality. An adaptive management approach may be needed for any future changes in loading from these other sources of loading. The details of an alum feasibility study that includes a long-term post-alum monitoring plan is attached as part of this application.
Targeting: Question 4. (10 points): How does this proposal fit with complementary work that you and your partners are implementing to achieve the goal(s) for the priority water resource(s) of concern? Describe the comprehensive management approach to this water resource(s) with examples such as: other financial assistance or incentive programs, easements, regulatory enforcement, or community engagement activities that are directly or indirectly related to this proposal.
The Whaletail Lake-South basin alum treatment is identified as a CIP project in the PSCWMC 4th Generation Watershed Management Plan. The PSCWMC is committed to implementing projects in the Watershed Management Plan and WRAPS/TMDL reports. Since the Pioneer-Sarah Creek watershed has a significant amount of agricultural land use, PSCWMC has partnered with Hennepin County and NRCS to actively work with the agricultural community to implement BMPs for improving water quality in the watershed. Hennepin County also provides financial assistance through state cost share and natural resources grants to implement agricultural BMPs. Hennepin County also has a conservation easement incentive program, which includes TRPD's Kingswood Park Reserve that provides critical habitat while protecting downstream water quality. Hennepin County further regulates the buffer law on county ditches within the watershed. The anticipated development of agricultural areas over the next 20 years provides additional opportunities to further water quality restoration/protection efforts through stormwater and water quality rules/standards in the PSCWMC Watershed Management Plan and Municipal Surface Water Management plans. The PSCWMC has also taken an initiative to complete subwatershed assessments through partnerships (Municipalities, Hennepin County, and Three Rivers Park District) to identify future implementation strategies in highly sensitive areas (Dance Hall Creek Subwatershed). All of these

Questions & Answers
efforts require a significant level of stakeholder community engagement that is coordinated through PSCWMC Watershed Education/Public Outreach Program, Municipal Education Programs (Minnetrista Newsletter), and Hennepin County Education Programs (Agriculture/Conservation). An adaptive management approach using all of these resources will be implemented for the Whaletail Lake subwatershed to ensure the lake will continue to meet state water quality standards after the prescribed alum treatment.
Measurable Outcomes and Project Impact: Question 5. (10 points): (A) What is the primary pollutant(s) this application specifically addresses? (B) Has a pollutant reduction goal been set (via TMDL or other study) in relation to the pollutant(s) or the water resource that is the subject of this application? If so, please state that goal (as both an annual pollution reduction AND overall percentage reduction, not as an in-stream or in-lake concentration number). (C) If no pollutant reduction goal has been set, describe the water quality trends or risks associated with the water resource or other management goals that have been established. (D) For protection projects, indicate measurable outputs such as acres of protected land, number of potential contaminant sources removed or managed, etc.
Whaletail Lake South & North basins are designated as impaired for excessive nutrients with phosphorus being the limiting nutrient affecting surface water quality. The PSCWMC TMDL for the Whaletail South basin indicated a 34% (180 lbs/yr) reduction in total phosphorus load (529 lbs) was required to meet the deep lake phosphorus standard (40 µg/L). The TMDL recommended an alum treatment for the South basin to target at least a 43% (180 lbs) reduction in internal load to meet water quality standards. The South basin alum treatment would also provide a secondary water quality benefit for the North basin. The South basin phosphorus load (108 lbs) accounts for 26% of the watershed load (411 lbs) and 13% of the total load (801 lbs) identified in the TMDL for the North basin. The PSCWMC TMDL for the North basin recommended a 20% (21 lbs) reduction in the South basin watershed load that would account for 10% of the total load reduction (212 lbs-26%) required to meet the shallow lake phosphorus standard (60 µg/L). It was also recommended that a 32% (94 lbs) reduction in internal load would be needed for the North basin to achieve water quality standards. Since the TMDL was completed, a recent review of the water quality data for the Whaletail South basin Alum feasibility study indicated that the North basin water quality has improved and has been meeting the phosphorus standard the past 5-years. The primary factors contributing to the overall water quality improvement for the North basin are uncertain. However, a potential risk of not implementing an alum treatment for the South basin would be the water quality for the North basin transitioning back to conditions observed prior to the completion of the TMDL. A prescribed alum treatment of the South basin would achieve the necessary phosphorus load reductions required to meet state water quality standards, but would also help ensure that the North basin would continue to meet the state phosphorus standard.
Measurable Outcomes and Project Impact: Question 6. (10 points): (A) What portion of the water quality goal will be achieved through this application? Where applicable, identify the annual reduction in pollutant(s) that will be achieved or avoided for the water resource if this project is completed. (B) Describe the effects this application will have on the root cause of the issue it will address (most critical pollution source(s) or threat(s)).
A) Whaletail Lake South basin alum feasibility study was completed to determine a recommended alum dose concentration required to bind at least 90% of the redox-sensitive phosphorus in the upper 6-cm sediment layer. The alum dose will reduce internal P-loading by 381 lbs/year, which is significantly more than the TMDL load reduction (180 lbs/yr) required to achieve water quality standards for the South basin. The internal load reduction would result in an in-lake P-concentration of 26 µg/L achieving the desired water quality outcome for meeting the state

Questions & Answers
P-standard (40 µg/L). The South basin water quality improvements would further reduce P-loading to the North basin by 52 lbs/year, which will also exceed the desired South basin watershed load reduction (21 lbs) identified in the North basin TMDL. The South basin watershed load reduction represents approximately 24% of the load reduction needed for the North basin to meet state P-standards. The North basin has been meeting the phosphorus standard the past 5-years. The anticipated water quality improvements in the South basin would help ensure that the North basin will continue to meet standards. **B) The recommended alum dose for the South basin will reduce internal P-load beyond what is required in the TMDL. Other sources of loading (watershed, curly-leaf pondweed, and carp) were monitored/evaluated in the alum feasibility study and found to have negligible impacts on affecting surface water quality of the South basin. The additional load reduction from the alum treatment will effectively provide an increase in the margin of safety for potential changes in these other sources of P-loading, thereby extending alum longevity and effectiveness, decreasing algal blooms and improving clarity, and overall cost-benefit of the treatment. The recommended dose will also increase the resiliency of the system to the impacts of large runoff events associated with changing climate and precipitation patterns in the future.**
Measurable Outcomes and Project Impact: Question Question 7. (5 points): If the project will have secondary benefits, specifically describe, (quantify if possible), those benefits. Examples: hydrologic benefits, climate resiliency, enhancement of aquatic and terrestrial wildlife species, groundwater protection, enhancement of pollinator populations, or protection of rare and/or native species.
The application has already described the quantified secondary water quality benefits to the Whaletail Lake-North basin. **Additional secondary benefits for both basins of Whaletail Lake include the following:** **1) Habitat: It is anticipated that there will be changes in the plant community in response to water clarity improvements after the alum treatment project. Increased water clarity should expand the depth of rooted aquatic plant growth increasing the effective littoral zone of the lake. An adaptive management approach may require consideration for controlling invasive species and expanding the native plant community. The establishment of a diverse native plant community will have water quality benefits (especially for plant dominated shallow basins) that provide a more resilient aquatic ecosystem considering periodic large run-off events anticipated with future climate change. A diverse aquatic plant community also enhances habitat for the fish population and other aquatic invertebrate species.** **2) Aesthetic/recreational: There will be less frequent severe algae blooms with improved water clarity in response to reduced in-lake P-concentrations. These conditions are more desirable for fishing, boating, and aesthetic viewing activities. Lower phosphorus concentrations should also decrease the severity of blue-green algal generated toxins that are a potential risk/threat to human and animal health.** **3) Educational: Gale Woods Farm Regional Park receives 98,000 visitors a year from nearby residential areas and the metro area. TRPD provides several outdoor education and naturalist programs for school groups and the public providing an opportunity to showcase the proposed project. In addition, the City of Minnetrista and PSCWMC are also undertaking various initiatives in stormwater management and responsible stewardship of water resources that will increase awareness of these issues with watershed residents and the broader public.**

Questions & Answers
Measurable Outcomes and Project Impact: Question 8. (15 points): (A) Describe why the proposed project(s) in this application are considered to be the most cost effective and feasible means to attain water quality improvement or protection benefits to achieve or maintain water quality goals. Has any analysis been conducted to help substantiate this determination? Discuss why alternative practices were not selected. Factors to consider include, but are not limited to: BMP effectiveness, timing, site feasibility, practicality, and public acceptance. (B) If your application is proposing to use incentives above and beyond payments for practice costs, please describe rates, duration of payments and the rationale for the incentives' cost effectiveness. Note: For in-lake projects such as alum treatments or carp management, please refer to the feasibility study or series of studies that accompanies the grant application to assess alternatives and relative cost effectiveness. Please attach feasibility study to your application in eLINK.
This project provides the most feasible cost-effective approach to improve water quality in Whaletail Lake. The TMDL study indicated that internal loading was the primary source of phosphorus load affecting surface water quality for Whaletail Lake-South basin and recommended an alum treatment to meet state water quality standards. An alum treatment feasibility study estimated an internal load reduction of 381 lbs/year with a long-term effectiveness for at least 20-years. The estimated cost of the alum treatment is $506,250 with a cost-benefit of $66/lb of P-removed when considering the P-load reduction and alum longevity. This cost-benefit analysis does not take into consideration the secondary benefit of improving water quality of the Whaletail Lake-North basin. The cost benefit of an alum treatment is considerably lower compared to the cost of implemented watershed BMPs ranging from hundreds to thousands of $/lb of P-removed. The implementation of watershed BMPs wasn't considered a cost-effective management approach since unit-area loads (0.10 lb/acre/year) were comparable to parkland and open space conditions. The South basin watershed is represented as 36% natural park reserve (Kingswood Park & Gale Woods Farm) and 26% undeveloped wetland areas. There is more of an opportunity to focus watershed BMP implementation in the North basin since agricultural areas represent 31% of the land use. The PSCWMC is committed to implementing BMPs in the watershed, but the impact of those improvements is relatively small compared to load reductions needed to meet state phosphorus standards. The management of curly-leaf pondweed and carp as potential sources of in-lake phosphorus loading was also considered as part of the alum feasibility study. The study concluded that curly-leaf pondweed and carp biomass are currently at levels that will not impact water quality, cause ecological damage, or decrease longevity/effectiveness of an alum treatment.
Question 9. (8 points): What steps have been taken or are expected to ensure that project implementation can begin soon after the grant award? Describe general environmental review and permitting needs required by the project (list if needed). Also, describe any discussions with landowners, status of agreements/contracts, contingency plans, and other elements essential to project implementation.
The Whaletail Lake South basin alum treatment was reviewed and approved by the PSCWMC Technical Advisory Committee. The PSCWMC identified the project in the 4th Generation Watershed Management Plan CIP Program. The project was also presented at the City of Minnetrista Council Meeting to further establish partnership and assist with local community relations for support of the project. An alum feasibility study was completed to determine alum dosage, application strategy, estimated load reduction, anticipated lake response, alum longevity, cost-benefit analysis, and long-term monitoring plan. As part of the feasibility study, additional sources of phosphorus loading were evaluated and monitored to ensure that Whaletail Lake South basin is ready for an alum treatment. These potential sources of phosphorus

Questions & Answers
loading included an evaluation of watershed loading, curly-leaf pondweed senescence, and carp population/biomass. The study concluded and confirmed that Whaletail Lake South basin is an excellent candidate for an alum treatment; and these potential sources of phosphorus loading were shown to have negligible impact on water quality. The long-term post-alum monitoring plan identified in the feasibility study will continue to evaluate changes in these potential sources of phosphorus loading to ensure the longevity and effectiveness of the alum treatment. The MPCA has reviewed the feasibility study as the regulatory authority of the project, and preliminary approval has already been issued for implementation of the project. Coordination with other agencies, specifically DNR and BWSR, will occur as necessary if the project is funded. Three Rivers Park District will coordinate partnership cost-share contract agreements and administer the implementation of the alum treatment project. Three Rivers Park District has experience coordinating and administering the implementation of similar alum treatment projects (Fish Lake and Hyland Lake) in the past.
Question 10. (2 points): What activities, if any proposed, will accompany your project(s) that will communicate the need, benefits, and long-term impacts to your local community? This should go above and beyond the standard newsletters, signs and press releases.
The identified partners for the implementation of the project include Pioneer-Sarah Creek Watershed Management Commission, Three Rivers Park District, City of Minnetrista, and Hennepin County. All of these partners have a water resources-related or project implementation elements within their respective web sites, and each partner can provide an information page with specific material about the project. In addition, Three Rivers Park District has a research department that frequently conducts park user survey data. Three Rivers Park District would commit to undertaking such a survey to assess user perceptions of water quality and recreational experience based on anticipated water quality improvements in response to the alum treatment.
Stream Restoration Projects Only: The Legacy Fund Restoration Evaluation Report recommends early coordination and comprehensive planning for stream projects. Describe the expertise of your team (i.e. geomorphology, hydrology, plant and animal ecology, construction site management, and engineering) and early coordination efforts you have been part of to ensure project success.
N/A
Stream Restoration Projects Only: Describe how your organization will provide financial assurance that operations and maintenance funds are available if needed.
N/A
The Constitutional Amendment requires that Amendment funding must not substitute traditional state funding. Briefly describe how this project will provide water quality benefits to the State of Minnesota without substituting existing funding.
All the non-grant funding comes from local sources so there is no potential for state general fund substitution.

Application Budget

Activity Name	Activity Description	Category	State Grant $ Requested	Activity Lifespan (yrs)
Whaletail Lake-South Basin Alum Treatment	Alum treatment on the South Basin of Whaletail Lake will reduce internal phosphorus loading to achieve in-lake state water quality standards.	NON-STRUCTURAL MANAGEMENT PRACTICES	$405,000.00	20

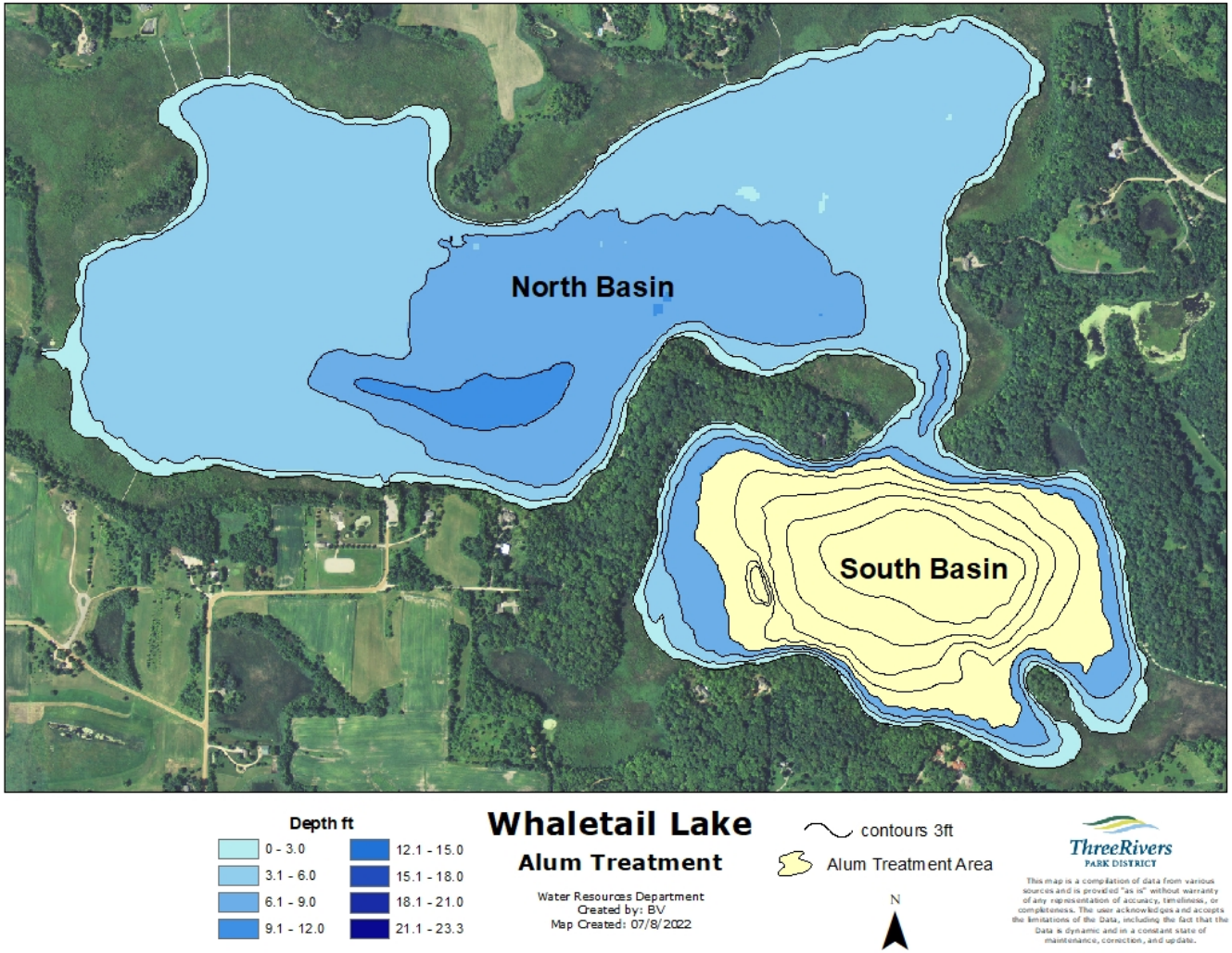
Proposed Activity Indicators

Activity Name	Indicator Name	Value & Units	Waterbody	Calculation Tool	Comments
Whaletail Lake-South Basin Alum Treatment	PHOSPHORUS (EST. REDUCTION)	381 LBS/YR	Whaletail Lake-South Basin (MnDNR 27-018402)	Other	Estimated internal P-load reduction

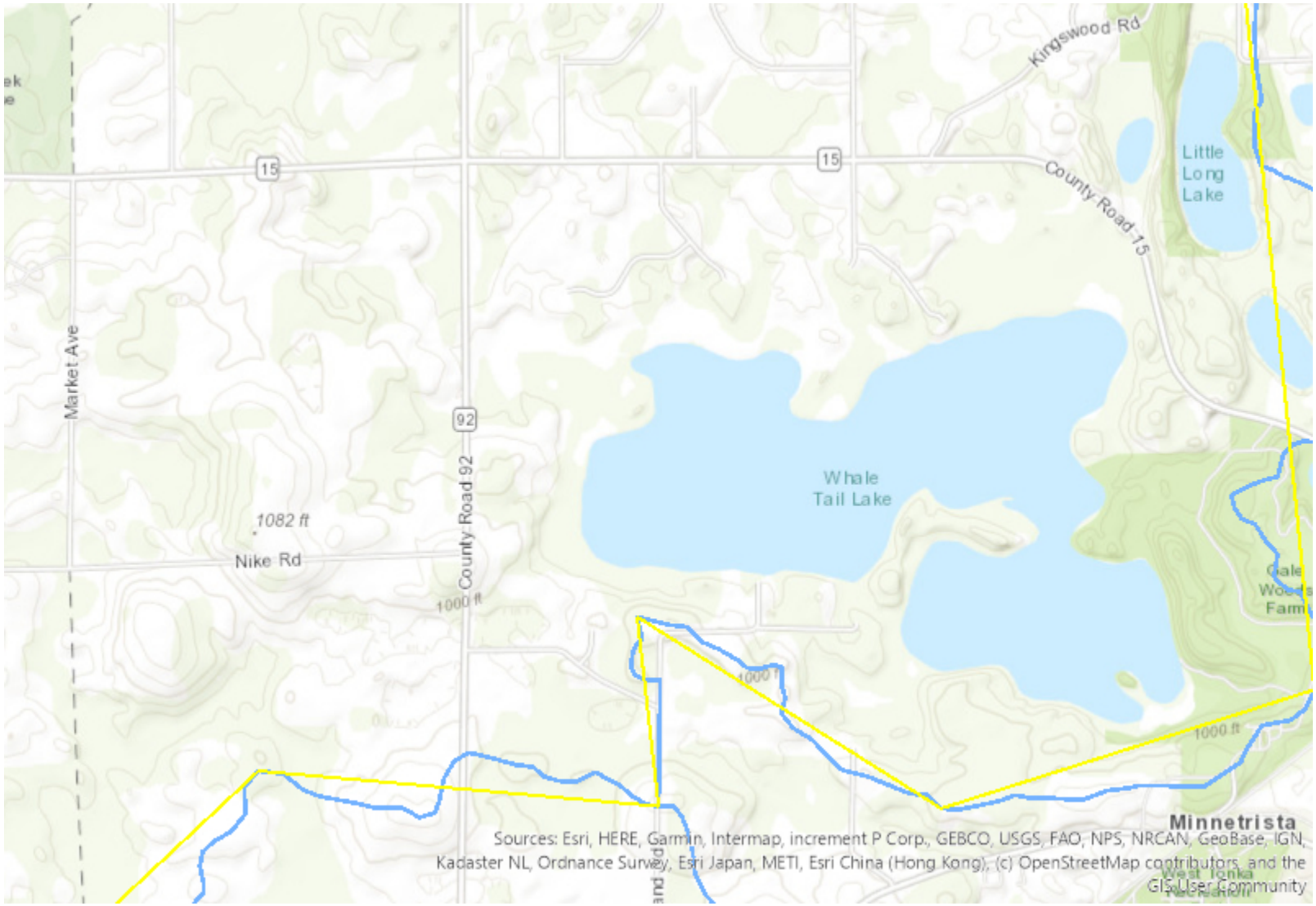
Activity Details

Activity Name	Question	Answer
Whaletail Lake-South Basin Alum Treatment	Dollar amount requested for Ag BMP Loan Program:	0
Whaletail Lake-South Basin Alum Treatment	Dollar amount requested for CWP Loans:	0

Application Image



Map Image


Kingswood Rd
15
15
County Road 15
Little
Long
Lake
Market Ave
92
County Road 92
Whale
Tail Lake
1082 ft
Nike Rd
1000 ft
1000 ft
1000 ft
Minnetrista
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

MEMORANDUM

TO: Pioneer-Sarah Creek Watershed Management Commission
FROM: Andrew Vistad, Hakanson-Anderson
DATE: August 12, 2022
SUBJECT: Staff Report

1.-8. See Previous Staff Report

9. **2019-08 Adams Pest Control, Medina.** Adam's Pest Control is planning to expand their current Medina facility. This property is located on the north side of State Highway 55, just west of Willow Drive. The entire parcel is 46-acres, but only the southern portion (Lot 1-26.6 acres) is being proposed for development at this time. This site plan consists of two new buildings which includes an office building and a warehouse/maintenance building with parking. This project will disturb 10.9 acres and create 4.6 acres of new impervious areas. The Commission's stormwater management plan requires compliance with Rules D, E, F and I. The site plans that were reviewed and approved for a watershed permit in late 2019 were never constructed. The project has been redesigned and resubmitted under the previous permit application and fee. The size of the building site has been reduced. The provided plans do not appear to create sufficient stormwater bio-filtration to meet watershed rules. The plans also do not provide sufficient details on the creation of wetland buffers on site. The designer is being asked to revise and resubmit plans addressing these deficiencies.

10. **2022-01 Bushwood Hills Reserve.** is a 5 lot 34.8-acre residential development located in the City of Greenfield. The development is proposing to handle stormwater rate control with 4 Biofiltration basins located within the development. The bio-filtration basins and land use change are expected to reduce phosphorus runoff by 52% and total suspended solids runoff by 58%. Additionally, the bio-filtration basins are providing some abstraction that is working to reduce the volume of runoff that is leaving the site. The engineer has supplied a SWPPP for the development that meets all watershed rules. This project was reviewed for Rule D, Rule E, and Rule I.

11. **2022-002 Huotari Residence.** Jeff Huotari has submitted a permit application for the construction of a driveway, residential dwelling, and septic system. The application was a requirement as a result of a wetland TEP meeting that determined that a portion of the installed drive had impacted an on-site wetland. The residential lot is located along County Road 11 south of Lake Rebecca. The project will disturb approximately 1 acre of land. This project was reviewed for Rule E.

12. **2022-003 Hilltop Prairie.** The Hilltop Prairie development is a 13 lot 62.6-acre residential development located in the City of Independence. The development is proposing to handle stormwater rate control with 4 NURP basins located within the development. Due to confining soils and high groundwater levels infiltration or filtration is not feasible. The applicant is creating sections of tree preservation and is also providing additional buffer to gain abstraction credits to offset the lack of infiltration. Additional wetland buffer and tree preservation generate 0.5" of

credit over their proposed areas. Stormwater ponds within the development will be maintained by the property owners, an operations and maintenance declaration has been obtained and well be recorded with the lots. Water quality modeling for the site indicates that a 33% reduction in total phosphorus and a 60% reduction in total suspended solids will be achieved. This project was reviewed for Rule D, Rule E, and Rule I.

13. **2022-004 8395 Ox Yoke Circle.** Plan Pools has applied for a permit for floodplain alteration to construct an inground pool. The pool is located in the rear yard of a private residence located north of Ox Yoke Lake. Due to the pool being located within the FEMA floodplain compensatory storage is required such that no net fill is placed within the floodplain. This project was reviewed for Rule F.

14. **2022-05 Koch Farm, Sanctuary.** The Koch Farm Sanctuary development is a 33 lot 141.4-acre residential development located in the City of Independence. The development is proposing to handle stormwater rate control with 9 NURP basins located within the development. Due to confining soils and high groundwater levels infiltration or filtration is not feasible. The applicant is creating sections of tree preservation and is also providing additional buffer to gain abstraction credits to offset the lack of infiltration. Additional wetland buffer and tree preservation generate 0.5" of credit over their proposed areas. Stormwater ponds within the development will be maintained by the property owners/HOA, an operations and maintenance declaration has been obtained and well be recorded with the lots. Water quality modeling for the site indicates that a 32% reduction in total phosphorus and a 56% reduction in total suspended solids will be achieved. A stream crossing for a mixed use path that connects this development with the development to the south was required by the City of Independence. This project was reviewed for Rule D, Rule E, Rule H, and Rule I.

15. **2022-06 Creekside Meadows,** is a 15 lot 79.2 acre residential development located within the City of Greenfield. The development is proposing to handle stormwater with 3 biofiltration basins. The bio-filtration basins and land use change are expected to reduce phosphorus runoff by 48% and total suspended solids runoff by 41%. Additionally, the bio-filtration basins are providing some abstraction that is working to reduce the volume of runoff that is leaving the site. The engineer has supplied a SWPPP for the development that meets all watershed rules. The developer has not supplied a buffer maintenance plan that outlines establishing the new wetland buffers. The project was reviewed for Rule D, Rule E, and Rule I.

16. **2022-07 7655 County Road 15, i**s a residential dwelling construction that is in close proximity to the wetland surrounding Whale Tail Lake. The home builder is proposing to build a residential home, septic sites, and relocate an existing driveway. The proposed building pad is located greater than 100 feet away from the wetlands and silt fence is being provided down gradient from all earth moving activity.

17. **2022-09 Gale Woods Accessibility,** is a project from TRPD that is proposing ADA improvements to the boat launch located at the Gale Woods Farm located on the south eastern side of the south bay of Whaletail Lake in Minnetrista. The project is proposing to create ADA accessible parking spaces to access the boat landing and pier. The project is located with in the floodplain for Lake Whaletail,

18. **2022-10 Pioneer Highlands**, is a 67 acre rural residential development located in the city of Medina. The development is located roughly half in the Pioneer Sarah Creek Watershed and half in the Elm Creek Watershed. It was agreed that the project would need to obtain a permit from only PSC WMC providing communication with the Elm Creek watershed engineer. The site contains a large closed basin wetland on site. Ultimately the site would drain to both Spurzem Creek and Rush Creek South Fork. Though additional wetland buffer was provided to meet stormwater abstraction requirements, stormwater management was not proposed as part of this project. The project currently does not meet state stormwater requirements that are outlined in the construction general permit section 15. The applicant was asked to revise and resubmit meeting state stormwater requirements.

19. **2022-11 Burgess Residence, i**s a residential dwelling construction that is in close proximity to the wetland surrounding Schwappauff Lake. The home builder is proposing to build a residential home, septic sites, and driveway. The proposed building pad is located greater than 100 feet away from Schwappauff Lake and silt fence is being provided surrounding all earth moving activity. The project was reviewed for Rule E.

20. ***2022-12 Bridgevine Subdivision,** is a 47.5 acre residential subdivision located within the City of Independence on the south shoreline of Lake Independence. The development is proposing to handle stormwater via curb and gutter with inlets and storm sewer. There will be 2 filtration basins located with in the development that will capture and treat the water quality volume before being discharged. The site generally flows in 3 directions, to the north discharging into an onsite gully that is identified in the Lake Independence and Lake Sarah SRA as GS46. The eastern part of the site discharges into an offsite gulley that is also identified in the Lake Independence and Lake Sarah SRA as GS50 or the Baker Park Ravine, which has recently been stabilized by a project lead by TRPD. The western portion of the site discharges under South Lake Shore Drive into an existing gully that eventually discharges into Pioneer Creek. The development plans do not address the erosion that is taking place in GS46 and the placement of the stormwater pond outlet is likely to increase erosion in the gully. Additionally, the on-site drainage is being modified and additional water is being directed towards GS50 which may lead to an increase in erosion. A SWPPP has not be provided. The project was reviewed for Rule D, Rule E, and Rule I.

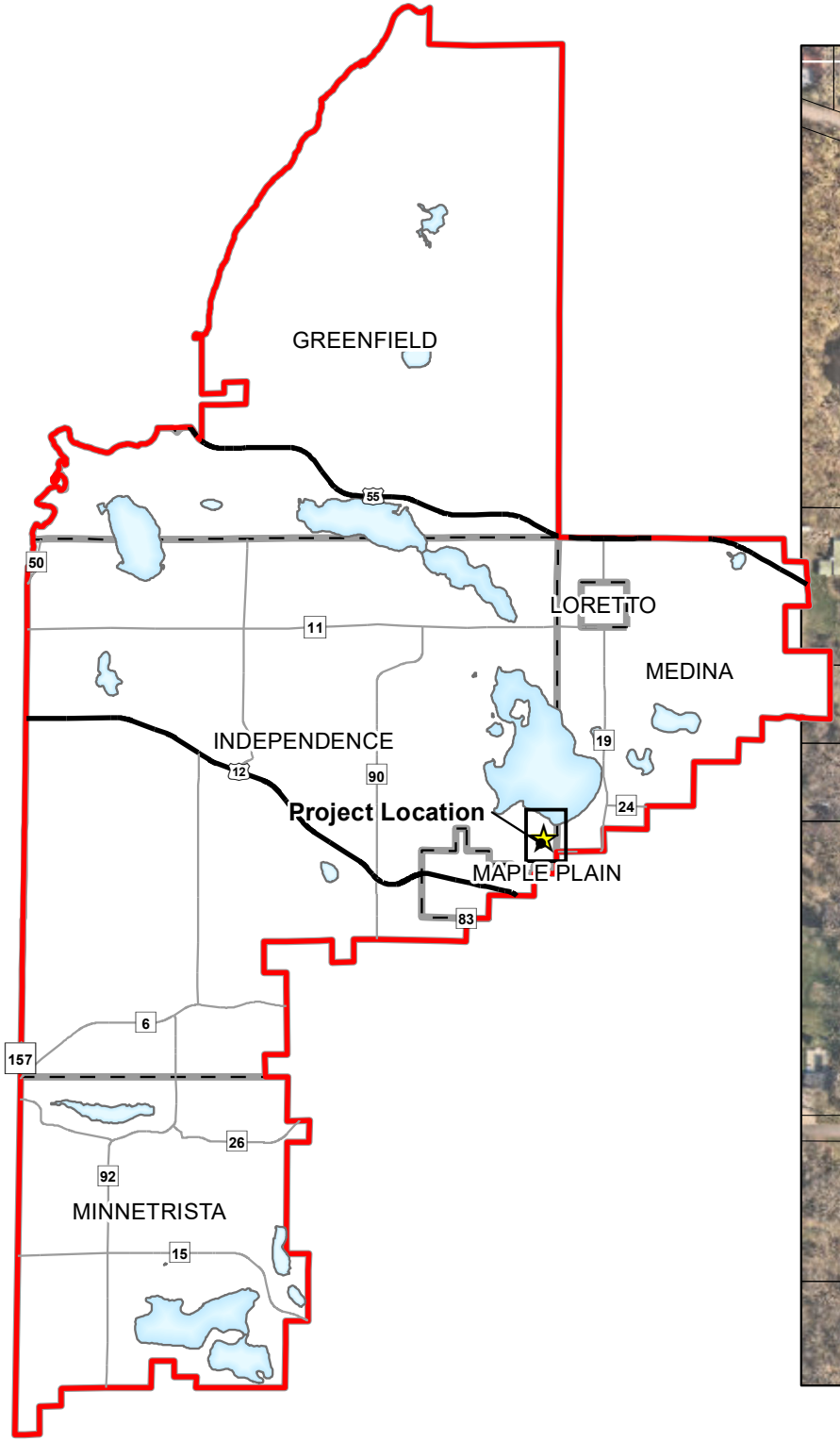
21. ***2022-13 Promise Hill Residence,** is a large signle family residential dwelling demolition and construction that will cause the disturbance of over 1 acre of land. The existing building and driveway contains approximately 0.75 acres of impervious surfacing, the new structure and

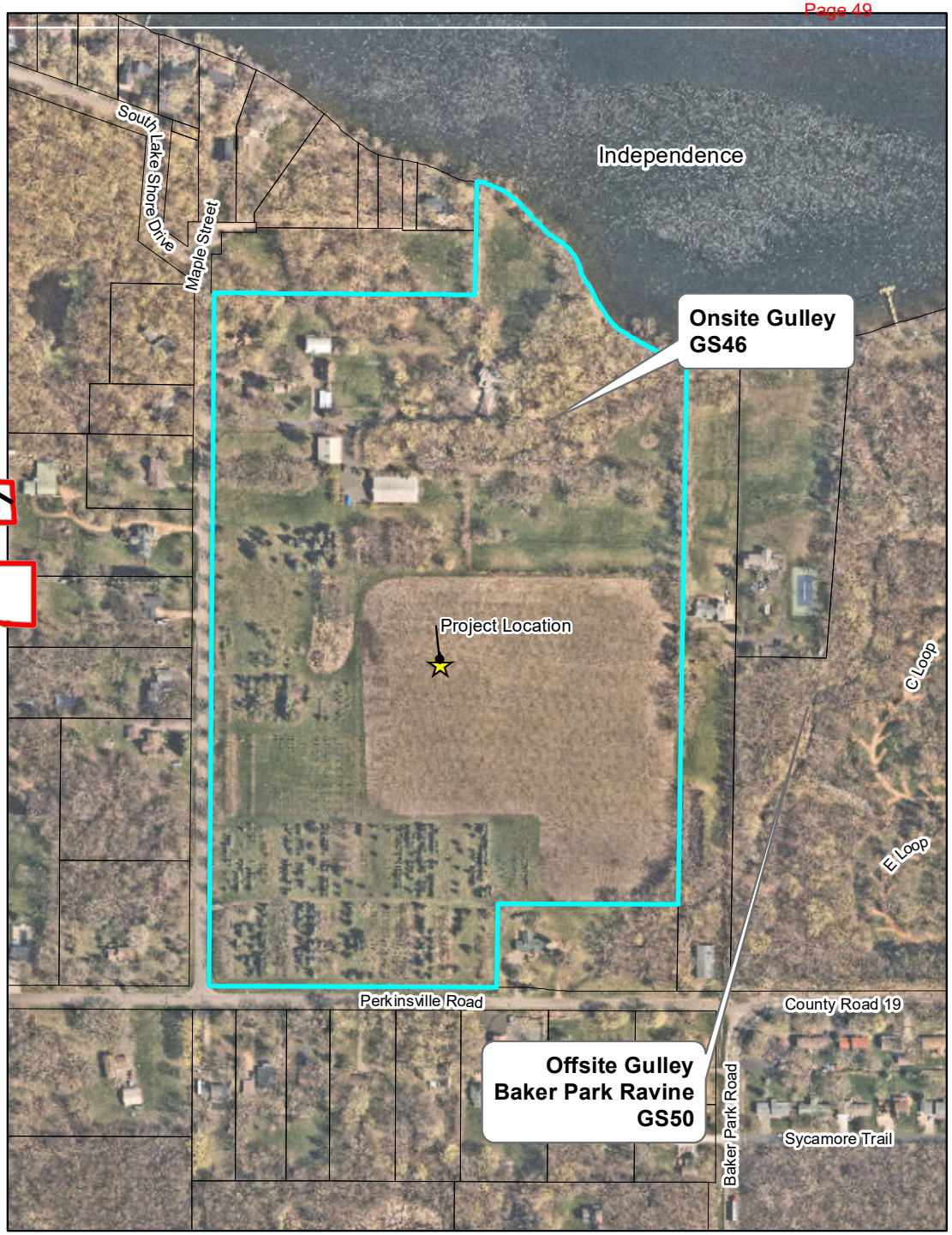
driveway will contain approximately 0.70 acres of impervious surfacing resulting in a decrease of 0.05 acres of impervious surfacing. The project was reviewed for Rule E.

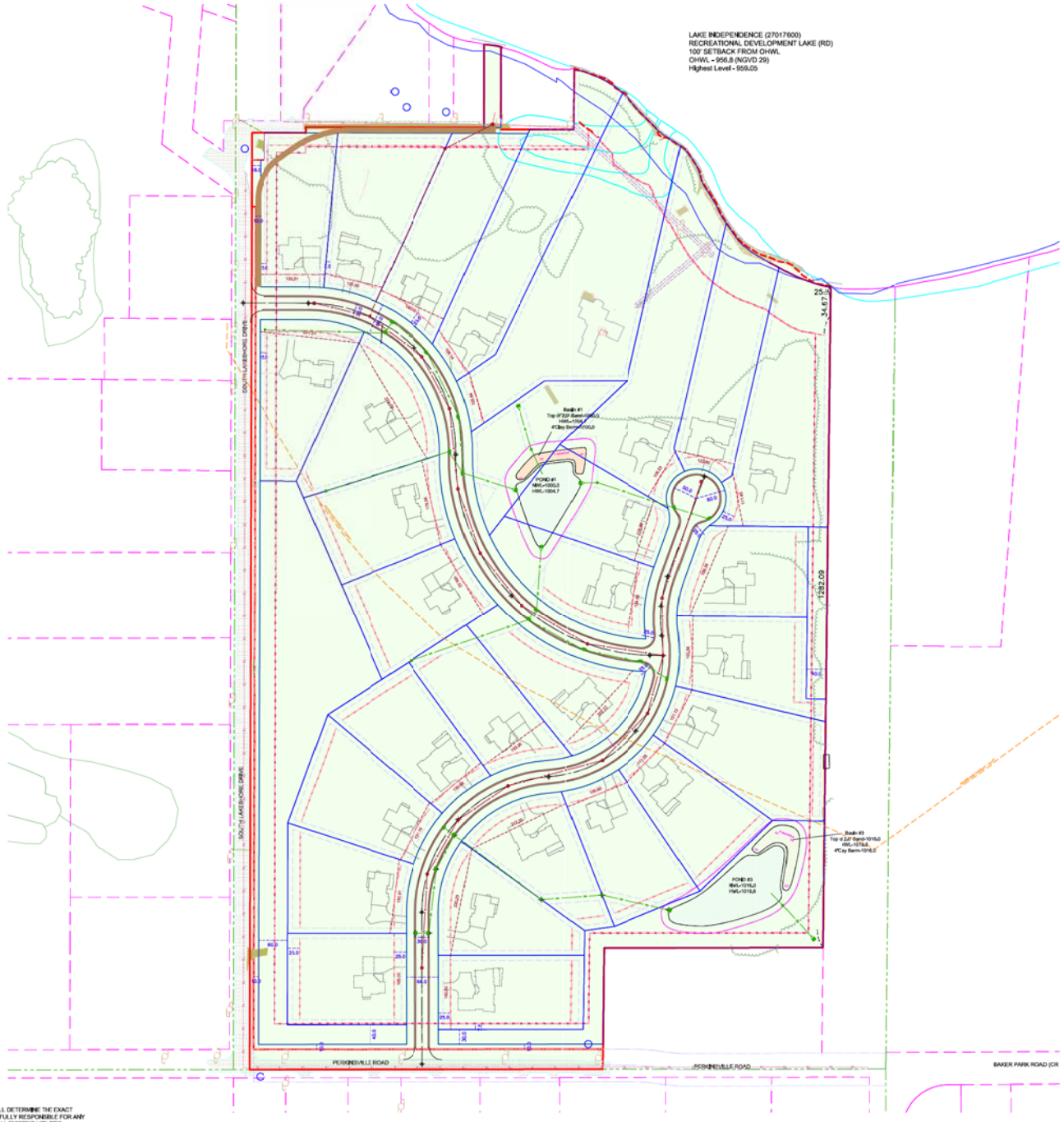
22. ***2022-14 Hidden Lake Channel Excavation,** is a 2,138 cubic yard channel excavation with in Lake Independence. The excavation has been permited through the DNR and was reviewed by the DNR Area Hydrologist. The Channel was initially excavated in the 1960s and was permitted for future maintenance. The channel has over time filled with sediment that the residents desire to remove. Spoils from the project will be land applied on a property adjacent to the channel excavation. The site has been reviewed and approved by the area hydrologist and is determined to be outside the 100-year floodplain. The project was reviewed for Rule E and Rule F.

23. ***2022-15 Schaffer Residence,** is a residential dwelling construction that is located on the shore of Hafften Lake. The home builder is proposing to build a residential home, septic sites, and driveway as well as some lot grading to provide some flat yard space. The proposed building pad is located greater than 100 feet away from Hafften Lake and silt fence is being provided surrounding all earth moving activity. The project was reviewed for Rule E.

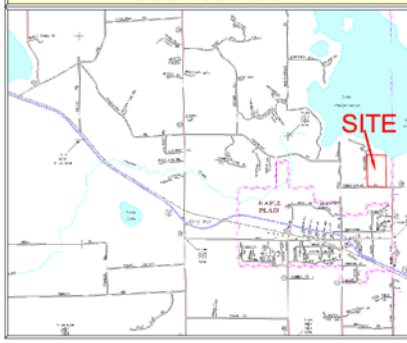
24. ***2022-16 West Lindgren Channel Excavation,** is a 1,338 cubic yard channel excavation with in Lake Independence. The excavation is in the process of being permitted through the DNR and is being reviewed by the DNR Area Hydrologist. The Channel was initially excavated in the 1960s and was permitted for future maintenance. The channel has over time filled with sediment that the residents desire to remove. Spoils from the project will be land applied on a property adjacent to the channel excavation. The spoils site has not yet been determined. Once the site is chosen it will be reviewed by the DNR area hydrologist and PSC technical advisor to ensure the spoils are not placed within the 100-year floodplain. The project was reviewed for Rule E and Rule F.


GREENFIELD
LORETTO
MEDINA
INDEPENDENCE
Project Location
MAPLE PLAIN
MINNETRISTA
55
50
11
12
90
19
24
83
6
157
26
92
15


Independence
South Lake Shore Drive
Maple Street
Onsite Gulley
GS46
Project Location
C Loop
E Loop
Perkinsville Road
County Road 19
Offsite Gulley
Baker Park Ravine
GS50
Baker Park Road
Sycamore Trail



LOCATION MAP



SHEET INDEX TABLE

SHEET	Description
1	Title Sheet
2-4	Preliminary Street Plan
5-8	Preliminary Sanitary Sewer Plan
9-12	Preliminary Storm Sewer Plan
13-15	Preliminary Grading Plan
16-17	Preliminary Erosion Control Plan

Notes:
Zoning:

Lots: 29 Single Family Lots
Front Yard Setback: 25'
Side Yard Setback: 7.5'/7.5'
Side Yard Setback Corner Lot: 25'
Rear Yard Setback: 25'

Street: 66' ROW
30' B-B - Surmountable Curb

*NOTE - HOUSES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ON

PREPARED BY	PREPARED FOR
ENGINEER SATHRE-BERGQUIST, INC. 150 SOUTH BROADWAY WAYZATA, MINNESOTA 55391 PHONE: (952) 476-6000 FAX: (952) 476-0104 CONTACT : ROBERT S. MOLSTAD, P.E. EMAIL: MOLSTAD@SATHRE.COM	DEVELOPER BOHLAND DEVELOPMENT 815 WAYZATA BLVD EAST WAYZATA, MN 55391 CONTACT: STEVE BOHL PHONE: (952) 473-2089 EMAIL: STEVE@BOHLANDDEVELOPMENT.COM

N ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT
EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY
G OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION 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.

ROBERT S. MOLSTAD, P.E.
Date: _____ Lic. No. _____

ENGINEERS SURVEYORS DESIGNERS PLANNERS

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 476-6000

CITY PROJECT NO.
—

INDEPENDENCE, MINNESOTA

TITLE SHEET
BRIDGEVINE
BOHLAND DEVELOPMENT