Please note the meeting will be held in person at the Carver County Government Center on the Wednesday, October 20, 2021. Some Managers may be joining the meeting virtually from remote locations. Please check the website for more information.

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Lower Minnesota River Watershed District

7:00 PM

Wednesday October 20, 2021

Carver County Government Center

602 East Fourth Street, Chaska, MN 55318

Agenda Item	Discussion
1. Call to order	A. Roll Call
2. Approval of agenda	
3. Citizen Forum	*Citizens may address the Board of Managers about any item not contained on the regular agenda. A maximum of 15 minutes is allowed for the Forum. If the full 15 So are not needed for the Forum, the Board will continue with the agenda. The Board will take no official action on items discussed at the Forum, with the exception of referral to staff or a Board Committee for a recommendation to be brought back to the Board for discussion or action at a future meeting.*
4. Consent Agenda	*All items listed under the consent agenda are considered to be routine by the Board of Managers and will be enacted by one motion and an affirmative vote of a majority of the members present. There will be no separate discussion of these items unless a Board Member or citizen request, in which event, the items will be removed from the consent agenda and considered as a separate item in its normal sequence on the agenda.* A. Approve Minutes September 15, 2021 Regular Meeting B. Receive and file August and September 2021 Financial reports C. Approval of Invoices for payment i. Frenette Legislative Advisors - July 2021 legislative services ii. Manager Hartmann – first half 2021 per diem & expense reimbursement iii. Manager Salvato - first half 2021 per diem & expense reimbursement iv. US Bank Equipment Finance – Copier lease payment v. Daniel Hron – August 2021 office rent vi. Manager Raby – first half 2021 per diem & expense reimbursement vii. Rinke Noonan Attorneys at Law - June 2021 legal services viii. The Horton Group, Inc. – 2021/2022 Directors & Officers Insurance ix. HDR Engineering, Inc. – website maintenance x. Young Environmental Consulting Group, LLC - June 2021 technical and Education & Outreach services xi. Dakota County Soil & Water Conservation District – Q2 2021 monitoring & education services xii. Naiad Consulting, LLC – April 2021 Administrative services & expense reimbursement xiii. Young Environmental Consulting Group, LLC – May education & outreach

	services xiv. Metro Sales - payment on copier maintenance agreement xv. Rinke Noonan, Attorneys at Law - July general legal services xvi. US Bank Equipment Finance - Copier lease payment xvii. Frenette Legislative Advisors - August legislative services xviii. Daniel Hron - September office rent xix. Scott County Soil & Water Conservation District - Q2 2021 monitoring, education & technical service xx. Western National Insurance - Annual liability insurance premium xxi. Freshwater - Payment for Nonyphenol & Sedimentation History in Riverine Lakes xxii. Inter-Fluve, Inc. - second payment for Area #3 evaluation & investigation xxiii. Manager Mraz - first half 2021 per diem & expense reimbursement xxiv. TimeSaver Off Site Secretarial - Preparation of July 2021 meeting minutes xxv. TimeSaver Off Site Secretarial - Preparation of August 2021 meeting minutes xxvi. Carver County Finance Department - Q3 2021 financial services expense
5. New Business/ Presentations	A. Election of Officers
6. Old Business	A. Burnsville Willow Creek Ravine Stabilization B. Cost Share Application - S. Mueller, 10745 Lyndale Bluffs Trail - no new information to report C. City of Carver Levee – no new information to report D. Remote meeting participation E. Dredge Management i. Vernon Avenue Dredge Material Management site ii. Private Dredge Material Placement F. Watershed Management Plan G. 2021 Legislative Action - no new information to report H. Education & Outreach I. LMRWD Projects - See Administrator Report for project updates ***(only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)*** J. Permits and Project Reviews - See Administrator Report for project updates ***(only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)*** i. CSAH 61 Drainage Improvements (LMRWD Permit 2021-002) ii. TH 13 & Lone Oak Signal Improvements (LMRWD Permit 2021-042) iii. Burnsville Cemetery (LMRWD Permit 2021-007) iv. Quarry Lake Outlet (LMRWD Permit 2021-014) v. Dakota LP (LMRWD Permit 2021-046) J. MPCA Soil Reference Values - No new information since last update
7. Communications	A. Administrator Report B. President C. Managers D. Committees E. Legal Counsel F. Engineer

8. Adjourn	Next meeting of the LMRWD Board of Managers is 7:00pm Wednesday, November 17, 2021.

Upcoming meetings/Events

- Metro MAWD - Tuesday, October 19, 2021, 7:00pm, virtual
- UMWA monthly meeting – Thursday, October 21, 2021, 12:30pm to 1:30pm Lilydale Pool & Yacht Club and virtual, please contact District Administrator to attend
- Minnesota Water Resources Conference – Virtual conference, October 19 & 20, 2021
- I-35W MN River Bridge Project Celebration – Saturday, October 30, 2021, 10:00am

For Information Only

- **WCA Notices**
  - Dakota County – Notice of Application – I-35 Trail Wetland Delineation
- **DNR Public Waters Work permits**
  - City of Savage – Credit River Outfall Repair – permit issue
  - Dakota County – MN River Greenway Fort Snelling Park Segment – permit issued
- **DNR Water Appropriation permits**
  - No notices received

Item 4A
LMRWD 10-20-2021

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Minutes of Regular Meeting
Board of Managers
Wednesday, September 15, 2021
Carver County Government Center, 602 East 4th Street, Chaska, MN 7:00 p.m.
Approved _____, 2021

1. **CALL TO ORDER AND ROLL CALL**
   On Wednesday, August 18, 2021, at 7:00 PM, in the Board Room of the Carver County Government Center, 602 East 4th Street, Chaska, Minnesota, President Hartmann called to order the meeting of the Board of Managers of the Lower Minnesota River Watershed District (LMRWD).

   President Hartmann asked for roll call to be taken. The following Managers were present: Manager Laura Amundson, President Jesse Hartmann, Manager Patricia Mraz, and Manager David Raby. Manager Lauren Salvato was absent. In addition, the following joined the meeting: Linda Loomis, Naiad Consulting, LLC, LMRWD Administrator; Della Schall Young, Young Environmental Consulting Group, LLC, Technical Consultant. Carrie Jennings, Freshwater; Scott Sparlin, Coalition for a Clean Minnesota River and Lindsey Albright, Dakota County Soil & Water Conservation District all joined virtually.

2. **APPROVAL OF THE AGENDA**
   Administrator Loomis stated that she had no revisions or additions to the agenda.

   Manager Raby made a motion to approve the agenda as presented. The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

3. **CITIZEN FORUM**
   Administrator Loomis reported that she had not received communication from anyone that wished to address the Board.

4. **CONSENT AGENDA**
   President Hartmann introduced the item.

   A. Approve Minutes July 21, 2021 and August 18, 2021 Regular Meeting
   B. Receive and file August 2021 Financial reports (There was no August financial report because of the early date of the meeting this month.
   C. Approval of Invoices for payment
      i. No invoices were approved this month. Because of the early date of the meeting no financial reports were received from Carver County
   D. Receive and file Citizen Advisory Committee August 2021 meeting minutes
   E. Authorize Final payment to Inter-Fluve for Area #3

President Hartmann made a motion to approve the Consent Agenda. The motion was seconded by Manager Mraz. Upon a vote being taken the motion carried unanimously.

5. NEW BUSINESS

A. Nonyphenol & Sedimentation History in Riverine Lakes

Administrator Loomis introduced Carrie Jennings of Freshwater. Ms. Jennings presented the report on contaminant history of nonylphenol and its ethoxylates in the Twin Cities' Urban Watershed. These contaminants are alkylphenols which are frequently used in laundry detergents, pesticides, and personal care products, because they are surfactants. They are created during the wastewater treatment process. The issue with this class of chemicals is that they bio-accumulate and disrupt the endocrine systems of animals and potentially people. They are toxic to aquatic organisms, are environmentally persistent, and have been banned in the UK, however the EPA has not taken that step yet but has introduced a voluntary phase out and suggested safer choices. One goal of sampling the sediment is to see if the voluntary regulations from the EPA were having an effect.

Ms. Jennings explained the goal of this investigation, conducted by Ron McManus, an intern with Freshwater, was to see if a chemical history could be documented by coring lake sediments. Mr. McManus had worked with Dr. Judy Krane of the MPCA to determine what contaminants he should look for. Dr. Krane has documented Nonyphenols in different locations around the state. Sediment cores were taken from lakes along the river and sent to the University of Minnesota's LacCore facility for processing and pollen analysis. (Pollen is used to assist in dating the sediment layers)

Ms. Jennings walked the Managers through the record history. She explained magnetic susceptibility, and organic vs. inorganic carbon. She explained some of the questions that may surround using riverine lakes to build a steady record; do these lakes store sediment overtime or do flood events erode the record.

She noted COVID disrupted their work. There were not issues collecting the sediment samples, however, once the sample were ready to be looked at the U of M campus was shut down so there was not access to the cores. When they were allowed back into the facility it was after the recommended storage time for this chemical; not because the chemical degrades but because it mobilizes. This time lag, between collecting the sample and testing for the chemical, is casting some doubts on the results. They were able to salvage something from this project by updating the sedimentation rates in the lakes along the flood plains. She noted that the work done with this project actually verified data record of previous work Freshwater did on behalf of the LMRWD.

She said that this project did provide good information about the validity of using riverine lakes to study the historical record. Ms. Jennings stated it could be possible in the future to do these tests again and noted the generous donations of the LMRWD and other Watersheds, as well as volunteer and pro bono work from many people. She said that if a project looking at these chemicals is done in the future, she would consult with the MPCA.

Manager Raby asked if these are really created during the waste treatment phase or whether they are concentrated; if they are actually created, how are they created?

Ms. Jennings replied they are created during the wastewater treatment process which introduces microorganisms into the water that can degrade some of the alkylphenol ethoxylates into multiple products including the nonylphenol. It is a product that results from the degradation of something that enters the wastewater treatment plant.

B. Request from Coalition for a Clean Minnesota River

Administrator Loomis reminded the Board that Scott Sparlin requested $10,000 over the course of two years to help get legislation passed at the State level for funding of water storage projects in the Upper Minnesota River Basin. Mr. Sparlin was successful this legislative session but the legislature diluted it as it is not just specific to the Minnesota River and the amount of funding allocated was not what had been hoped for. Now Mr. Sparlin would like to ask the federal government for assistance with the same task because much of the sediment and nutrients from the erosion in the Minnesota River are contributing to the anoxic zone in the Gulf of Mexico.

Manager Raby would like to know what the overall effort over the next two years will be and the funding effort for that.

Mr. Sparlin clarified they got the program established, it is for the Minnesota River basin and the Upper Mississippi River. The legislature did not include the kinds of funds needed to bring this to scale which is what they will be working on over the next couple of years. The money he is asking the LMRWD for is to continue down the path of seeking a federal partnership. The overall budget is dependent upon the work that other organizations are doing so he cannot give a good answer to the question at this time. They are looking at a $30,000 per year (total of $60,000) overall budget and will seek a match for the funds.

President Hartmann made a motion to approve the fund request as a match per the previous time. The motion was seconded by Manager Mraz. Upon a vote being taken the motion carried unanimously.

C. Appletree Condominium Cost Share Application

Administrator Loomis stated this is a condominium building in Bloomington; they are in a steep slope overlay zone and have been having issues with erosion behind the building. They have done quite a bit of work to put in drain tile and drain water away from the building to the City storm water system and are looking at landscaping to further ameliorate the erosion issues. They sent in an application for a cost-share project and Young Environmental reviewed the application and made some recommendations.

Ms. Schall-Young noted it is a good application and they are recommending approval. The Board should keep in mind that the project will need a permit so perhaps a portion of the money should go towards that permit application to ensure that they come back and do due diligence.

Administrator Loomis noted $7,500 is the maximum amount for a condominium-type of request.

Manager Raby made a motion to approve the cost-share application subject to the applicant applying for and obtaining a permit from the LMRWD. The motion was seconded by Manager Mraz. Upon a vote being taken the motion carried unanimously.

D. Modification to LMRWD Board of Managers meeting schedule

Administrator Loomis noted in April, Staff asked that the Board consider adding a second meeting every month to the schedule to make it a regular meeting and eliminate emergency meeting notices, and now that Ms. Schall-Young's team has a better handle on applications they no longer feel they need the second meeting. They are asking to modify that meeting schedule and eliminate the first Wednesday meeting.

Manager Mraz asked if staff feels an additional meeting would be needed again next summer. Ms. Schall-Young noted that one of the reasons the LMRWD has seen so many permit reviews is that several cities do not yet have the municipal approval the LMRWD grants to cities. The LMRWD is looking to approve all the cities before next summer, so the workload will be reduced.

Manager Mraz made a motion to adjust the meeting schedule. The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

6. OLD BUSINESS

A. I-35W Frontage Trail Cost Share – Burnsville

Administrator Loomis noted at the previous meeting the Jen Desrude, Public Works Director for Burnsville, requested funding on two projects: the I-35W Trail project and the Willow Creek stabilization. Young Environmental scored the projects and the trail project did not score very high and the ravine stabilization project scored quite a bit higher. Staff continued to work with the City to find a number appropriate for the District's participation. Staff recommends the District does not participate in the I-35W Trail project. Staff recommends $75,000 from the District to the Willow Creek stabilization project seems appropriate if the Board decides to participate.

Manager Raby thinks if they fund the project, they should fund it in phases.

Ms. Schall-Young suggested when the construction is substantially complete, the District would give them 90% and when it is fully restored they would get the remaining 10%.

Manager Raby made a motion to approve the $75,000 contribution with 90% paid upon substantial completion and 10% after total completion. The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

B. Cost Share Application - S. Mueller, 10745 Lyndale Bluffs Trail

No new information to report other than what was reported in the Executive Summary.

C. City of Carver Levee

No new information to report other than what was reported in the Executive Summary.

D. Remote meeting participation

Administrator Loomis met with facilities and IT people at the County to discuss the District's needs for meetings and tying into their system. They now have the capacity to bring people into meetings remotely. She noted the County will be upgrading their system and there will be discussions on what is appropriate for the LMRWD to contribute to the cost of upgrades.

Manager Raby asked if he should use his own computer to join a Board meeting from a remote location? Administrator Loomis noted that is a decision that is up to the Board. Manager Raby said he is fine using his own equipment unless some special equipment is required. He would prefer not to take a LMRWD owned computer away for the months he is gone.

President Hartmann asked about the bandwidth when participating from a remote location. Administrator Loomis agreed that could be an issue. She noted that you can plug a laptop directly into the internet router using an ethernet cable to improve connectivity. Manager Raby asked if he would need to meet in a public location when in a remote location. Administrator Loomis said that is a requirement of the open meeting laws.

Manager Raby noted the Board approved funding for equipment necessary to allow Managers to participate from a remote location. Managers Raby and Amundson said they both plan to attend the October Board meeting from a remote location.

E. Dredge Management

i. Vernon Avenue Dredge Material Management site

No new information to report other than what was reported in the Executive Summary.

ii. Private Dredge Material Placement

Administrator Loomis advised the Board that all payments for 2020 placement of private dredge material has been received.

F. Watershed Management Plan

No new information to report since last update.

G. 2022 Legislative Action

No new information to report since last update.

H. Education and Outreach Plan

i. **Tour of LMRWD Projects**

Administrator Loomis noted they have a date set for October 2, 2021 for a tour. She asked about preference for transportation that day.

The Board decided to drive individually.

I. LMRWD Projects

(Only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)

No projects require action this month – See Administrator Report for project updates.

J. Project/Plan Reviews

(Only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)

i. Excel Energy Line 0832 (LMRWD No. 2021-041)

Administrator Loomis noted this is a project to repair a structure in Black Dog Lake that supports the electric lines. Excel Energy plans to replace the structure and there will be some temporary work in public waters. Ms. Schall-Young and Staff have reviewed it and received the payment. She noted that there will be temporary fill in the lake that will be removed once the project is completed, however it still required compensatory storage (although temporarily).

Manager Raby made a motion to approve Xcel Energy Line #0832 (LMRWD No. 2021-041). The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

ii. Canterbury Senior Living (LMRWD No. 2021-040)

Administrator Loomis noted this a for a senior residential facility in the Canterbury Park development in the city of Shakopee. She stated this is a recommendation for conditional approval subject to the NPDES permit and contact information for those responsible for inspection.

Della Schall-Young noted that this project is part of a regional stormwater management system and that is why the information the documentation shows how the project will apply for credits to manage stormwater.

President Hartmann made a motion approve Canterbury Senior Living (LMRWD Permit No. 2021-040) pending receipt of a copy of the NPDES permit and contact information for the contractor(s) and/or the person(s) responsible for inspection and maintenance of

all erosion and sediment control features. The motion was seconded by Manager Amundson. Upon a vote being taken the motion carried unanimously.

iii. Circle K/Holiday Station (LMRWD No. 2021-034)
Administrator Loomis noted this is for construction of a Holiday Station store at 7800 126th Street in Savage.

Ms. Schall-Young shared that the project falls under Rules B and D, one for erosion control and the other for stormwater management. Erosion control looks good and Ms. Schall-Young's team has been working with the reps for Circle K/Holiday on the stormwater management component. The applicant would like to get out and start construction, so while the team works through the Rule D requirements, they have asked the applicant to provide performance bonds for assurances to correct things if needed. Ms. Schall-Young is also requesting a copy of the dewatering analysis from the DNR. She noted they recommend approval with conditions.

Manager Raby made a motion to conditionally approve Circle K/Holiday Station Stores (LMRWD Permit No. 2021-034) pending receipt of A commercially issued performance bond for $24,500; a copy of the NPDES permit and the contact information for the contractor(s) and/or the person(s) responsible for inspection and maintenance of all erosion and sediment control features; and a copy of the DNR-requested dewatering analysis report. The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

iv. Burnsville Park Jeep (LMRWD No. 2021-030)
Administrator Loomis noted the dealership is looking at some improvements including adding a new building and the parking lots. Staff recommends approval.

Manager Raby made a motion to approve Burnsville Park Chrysler Jeep (LMRWD Permit No. 2021-030) pending receipt of a copy of the NPDES permit and contact information for the contractor(s) and/or the person(s) responsible for inspection and maintenance of all erosion and sediment control features. The motion was seconded by President Hartmann. Upon a vote being taken the motion carried unanimously.

K. MPCA Soil Reference Values - no change since last update

7. COMMUNICATIONS

A. Administrator Report: Administrator Loomis noted that the Administrator report was not distributed prior to the meeting. She reported that the 1 Watershed 1 Plan, Minnesota River East grant for developing the plan was approved and the planning committee will set up a meeting schedule.

The District has been invited to be part of the Technical Advisory Group for theLower MN River West 1 Watershed 1 Plan.

The US Army Corps of Engineers held its River Resource Forum virtually August 24th. Administrator Loomis reported that the USACOE said the Bass Ponds project in Scott County is scheduled for completion in October. She noted that this project is a habitat restoration project that will change some outlet structures between the lakes to allow more natural fluctuation of the water levels. She noted there is a trail there that has been closed and Administrator Loomis has been receiving inquiries from the public as to when it will open. The Corps of Engineers is will be doing a virtual ribbon-cutting when it is complete.

She noted that she reported to the Board in August that Carver County was planning to renew its agreement with the LMRWD to perform accounting services. She has since spoken with the County and discovered that she did not understand that the County is no longer willing to perform accounting services for the LMRWD. She will prepare an RFP for accounting services as well as for Audit services.

Manager Raby asked that Administrator Loomis give the Board sufficient time to fill the Administrator position when she decides to retire.

B. President: No report
C. Managers: No report
D. Committees: No report
E. Legal Counsel: No report
F. Engineer: No report

8. ADJOURN

At 8:43pm, President Hartmann made a motion to adjourn the meeting. Manager Raby seconded the motion. Upon a vote being taken the motion carried unanimously.

The next meeting of the LMRWD Board of Managers meeting will be 7:00, Wednesday, October 20, 2021, and will be held at the Carver County Government Center, 602 East 4th Street, Chaska, MN. Electronic access will also be available.

_____
Lauren Manager Salvato, Secretary

Attest:

_____
Linda Administrator Loomis, Administrator

Lower Minnesota River Watershed District (UNAUDITED)
General Fund Financial Report
Fiscal Year: January 1, 2021 through December 31, 2021
Meeting Date: October 20, 2021

Item 4.B.
LMRWD 10-20-21

BEGINNING BALANCE		**31-Jul-21**		**$ 1,954,158.55**
ADD:				
General Fund Revenue:				
Project Review fees			$ 3,500.00	
License fee for placement of private dredge (Savage Riverport)			$ 9,927.00	
Total Revenue and Transfers In				**$ 13,427.00**
DEDUCT:				
Warrants:				
431406	Frenette Legislative Advisors		$ 1,666.67	
431408	Manager Per diem		$ 1,000.00	
431429	Manager Per diem		$ 875.00	
431437	US Bank Equipment Finance		$ 168.10	
431650	Daniel Hron		$ 650.00	
431668	Manager Per diem		$ 1,125.00	
431671	Rinke Noonan Attorneys at Law		$ 1,250.00	
431771	The Horton Group		$ 1,036.00	
100017211	HDR Engineering, Inc.		$ 1,609.64	
100017228	Redpath and Company, LTD		$ 15,265.00	
100017234	Young Environmental Consulting		$ 61,851.26	
100017369	Dakota County SWCD		$ 2,566.54	
100017386	Naiad Consulting, LLC		$ 11,370.01	
100017483	Young Environmental Consulting		$ 3,332.00	
Total Warrants/Reductions				**$ 103,765.22**
ENDING BALANCE		**31-Aug-21**		**$ 1,863,820.33**

Lower Minnesota River Watershed District
General Fund Financial Report
Fiscal Year: January 1, 2021 through December 31, 2021
Meeting Date: October 20, 2021

FY 2021

EXPENDITURES	2021 Budget	August Actual	YTD 2021	Over (Under) Budget
Administrative expenses	$ 250,000.00	$ 44,978.19	$ 148,534.28	$ (101,465.72)
Cooperative Projects				
Eden Prairie Bank Stabilization Area #3	$ 100,000.00	$ 5,776.91	$ 63,773.31	$ (36,226.69)
Gully Erosion Contingency Fund	$ -	$ 19,194.68	$ 23,590.33	$ 23,590.33
USGS Sediment & Flow Monitoring	$ -	$ -	$ -	$ -
Ravine Stabilization at Seminary Fen in Chaska	$ -	$ -	$ -	$ -
Riley Creek Cooperative Project with RPBCWD	$ -	$ -	$ 150,000.00	$ 150,000.00
Seminary Fen Ravine Restoration site A	$ 75,000.00	$ -	$ -	$ (75,000.00)
Seminary Fen Ravine Restoration site C-2	$ -	$ -	$ -	$ -
509 Plan Budget				
Resource Plan Implementation				
Gully Inventory	$ -	$ -	$ -	$ -
MN River Corridor Management Project	$ 75,000.00	$ -	$ 26,423.00	$ (48,577.00)
TH 101 Shakopee Ravine	$ -	$ -	$ -	$ -
Assumption Creek Hydrology Restoration	$ -	$ -	$ 2,125.50	$ 2,125.50
Carver Creek Restoration	$ -	$ -	$ -	$ -
Groundwater Screening Tool Model	$ -	$ -	$ 408.00	$ 408.00
MN River Floodplain Model Feasibility Study	$ -	$ -	$ -	$ -
Schroeder Acres Park SW Mgmt Project	$ -	$ -	$ -	$ -
PLOC Realignment/Wetland Restoration	$ 70,000.00	$ -	$ -	$ (70,000.00)
Spring Creek Project	$ 75,000.00	$ 944.25	$ 1,376.25	$ (73,623.75)
West Chaska Creek	$ -	$ -	$ -	$ -
Sustainable Lakes Mgmt. Plan (Trout Lakes)	$ -	$ -	$ -	$ -
Geomorphic Assessments (Trout Streams)	$ -	$ -	$ -	$ -
Fen Stewardship Program	$ 25,000.00	$ 8,255.89	$ 15,132.18	$ (9,867.82)
District Boundary Modification	$ -	$ -	$ -	$ -
E. Chaska Creek Bank Stabilization Project	$ -	$ 281.10	$ 77,457.31	$ 77,457.31
E. Chaska Creek Treatment Wetland Project	$ -	$ -	$ -	$ -
MN River Sediment Reduction Strategy	$ -	$ -	$ -	$ -
Local Water Management Plan reviews	$ 15,000.00	$ -	$ 1,285.50	$ (13,714.50)
Project Reviews	$ 50,000.00	$ 13,342.11	$ 70,614.13	$ 20,614.13
Monitoring	$ 75,000.00	$ 2,400.00	$ 15,238.00	$ (59,762.00)
Watershed Management Plan	$ 10,000.00	$ -	$ 1,526.54	$ (8,473.46)
Public Education/CAC/Outreach Program	$ 30,000.00	$ 8,592.09	$ 35,864.79	$ 5,864.79
Cost Share Program	$ 50,000.00	$ -	$ 5,543.50	$ (44,456.50)
Nine Foot Channel				
Transfer from General Fund	$ -	$ -	$ -	$ -
Dredge Site Improvements	$ 240,000.00	$ -	$ 102.00	$ (239,898.00)
Total:	$ 1,140,000.00	$ 103,765.22	$ 638,994.62	$ (501,005.38)

Lower Minnesota River Watershed District (UNAUDITED)
General Fund Financial Report
Fiscal Year: January 1, 2021 through December 31, 2021
Meeting Date: October 20, 2021

Item 4.B.
LMRWD 10-20-21

BEGINNING BALANCE	**31-Aug-21**			**$ 1,863,820.33**
ADD:				
General Fund Revenue:				
Project Review fees			$ 1,500.00	
License fee for placement of private dredge (Cargill)			$ 43,038.00	
Total Revenue and Transfers In				**$ 44,538.00**
DEDUCT:				
Warrants:				
431899	Metro Sales		$ 76.63	
431911	Rinke Noonan Attorneys at Law		$ 2,527.50	
431922	US Bank Equipment Finance		$ 168.10	
432010	Frenette Legislative Advisors		$ 1,666.67	
432018	Daniel Hron		$ 650.00	
432029	Scott County Soil & Water		$ 5,339.00	
432034	Western National Insurance Co.		$ 8,546.00	
432231	Freshwater		$ 10,000.00	
432236	Inter-Fluve, Inc.		$ 23,044.92	
432249	Manager per diem		$ 625.00	
100017609	TimeSaver Off-site Secretarial, Inc.		$ 187.00	
100017747	TimeSaver Off-site Secretarial, Inc.		$ 223.00	
JE	Carver County Finance Dept.		$ 1,345.50	
Total Warrants/Reductions				**$ 54,399.32**
ENDING BALANCE	**30-Sep-21**			**$ 1,853,959.01**

Lower Minnesota River Watershed District
General Fund Financial Report
Fiscal Year: January 1, 2021 through December 31, 2021
Meeting Date: October 20, 2021

FY 2021

EXPENDITURES	2021 Budget	September Actual	YTD 2021	Over (Under) Budget
Administrative expenses	$ 250,000.00	$ 16,015.40	$ 164,549.68	$ (85,450.32)
Cooperative Projects				
Eden Prairie Bank Stabilization Area #3	$ 100,000.00	$ 23,044.92	$ 86,818.23	$ (13,181.77)
Gully Erosion Contingency Fund	$ -	$ -	$ 23,590.33	$ 23,590.33
USGS Sediment & Flow Monitoring	$ -	$ -	$ -	$ -
Ravine Stabilization at Seminary Fen in Chaska	$ -	$ -	$ -	$ -
Riley Creek Cooperative Project with RPBCWD	$ -	$ -	$ 150,000.00	$ 150,000.00
Seminary Fen Ravine Restoration site A	$ 75,000.00	$ -	$ -	$ (75,000.00)
Seminary Fen Ravine Restoration site C-2	$ -	$ -	$ -	$ -
509 Plan Budget				
Resource Plan Implementation				
Gully Inventory	$ -	$ -	$ -	$ -
MN River Corridor Management Project	$ 75,000.00	$ -	$ 26,423.00	$ (48,577.00)
TH 101 Shakopee Ravine	$ -	$ -	$ -	$ -
Assumption Creek Hydrology Restoration	$ -	$ -	$ 2,125.50	$ 2,125.50
Carver Creek Restoration	$ -	$ -	$ -	$ -
Groundwater Screening Tool Model	$ -	$ -	$ 408.00	$ 408.00
MN River Floodplain Model Feasibility Study	$ -	$ -	$ -	$ -
Schroeder Acres Park SW Mgmt Project	$ -	$ -	$ -	$ -
PLOC Realignment/Wetland Restoration	$ 70,000.00	$ -	$ -	$ (70,000.00)
Spring Creek Project	$ 75,000.00	$ -	$ 1,376.25	$ (73,623.75)
West Chaska Creek	$ -	$ -	$ -	$ -
Sustainable Lakes Mgmt. Plan (Trout Lakes)	$ -	$ -	$ -	$ -
Geomorphic Assessments (Trout Streams)	$ -	$ -	$ -	$ -
Fen Stewardship Program	$ 25,000.00	$ -	$ 15,132.18	$ (9,867.82)
District Boundary Modification	$ -	$ -	$ -	$ -
E. Chaska Creek Bank Stabilization Project	$ -	$ -	$ 77,457.31	$ 77,457.31
E. Chaska Creek Treatment Wetland Project	$ -	$ -	$ -	$ -
MN River Sediment Reduction Strategy	$ -	$ -	$ -	$ -
Local Water Management Plan reviews	$ 15,000.00	$ -	$ 1,285.50	$ (13,714.50)
Project Reviews	$ 50,000.00	$ -	$ 70,614.13	$ 20,614.13
Monitoring	$ 75,000.00	$ 4,169.00	$ 19,407.00	$ (55,593.00)
Watershed Management Plan	$ 10,000.00	$ -	$ 1,526.54	$ (8,473.46)
Public Education/CAC/Outreach Program	$ 30,000.00	$ 10,279.00	$ 46,143.79	$ 16,143.79
Cost Share Program	$ 50,000.00	$ 891.00	$ 6,434.50	$ (43,565.50)
Nine Foot Channel				
Transfer from General Fund	$ -	$ -	$ -	$ -
Dredge Site Improvements	$ 240,000.00	$ -	$ 102.00	$ (239,898.00)
Total:	$ 1,140,000.00	$ 54,399.32	$ 693,393.94	$ (446,606.06)

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 5. A. Election of Officers

Prepared By
Linda Loomis, Administrator

Summary
According to the bylaws for the Lower Minnesota River Watershed District, election of officers is to be held annually in September. It was not on the September 15, 2021 agenda so it has been added to the October 20, 2021 agenda.

Currently, Manager Jesse Hartmann is President (since 2018 election), Manager Dave Raby is Treasurer (Manager Raby has held the position of Treasurer since 2015. In 2017, the offices of Secretary and Treasurer were combined because there were only three Managers on the Board. Manager Raby held the position of Secretary/Treasurer until Manager Salvato's appointment in 2020.) Manager Lauren Salvato is Secretary (since 2020) and Manager Patricia Mraz is Vice President (since her appointment by President Hartmann in April 2021).

Bylaws call for the election of a President, Vice President, Secretary, Treasurer and Assistant Treasurer. The duties for each office are defined in the bylaws.

Bylaws also require that they be reviewed at least every five years. The bylaws were last reviewed in 2016. Since Carver County is referenced in the bylaws the board may wish to wait until a new financial services provider has been retained before updating the bylaws. Bylaws are attached for reference.

Attachments
Bylaws dated 10-19-2026

Recommended Action
Hold Elections of officers in accordance with LMRWD bylaws

BY-LAWS OF
LOWER MINNESOTA RIVER WATERSHED DISTRICT

(By-Laws adopted by Lower Minnesota River Watershed District under Minn. Stat. § 103D.315: Subd. 11. "Administration By-Laws: *"The managers shall adopt bylaws for the administration of the business and affairs of the watershed district.*")

ARTICLE I.

NAME

Section 1. **NAME:** Lower Minnesota River Watershed District.

Section 2. **ABBREVIATIONS:** Throughout these By-Laws whenever it is desirable to abbreviate the name of the Lower Minnesota River Watershed District, the initials "LMRWD" or the word "District" shall be used.

ARTICLE II.

PURPOSE

Pursuant to Minn. Stat. § 103D.201, the District's General Purpose is as follows:

1. Protect, preserve, and use natural surface and groundwater storage and retention systems.
2. Minimize public capital expenditures needed to correct flooding and water quality problems.
3. Identify and plan for means to effectively protect and improve surface and groundwater quality.
4. Establish more uniform local policies and official controls for surface and groundwater management.
5. Prevent erosion of soil into surface water systems.
6. Promote groundwater recharge.
7. Protect and enhance fish and wildlife habitat and water recreational facilities.
8. Secure the other benefits associated with the proper management of surface and groundwater.
9. Cooperate with, aid and assist the state and/or federal government to provide for commercial river transportation.

ARTICLE III

LMRWD OFFICE and WATERSHED DISTRICT'S BOUNDARIES

Section 1. DISTRICT OFFICE: LMRWD office is located at 112 East 5th Street, Suite 102, Chaska, MN 55318.

Section 2. BOUNDARIES of LMRWD: The LMRWD covers an area of 64 square miles of Carver, Hennepin, Dakota, Scott and Ramsey counties. It also includes the Minnesota River Valley from Fort Snelling at the confluence of the Minnesota and Mississippi rivers, upstream to Carver Minnesota. The width of the District includes the bluffs on both sides of the Minnesota River within this reach of the river. In addition, included in its boundaries are fourteen (14) cities or townships, partially or in their entirety.

ARTICLE IV

BOARD OF MANAGERS

Section 1. DISTRIBUTION of MANAGERS and APPOINTMENT THEREOF: Pursuant to Minn. Stat. § 103D.301, Distribution of Manager Positions, Subd. 1: More than one affected county. *"If more than one county is affected by a watershed district, the board must provide that managers are distributed by residence among the counties affected by the watershed district."* Minn. Stat. § 103D.301 Subd. 3: "*...The county board of commissioners of a county affected by the watershed district...* " appoints the manager.

Section 2. COMPOSITION OF LMRWD BOARD OF MANAGERS: The LMRWD is composed of five managers appointed by the four counties in the District: Hennepin County, two (2) managers; Dakota County, one (1) manager; Carver County, one (1) manager; and Scott County, one (1) manager. Ramsey County is no longer represented because there is no population from Ramsey County in the District.

Section 3. TERMS OF OFFICE: Appointments made by the respective counties' Board of Commissioners to the LMRWD Board of Managers are for three-year terms. Terms of office begin in March of the year they are appointed unless a county delays in the appointment of a manager. Per Minn. Stat. § 103D.315, Subd. 6., a manager's term continues until a successor is appointed and qualified.

Section 4. BONDING: Before assuming the duties of the Board, each Board member, at District expense, will obtain and file a bond in accordance with Minn. Stat. §103D.315, Subd. 2. The Board, at District expense, will provide for insurance for its members to provide liability protection on such terms and in such amounts as the Board decides.

Section 5. VACANCIES: Any manager who is unable to fulfill his/her three-year term of office on LMRWD Board of Managers shall notify his/her respective county commissioner of the fact he/she will leaving his/her position as manager on the LMRWD so the county he/she

represents can appoint another manager as soon as possible to complete the departing manager's term in office.

Section 6. COMPENSATION: Minn. Stat. § 103D.315 Subd. 8: "*The compensation of managers for meetings and for performance of other necessary duties may not exceed* the amount specified by law. *Managers are entitled to reimbursement for traveling and other necessary expenses incurred in the performance of official duties.*"

Managers shall be compensated the statutory maximum per diem for meetings and the performance of other necessary duties authorized by the Board. Managers are entitled to reimbursement for mileage, travel expenses, and lodging in accordance with the LMRWD travel policy. Managers cannot be reimbursed for alcoholic beverages.

Section 7. SUBMISSION OF MANAGER'S EXPENSES: A claim form shall be filled out by each Manager and submitted to the LMRWD office to be processed and approved in the same manner as other claims in June and December.

Section 8. DUTIES OF MANAGERS IN STATUTE: Minn. Stat. § 103D.315 "Managers" defines additional duties of the District's Managers.
In addition to statutory duties, Managers shall abide by the following principles:

(a) The Board of Managers acts as the unified voice of LMRWD and the president serves as the spokesperson for the Board of Managers.

(b) No individual Manager may provide direction, instructions or authorization to the Administrator or a District consultant unless specifically authorized to do so by the Board of Managers.

(c) A Manager's request for information that would require a significant amount of the Administrator's time must be approved by the Board of Managers.

(d) A Manager must notify the Administrator when a request for information is made from consultants to the District.

(e) A Manager may not request or authorize on behalf of the District performance of services by the Administrator or consultant unless authorized by action of the Board of Managers.

(f) Individual managers cannot bind the District to agreements or expenditures.

ARTICLE V
OFFICERS

Section 1. ELECTION OF OFFICERS: The following officers shall be elected each calendar year on or before the first regularly scheduled meeting in September: President, Vice-

President, Secretary and Treasurer and Assistant Treasurer. Terms are for one-year unless re-elected.

Section 2. OFFICER VACANCIES: Minn. Stat. § 103D.315 Subd. 3: *"The managers must fill vacancies occurring in the officers' positions."*

Section 3. TEMPORARY APPOINTMENTS OF OFFICERS: The Board may appoint a Board member as officer pro tem if an officer is absent or disabled and action by that officer is required.

Section 4. DUTIES OF OFFICERS:

(a) President: The President shall preside at all meetings of the Board of Managers. The President shall serve under the supervision and direction of the Board and shall see that all orders and resolutions of the Board are carried into effect. The President shall execute all contracts or instruments requiring an officer's signature, unless otherwise directed by the Board, and shall have the general powers and duties usually vested in the office of President of the Board and shall have such other powers and perform such other duties as the Board may from time to time prescribe.

(b) Vice-President: In the absence of the President at a regularly held LMRWD meeting, the Vice-President shall preside at the meeting. The Vice-President shall exercise and perform the authorities and duties of the President in the event of the latter's absence, death, disqualification, or incapacity until the LMRWD Board of Managers elects a new President. The Vice-President shall exercise and perform such other authorities and duties as may be prescribed or limited from time to time by the Board of Managers.

(c) Secretary: The Secretary shall cause to be recorded all votes and the minutes of all proceedings of the Board of Managers in a book to be kept for that purpose. The Secretary shall give, or cause to be given, notice of all meetings of the Board, and shall perform such other duties as may from time to time be prescribed by the Board or by the President. These duties may be delegated to the Administrator as directed by the Board of Managers.

(d) Treasurer: The Treasurer shall have the care and custody of the funds and securities and shall disburse the funds of the LMRWD as may be ordered from time to time by the Board. The Treasurer shall keep or cause to be kept full and accurate accounts of receipts and disbursements in books belonging to the LMRWD, and shall deposit all monies, securities and other valuable effects of the LMRWD in the name and to the credit of the LMRWD in such depositories as may be designated from time to time by the Board. Except to the extent that some other person or persons may be specifically authorized by the Board to do so, the Treasurer shall make, execute, and endorse all checks and other commercial paper on behalf of the LMRWD when requested by the Board and shall perform such other duties as may be prescribed by the Board.

(e) Assistant Treasurer: In the absence of the Treasurer, the Assistant Treasurer shall perform the duties of the Treasurer. The Assistant Treasurer shall exercise and perform the authorities and duties of the Treasurer in the event of the latter's absence, death, disqualification, or incapacity until the LMRWD Board of Managers elects a new Treasurer. The Assistant Treasurer shall exercise and perform such other authorities and duties as may be prescribed or limited from time to time by the Board of Managers.

Section 5. AUTHORIZED SIGNATORIES BY MANAGERS: LMRWD has a fiscal agency agreement with Carver County. Payments made by Carver County on behalf of LMRWD must comply with the processes and internal controls contained in the fiscal agency agreement. All other checks, drafts, or orders for the payment of money, notes or other evidences of indebtedness issued in the name of the LMRWD shall be signed by two members of the LMRWD Board of Managers. Checks may be endorsed through electronic signature.

Section 6. COMMUNICATIONS: Unless it is a personnel issue, when communicating with the LMWRD consultants Board members should inform the Administrator about the communication to keep her/ him updated about ongoing issues and business of the LMRWD.

Section 7. HARRASSMENT AND DISCRIMINATION: Board members and those with whom they work have the right and responsibility to work in an environment free from harassing or discriminating behavior. It is the responsibility of each Board member to refrain from creating a discriminatory or harassing environment. Each Board member is also responsible for treating others with dignity and respect and to report all incidents of harassment immediately so that they can be quickly and fairly resolved.

Section 7. REMOVAL FROM OFFICE: Any officer may be removed at any time, with or without cause, upon the affirmative vote of two-thirds (2/3) of the Board of Managers.

ARTICLE VI.
MEETINGS OF LMRWD BOARD OF MANAGERS

Section 1. REGULAR SET MEETINGS: The Managers shall have regular meetings to conduct the business of the LMRWD on the third Wednesday of each month and if such day shall fall on a holiday, an alternative date shall be set and noticed. The meetings may be cancelled and rescheduled at any time that the Managers deem necessary.

Section 2. SPECIAL MEETINGS: Special meetings to conduct the business of the LMRWD may be held and shall be legally noticed at any other time that the Managers may deem necessary.

Section 3. PUBLIC HEARINGS: Public hearings shall be conducted as required by law or, in addition, as directed by the Board of Managers.

Section 4. MEETING CALLED BY MANAGER: Minn. Stat. § 103D.315 Subd. 10, states: *"A meeting may be called at any time at the request of any manger. When a manager*

requests a meeting, the secretary of the watershed district must mail a notice of the meeting to each member at least eight (8) days before the meeting." The District's administrator shall notify the Managers as soon as possible of the time and place of the pending meeting and shall provide other notice as required by law.

Section 5. QUORUM and ADJOURNED MEETING: At all meetings of the Managers, a majority of the Managers appointed shall constitute a quorum to do business but a smaller number may adjourn from time to time. Unless otherwise required by law, all decisions must be approved by the affirmative vote of a majority of the Managers present at a meeting where there is a quorum.

Section 6. CHAIR of MEETINGS: The President shall preside as chairperson at all meetings of the Managers. In the absence of the President, the Vice-President shall preside. In the absence of both, the Secretary shall serve as temporary President. The President and temporary President shall have the same privileges.

Section 7. MEETING FORMAT:

(a) At the hour appointed for a meeting of the Board of Managers of the LMRWD, upon reaching a quorum, the Managers shall be called to order by the President or in his/her absence, by the acting President. The Managers shall proceed to do business following a set agenda.

(b) The President shall preserve order. The President may make motions, second motions or speak on any question, provided, however, that in order to do any of these things, upon demand of any Manager, the President shall vacate the chair and designate a temporary President. The President, or acting President, shall be entitled to vote like other Managers.

(c) Every Manager, prior to his/her speaking, shall address the President and shall not proceed until he/she has been recognized by the Chair.

(d) If a Manager has a personal interest in a matter that comes before the LMRWD Board of Managers, to the extent that it creates a conflict of interest as a matter of law, the Manager shall not vote on said issue.

(e) No person other than a Manager shall address the Board except with the consent of the President or by a vote of the majority of the Managers present.

(f) The President has the authority to set a time limit that a Manager or a person addressing the Board may speak, except upon vote of the majority of the Board of Managers present.

(g) All committees shall be appointed by the President unless expressly ordered by the Board. It shall be the duty of committees to act promptly and faithfully in all matters referred to them, to comply with the Open Meeting Law, if applicable, and to make reports at a future set time/date established by the Board.

(h) Minutes of all meetings of the LMRWD Board of Managers shall be recorded, reviewed by the Board, adopted and kept at the District's office. They shall be signed by the Secretary and shall constitute an official record of the procedure.

(i) Any Manager may request that the yeas and nays be recorded on any motion voted on by the Board and such request will be granted by the President.

Section 8. CONFLICTS OF INTEREST: LMRWD seeks to assure public confidence in the integrity of its proceedings by holding itself to high ethical standards. Ensuring that conflicts of interest do not affect the efforts of LMRWD is an essential element of maintaining high ethical standards. If a Manager has a conflict of interest in a matter, he or she shall state that such an interest exists, which will be noted in the minutes. The Manager must abstain from participating in any discussion, offering any motion, or voting on any matter in which the conflict of interest exists. "Conflict of interest" means a material financial interest of the Board Manager, a family member or a close associate; a relationship that limits the Manager's ability to be objective; or that creates the appearance of impropriety. At the request of the President or by any Board Manager, in a matter in which a Manager has a conflict of interest a roll call vote shall be taken and recorded in the minutes, as well as the abstention of the Manager with the conflict of interest.

Section 9. APPEAL OF A CHAIR RULING: A Board Manager may appeal to the Board from a ruling of the President. If the appeal is seconded, the Board Manager may speak once solely on the question involved and the President may explain his or her ruling, but no other Board Manager will participate in the discussion. The appeal will be sustained if it is approved by a majority of the Board Managers present exclusive of the President.

ARTICLE VII.
PARLIMENTARY AUTHORITY

Section 1. PARLIMENTARY AUTHORITY: The most current version of Robert's Rules of Order Newly Revised shall govern the LMRWD's meetings in all cases to which they are applicable and in which they are not inconsistent with state law, these By-Laws and, or any special rules of order the LMRWD may adopt.

Section 2. SUSPENSION: Robert's Rules of Order may be temporally suspended by consent of the majority of the Board Managers present.

ARTICLE VIII.
ANNUAL REPORT

Section 1. ANNUAL REPORT: Minn. Stat. § 103D.351: "(a) *The managers must prepare a yearly report of the financial conditions of the watershed district, the status of all projects, the business transacted by the watershed district, other matters affecting the interests of the watershed district, and a discussion of the managers plans for the succeeding year.*"

Section 2. **COPIES DISTRIBUTED:** Minn. Stat. § 103D.351: *"(b) Copies of the report must be transmitted to the Board of Water and Soil Resources, the commissioner, and the director within a reasonable time."*

ARTICLE IX.
ANNUAL AUDIT

ANNUAL AUDIT: Minn. Stat. § 103D.355, Subd 1. Requirement: *"The managers must have an annual audit completed of the books and accounts of the watershed district. The annual audit may be made by a public accountant or by the state auditor. "*

ARTICLE X.
WATERSHED MANAGEMENT PLAN

WATERSHED MANAGEMENT PLAN. Minn. Stat. § 103D.401, Subd. 1. Contents:

(a) *"The managers must adopt a watershed management plan for any and all of the purposes for which a watershed district may be established. The watershed management plan must give a narrative description of existing water and water-related problems within the watershed district, possible solutions to the problems, and the general objectives of the watershed district. The watershed management plan must also conform closely with watershed management plan guidelines as adopted and amended from time to time by the Board of Water and Soil Resources."*

(b) *"The watershed management plan may include a separate section on proposed projects. If the watershed district is within the metropolitan area, the separate section of proposed projects or petitions for projects to be undertaken according to the watershed management plan is a comprehensive plan of the watershed district for purposes of review by the Metropolitan Council under section 473.165."*

ARTICLE XI.
AMENDMENT TO BY-LAWS

Section 1. **AMENDMENT TO BY-LAWS.** LMRWD BY-LAWS MAY BE AMENDED, repealed, or adopted by a majority of the LMRWD Board of Managers upon thirty (30) days written notice of the proposed change in its entirety during a meeting of the LMRWD Board of Managers unless said notice is waived by all of the Managers. Notice of such alteration or amendment is to be contained in the notice of such meeting. The alteration/s or amendment/s must pass by a majority vote of the LMRWD Board of Managers.

Section 2. **INTERPRETATION** of the By-Laws and any amendment or additions thereto shall rest with the LMRWD Board of Managers.

Section 3. **TEMPORARY SUSPENSION OF BYLAWS:** These rules may be temporarily suspended by consent of a majority of the Managers present.

ARTICLE XII.
REVIEW OF BY-LAWS

THESE BY-LAWS shall be reviewed at least every five years and revised if needed. These bylaws govern internal LMRWD matters and do not create rights in any third parties.

Duly adopted on the 21st day of October, 2015 by the Lower Minnesota River Watershed District Board of Managers and signed by the President and Secretary of the organization.

By: Yvonne Shirk
President

10/19/14
Date

By: Len Kramer
Secretary

10/19/16
Date

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
6. A. – Burnsville Willow Creek Ravine Stabilization

Prepared By
Linda Loomis, Administrator

Summary
Staff is working with the city to develop a cooperative agreement between the LMRWD and the City.

Attachments
No attachments

Recommended Action
No action recommended

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 6. D. – Remote meeting participation

Prepared By
Linda Loomis, Administrator

Summary
This item has been on the LMRWD Board agenda since May of 2019. At that time, the Board of Managers directed that staff investigate what equipment the LMRWD should purchase so that Managers could participate in Board meetings when out of town in accordance with Minnesota Open Meeting Laws. The LMRWD consulted Tierney Brothers for a quote. Tierney recommended that the district work with Carver County to upgrade the audio system in the County Board room to assure adequate quality of the audio of the Board meetings.

Since that time, COVID created the need for all public bodies to meet remotely and Carver County now has equipment available for the LMRWD to be able to have the public participate remotely and Managers participate when out of town. Carver County is working to upgrade the equipment and has included the LMRWD in its plans. Therefore, this item will be removed from future agendas.

Attachments
No attachments

Recommended Action
No action recommended

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 6. E. – Dredge Management

Prepared By
Linda Loomis, Administrator

Summary

i. **Vernon Avenue Dredge Material Management site**

On October 11, 2021, the LMRWD received notice from the Minnesota Department of Transportation (MnDOT), in cooperation with the Federal Highway Administration (FHWA), regarding the Finding of No Significant Impact (FONSI) and Section 4(f) De Minimis Determination for the Trunk Highway (TH) 13: Dakota Avenue to Nicollet Avenue Project.

The notice stated: MnDOT completed an Environmental Assessment and has undertaken a thorough analysis of the project and its potential impacts. Through MnDOT's analysis, coordination with affected agencies, public and community involvement, and comment letters received, the Federal Highway Administration (FHWA) has concluded that the project will not cause significant environmental impacts and issued a Finding of No Significant Impact (FONSI) and Section 4(f) De Minimis Determination for the project on October 1, 2021.

The FONSI is available for viewing on the Highway 13 project webpage: **mndot.gov/metro/projects/hwy13savageburnsville**

On October 7, 2021, MnDOT held a meeting of the Business Advisory group, that presented information about the design of the project, timing of the construction, detours, and access to the ports during construction. A presentation for the general public was made on October 12, 2021.

The final design includes closing the intersections of TH 13 with Yosemite and Vernon Avenues. TH 13 will pass over Dakota Avenue and a new frontage road will be constructed on the north side of TH 13 to serve the ports and the LMRWD dredge placement site. Access to the LMRWD dredge site from the west will need to exit at Dakota Avenue, use the south frontage road to Quinton Avenue to turn left onto TH 13, then use the new off ramp to access Vernon Avenue.

Consultants for the MnDOT TH 13/Dakota Avenue Intersection projects contacted the LMRWD about access to the dredge site during construction. Construction will require closure of Vernon Avenue for a period of 28 consecutive days during June/July 2022. LS Marine was consulted regarding the need for access to the site. Dredging of the private terminals is usually complete by June 1. If weather delays dredging then access after June 1 may be necessary.

LS Marine has found a buyer for main channel material on the site at a price of $2/CY. MnDOT was requested to coordinate the construction closure of Vernon Avenue with the LMRWD so that material can be removed by the buyer. MnDOT said the contractor would be made aware of the LMRWD's situation.

ii. **Private Dredge Material Placement**
Payment for 2020 placement of private material has been received from all parties. Measurement of material placed in 2021 has been requested, so that invoices can be sent.

Attachments
No attachments

Recommended Action
No action recommended

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 6. F. – Watershed Management Plan

Prepared By
Linda Loomis, Administrator

Summary
Staff has been working on preparing a redlined version of the rules for the Board of Managers review at the November 2021 meeting.

Attachments
No attachments

Recommended Action
No action recommended

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 6. H. – Education & Outreach

Prepared By
Linda Loomis, Administrator

Summary
The tour of watershed projects turned out to be a great day. The weather cooperated and we were able to visit all the sites. Thank you to everyone that turned out. On the following Tuesday, October 5th, Greg Genz, a member of the Citizen Advisory Committee, was kind enough to provide his boat for a tour of the river. The CAC met Mr. Genz at the Lyndale boat landing and toured upriver to Shakopee. It was a very informative meeting for the CAC. (And the weather was beautiful!)

Staff has been working on permanent signage for the LMRWD according to the work plan approved by the Board of Managers. The LMRWD issued an RFP for design and fabrication of two signs. Two proposals were received and staff recommendations are attached.

Students at Jefferson High School have contacted the LMRWD about signage for the Cost Share Project and the LMRWD may offer to include signage for the project with the order for other signs.

Staff also met with Mr. Ted Suss of the Friends of the Minnesota Valley to discuss getting more schools engaged in the River Watch program.

Attachments
Interpretive Signage Consultant Recommendation dated October 15, 2021.
Proposal from Barr Engineering
Proposal from Studio Lola

Recommended Action
Motion to accept the proposal from and award contract to Studio Lola

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Jen Dullum, Education and Outreach Coordinator
Della Schall Young, CPESC, PMP

Date: October 15, 2021

Re: Interpretive Signage Consultant Recommendation

On July 21, 2021, the Lower Minnesota River Watershed District (LMRWD or District) authorized Young Environmental Consulting Group's (Young Environmental) to release a request for proposal (RFP) for interpretive signs at East Chaska Creek and Eagle Creek. Following consultation with other water management organizations and development of the RFP, on September 27, 2021, Young Environmental emailed the RFP directly to the following eight recommended firms with experience on similar projects:

1. Barr Engineering Company (Barr)
2. Dogtooth Design
3. Gopher Signs
4. KORT Signs
5. Sign Minds
6. Split Rock Studios
7. Studio Lola
8. Tūhura Communications

Two proposals were received from Studio Lola and Barr by the October 8, 2021, which was the due date. Split Rock Studios sent a message to the District, wishing it the best while stating they would not be submitting a proposal because of their current workload. Below is a summary of the review process and our recommendation.

Review Process

Linda Loomis, LMRWD administrator, and Jennifer Dullum and Della Young, Young Environmental, reviewed the proposals received based on experience, qualifications, and cost and individually scored them based on the following factors:

Completeness and clarity of the response	20 percent
Qualifications and experience of the firm	15 percent
Qualifications of key personnel	15 percent
Demonstrated expertise in creating interpretive signs or exhibits	20 percent
Ability to complete the project by March 31, 2022	15 percent
Estimated cost	15 percent

To account for the differences in evaluation approaches and to present an objective final score, each firm's individual reviewer scores were averaged. The final scoring for the proposals received are presented below.

Firm	Final Score	Rank
Barr Engineering	85	1
Studio Lola	83	2

Recommendations

Based on the scoring outlined above, Barr scored slightly higher than Studio Lola. However, Barr's proposed cost came in over three times higher than Studio Lola. As a result, we recommend Board approval of Studio Lola, a firm that has worked with and received positive reviews from several watershed districts, including Nine Mile Creek and Ramsey–Washington Metro Watershed District, as the firm to design the Eagle Creek/Savage Fen and East Chaska Creek Stabilization Project interpretive signs.

proposal for

Interpretive Signs

prepared for Young Environmental Consulting Group and the Lower Minnesota River Watershed District

submitted by Barr Engineering Co.

October 8, 2021

BARR

9 MILE CREEK DISCOVERY POINT

UNDERSTANDING OUR URBAN WATERSHED

WELCOME!

Discovery Point is the interpretive center and demonstration site of the Nine Mile Creek Watershed District (NMCWD). Here the District offers education and outreach programming that focuses on protecting the valuable water resources in our watershed.

A watershed is an area of land where all the water drains to one location. The NMCWD has a direct responsibility to protect and manage all surface waters and land area that drain to Nine Mile Creek. The District encompasses approximately 50 square miles of land in the cities of Bloomington, Eden Prairie, Edina, Hopkins, Minnetonka, and Richfield. The NMCWD is a special purpose unit of local government.

Here you will find examples of best management practices (BMPs) that feature ways to protect our water. At key locations, additional signs will explain the BMPs and how you can do your part to protect our environment.

9 MILE CREEK WATERSHED DISTRICT

Learn more at www.ninemilecreek.org

AN AMAZING GIFT!

This land and home were generously donated to Nine Mile Creek Watershed District by Barbara Kaerwer. Barbara dedicated her life to protecting the natural environment. Through her tremendous act of kindness, this property has become a place for all visitors to learn how to be good stewards of the land.

LET'S EXPLORE! CAN YOU FIND THESE SITE FEATURES?

RAINGARDENS. Collect and filter rainwater while providing pollinator habitat.

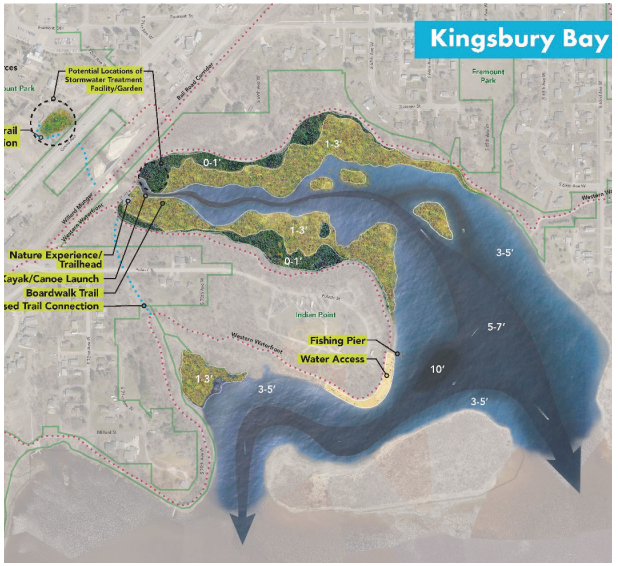
CISTERN. Collects and stores water from the roof for irrigation.

VERNAL POOL. An earthen berm and a weir hold back water to create a seasonal wetland.

ECOLOGICAL RESTORATION. An ongoing process to restore native plant communities and remove invasive species.

PERMEABLE SURFACES. Provides a stable parking surface that allows rainwater to soak into the ground.

REINFORCED TURF. Stronger than turf alone, the reinforced turf of the overflow parking lot allows water to soak into the ground.



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engineering and environmental consultants

BARR

October 8, 2021

Jen Dullum
Education & Outreach Coordinator
Young Environmental Consulting Group
P.O. Box 43933
Minneapolis, MN 55443

Re: Request for proposal for interpretive signs: design and fabrication services for the Lower Minnesota River Watershed District

Dear Ms. Dullum:

Barr Engineering Co. is pleased to present our proposal to Young Environmental Consulting Group (Young Environmental) and the Lower Minnesota River Watershed District (LMRWD) to provide graphic design, illustration, and fabrication facilitation services in the watershed.

For this project, we will likely combine mapping, diagramming, and illustration to communicate complex ecosystem processes and engineering in an approachable, informative, and compelling manner. The fen and creek stabilization project sign suite needs to be grounded in good science and be visually appealing and informative. We have formed a team of graphic and ecological design specialists well-versed in restoration practices and with the design expertise needed to present these concepts to the general public. Our proposal also includes communications staff who can help to take the signs to a level of understanding critical for addressing equity within the watershed.

For this project, we have broken down tasks into three phases: communication, graphics, and fabrication. With decades of community engagement projects, our team understands the critical task of thoughtful cooperation between the community, designers, and stakeholders to deliver a successful project.

Thank you for the opportunity to propose on this project. Please contact Marcy Bean, project manager (952-457-5467, mbean@barr.com) or Karen Chandler, principal in charge (612-247-6666, kchandler@barr.com) if you have any questions about this proposal.

Sincerely,

Karen L. Chandler

Karen Chandler, PE
Vice President, Senior Water Resources Engineer

Marcy R Bean

Marcy Bean, PLA
Senior Landscape Architect

Table of contents

Barr has successfully designed and supported fabrication of dozens of installed projects throughout the Twin Cities, including interpretive signage for Mississippi Watershed Management Organization (top) and the Green Line light rail corridor and rain gardens in St. Paul (bottom).

1. Company profile

Barr Engineering Co. is an employee-owned consulting company that integrates engineering and environmental expertise to help clients develop, manage, and restore natural resources.

Barr's engineers, ecologists, and landscape architects work together to develop a wide range of innovative solutions to water-resource problems. Our big-picture approach, combined with an eye for the small details, allows us to create solutions and designs that also incorporate beautiful landscapes that conserve water and energy, lower chemical use, and reduce maintenance—and provide public green spaces and healthy habitat for native plant and wildlife populations.

We also develop interpretive graphics and signage, education programs, and manuals on a variety of topics such as implementing stormwater management practices on small, urban sites; maintaining environmentally sound lawns; and managing invasive nonnative plant species.

Firm information:
Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435

Proposal contact:
Karen Chandler
Vice President, Principal in Charge
952.832.2813
kchandler@barr.com

2. Project team qualifications

Barr has had the opportunity to partner with Young Environmental and the Lower Minnesota River Watershed District (LMRWD) for a variety of engineering projects over the last few years. Building on these experiences, our team will be led by Karen Chandler, principal in charge, and Marcy Bean, project manager. Karen and Marcy will work together to provide open communication and collaboration with project partners. We have built a team that has broad expertise in graphics and communications, including Melanie Upchurch, Barr's new Visual Communication Designer, who specializes in transforming complex concepts into clear and persuasive visuals. This expertise, matched with engineers and landscape designers who have studied, designed, and constructed similar ecosystem-based projects will support a science-based underpinning of all graphics and communications developed for this project.

Marcy will lead the Barr team internally, with several key meetings to introduce Barr staff listed below to the project partners. We envision a collaborative design process with visioning sessions and storyboarding to build from ideas generated by everyone on the team and jumpstart creativity while ensuring that LMRWD goals are met.

Our clients cite customer service and project communication as key factors in their satisfaction with Barr—reasons that returning clients make up more than 76% of our client base.

Our proposed team has designed educational, interpretive signage for numerous high-profile green infrastructure sites around the Twin Cities, including the Mississippi Watershed Management Organization's Stormwater Park and Learning Center; Nine Mile Creek Watershed District's Discovery Point (interpretive center and demonstration site); Maplewood Mall; the Minnehaha Creek corridor; and the Green Line light rail corridor on University Avenue in Saint Paul. We use a variety of tools (illustrations, diagramming, mapping, and interactive media) and easily understood text to create powerful visuals and educational materials that make complex topics comprehensible.

Project team bios

Karen Chandler, PE, Vice President, Senior Water Resources Engineer
MS, Civil Engineering

role: principal in charge

Karen has 34 years of experience working with watershed organizations and cities to complete and implement watershed and stormwater management plans. She has developed and led development of dozens of watershed management plans and updates for urban and rural water management organizations and cities. She assists these clients with designing and constructing stormwater projects as well as hydrologic, hydraulic, and water-quality analyses. Karen uses her extensive community and stakeholder engagement experience to guide and support clients with facilitating public processes.

She provides ongoing engineering services to the Bassett Creek Watershed Management Commission and Black Dog Watershed Management Organization. Karen is the principal-in-charge of Barr's ongoing work with Young Environmental Consulting Group to provide services to the LMRWD.

relevant project experience:

- Public-facing executive summaries for watershed management plans; various watershed management organizations; project principal or project manager
- Watershed newsletter; Black Dog Watershed Management Organization; project manager
- Watershed tour documents; Bassett Creek Watershed Management Commission; project manager
- Graphic-based water quality summaries; Bassett Creek Watershed Management Commission: project manager

Marcy Bean, PLA, Sr. Landscape Architect **role: project manager**

Bachelor of Architecture

Marcy has 18 years of experience focusing on innovative stormwater management, native landscaping and maintenance, and green infrastructure design in urban environments. Her work has involved urban ecosystem restoration, stormwater reuse, BMP design and maintenance, and stakeholder facilitation. Prior to joining Barr, Marcy managed capital projects and supported community-based efforts to manage stormwater at the MWMO. Marcy manages projects in a range of scales, from large-scale capital projects to community-based projects.

relevant project experience:

- Various projects; Young Environmental Consulting Group and Lower Minnesota River Watershed District; Education and Outreach support
- Powers Lake stormwater BMP with integrated passive-park use and landscape restoration; South Washington Watershed District; project manager
- "Eco-mosque" transformation, including sustainability, environmental justice, and rain gardens; Masjid An-Nur, North Minneapolis; grant support and facilitation (prior to Barr)

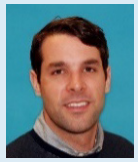
Melanie Upchurch, Visual Communications Designer **role: visual communications**

Masters of Science, Biomedical Visualization; BFA, Drawing and Graphic Design, Human Biology (minor)

Melanie specializes in transforming complex concepts into clear and persuasive visuals tailored to audiences. Her areas of focus include art direction, 2D illustrations and animations, graphic design, infographics and process diagrams. Prior to Barr began her career helping Fortune 500 companies tell their stories at various stages of litigation. While in the legal industry, Melanie was involved in numerous prominent and high-profile cases.

relevant project experience:

- Beef Product Inc., v. ABC News, Inc., (the largest defamation settlement in the United States)
- Paramount Pictures Corporation, et al. v. Axanar Production, Inc., et al.
- United States v. BP Exploration & Production, Inc. (Deepwater Horizon)
- Mobile Electronic Devices and Radio Frequency and Processing Components (Qualcomm)



Brendan Dougherty, PLA, Sr. Landscape Architect **role: graphics specialist**

MLA, Landscape Architecture

Brendan has over 12 years of experience in sustainable landscape design, alternative stormwater management, and environmental site restoration. He creates infographics, icons, templates, diagrams, 3D drawings, and visualizations for master plans, interpretive signage, and public meetings. He specializes in developing signage that reinforces a sense of place and a site history. He also designs and develops construction plans for green infrastructure, landscapes, and urban ecology regeneration. Brendan designed interpretive signage for the Mississippi Watershed Management Organization and Nine Mile Creek Watershed District headquarters and various Capitol Region Watershed District projects. He also provided layout and graphic design for the Ford site and Hiawatha Golf Course reports.

relevant project experience:

- Stormwater Park and Learning Center stormwater practices interpretive signage; Mississippi Watershed Management Organization; graphic designer (templates, icons, themes, and 3D drawings)
- Discovery Point interpretive signage; Nine Mile Creek Watershed District; graphic designer (illustrative graphics, BMP icons, layout and design)
- Central Corridor Light Rail Transit (Green Line) green infrastructure stormwater practices; Capitol Region Watershed District; graphic designer (3D drawings)

Shiyue Zhang, Landscape Designer

role: graphics specialist

MLA, Landscape Architecture

Shiyue has four years of experience in graphic design and landscape design. He develops project renderings, educational signage, and public outreach materials and provides construction documentation development on a variety of projects, from small-scale, community-based rain gardens and other integrated stormwater practices to large, regional parks and urban redevelopment projects. Specifically, his responsibilities include assisting with the production of construction plans, illustrative renderings, and infographics and developing detailed cost estimates and technical specifications for project designs. Shiyue contributes to a range of design and planning projects, including park design, campus master planning, trails and open-space design, green infrastructure design, innovative stormwater treatment design, native plant community restoration, and natural resource management planning.

relevant project experience:

- Morningside flood mitigation; City of Edina; graphic designer (concept landscape design and site plan, park-space 3D renderings)
- Metropolitan Council sustainable landscape master plan; City of Minneapolis; graphic designer
- County government center planting design; Salt Lake County; landscape designer (planting concept and landscape design)

Annie Breitenbucher, Reports Specialist

role: communications specialist

MLS, Liberal Studies

Annie has two decades of experience in journalism and communications. Her responsibilities include writing, editing, and designing technical publications, marketing materials, and reports. Prior to Barr, Annie reported and wrote nearly 200 byline stories and coordinated promotions for the Star Tribune's education department. She has co-authored and designed dozens of community education summaries, overviews, and reports for cities and natural resource management organizations, including the former Ford Plant sustainable stormwater master plan.

relevant project experience:

- 2017–2026 watershed management plan strategic overview; Ramsey-Washington Metro WD; editor and designer
- Ford Plant sustainable stormwater master plan; City of Saint Paul; writer and co-designer
- Hiawatha Golf Course water management alternatives community education report; Minneapolis Park & Recreation Board; writer, designer
- District infrastructure Emergency Action Plan; Capitol Region Watershed District; plan writer and designer

3. Scope of work

In this section of the proposal, Barr presents our approach to producing two high-quality interpretive signs (about 36 inches by 24 inches) for the Eagle Creek/ Fen and the East Chaska Creek Stabilization Project. We have broken out the project scope into three phases, combining both sites into each phase and meeting: 1.) communication; 2.) graphics; and 3.) fabrication. For Phase 1, Barr's team would meet with experts from Young Environmental, LMRWD, and others as requested to learn more about the vision for the signs, key aspects of each project, and important messages that the partners want to communicate. Together, we will begin to storyboard concepts, including key educational aspects, for each site and begin conceptualizing graphics that can help communicate the identified messages to the public. Barr will then take the storyboard concepts a step further and develop graphic layout mockups for each sign so that the partners can review and comment. Our communications team will draft written components to support messages developed during this phase of work.

In Phase 2, the Barr team will create detailed graphics for use with sign frameworks. Graphic art creation and illustrations may include plan diagrams, illustrative renderings describing scientific processes, or other graphics to help support the educational goals of each sign. Written components will be finalized. Barr will incorporate the LMRWD's graphic standards into the sign design. Project partners will have an opportunity to review and comment. Barr will then address comments and finalize the design for each sign.

During Phase 3, Barr will obtain proposals for signage fabrication. As shown in Appendix A, Barr has experience working with fabrication vendors to develop professional-grade signage that will withstand harsh Minnesota weather. Based on the proposal evaluation timeline, we anticipate the project kickoff meeting would occur in early November 2021. As a preliminary schedule, we recommend having Phase 1 occur in November, kicking off Phase 2 in December and aiming for completion of graphics by mid-February 2022. We'll use our experience and efficiencies to support sign fabrication by March 31, 2022.

Phase 1: communication development for interpretive signage

The scope of professional consulting services for Phase 1 includes:

1. Attend one kickoff meeting (virtual or in person) to discuss vision, science and engineering of each project, and key educational messaging.
2. Prepare draft outline of storyboard concepts for review/comment by Young Environmental/LMRWD team.
3. Develop storyboard concepts (based on outline developed above) with key messaging, and hold one virtual meeting with the Young Environmental/LMRWD team to review and discuss.
4. Prepare graphic mockup of signage, including LMRWD graphic standards and logos, fonts, color schemes, border and other elements (excluding graphics developed in Phase 2).

Phase 2: graphic development for interpretive signage

The scope of professional consulting services for Phase 2 includes:

1. Further development of signage layout.
2. Prepare illustrations and create graphic art to support messaging developed in Phase 1.
3. Hold one virtual meeting with Young Environmental/LMRWD team to review preliminary sign design with graphics.
4. Complete design of sign prior to fabrication and provide to Young Environmental/LMRWD team for final review.
5. Complete final design of sign and develop sign fabrication details for construction, as needed.

Phase 3: fabrication of interpretive signage

The scope of professional consulting services for Phase 3 includes:

1. Solicit sign fabrication quotes from up to three vendors, and coordinate with the Young Environmental/LMRWD team to make formal vendor selection.
2. Coordinate with vendor and Young Environmental/LMRWD team in signage fabrication.

Assumptions

1. Phase 1 and 2 each include up to two opportunities to review and comment. One round of review is included in Phase 3.
2. Development of a 3D model will not be required for renderings. This service is available but would be at an additional cost.
3. Installation of signage is not included.

4. Fee estimate

The proposed cost of the services would be billed on a time and expenses basis, not to exceed $16,670. Invoices are payable pursuant to our subcontract agreement with Young Environmental.

Project phase	Estimated fee per sign	Estimated total fee
Phase 1: communication development for interpretive signage	$3,025	$6,050
Phase 2: graphic development for interpretive signage	$3,680	$7,360
Phase 3: fabrication of interpretive signage	$1,630*	$3,260
Subtotal	**$8,335 (per sign)**	
Total project fees		**$16,670**

* Includes $380 Barr fee and $1,250 for fabrication

5. Ownership and copyright terms

Pursuant to our subcontract agreement with Young Environmental, all drawings, specifications, technical data, documents, and other information furnished to Barr either by Young Environmental or LMRWD or developed by Barr or others in connection with the services is the property of Young Environmental or LMRWD. It appears that young's contract with the District requires that all work product become the property of the District. Therefore, all Barr work product will become the property of LMWWD.

Appendix A:
work samples

BARR

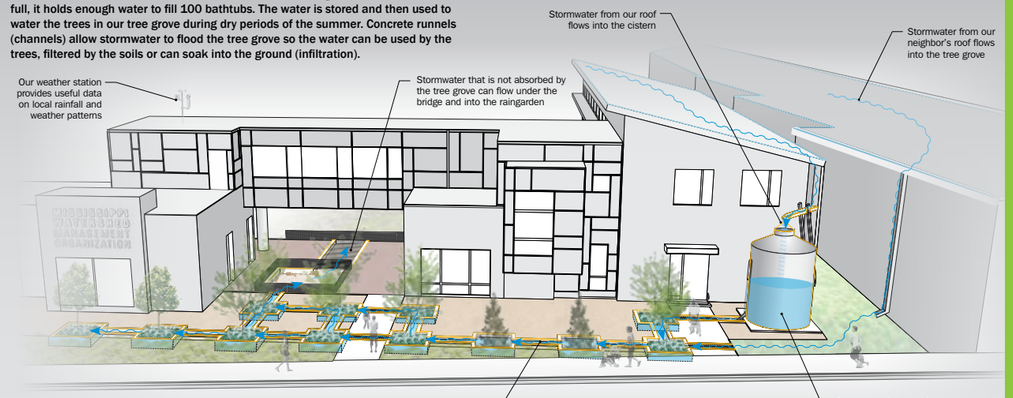
Barr Engineering Co.

Graphic Design and Illustration Services Work Examples

RAIN AS A RESOURCE
STORMWATER TREE GROVE & CISTERN

A BIG WATERING CAN

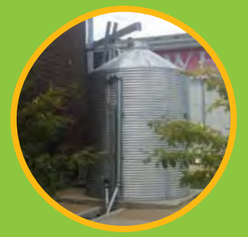
When it rains, water from our roof is collected in our 4,000-gallon cistern. When full, it holds enough water to fill 100 bathtubs. The water is stored and then used to water the trees in our tree grove during dry periods of the summer. Concrete runnels (channels) allow stormwater to flood the tree grove so the water can be used by the trees, filtered by the soils or can soak into the ground (infiltration).



HOW IT WORKS

Cisterns are the oldest form of rainwater collection and storage and are very similar to a rainbarrel that you might have at your home. Water in a cistern or rainbarrel can be stored until it is needed, often when it hasn't rained in a while.

Using stored rain for watering your plants helps to preserve drinking water because the water from your garden hose is the same water you drink from your tap.



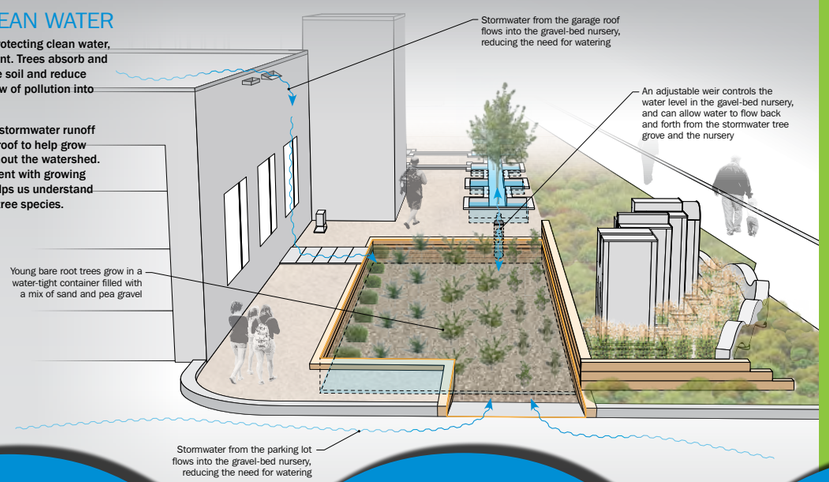
The clear pipe on the front of the cistern shows how much water is inside. Can you tell how full the cistern is today?

STORMWATER FOR HEALTHY TREES
GRAVEL-BED TREE NURSERY

ROOTING FOR CLEAN WATER

Trees are an important tool for protecting clean water, especially in an urban environment. Trees absorb and clean stormwater runoff, stabilize soil and reduce erosion. This helps to stop the flow of pollution into our rivers, lakes and streams.

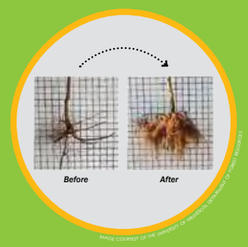
Our gravel-bed tree nursery uses stormwater runoff from our parking lot and garage roof to help grow trees that will be planted throughout the watershed. Our nursery allows us to experiment with growing different types of trees, which helps us understand how climate change is affecting tree species.



HOW IT WORKS

Gravel-bed nurseries are an inexpensive way to grow healthy trees in a small amount of space.

Growing trees in a gravel-bed rather than soil can result in trees with 200 percent more roots. These extra roots help the trees grow larger in shorter amounts of time. They also make the trees tougher and healthier when planted. The more roots a tree has, the better it can absorb water and nutrients.



As our climate changes, what types of trees will grow best?

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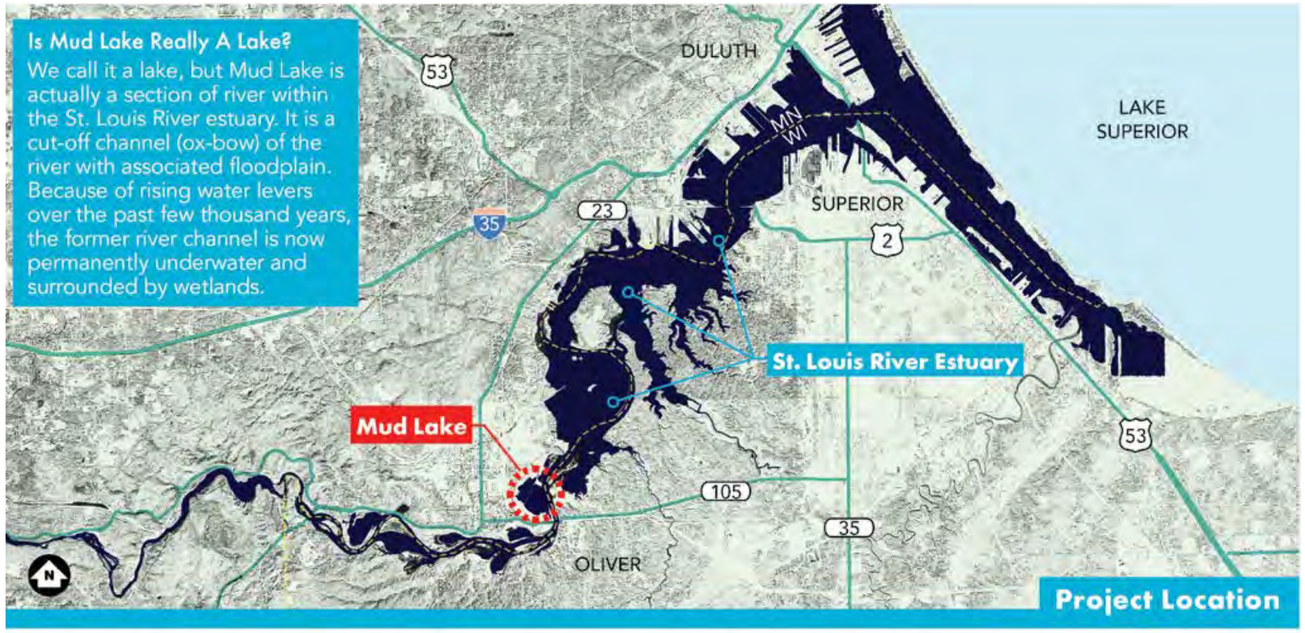
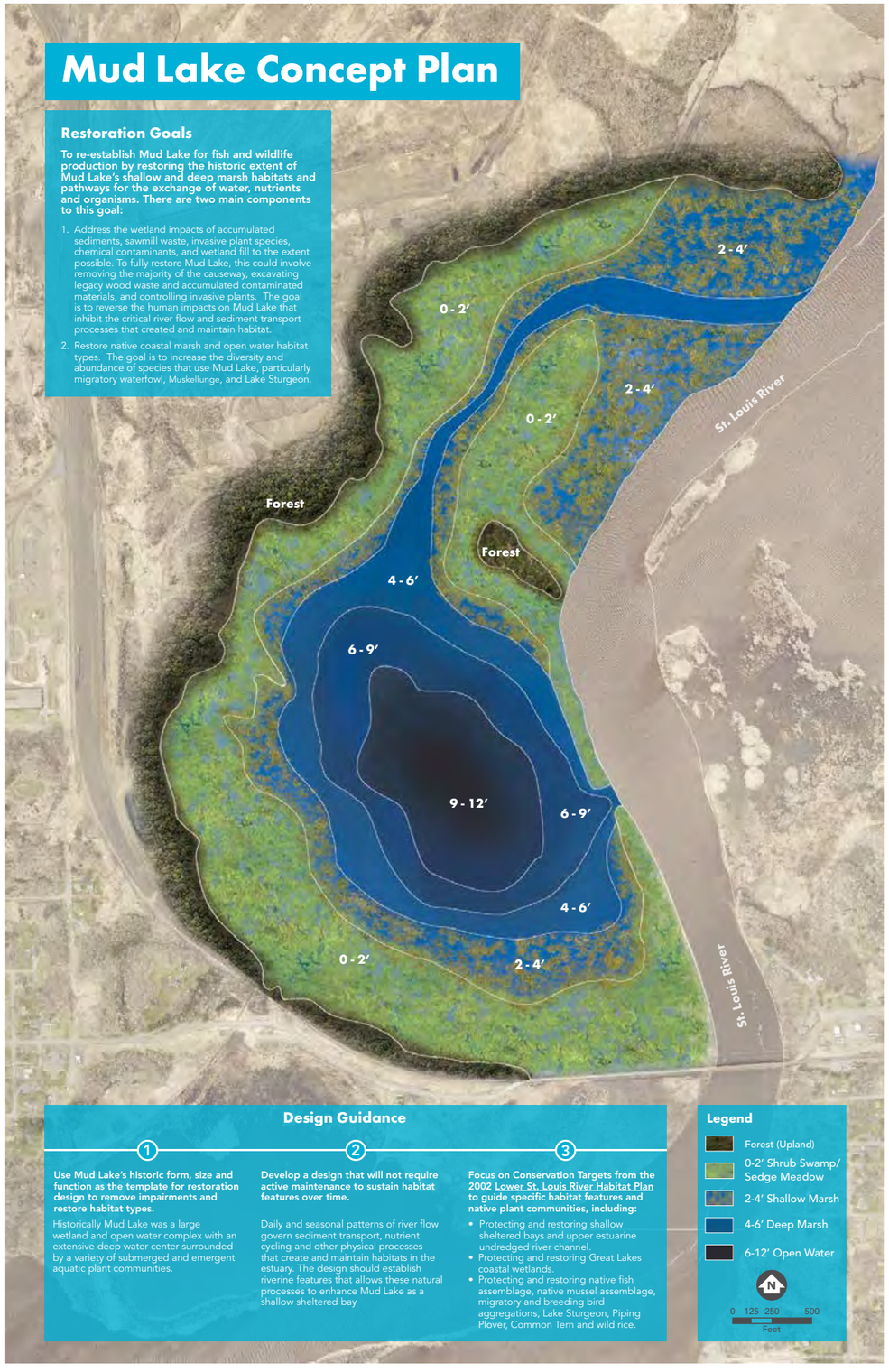
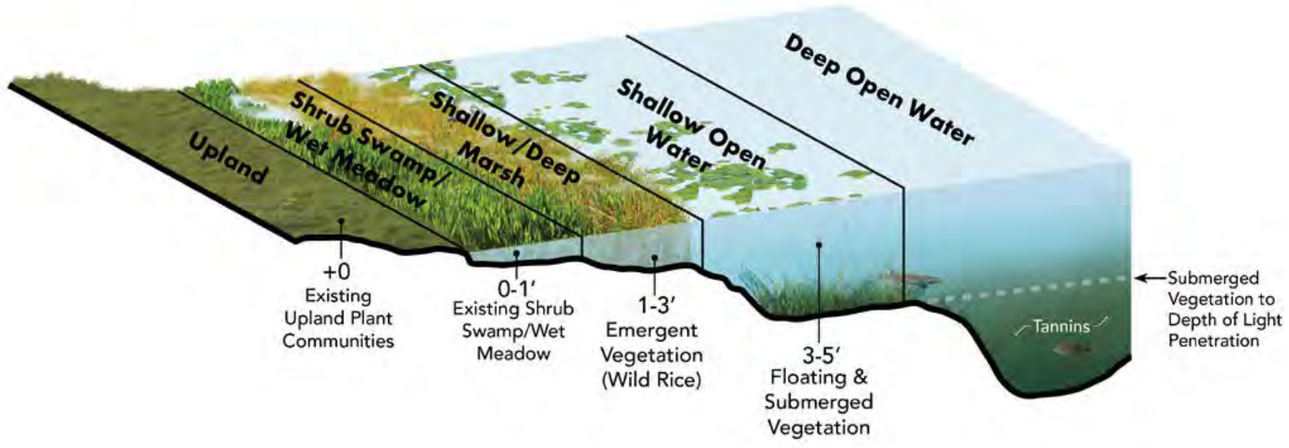
MWMO - Headquarter Interpretive Signage





Shallow Sheltered Bay Habitat Types



City of Duluth - Mud Lake Graphical Report

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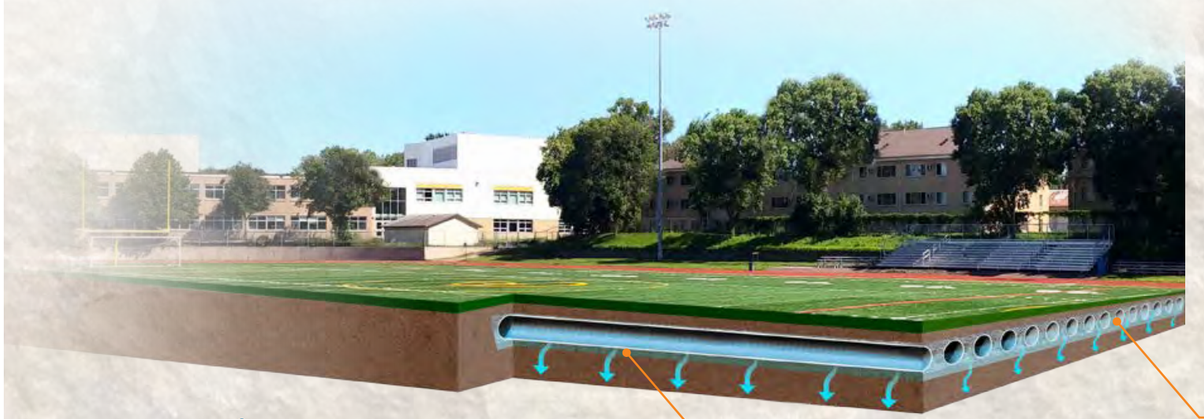
WHAT'S BENEATH THE FIELD?

Underground rock trenches at Como Park Senior High School help reduce pollution in Como Lake. Here's how —

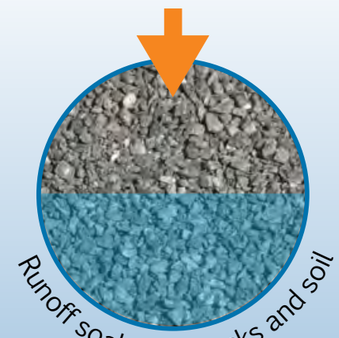


Runoff fills pipes and rock trenches, then soaks into the ground

Polluted stormwater runoff used to flow from Rose Avenue, Como Park Senior High School, and the surrounding neighborhood to Como Lake through storm sewers. The school installed a series of large pipes with thousands of holes and buried them in rock-filled trenches below the athletic field. This system captures and cleans up to **6.5 million gallons** of runoff each year by allowing it to slowly soak into the ground.

Polluted stormwater runoff enters infiltration gallery from storm sewer on Rose Avenue.

Runoff enters pipes and rock trench



Runoff soaks into rocks and soil

Cleaner water in Como Lake

Why?

Did you know that when it rains or snow melts, water carries trash, dirt, oil, pet waste and leaves to Como Lake? Water that flows over hard surfaces is called runoff. Projects like this one are essential to capture, clean and reduce runoff before it reaches nearby lakes and rivers. Saint Paul Public Schools completed this project in partnership with Capitol Region Watershed District. Project support provided by Capitol Region Watershed District, Saint Paul Public Schools, City of Saint Paul and the Clean Water, Land, and Legacy Amendment.

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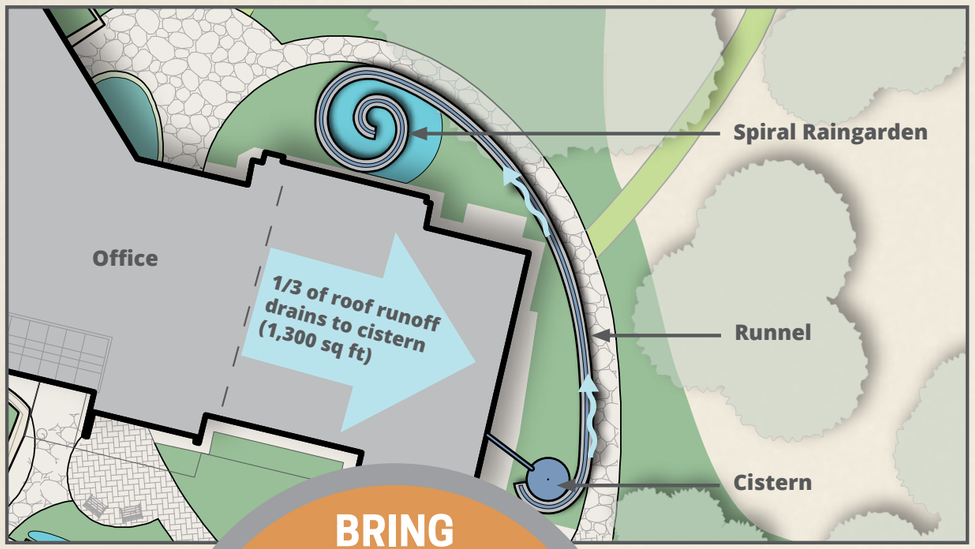
CRWD - Como High School Interpretive Signage

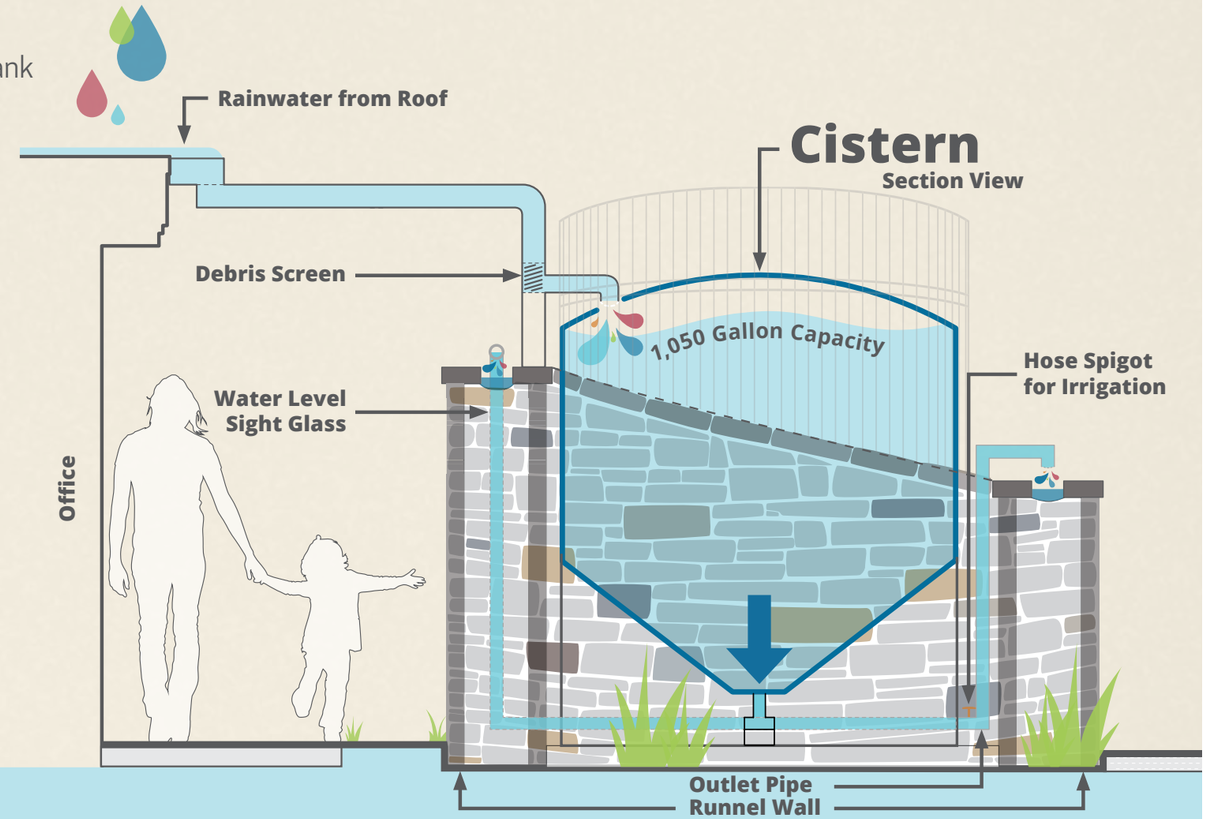
CISTERN

RUNNEL AND SPIRAL RAINGARDEN

NINE MILE CREEK DISCOVERY POINT

It is amazing how quickly rain adds up. A one-inch storm event will entirely fill our 1,050-gallon cistern, and only one third of our roof drains to it! This large holding tank is part of an artistic system. Overflow water drains to the spiral raingarden via the runnel, and stored water is used to irrigate landscape plants.





BRING IT HOME!

Like a cistern, rain barrels are used to collect rainwater from your roof. They are a small first step you can take to reduce runoff. Try linking two or more together to increase the amount of water you can capture.

WATER QUALITY BENEFIT

1,050 Gallons

= 19 Rain Barrels

= 27 Bathtubs

Capture Rainwater On-Site

Install a cistern to capture and store roof runoff water. Use the water for irrigation when drier days come. The use of cisterns helps conserve groundwater and reduces the amount of polluted runoff flowing into our lakes and creeks. Cisterns can be installed above or below ground and come in a number of sizes and appearances.

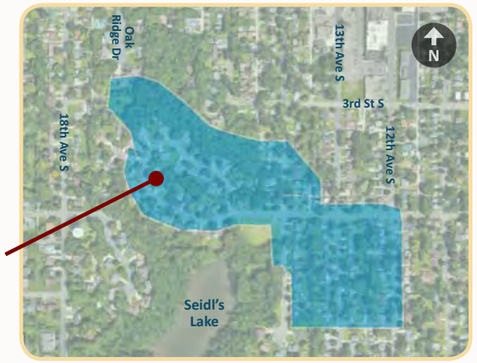
ROOTED IN WATER QUALITY IMPROVEMENT

TREE TRENCHES STOP POLLUTANTS FROM ENTERING SEIDL'S LAKE

WHAT DOES THE TREE TRENCH SYSTEM DO?

The Seidl's Lake tree trench system intercepts and filters polluted stormwater from a 27-acre watershed to the north of Seidl's Lake. The underground tree trench prevents almost 10 pounds of phosphorus and over 3,700 pounds of sediment from entering Seidl's Lake. This helps to improve the quality of the lake, reduce the frequency of algal blooms, and recharge groundwater.

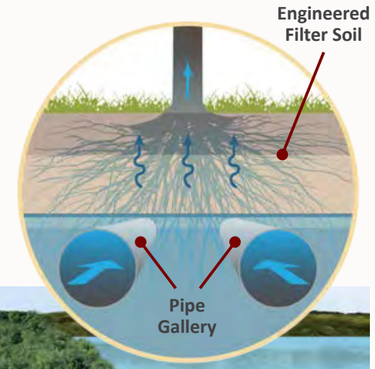
The innovative underground storage system collects and treats stormwater, providing water directly to the roots of trees planted in the park. Added benefits of the system include habitat for song birds, shade for park users, and usable park space on top of the system.

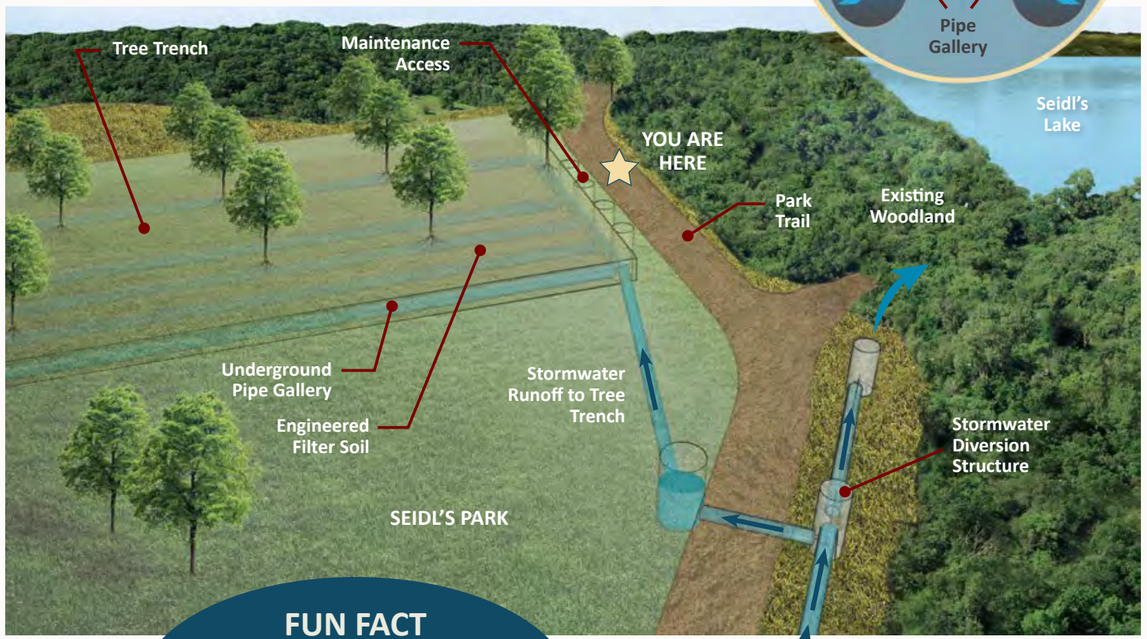


The 27-acre watershed to the north of Seidl's Lake that is treated by the tree trench system

HOW DOES IT WORK?

Stormwater runoff from the watershed enters the stormwater diversion structure. The first 1.1 inches of the stormwater enters the underground pipe gallery, filling up the pipes and empty spaces in the surrounding engineered filter soil. Sediment and debris in the water are captured in the pipe system. The tree roots can "drink" the stormwater from above. Excess water soaks into the soil, which recharges the groundwater aquifer.





FUN FACT

THE 4,000,000 GALLONS OF STORMWATER INTERCEPTED BY THE TREE TRENCH SYSTEM COULD FILL NEARLY 370 SWIMMING POOLS!

SSP

LMR WMO
LOWER MISSISSIPPI RIVER
WATERSHED MANAGEMENT ORGANIZATION

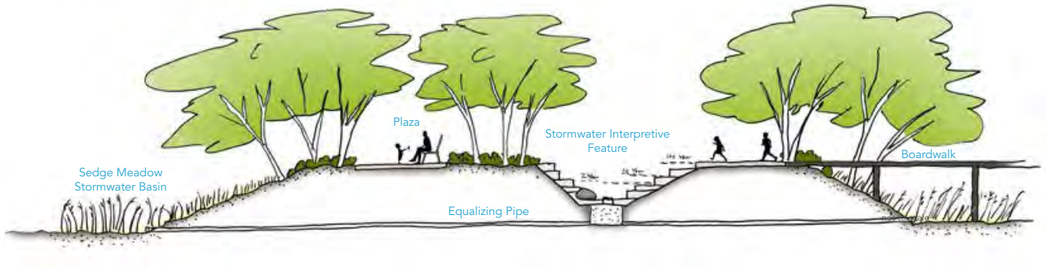
METROPOLITAN COUNCIL

City of South St. Paul - Seidl's Lake Interpretive Signage resourceful. naturally.®

Key

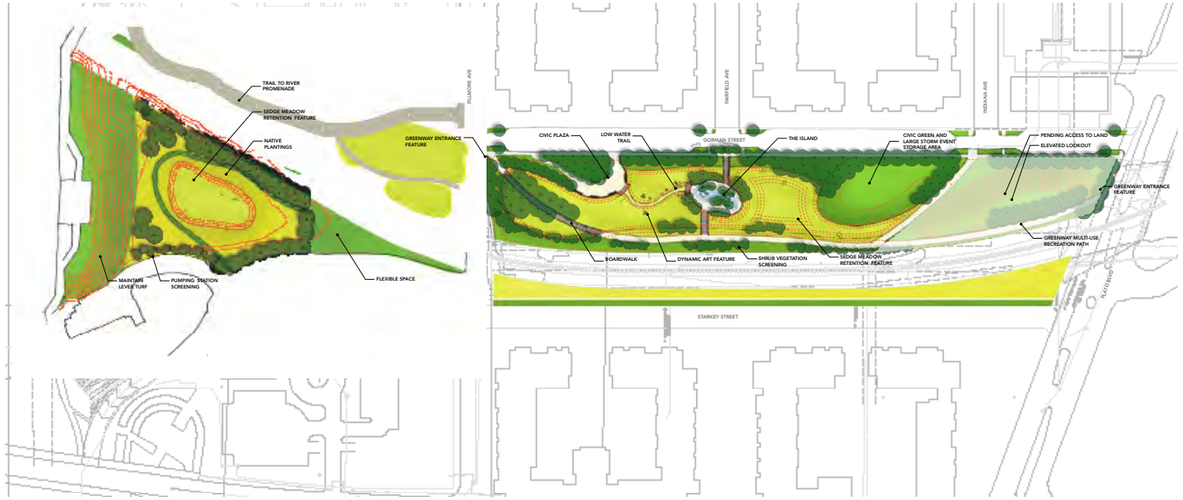
1. The Island
2. Civic Green
3. Sedge Meadow
4. Civic Plaza
5. Low Water Trail
6. Boardwalk
7. Dynamic Art Feature
8. Vegetative Screening
9. Elevated Lookout
10. Muti-Use Recreation Path
11. Future Development
12. Existing Rail Road

Section: The Island



West Side Flats Greenway - Conceptual Rendering

Prepared by Barr Engineering Co. for the City of Saint Paul — 4/22/2017



West Side Flats Greenway

Prepared by Barr Engineering Co. for The City of Saint Paul - 04/21/2017

0 40 80 120
Feet

City of St. Paul - West Side Flats Park Renderings

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PRELIMINARY LANDSCAPE PERSPECTIVE RENDERING
Prepared by Barr Engineering Co. for City of New Brighton WTP1 AOP Expansion – 11/29/16

PRELIMINARY LANDSCAPE PERSPECTIVE RENDERING
Prepared by Barr Engineering Co. for City of New Brighton WTP1 AOP Expansion – 11/29/16

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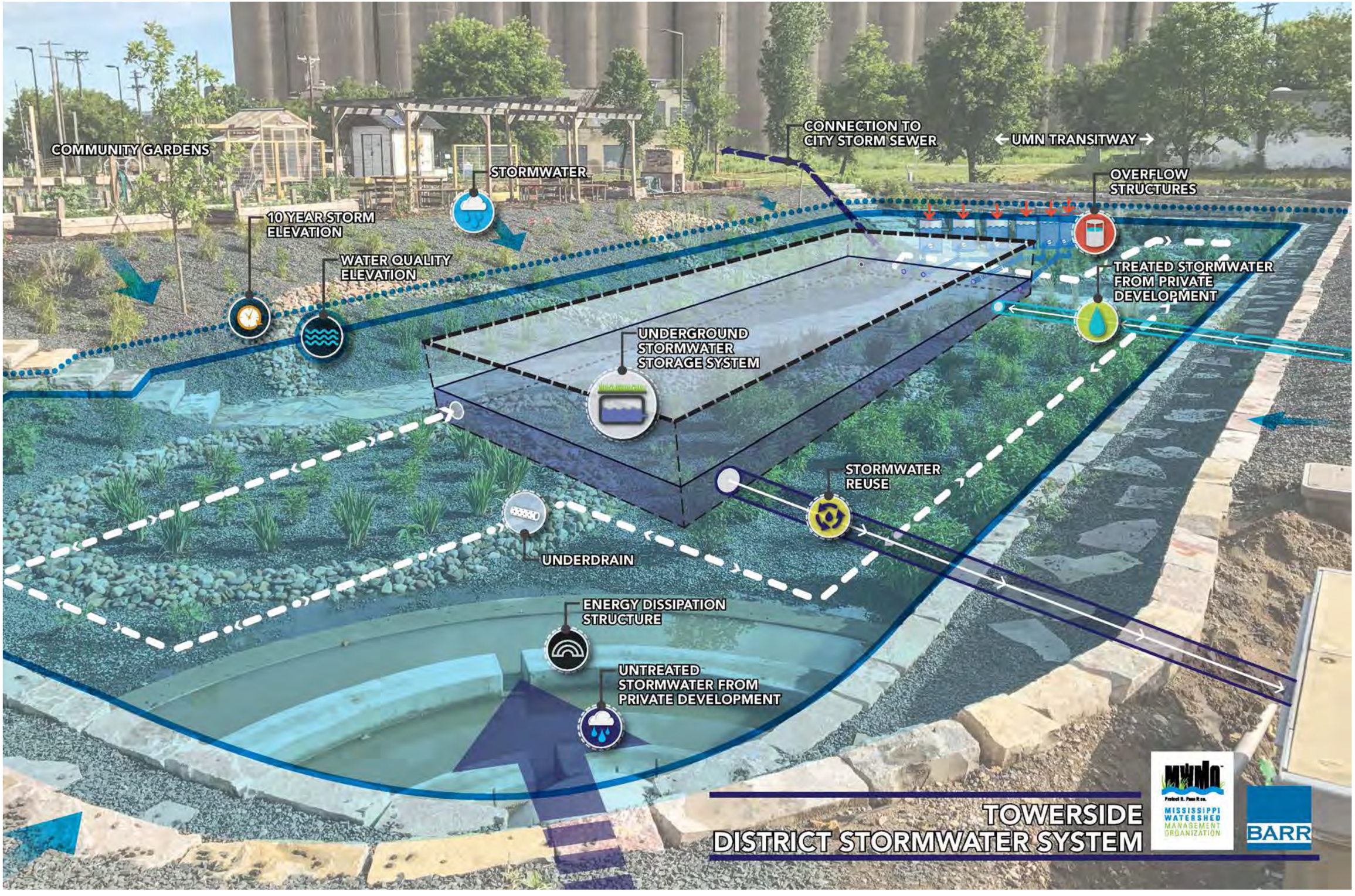
City of Blaine - Landscape Rendering



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MWMO - Towerside Diagram

RPBCWD - Creek Restoration Rendering

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Hello

PROPOSAL

ABOUT

COMPANY	PROJECT	DATE
Young Environmental	LMRWD	Oct 6, 2021

ECOSYSTEM SIGNAGE BUILDING AND PRINTING

Collaborative layout and design for (2) Signage

ABOUT STUDIO LOLA—Hello! We are a company of freelancers working collaboratively with clients to build brand materials for print, web and more, specializing in logo creation, brand management and interior and exterior signage. Each contributer is a part of a team of awesome humans collected who are honest, hardworking and kind. All talent has been proven through time and projects completed:

Graphic Design **Jamie Colbert**, designer and owner of Studio Lola; 20 years experience in print design + 5 years of web design
Studio Lola Jamie Colbert; jamie@studio-lola.com, 6514429696, 26780 Freeport Ct. Wyoming, MN 55092

Illustration **Maggie Wiebe**, student University of Michigan, Penny W Stamps School of Art & Design '22
maggiewiebe.com, 651-249-0103
custom work completed recently for rain garden signage for RWMWD

Content / Editing **Inhouse through Studio Lola**

Sign Fabrication **ImageLoc Signage** We keep all printing reps witihin our company; what does that mean? We have some sweet elationships we have built over the years, we get some great pricing, we add a markup and bill through our company.

PRICE ESTIMATE TOTALS & PAYMENT DETAILS

1/2 down is due before project begins for all creation work; remainder due along with printing costs upon approval and prior to print
WE ACCEPT PAYMENT VIA CHECK OR VENMO

Graphic Design 12-18 hr @ $85
Illustration $750 - 1000; additional costs for usage rights beyond one-time use TBD
Content / Editing 2-5 hr @ $85

Sign Fabrication $1500-2500
Scope: This estimate is from a recent quote received for a similar job using the print provider I would use for your project. They have a patented process that is unlike any other I have seen for quality/weather resistance.Panel Width (INCH): 18.00 Panel Height (INCH): 12.00 Panel Total SQ FT: 1.50 .125 Panel Thickness; Single Side Print Rectangle; FINISHING 1/8" Corner Radius (default) *No Holes 3/8"-16 x.75" Mounting Studs (Quantity =4) Artwork File (Quantity =2); MOUNTING PEDESTAL FRAMELESS PEDESTAL POST MOUNT 20 160005 Options: 3"x3"x78" Inground Single Leg 10"x12" Mounting Plate Powdercoat Black Texture Est. Unit Weight: 20 LBS FREIGHT CHARGES ***Installation not included***

$1000 DOWNPAYMENT (1/2 DOWN REQUIRED FOR NEW CLIENTS); PAY VIA CHECK OR VENMO

I approve! Let's do this

Your signature of approval is required to place your job in active status. Note: New clients are required to pay half down to reserve the project time in my schedule and to solidify your commitement to the project as well.

☐ GO! NO EDITS (Ready to print/approved as is)

☐ WAIT! EDITS (New proof requested)

X _____
sign here

_____
date

RAIN GARDEN
at Wakefield Park

What is a rain garden?

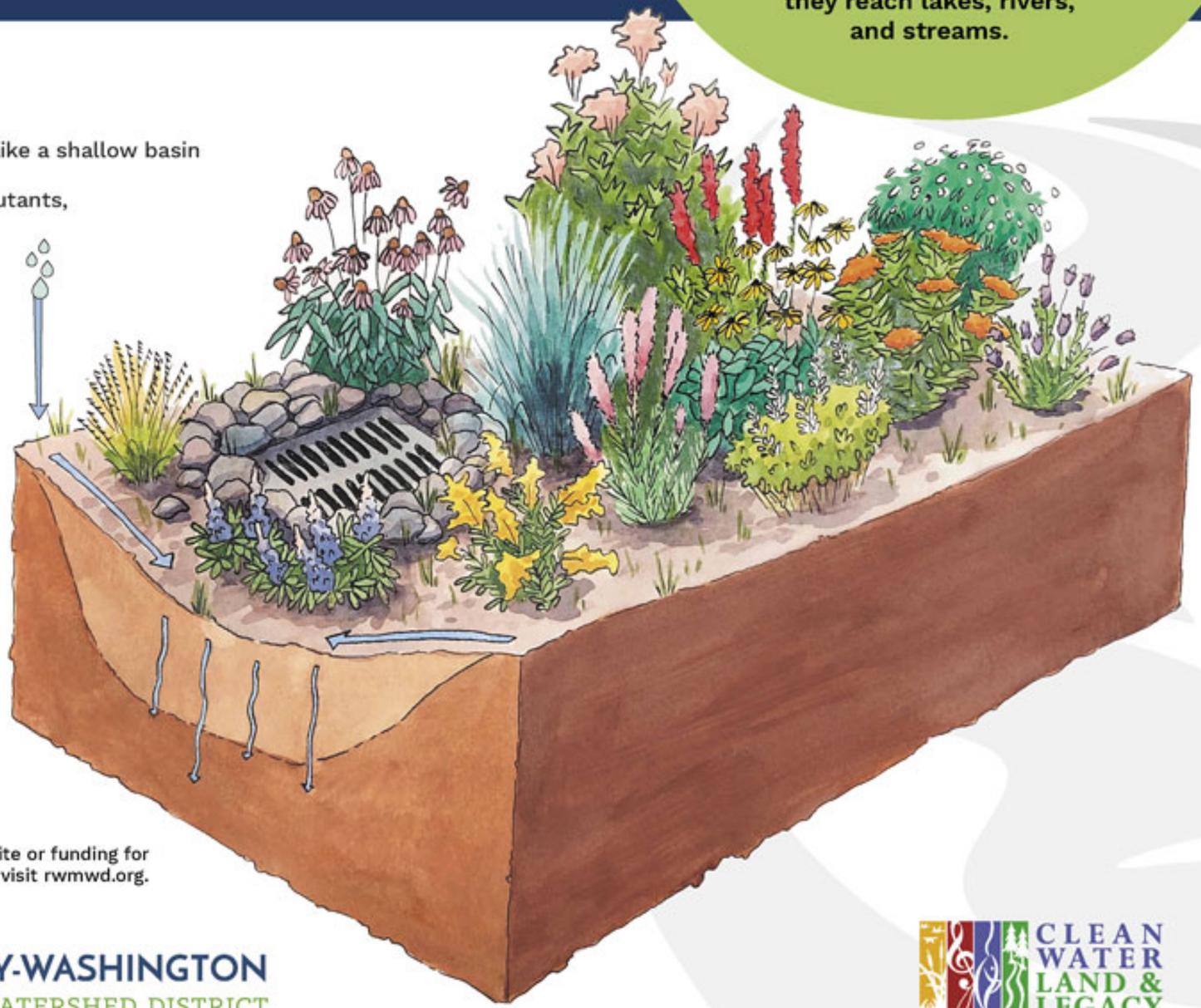
A rain garden is a planted lowe area that collects rainwater from hard surfaces like pavement and then filters out pollutants before they reach lakes, rivers, and streams.

What happens in the rain garden when it rains?

As it rains, rainwater will flow into the rain garden, which is usually shaped like a shallow basin

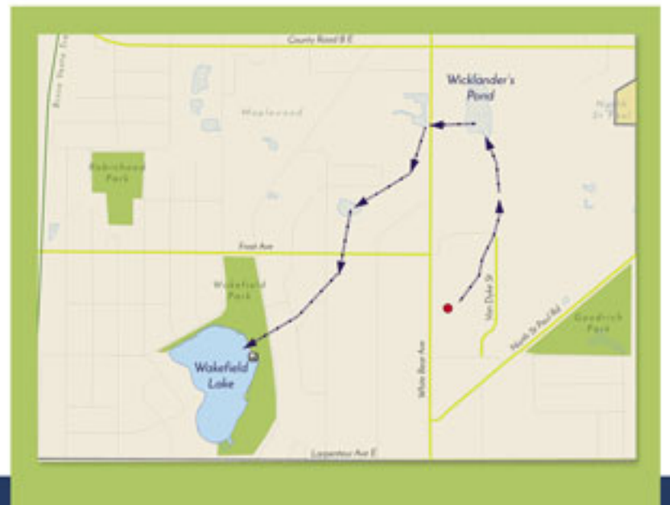
Water is filtered through deep plant roots and organic matter, removing pollutants, collecting sediment, and slowing the water flow

After it has been filtered, the water then joins the storm sewer system via an overflow grate or throughgroundwater



Facts about this Wakefield Park rain garden:

- Over 9,000 perennials and grasses, over 600 shrubs, and 70 trees are planted across 13 gardens on this site
- The gardens combined stretches over 31,000 square feet
- Over 11 acres drains to these gardens including 8 acres of pavement or other surfaces where water cannot soak into the ground
- Cleans rainwater runoff going into Wakefield Lake



Learn more

To learn more about this site or funding for a rain garden of your own, visit rwmwd.org.

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

CLEAN WATER LAND & LEGACY AMENDMENT

RAIN GARDEN

Woodbury Elementary School

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Cost share funding for rain garden construction is available. Find more information at rwmwd.org/costshare.

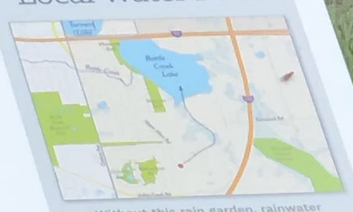
WHAT IS A RAIN GARDEN?

Rain gardens are shallow low spots intentionally designed to collect rainwater runoff, allowing the rainwater to soak or infiltrate into the ground. Rain runs quickly off streets and parking lots, picking up pollutants such as phosphorus and oil on the way. By collecting and cleaning rainwater runoff these rain gardens not only keep our lakes and creeks clean, they also protect our homes from flooding.

WHAT DOES THIS GARDEN DO?

- In some places, it's not possible to soak rainfall into the groundwater through existing soil. Filtration rain gardens collect stormwater and clean it by filtering it slowly through plants and engineered soil to remove pollutants.
- After filtering, clean rainwater travels through the storm sewer to a nearby pond, lake or stream
- By slowing the flow of stormwater and releasing it over time, rain gardens can also help reduce flooding.

Local Water Flow



Without this rain garden, rainwater runoff for this site would flow untreated into the closest lake.

This rain garden was planted by students from this school with the help of Ramsey County Master Gardeners.

NATIVE PLANTS & THEIR CULTIVARS

The plants in the rain garden have deep roots to help water soak into the ground. Pollinators such as bumblebees and butterflies are critical for our ecosystem and depend on plants like these to survive. Native plants are also adapted to our seasons and do not need watering or fertilizer to survive throughout the year.

Joe Pyeweed

Anise Hyssop

FLOWERING PLANTS

Flowers from these plants provide nectar and pollen that native pollinators need.

Prairie Dropseed

Switchgrass

NATIVE GRASSES & SEDGES

Seeds and stems from these plants provide food and habitat for insects and birds.

CLEAN WATER LAND & LEGACY AMENDMENT

DEFINING CHALLENGES WITH OUTDOOR PHOTO-QUALITY SIGNAGE

Photo-quality images are far more sensitive to UV light than solid colors and, over time, can fade if they are not adequately protected. The process of creating continuous-tone, photo quality images on signs is typically done on a digital inkjet or dye sublimation printer. Whichever printing process is used, the printed image must be protected with an over-laminate material to shield it from UV, weather conditions, moisture, graffiti and vandalism. The challenges facing each sign construction process are summarized on the right.

FADED IMAGE

DELAMINATION

HPL PEELING IMAGE

Laminated to Dibond® or aluminum with clear over-laminate sheet

- Subject to UV fading after two to three years
- Subject to moisture intrusion and delamination
- No integrated mounting system
- Easily damaged by graffiti and/or vandals
- Price/value – short life span increases cost of ownership

High Pressure Laminate (HPL) or Porcelain Enamel

- Intensive manufacturing process (labor and equipment)
- Consumes high energy levels during production
- Material costs are high; porcelain - extremely high
- HPL utilizes formaldehyde in the production process
- Purchase price: HPL - high
- HPL has a tendency to peel as it ages

Fiberglass Embedded

- Subject to fading after five years in direct sun
- Tends to yellow with age
- With age, surface fibers compomise image clarity
- Purchase price is high

FIBERGLASS EMBEDDED

HIGH PRESSURE LAMINATE

IMAGELOC®

SUMMARY OF SIGN INDUSTRY CONSTRUCTION TECHNOLOGIES

☛ Laminated Inkjet Signs

Typically printed on paper or vinyl and then adhered to a composite board material such as Dibond®. The sign is then covered with a clear plastic laminate to protect the graphics. These signs are prone to premature failure in a variety of ways, including delamination, fading, peeling, weather damage, graffiti and vandalism. Typically warranted for one to three years against fading only. Priced equal to fiberglass embedment and HPL signs.

☛ Fiberglass Embedded Signs

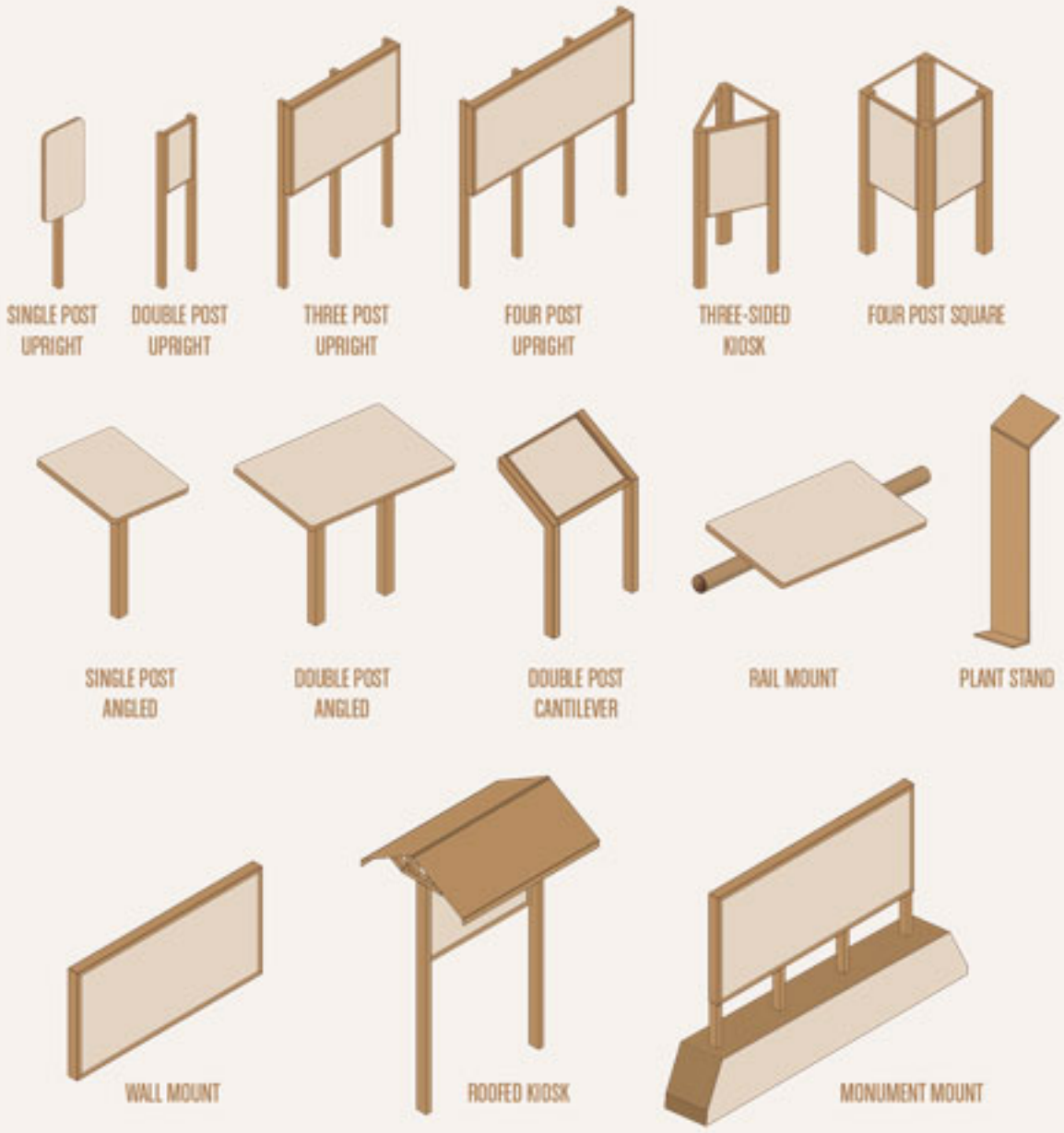
Printed on paper and then covered with fiberglass resin. Print quality is good but the panels are easily scratched. The surface of these signs tend to deteriorate over time, especially in areas where the sign is exposed to direct sunlight. When deteriorating, the fiberglass breaks down, leaving the surface of the sign cloudy and obstructing the visibility of the graphics. Performs best in areas of shade or partial shade. Priced equal to HPL and laminated inkjet.

☛ High Pressure Laminate (HPL)

Like inkjet and fiberglass embedment, HPL is printed on paper. It is then covered with multiple layers of UV laminate to protect the graphics from fading and vandalism. These layers of laminate do reduce the clarity of the underlying images. HPL manufacturing is a labor and manufacturing intensive process which contributes to its high cost. HPL signs are subject to fading over time, as well as peeling and delamination along the edge of the panels. Priced equal to fiberglass embedment and laminated inkjet.

☛ ImageLOC®

Direct-printed onto a proprietary organic coating that is fused to heat-treated aluminum. Color vibrancy, image clarity and durability are all trademarks of this innovative technology. Highly durable in all weather conditions, ImageLOC® is warranted not to fade, crack, peel or delaminate for a minimum of ten years. A proprietary organic hydrophobic topcoating repels permanent markers, oil or water-based paints and much more, making it virtually graffiti-proof. ImageLOC® is a “green” environmentally friendly technology. It offers the lowest cost of ownership of any durable sign technology.


SINGLE POST UPRIGHT
DOUBLE POST UPRIGHT
THREE POST UPRIGHT
FOUR POST UPRIGHT
THREE-SIDED KIOSK
FOUR POST SQUARE
SINGLE POST ANGLED
DOUBLE POST ANGLED
DOUBLE POST CANTILEVER
RAIL MOUNT
PLANT STAND
WALL MOUNT
ROOFED KIOSK
MONUMENT MOUNT

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, October 20, 2021

Agenda Item
Item 6. J. – Permits & Project Reviews

Prepared By
Linda Loomis, Administrator

Summary

i. **CSAH 61 Drainage Improvements (LMRWD Permit 2021-002)**
This is a project proposed by Carver County to address an issue at a box culvert under Flying Cloud Drive/CSAH 61.

Attachments
Technical Memorandum County State Aid Highway (CASH) 61 Drainage Ditch Improvements (LMRWD No. 2021-002) dated October 13, 2021

Recommended Action
Motion to approve CSAH 61 Drainage Ditch Improvements Project (LMRWD Permit No. 2021-002) and authorize staff to pursue larger erosion issues with Carver County, and the cities of Chanhassen and Eden Prairie

ii. **TH 13 & Lone Oak Signal Improvements (LMRWD Permit 2021-042)**
This is a MnDOT Project for traffic improvements at TH 13 and Lone Oak Boulevard. The project will construct improvements to the intersection to improve pedestrian access to the MN River Greenway Trailhead on the North side of the Intersection.

Attachments
Technical Memorandum Highway 13 and Lone Oak Signal (LMRWD No. 2021-042) dated October 13, 2021

Recommended Action
Motion to approve TH 13 & Lone Oak signal improvements (LMRWD Permit No. 2021-042)

iii. **Burnsville Cemetery Expansion (LMRWD Permit 2021-007)**
This is a proposal to increase the area of the Garden of Eden Islamic Cemetery in Burnsville.

Attachments
Technical Memorandum Burnsville Cemetery Expansion (LMRWD No. 2021-007) dated October 13, 2021

Recommended Action
Motion to conditionally approve Garden of Eden Cemetery expansion (LMRWD No. 2021-007) subject to receipt of a copy of the NPDES permit and the name of the contractor and contact information for the person responsible for the inspection and maintenance of all erosion and sediment control features.

iv. Quarry Lake Outlet (LMRWD Permit 2021-014)

The project is proposed by the City of Shakopee to manage water levels in Quarry Lake and control damage caused by excessively high-water levels.

Attachments
Technical Memorandum Quarry Lake Outlet (LMRWD No. 2021-014) dated October 14, 2021

Recommended Action
Motion to conditionally approve Quarry Lake Outlet (LMRWD No. 2021-014) subject to receipt of a copy of the NPDES permit and the name of the contractor and contact information for the person responsible for the inspection and maintenance of all erosion and sediment control features.

v. Dakota LP (LMRWD Permit 2021-046)

This proposed is for improvements to a gas pipeline that runs underneath the Minnesota River between Bloomington and Burnsville. Staff was planning this permit for the November 2021 LMRWD Board of Managers meeting, however, ERM, the consultant on this project for CenterPoint Energy has asked that the approval be expedited because providing natural gas for consumers is considered an essential service. This project involves open cuts on steep slopes.

At this time staff is reviewing the signed drawings and will have recommendations for the Board on Monday.

Attachments
Attachments to follow

Recommended Action
Recommendations to follow

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Kaci Fisher, Environmental Scientist
Katy Thompson, PE, CFM

Date: October 13, 2021

Re: County State Aid Highway (CSAH) 61 Drainage Ditch Improvements (LMRWD No. 2021-002)

Carver County (County) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD or District) to maintain a drainage channel that crosses under Flying Cloud Drive (CSAH 61) and improve drainage through the culvert under the highway in the City of Chanhassen (City). The County has provided a grading plan of the proposed improvements along with the permit application for the CSAH 61 Drainage Ditch Improvements (Project).

The proposed Project consists of excavating a new channel to remove excess sediment buildup and improve the flow through the 4x16 foot box culvert under Flying Cloud Drive. Additionally, the Project intends to reestablish the historic channel for this drainageway so that water discharges south to the Minnesota River rather than west onto US Fish and Wildlife Service (USFS) property. The Project would disturb approximately 0.3 acres at Flying Cloud Drive (Figure 1). The Project is not located within the High Value Resource Area or Steep Slopes Overlay District, but it is located within the Minnesota River 100-year floodplain. Construction is proposed to commence November 2021.

Because the City does not have its municipal permit from the District, the Project requires an LMRWD individual permit and is, therefore, subject to an LMRWD permitting review.

Summary

Project Name:	CSAH 61 Drainage Ditch Improvements

Purpose:	Channel grading
Project Size:	Approximately 0.3 acres disturbed, no new impervious proposed
Location:	Adjacent to 285 Flying Cloud Drive, Chanhassen, MN
LMRWD Rules:	Rule C—Floodplain and Drainage Alteration
Recommended Board Action:	Approval

Discussion

The District has received the following documents for review:

- LMRWD online permit application; received February 2, 2021
- US Army Corps of Engineers permit to discharge into a wetland; dated February 1, 2021; received February 1, 2021
- Proposed channel grading; received February 2, 2021
- Redlined Wetland Delineation Figure by Hennepin County; dated March 17, 2016; received February 2, 2021
- Plans sheets for Bridge Number 10J43 by Hennepin County; dated November 2, 2016; received February 11, 2021
- CSAH 61: Pollutant Loading at all LMRWD Outlets memo by HZ United; dated October 27, 2016; received February 11, 2021, and August 26, 2021
- Current right-of-way aerial map; received February 11, 2021
- Historical aerial photos from 1969, 1979, and 1991 from Carver County; received February 11, 2021
- Stream calculations; received August 26, 2021
- Draft grading plans by Carver County; dated April 28, 2021; received August 26, 2021

The application was deemed complete on September 16, 2021, and the documents received provide the minimum information necessary for permit review.

Rule C—Floodplain and Drainage Alteration

The proposed Project is located within the Minnesota River floodplain, shown on the Carver County Flood Insurance Rate Map Panel 2709C0234D, dated December 21, 2018. The 100-year flood elevation at this location is approximately 720.7 feet (NAVD88).

The Project proposes excavating a new channel and stilling basin within County right-of-way and south of TH 101 to improve the channel hydraulics, prevent sediment buildup in the culvert, and prevent the continued westerly migration of the creek onto USFWS property. On the north side of CSAH 61, the Project proposes to straighten the drainageway as it enters the culvert. The 100-year floodplain is located only on the south side of CSAH 61, so the channel straightening and associated fill will not affect high water elevations on the Minnesota River. The County has provided hydraulic calculations demonstrating the new channel cross-section has the capacity to convey the flows as designed.

Additional Considerations

As part of the LMRWD 2020 Gully Inventory and Condition Assessment, the CSAH 61 culvert was surveyed and clearly presented with excessive sedimentation and evidence of the need for this project (Gully L199 Assessment). However, the Project is unlikely to solve the sedimentation problem at this location. The CSAH 61 culvert serves a 400-acre upstream watershed that includes High Priority Region 11 (Figure 2). The stream reach between High Priority Region 11 and CSAH 61 (Gully L197 Assessment) shows the extent of bank erosion and channel degradation occurring immediately upstream of the proposed project. Until this reach and the upstream High Priority Region are stabilized, the County is likely to continue to face sediment maintenance problems.

Recommendations

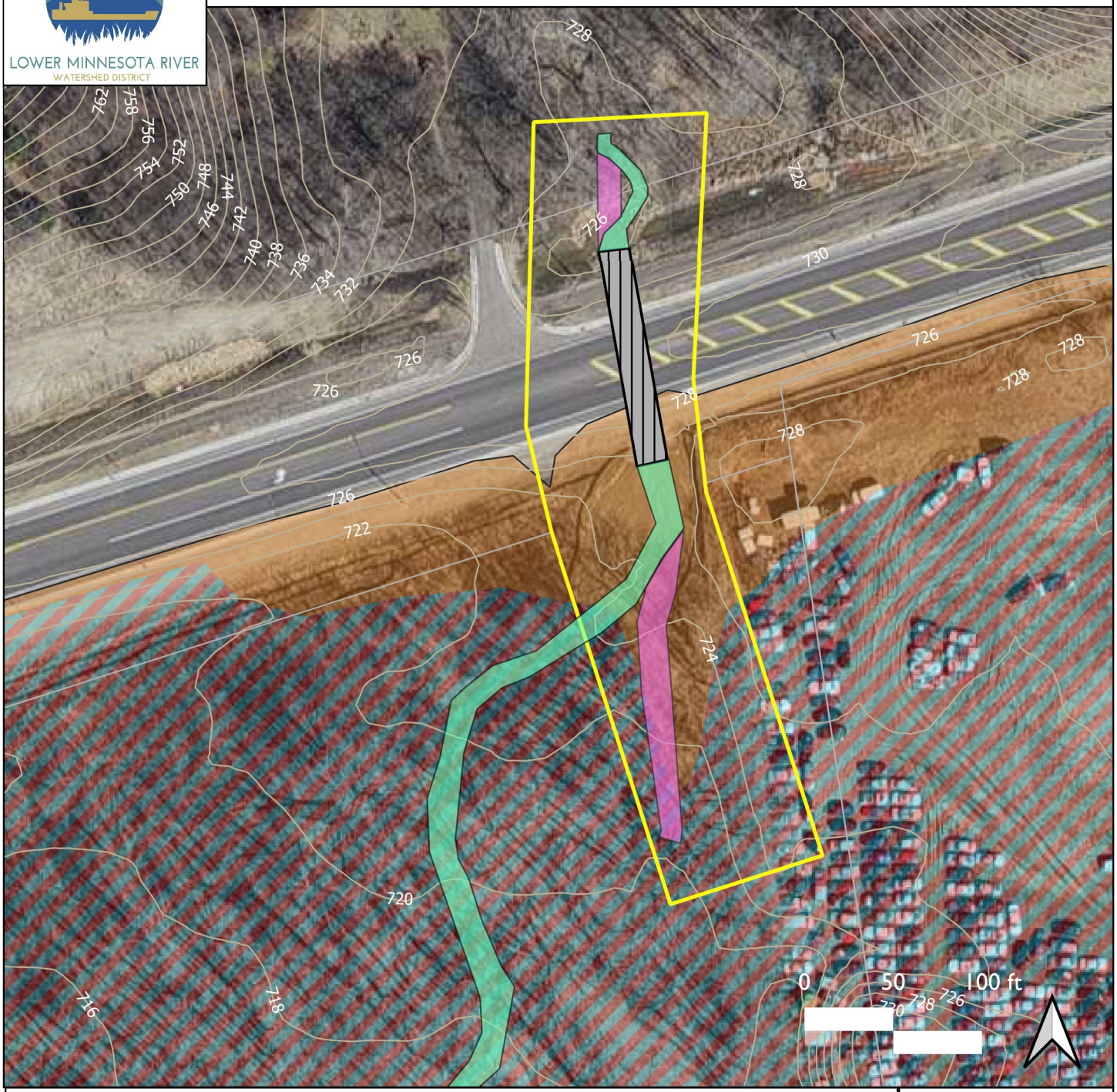
The staff recommends approval of the CSAH 61 Drainage Ditch Improvements Project. A follow-up meeting with the County and Cities of Chanhassen and Eden Prairie is recommended to discuss potential opportunities to address the larger erosion issue occurring upstream.

Attachments

- Figure 1—CSAH 61 Project Location Map
- Figure 2—CSAH 61 Project Drainage Area Map
- 2020 Gully L199 Condition Assessment
- 2020 Gully L197 Condition Assessment
- Draft Permit No. 2021-002

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

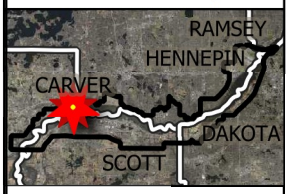
Figure 1: CSAH 61 Drainage Ditch Improvements



LEGEND

- Project Location
- CSAH 61 Drainage Project
- New Channel
- Existing Culvert
- Existing Channel
- 2-ft LiDAR Contours
- Steep Slopes Overlay District
- 100-yr Floodplain
- Floodway
- 500-yr Floodplain
- Parcel Boundaries
- LMRWD Boundary
- County Boundaries

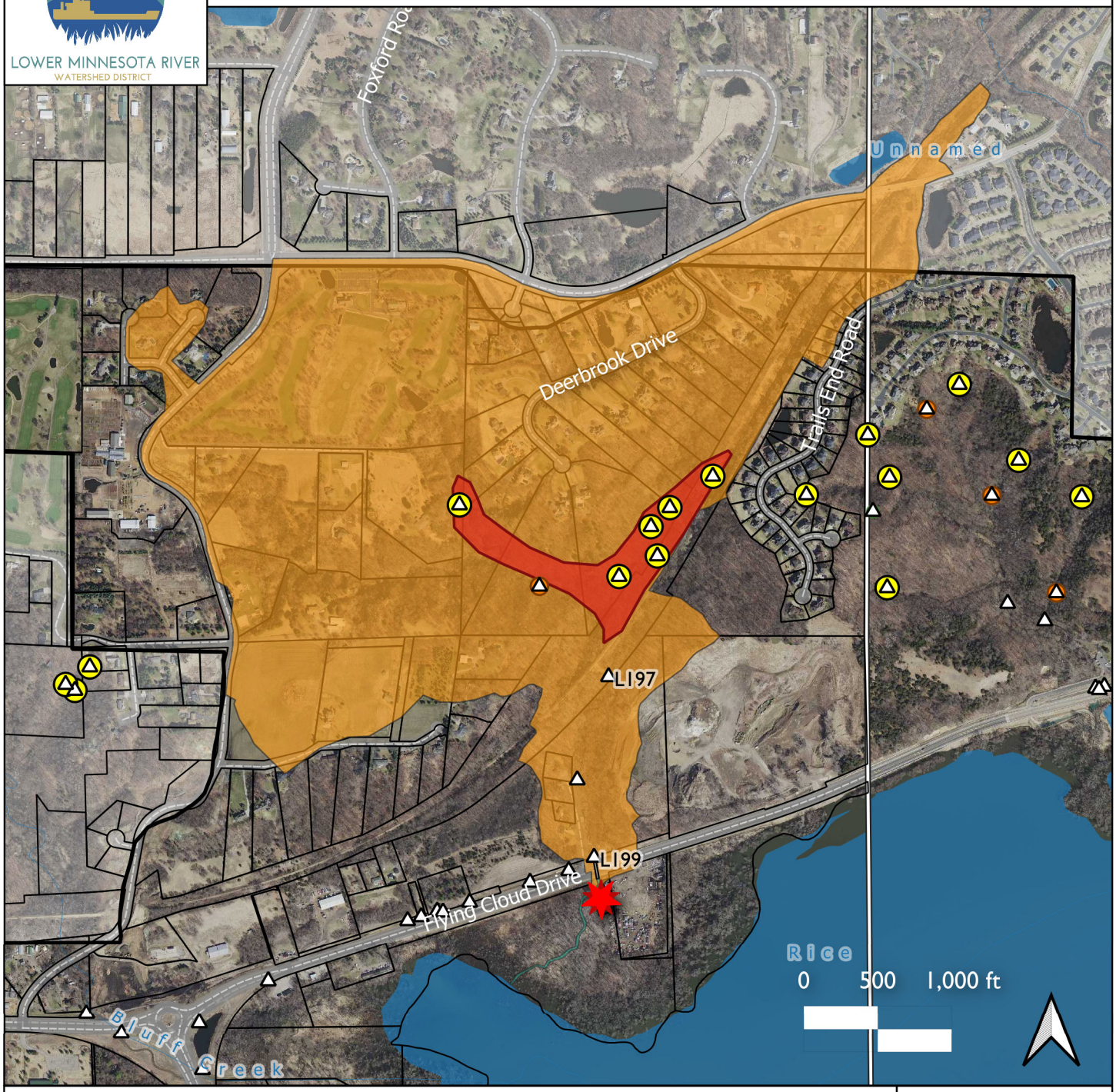
LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Figure 2: County Highway 61 Drainage Ditch Drainage Area



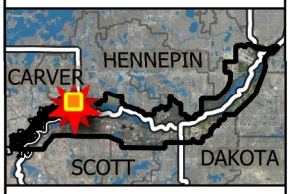
LEGEND

- Project Location
- 2020 Pipe Outfall Locations

2020 Gully Erosion Potential

- High Erosion Potential
- Moderate Erosion Potential
- Low Erosion Potential
- 2020 Gully Inventory High Priority Region
- CSAH 61 Culvert Drainage Area
- Carver Co. Parcel Data
- LMRWD Boundary
- County Boundaries
- Public Waters
- Public Waterbodies

LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

PIPE ID: L199	
PREVIOUS WAYPOINT ID: 1234	
SURVEY DATE: 07/16/2020 9:33 AM	
LOCATION: Chanhassen City	
TYPE OF SITE: Pipe Outfall	
SITE SUMMARY: Weather: Sunny Rainfall in previous 24 hours: No Access: Along a Road Note yes if pipe requires attention:	Pipe UTMs:

PIPE INFORMATION	
INTERIOR PIPE DIAMETER:	6"-24"
PIPE MATERIAL	Concrete
APRON CONDITION:	Yes, Fair
EROSION AREAS:	Inlet, Outlet
OUTLET CONDITION:	Erosion
ILLICIT DISCHARGE:	None
INVASIVE SPECIES:	None, None
PRESENCE OF WATER	Moderate, Fast

ADDITIONAL NOTES:
Pipe within a pipe: No
Debris? None
Concrete pipe from 2007 report looks to have been replaced with new square concrete culvert.
Erosion around inlet and outlet apron.

Looking d/s at concrete inlet pipe with riprap along the edges

Close up of inlet, some erosion around the apron

Looking u/s at stream feeding into culvert

Looking at frontal view of outlet culvert

Looking u/s at some erosion along the right apron of the outlet

PIPE ID: L197	
PREVIOUS WAYPOINT ID: 1232	
SURVEY DATE: 07/16/2020 10:05 AM	
LOCATION: Chanhassen City	
TYPE OF SITE: Pipe Outfall	
SITE SUMMARY: Weather: Sunny Rainfall in previous 24 hours: No Access: Walked through a Stream Note yes if pipe requires attention:	Pipe UTMs:

PIPE INFORMATION	
INTERIOR PIPE DIAMETER:	>48"
PIPE MATERIAL	Corrugated Metal
APRON CONDITION:	No, Unable to assess/N/A
EROSION AREAS:	Outlet
OUTLET CONDITION:	Erosion
ILLICIT DISCHARGE:	None
INVASIVE SPECIES:	None, None
PRESENCE OF WATER	Moderate, Fast

ADDITIONAL NOTES:
Pipe within a pipe: No
Debris? None
Outlet pipe routes the stream under the walking trail, looks stabilized with concrete wall. The left side of the stream bank is stabilized with riprap, but along the right bank and further d/s, significant slumps were observed.

Frontal view of outlet pipe

Riprap stabilization along the left bank

Slumping along the right bank d/s from the outlet

Looking d/s at stream channel

Looking d/s at a large slump with overhang on the left bank

Looking u/s towards pipe outfall, manmade knickpoints visible

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Permit Number
2021-002

Individual Project Permit

Pursuant to Minnesota Statutes, Chapter 103B, 103D, and 103F consistent with the rules of the Lower Minnesota River Watershed District (LMRWD), and on the basis of statements and information contained in the permit application, plans and supporting information provided by the applicant, all of which are made part hereof by reference, **permission is hereby granted** to the applicant to perform actions as authorized below.

By granting this permit, the LMRWD does not direct the activity authorized herein or warrant the soundness of the applicant's design or methods in any respect. The LMRWD waives no immunity or protection applicable to itself, an officer, an agent or an employee pursuant to this approval.

Project Name	Project Location	
CSAH 61 Drainage Ditch	10398 Erie Lane, Chaska, MN	
Type of Development	**City**	**County**
Maintenance work, channel grading	Chaska	Carver
Permittee/Property Owner's Name	**Permittee Mailing Address**	
Lyndon Robjent, Carver County	11360 Highway 212, Ste 1, Cologne, MN 55322	
Authorized Agent Name	**Agent Email Address**	**Agent Phone Number**
Shelby Sovell, Carver County	ssovell@co.carver.mn.us	(507) 340-8780
Purpose of Permit	**Authorized Action(s)**	
Realign the existing drainage ditch to its historic channel	Alteration of land below the 100-year flood elevation	
Affected Rule(s): Rule C—Floodplain and Drainage Alterations		
Board Approval	**Expiration Date**	**Issued Date**
October 20, 2021	**October 20, 2022**	
Authorized Issuer Name and Title	**Email Address**	**Phone Number**
Linda Loomis, LMRWD Administrator	permit@lowermnriverwd.org	(763) 545-4659

This permit is granted **subject to** the following **general conditions**:

NPDES Permit: Submit a copy of the NPDES construction stormwater general permit to the LMRWD before construction begins. All erosion and sediment control measures must be effectively installed and maintained according to LMRWD guidelines and MPCA NPDES Permit guidelines as laid out by current District Rules and Policies until all disturbed soils have been permanently stabilized.

Grading and excavating must not begin until the applicant has been noticed that a permit has been issued and required erosion control measures are in place. Working without a permit where required is in violation of LMRWD Rules and is a misdemeanor subject to penalty by law.

Applicable federal, state, or local regulations: The permittee is responsible for the action(s) of their representative, contractor and employees and compliance with all rules, regulations, requirements, or standards of any applicable federal, state, or local agencies; including, but not limited to, the U.S. Army Corps of Engineers, Board of Water and Soil Resources, MN Pollution Control Agency, watershed districts, water management organizations, county, city and township zoning.

Site access: In accepting this permit, the owner recognizes and agrees that LMRWD representatives may enter the site at reasonable times to inspect the activities authorized hereunder and compliance with the requirements of this permit, the LMRWD Rules and applicable statutes. This includes routine site inspections as well as inspections during or immediately following installation of best management practices, following storms/critical events, prior to seeding deadlines, for the purpose of permit closeout, or on report of issue or complaint. This right of access is in addition to the access authority of the LMRWD under existing law.

Completion date: Construction work authorized under this permit shall be completed on or before the date specified above. No construction is authorized beyond the expiration date. The permittee may request an extension of the time to complete the project by submitting a written request, stating the reason thereof, to the LMRWD, no later than two weeks before this permit expiration.

Written consent: In all cases where the permittee by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.

Not assignable: This permit is not assignable nor transferable by the permittee except with the written consent of the LMRWD.

No changes: The permittee shall make no changes, without written permission or amendment previously obtained from the LMRWD, in the dimensions, capacity or location of any items of work authorized hereunder.

Permission only/no liability: This permit is permissive only. No liability shall be imposed by the LMRWD or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the permittee, its agents, employees, or contractors for violation of or failure to comply with the permit or applicable conditions.

Contractor responsibility: The permittee shall ensure the contractor has received and thoroughly understands all conditions of this permit.

Termination: This permit may be terminated by the LMRWD at any time deemed necessary for the conservation of water resources, or in the interest of public health and welfare, or for violation of any of the conditions or applicable laws, unless otherwise provided in the permit.

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Kaci Fisher, Environmental Scientist
Katy Thompson, PE, CFM

Date: October 13, 2021

Re: Highway 13 and Lone Oak Signal (LMRWD No. 2021-042)

Minnesota Department of Transportation (MnDOT, applicant) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD or District) to install a traffic signal and to construct Americans with Disability Act (ADA) and drainage improvements at the intersection of Lone Oak Road and Highway 13 in the City of Eagan (City), as shown in **Figure 1**. The applicant has provided site plans for the Highway 13 and Lone Oak Signal (Project) along with the permit application.

The proposed Project would disturb approximately 0.12 acres, create 0.06 acres of new impervious surfaces, and excavate 180 cubic yards within the High Value Resource Area (HVRA). It is not within the Steep Slopes Overlay District nor the 100-year floodplain.

The City has received a LMRWD municipal permit; however, the City does not have the authority to permit MnDOT projects. As such, the Project requires an LMRWD individual permit and is subject to an LMRWD permitting review for the portion of the Project within its jurisdiction.

Summary

Project Name:	Highway 13 and Lone Oak Signal
Purpose:	Traffic signal and ADA and drainage improvements
Project Size:	0.12 acres disturbed; 0.05 acres existing impervious;

	0.06 acres proposed impervious
Location:	Intersection of Highway 13 and Lone Oak Road, Eagan, MN
LMRWD Rules:	Rule B—Erosion and Sediment Control
Recommended Board Action:	Approval

Discussion

The District received the following documents for review:

- LMRWD online permit application; received August 27, 2021
- Project Map; received August 27, 2021
- Construction plans by MnDOT; dated August 24, 2021; received August 27, 2021

The application was deemed complete on September 16, 2021, and the documents received provide the minimum information necessary for permit review.

Rule B – Erosion and Sediment Control

The District regulates land-disturbing activities that involve the excavation of 50 cubic yards or more within the HVRA. The HVRA occurs on the west side of Trunk Highway (TH) 13. The Earthwork Tabulation sheet shows 180 cubic yards will be excavated for TH 13. The applicant has provided an erosion and sediment control plan and a Stormwater Pollution Prevention Plan. The proposed grading does not substantially change the existing topography or drainage patterns, and because the Project disturbs less than one acre, a copy of the NPDES permit is not needed. The Project complies with Rule B.

Recommendations

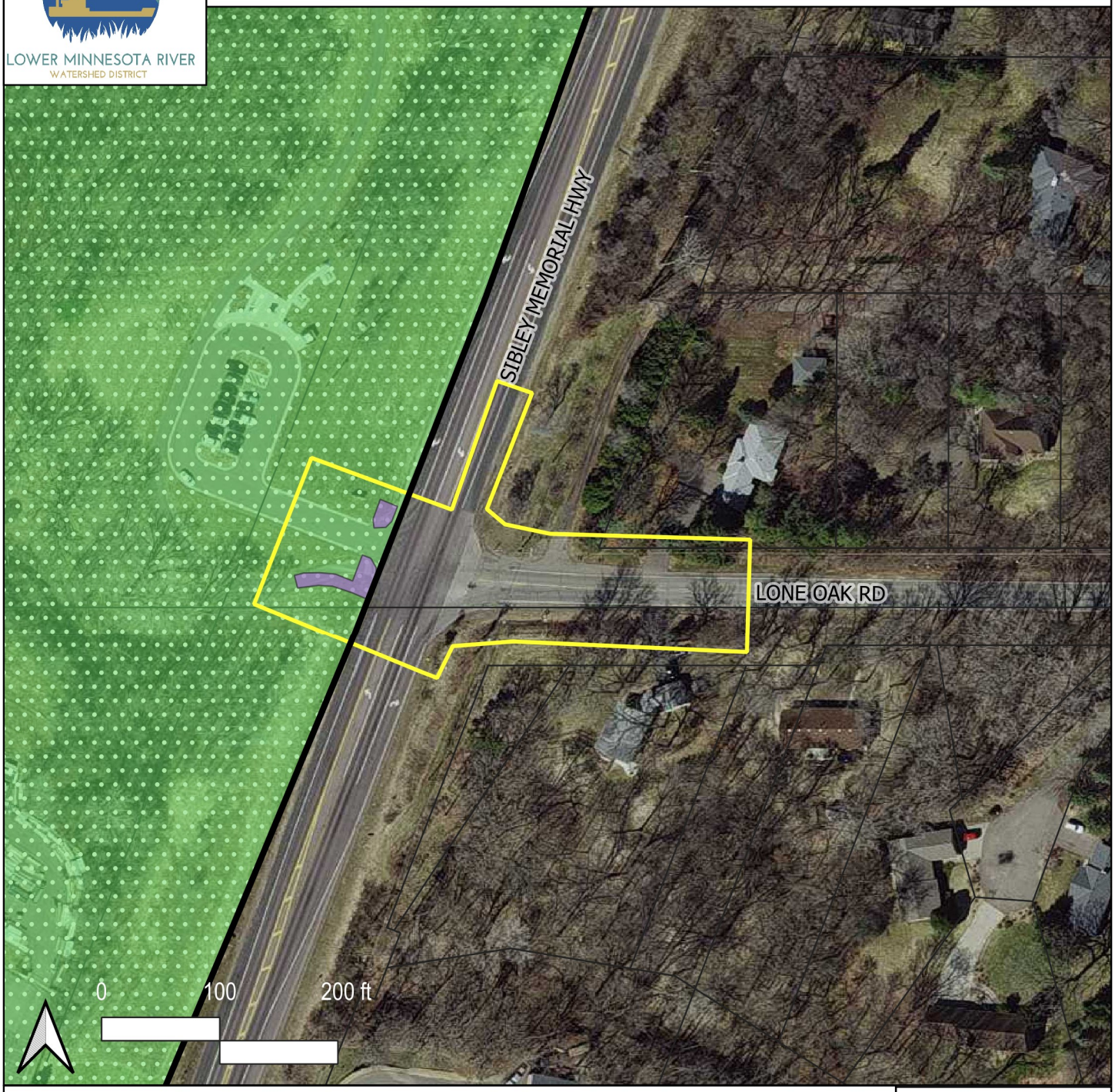
Staff recommends approval of the Project.

Attachments

- Figure 1 – Highway 13 and Lone Oak Signal Project Location Map
- Draft Permit No. 2021-042

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Figure 1: Hwy 13 & Lone Oak Signal Project Location



LEGEND

- Project Location
- Hwy 13 & Lone Oak
- Improvement Areas
- Public Waterways
- Public Waters
- Calcareous Fens
- High Value Resource Area
- Steep Slopes Overlay District
- Trout Streams
- 100-yr Floodplain
- Floodway
- LMRWD Boundary
- County Boundaries
- Parcels Boundaries

LMRWD Watershed Location Map

Young Environmental Consulting Group, LLC

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Permit Number
2021-042

Individual Project Permit

Pursuant to Minnesota Statutes, Chapter 103B, 103D, and 103F consistent with the rules of the Lower Minnesota River Watershed District (LMRWD), and on the basis of statements and information contained in the permit application, plans and supporting information provided by the applicant, all of which are made part hereof by reference, **permission is hereby granted** to the applicant to perform actions as authorized below.

By granting this permit, the LMRWD does not direct the activity authorized herein or warrant the soundness of the applicant's design or methods in any respect. The LMRWD waives no immunity or protection applicable to itself, an officer, an agent or an employee pursuant to this approval.

Project Name	Project Location	
Highway 13 and Lone Oak Signal	Intersection of Highway 13 & Lone Oak Road	
Type of Development	**City**	**County**
Highway improvements	Eagan	Dakota
Permittee/Property Owner's Name	**Permittee Mailing Address**	
Steve Gebauer, Minnesota Department of Transportation	1500 County Road B2, Roseville, MN 55113	
Authorized Agent Name	**Agent Email Address**	**Agent Phone Number**
Greg Asche, Minnesota Department of Transportation	greg.asche@state.mn.us	(651) 366-5904
Purpose of Permit	**Authorized Action(s)**	
The addition of a traffic signal and ADA and drainage improvements	Site grading and improvements, erosion and sediment control	
Affected Rule(s): Rule B—Erosion and Sediment Control		

Board Approval	Expiration Date	Issued Date
October 20, 2021	**October 20, 2022**	

Authorized Issuer Name and Title	Email Address	Phone Number
Linda Loomis, LMRWD Administrator	permit@lowermnriverwd.org	(763) 545-4659

This permit is granted **subject to** the following **general conditions**:

NPDES Permit: Submit a copy of the NPDES construction stormwater general permit to the LMRWD before construction begins. All erosion and sediment control measures must be effectively installed and maintained according to LMRWD guidelines and MPCA NPDES Permit guidelines as laid out by current District Rules and Policies until all disturbed soils have been permanently stabilized.

Grading and excavating must not begin until the applicant has been noticed that a permit has been issued and required erosion control measures are in place. Working without a permit where required is in violation of LMRWD Rules and is a misdemeanor subject to penalty by law.

Applicable federal, state, or local regulations: The permittee is responsible for the action(s) of their representative, contractor and employees and compliance with all rules, regulations, requirements, or standards of any applicable federal, state, or local agencies; including, but not limited to, the U.S. Army Corps of Engineers, Board of Water and Soil Resources, MN Pollution Control Agency, watershed districts, water management organizations, county, city and township zoning.

Site access: In accepting this permit, the owner recognizes and agrees that LMRWD representatives may enter the site at reasonable times to inspect the activities authorized hereunder and compliance with the requirements of this permit, the LMRWD Rules and applicable statutes. This includes routine site inspections as well as inspections during or immediately following installation of best management practices, following storms/critical events, prior to seeding deadlines, for the purpose of permit closeout, or on report of issue or complaint. This right of access is in addition to the access authority of the LMRWD under existing law.

Completion date: Construction work authorized under this permit shall be completed on or before the date specified above. No construction is authorized beyond the expiration date. The permittee may request an extension of the time to complete the project by submitting a written request, stating the reason thereof, to the LMRWD, no later than two weeks before this permit expiration.

Written consent: In all cases where the permittee by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.

Not assignable: This permit is not assignable nor transferable by the permittee except with the written consent of the LMRWD.

No changes: The permittee shall make no changes, without written permission or amendment previously obtained from the LMRWD, in the dimensions, capacity or location of any items of work authorized hereunder.

Permission only/no liability: This permit is permissive only. No liability shall be imposed by the LMRWD or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the permittee, its agents, employees, or contractors for violation of or failure to comply with the permit or applicable conditions.

Contractor responsibility: The permittee shall ensure the contractor has received and thoroughly understands all conditions of this permit.

Termination: This permit may be terminated by the LMRWD at any time deemed necessary for the conservation of water resources, or in the interest of public health and welfare, or for violation of any of the conditions or applicable laws, unless otherwise provided in the permit.

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Kaci Fisher, Environmental Scientist
Katy Thompson, PE, CFM

Date: October 13, 2021

Re: Burnsville Cemetery Expansion (LMRWD No. 2021-007)

BKBM Engineers (the applicant) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD or District) to expand the existing Garden of Eden Islamic Cemetery in Pleasantview Memorial Gardens in the City of Burnsville (City), as shown in **Figure 1**. The applicant has provided the conceptual grading and erosion control plans of the proposed expansion along with the permit application for the Burnsville Cemetery Expansion (Project).

The Project would disturb approximately 3.2 acres, and no new impervious surface areas are proposed. The Project location is not mapped within the High Value Resource Area, Steep Slope Overlay District (SSOD), or the 100-year floodplain. However, further discussion on the SSOD is included in the Additional Considerations section.

The City does not have its LMRWD municipal permit, so this Project requires an LMRWD individual permit and is subject to an LMRWD permitting review.

Summary

Project Name:	Burnsville Cemetery Expansion
Purpose:	Expansion of existing cemetery (additional burial plots)
Project Size:	Approximately 9 acres; 3.2 acres disturbed and no impervious surface area

Location:	400 State Highway 13 E, Burnsville, MN
LMRWD Rules:	Rule B—Erosion and Sediment Control
Recommended Board Action:	Conditional Approval

Discussion

The District has received the following documents for review:

- Online permit application; received March 19, 2021
- LMRWD permit review fee of $750; received September 7, 2021
- City submittal plan sheets by BKBM Engineers; dated June 18, 2021; received September 2, 2021
- Narrative for the Pleasant View Memorial Garden Cemetery Expansion Memo by BKBM Engineers; dated August 31, 2021; received September 2, 2021
- Conditional Use Permit Amendment—Minnesota Cemeteries Corporation public comment memo by Moss & Barnett; dated August 26, 2021; received September 2, 2021
- Email Re: Burnsville Cemetery Expansion by BKBM Engineers; dated September 17, 2021; received September 17, 2021
- Revised grading plan by BKBM Engineers; received October 6, 2021

The application was deemed complete on September 27, 2021, and the documents received provide the minimum information necessary for permit review.

Rule B—Erosion and Sediment Control

The District regulates land-disturbing activities that affect one or more acres under Rule B. The proposed Project would disturb approximately 3.2 acres within the LMRWD assessed land. The applicant has provided an erosion and sediment control plan and a Stormwater Pollution Prevention Plan.

The Project generally complies with Rule B; however, we offer the following comments that must be addressed before the LMRWD can issue a permit and construction may begin:

- A copy of the NPDES permit
- The contact information for the contractor
- The contact information for the person(s) responsible for the inspection and maintenance of all erosion and sediment control features

Additional Considerations

The proposed Project is located in a unique area of Burnsville; the District's special overlay districts have not been delineated due to a mapping error. However, it is reasonable to assume the High Value Resource Area does not apply in this case. The Project is adjacent to several portions of the SSOD, and while it is likely that steep slopes exist on the proposed Project site, these areas have not been delineated. Due to the nature of the steep slopes in the area, it is highly recommended that the applicant take caution when conducting grading activities near the existing ravine and near steep slopes to prevent erosion.

Additionally, the Project has received a public comment regarding stormwater draining onto neighboring properties. The area in question is within the Project's delineated Drainage Area 4 in the southwest corner of the site. The applicant sent an email to LMRWD on September 17, 2021, stating the southwest drainage area grading will be left alone until they can work with the Minnesota Department of Transportation to mitigate Highway 13 drainage ditch overflow that comes into the area to avoid upsetting the neighbors. This review will not incorporate the area of Drainage Area 4, so a separate permit for this area may be needed in the future.

Recommendations

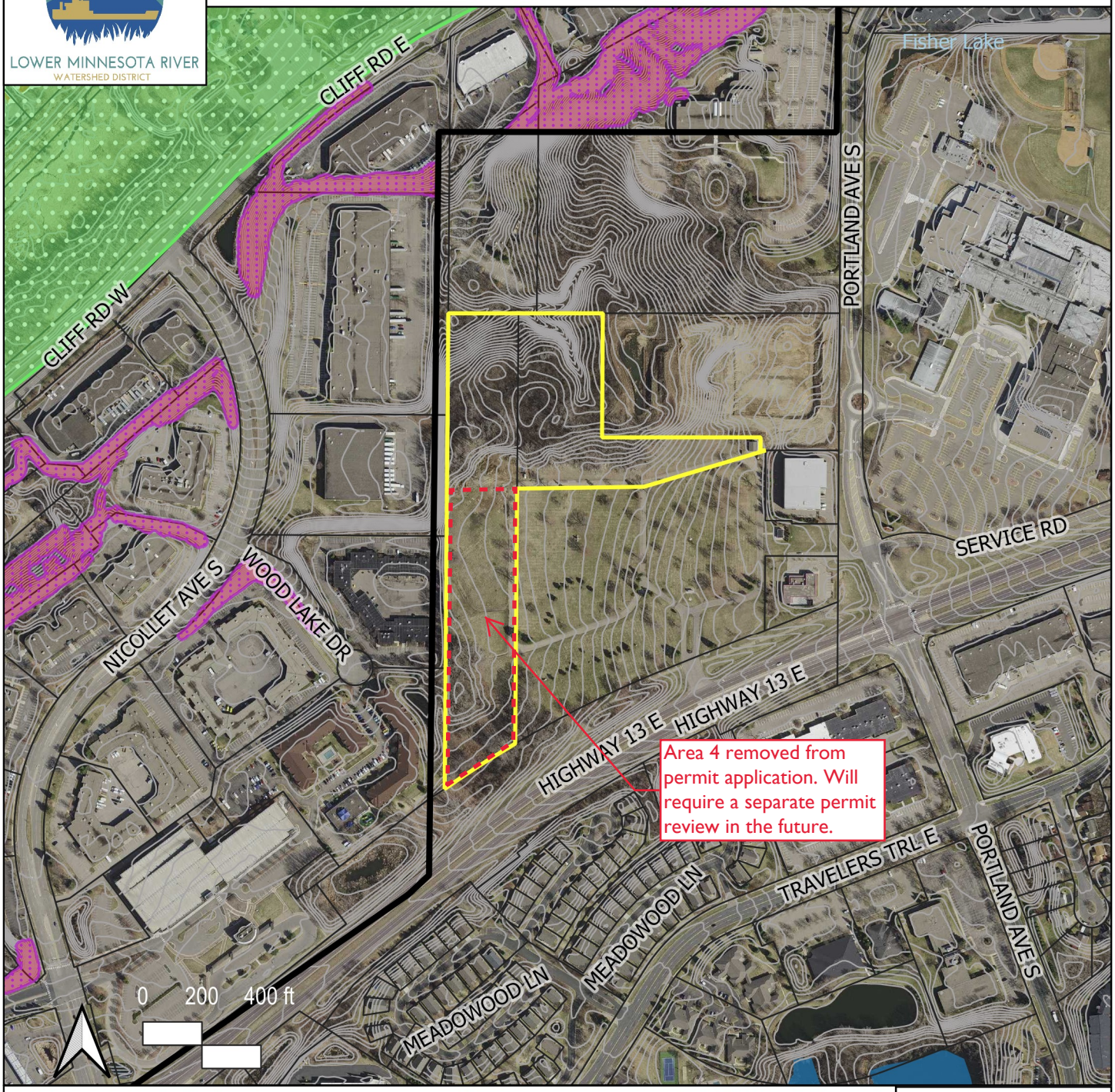
Staff recommends conditional approval of the Project, pending receipt of the following:

1) A copy of the NPDES permit
2) Contact information for the contractor
3) Contact information for the person(s) responsible for inspection and maintenance of all erosion and sediment control features

Attachments

- Figure 1—Burnsville Cemetery Expansion Project Location Map

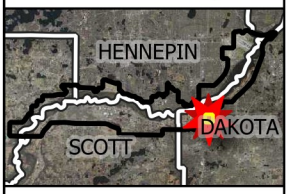
Figure 1: Burnsville Cemetery Project Location



LEGEND

- Project Location
- Burnsville Cemetery
- High Value Resource Area
- Steep Slopes Overlay District
- Calcareous Fens
- Public Waterbodies
- Public Waterways
- Parcel Boundaries
- County Boundaries
- LMRWD Boundary

LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Katy Thompson, PE, CFM
Della Schall Young, CPESC, PMP

Date: October 14, 2021

Re: Quarry Lake Outlet (LMRWD No. 2021-014)

The City of Shakopee (City) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD) to construct a gravity outlet structure between Quarry Lake and the Prior Lake Outlet Channel (PLOC) and to stabilize two erosion locations, shown in Figure 1. In Quarry Lake, an artificial and landlocked lake, water levels rise and fall with changes in precipitation. In 2019, because of above-average precipitation, the lake levels were high for a prolonged period during the summer; this excessive rainfall caused $55,000 in damages to the inundated public infrastructure and required emergency pumping to draw down the lake. To prevent this from reoccurring, the City is proposing this project.

We reviewed this project in October 2020 and in May 2021 (see attached memos) and provided comments to the City and its consultant, WSB. Since that time, the City has finalized the construction plans and issued them for bid. Because the City does not have its LMRWD municipal LGU permit, this project requires an LMRWD individual project permit and, as such, is subject to a LMRWD permitting review. As presented, the project will trigger LMRWD Rules B and C.

Summary

Project Name:	Quarry Lake Outlet
Purpose:	Regulate high water levels in Quarry Lake
Project Size:	1.25 acres disturbed; 0.5 acres existing impervious; 0.5 acres proposed impervious; 0 acres net change in

	impervious
Location:	Quarry Lake Park, Shakopee (Scott Co. Parcel ID 279020202)
LMRWD Rules:	Rule B—Erosion and Sediment Control Rule C—Floodplain and Drainage Alteration
Recommended Board Action:	Conditional approval

Discussion

The District received the following documents for review:

- LMRWD online permit application; received April 9, 2021
- 60 Percent Construction Plans by WSB; dated March 30, 2021; received April 9, 2021
- Stormwater Pollution Prevention Plan (SWPPP) narrative by WSB; dated April 8, 2021; received April 9, 2021
- Geotechnical Report by WSB; dated November 13, 2020; received May 6, 2021
- MnDNR public waters permit comment request; received April 23, 2021
- Quarry Lake Water Level Management Plan by WSB; dated April 29, 2020; received September 16, 2021
- Response Memo to LMRWD and DNR Comments on Quarry Lake by WSB; dated September 16, 2021; received September 16, 2021
- Volume Report by WSB dated August 25, 2021; received September 16, 2021
- Quarry Lake Outlet Project Plan Set by WSB; dated September 10, 2021; received September 16, 2021
- Quarry Lake Outlet Project Bid Plans by WSB; dated October 7, 2021; received October 12, 2021

The application was deemed complete on September 16, 2021, and the documents received provide the information necessary for permit review.

Rule B—Erosion and Sediment Control

The District regulates land-disturbing activities that affect one acre or more under Rule B. The proposed project would disturb approximately 1.25 acres within the LMRWD boundary. The City has provided an erosion and sediment control plan and a SWPPP, and, within those documents, has provided redundant perimeter controls to protect Quarry Lake during construction.

The project generally complies with Rule B; however, both a copy of the NPDES permit and contact information for the contractor and/or person(s) responsible for inspection

and maintenance of all erosion and sediment control features are needed to issue the final LMRWD permit.

Rule C—Floodplain and Drainage Alteration

Although the project is not located within a mapped floodplain and proposes a net cut of 150 cubic yards below the existing high-water elevation of Quarry Lake, the project proposes to provide an outlet where none previously existed, altering the existing drainage and triggering Rule C. The City has provided documentation that the project will produce a net reduction in floodplain fill and reduce the 100-year flood elevation on the lake from Elevation 738.0 to 727.1 without adversely impacting the existing trout fishery and the Prior Lake Outlet Channel (PLOC). The existing trout fishery will be protected by a backflow preventer and a 1,000-micron filter screen incorporated into the new outlet structure. The proposed combination of the backflow preventor and filter will prevent water from the PLOC from entering Quarry Lake. It will also prevent anything larger than 1,000 microns from passing between Quarry Lake and the PLOC. Additionally, the backflow preventer will keep Quarry Lake outflows from affecting the capacity of the PLOC by holding back discharges from Quarry Lake when the PLOC channel is full.

It should be noted that the filter screen may require the dewatering of Quarry Lake for installation; if so, per the bid plans, the contractor is required to develop a dewatering plan, obtain all necessary permits, and submit a copy of the dewatering plan to all applicable regulatory agencies, including the LMRWD.

Recommendations

The City has addressed our previous comments, and we recommend conditional approval of the project pending receipt of the following:

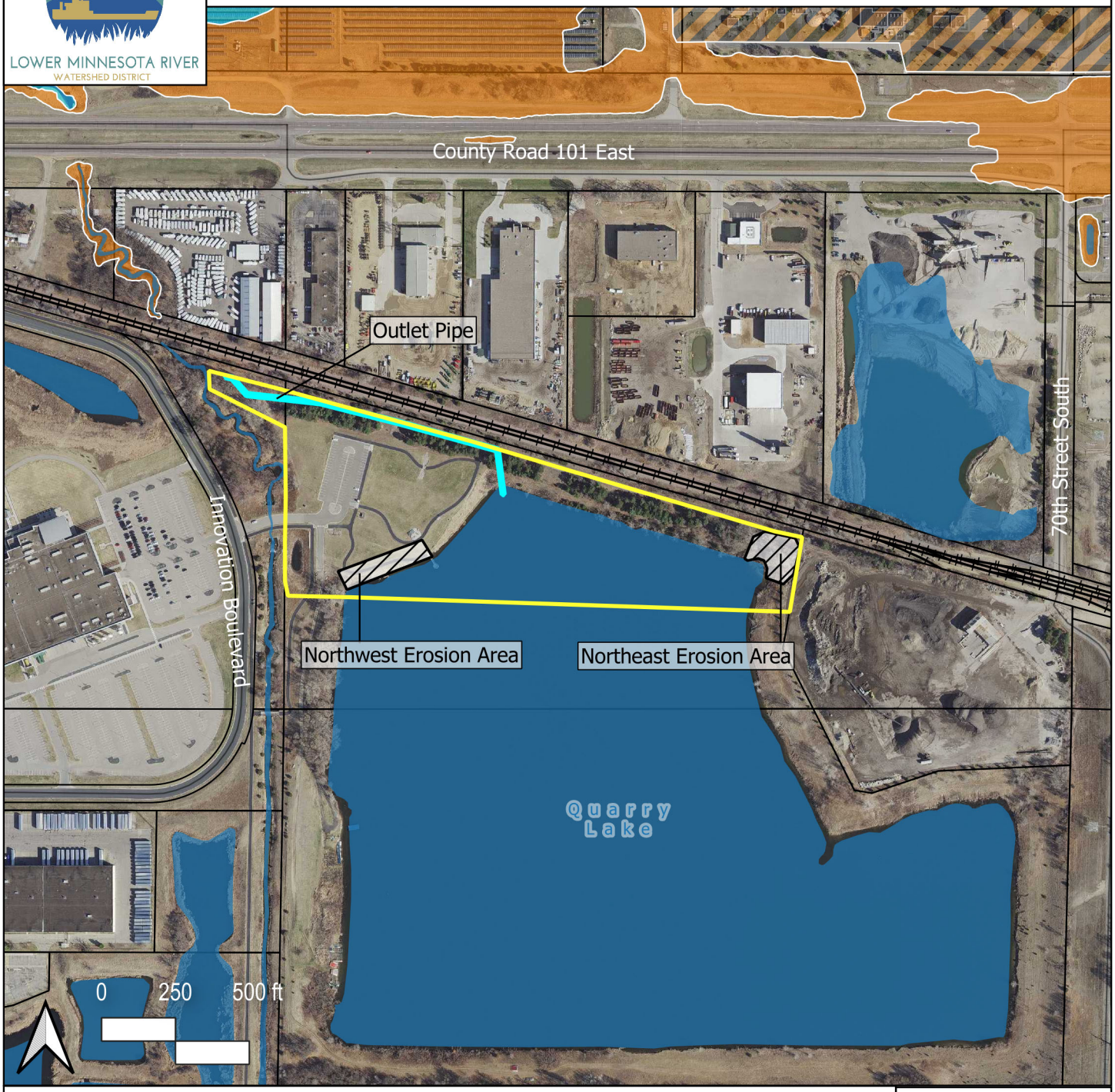
- A copy of the NPDES permit.
- Contact information for the contractor(s) and/or the person(s) responsible for inspection and maintenance of all erosion and sediment control features.

Additionally, a stipulation will be added to the final permit requiring the City to provide the LMRWD advanced warning of dewatering activities on Quarry Lake and a copy of the proposed dewatering plan for comment.

Attachments

- Figure 1—Quarry Lake Outlet Project Location Map
- September 16, 2021, WSB Responses to LMRWD and DNR Comments Memo
- May 22, 2021, Quarry Lake Outlet Project Review

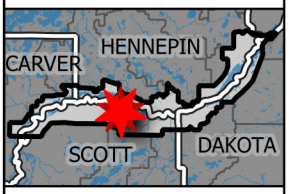
Figure 1: Quarry Lake Outlet Project Location



LEGEND

- Project Location
- Quarry Lake Outlet Project
- Erosion Areas
- Outlet Pipe
- Scott Co. Floodplain
- 100-yr Floodplain
- Floodway
- 500-yr Floodplain
- Public Waterways
- Public Waters
- LMRWD Boundary
- County Boundaries

LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

Memorandum

To: Linda Loomis – Lower Minnesota River Watershed District (LMRWD)
Taylor Huinker – Minnesota Department of Natural Resources (DNR)
Katy Thompson, PE, CFM – Young Environmental Consulting Group, LLC
Della Schall Young, CPESC, PMP - Young Environmental Consulting Group, LLC

Cc: Kirby Templin, PE – City of Shakopee

From: Jeff Sandberg, PE – WSB
Joey Abramson, PE – WSB
Roxy Robertson – WSB
Meghan Litsey, CPESC – WSB

Date: September 16, 2021

Re: Quarry Lake Outlet Project – Responses to LMRWD and DNR Comments
City Project No. STORM-20-001
WSB Project No. 016863-000

In a memorandum dated May 22, 2021, the DNR and LMRWD submitted comments on the 60% plans for the Quarry Lake Outlet Project for the City of Shakopee. The following is a list of each of the comments received with our responses below in red text.

- *The applicant has provided the necessary information for Rule B, but the following required information for Rule C is still outstanding:*
  - *Computation by a professional engineer of the cut, fill, and change in water storage capacity and conveyance resulting from the proposed work in Quarry Lake and the PLOC*
    - The project proposes a net cut of 150 CY below the existing HWL. See volume report attached.

- *Quarry Lake is a State of Minnesota-designated trout water.*
  - *Redundant perimeter controls should be placed to protect this area of environmental sensitivity.*
    - The attached plans have been revised to address this comment.
  - *The SWPPP should acknowledge that designation, and appropriate erosion and sediment control measures must be incorporated to protect the fishery.*
    - The attached plans have been revised to address this comment.
  - *The floating silt curtain does not satisfy the MPCA's NPDES requirement for down-gradient perimeter control because it is not designed to prevent sediment from entering the surface water. See https://www.pca.state.mn.us/sites/default/files/wq-strm2-26.pdf for further details.*
    - The attached plans have been revised to address this comment. Bio logs have been added as perimeter control.
  - *The 60 percent plans (sheet 4) show regrading and removal of the concrete slab near the pier, but there were no notes about the pier itself. What is the City's plan for the existing pier?*

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- The existing pier will be moved by the City to a new location.

- *We understand the concerns the City has with managing fluctuating lake levels but need more information about the following statement made on the LMRWD permit application: "[I]ncreasing water levels will result in flooding of adjacent properties within a few years." Additionally, it is unclear whether the 2019 high water levels (HWLs) were the effects of a historically wet year or part of a larger trend. Please clarify which properties are at risk and when it is expected that Quarry Lake would flood these properties under present conditions.*
  - The adjacent Aggregate Industries property and Quarry Lake Park stand to have flooding impacts within the next few years if an outlet is not provided. The feasibility study is attached for more information.

- *As shown in Table 1, there are several discrepancies in the normal water level (NWL) and HWL elevations provided to the LMRWD for both existing and proposed conditions; please clarify whether this is intentional or potentially a vertical datum issue.*

Table 1. Quarry Lake NWL and HWL Elevation Summary (vertical datum not provided)

	Existing NWL	Proposed NWL	Existing HWL	Proposed HWL
MPARS Application	Not provided	727.08	Not provided	Not provided
60 Percent Quarry Lake Outlet Plans	723.7	726.2	727.1–740	727.1
2020 Quarry Lake Water Level Management Plan	724.4	725.9	739.9	726.4

  - The high water level reported in the 2020 Water Level Management Plan was based on 10 years of rainfall data and not a 100-year storm event. The report noted that without an outlet, the lake would continue to rise until overtopping the railroad at approximately elevation 741. Upon further review, the overtopping elevation is closer to elevation 738, at which point the lake would begin to flow west across the park and into the PLOC.
  - The NWL of 723.7 as noted in the plans was the surveyed water elevation in November 2020. Since the water level fluctuates based on groundwater influence and seasonal rainfall variations, this elevation is not a normal water level but rather a reference elevation. The proposed NWL is 725.92, which is controlled by the invert of the outlet pipe. The existing HWL is variable as it depends on seasonal precipitation and groundwater flows. The HWL ranges from 727.1 to approximately 739.
  - The attached plans have been revised to address this comment.

- *Per the MPARS application, the project proposes 1,000 cubic yards of*

permanent fill and will raise Quarry Lake's NWL. However, neither compensatory storage nor the no-rise certification required by LMRWD Rule C was provided. Additional information is required, as follows:
The project proposes a net cut of 117 CY below the existing HWL.The MPARS application has been amended to reflect this.

- *Please clarify whether the HWL provided is also the 100-year flood elevation.*
  - The existing HWL range represents the estimated range of the HWL of Quarry Lake without an outlet as it exists today. In existing conditions, the 100-year event causes the lake to rise to 727.1 within one day and will continue to rise until reaching the EOF, due to groundwater inflow, as described in the feasibility report. The proposed HWL of 727.1 is the 100-year flood elevation.

- *Please clarify whether the proposed fill would be placed below the 100- year flood elevation of Quarry Lake.*
  - The project proposes a net cut below the existing HWL.

- *If the outlet project is proposed to alleviate HWL elevations on Quarry Lake and project-adjacent properties from imminent flooding, will the proposed NWL increase of 2.6 feet also increase the flood risk to these properties under a 100-year flood event?*
  - The proposed project is designed to limit the HWL from approximately 739 to 727.1, which will alleviate the future flooding. The NWL needed to be raised to enable a gravity outlet as proposed.

- *What effects will raising the NWL elevation have on the 100-year flood elevation of Quarry Lake?*
  - The 100-year flood elevation will be lower due to the presence of an outlet.

- *What effects will raising the NWL have on the erosion potential of the adjacent Quarry Lake shoreline?*
  - Over the last number of years, Quarry Lake has experienced severe fluctuations in water levels. These fluctuations have led to increased erosion of the shoreline. This project will stabilize and establish a normal water level and will result in dramatically less fluctuation in water levels. A stable water level will allow shoreline vegetation to establish and take root, and reduce the erosion potential of the shoreline long-term.

- *MPARS application question 15 may have been answered incorrectly. When asked, "Will work at this site result in the draining of any water*

resources?" the applicant's response was "No." However, because this is a landlocked system, adding an outlet allows Quarry Lake to drain, and the response should be revised.

- The MPARS application has been revised to reflect that the project proposes draining of a water resource.

- *Below are several comments on how the proposed Quarry Lake outlet will function with the PLOC, given the water level in the channel is 730.82 feet, approximately 4.9 feet above the proposed outlet elevation.*
  - *Per information provided with the MPARS application, the proposed Quarry Lake Outlet project will not affect the PLOC; however, it does not state what design events were considered to make this determination.*
    - The 2-, 10-, and 100-year events were considered in the included modeling.
  - *We noted the proposed backflow preventor on the PLOC side of the outlet, but how will the Quarry Lake outlet function if the PLOC elevation is higher than the Quarry Lake elevation?*
    - Quarry Lake will not discharge when the water level in the PLOC exceeds the invert of the oufall. Based on survey data collected in 2020, the baseflow elevation of the PLOC at the outfall location of the lake outlet is approximately 724.8.
  - *Please provide evidence of what type of flows are anticipated to enter the PLOC from the proposed Quarry Lake outlet, how these additional flows will affect the PLOC's existing capacity, and whether the outlet protections proposed are adequate to prevent scour and erosion.Quarry Lake supports both brook and rainbow trout fisheries; we are concerned that the following effects of this project have not taken this into consideration:*
    - The following table summarizes the existing and proposed peak discharge rates in the PLOC downstream of the proposed lake outlet. The flows in the table are from the existing and proposed XP SWMM models and represent the flow through the box culvert underneath the railroad. Quarry Lake does not discharge during the peak flows in the PLOC, so the Quarry Lake outlet does not impact the peak flows in the PLOC. This is because the water level in the PLOC during peak flows is greater than the Quarry Lake water level.

	Peak Flow in PLOC for the Specified Storm Return Period (MSE 3, Atlas 14) [cfs]		
	2-year	10-year	100-year
Existing Conditions	83.5	221.5	680.9
Proposed Conditions	83.5	221.5	680.9

- *How will the outlet project affect the existing trout fisheries and management?*

  - Given that there will be a backflow preventer and also a 1000 micron filter incorporated into the lake outlet, nothing larger than 1000 micron will pass between the PLOC and the lake. Therefore, this project is not anticipated to have any significant effects on trout fisheries and management.

- *Will the increased NWL elevation affect the existing trout fisheries and management?*
  - There are no anticipated impacts to trout fisheries and management due to this project. Given that the lake is landlocked, the project does not increase any NWL since the current water level is constantly changing and was modeled to continue to rise without an outlet.

- *Will the filtration technology proposed at the inlet to prevent Eurasian watermilfoil from escaping Quarry Lake into the PLOC also protect Quarry Lake from invasive species entering from the PLOC?*
  - The project includes a backflow preventer to reduce occurrence of flows entering from the PLOC. But if flows did enter from the PLOC, the 1000 micron filter would provide protection from Eurasian watermilfoil from entering into Quarry Lake. The 1000 micron filter also prevents Eurasian watermilfoil from escaping Quarry Lake.

- *What effects will raising the NWL elevation have on the existing wetlands surrounding Quarry Lake?*
  - Natural fringe wetlands do not exist along Quarry Lake, so there will be no wetland impacts from raising the NWL.

Attachments:

- Quarry Lake Outlet Project Plan Set
- 2020 Water Level Management Plan for Quarry Lake (feasibility report)
- Volume Report for Quarry Lake Outlet Project
- Existing and Proposed XPSWMM Models

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

Cc: Taylor Huinker
Minnesota Department of Natural Resources

From: Katy Thompson, PE, CFM
Della Schall Young, CPESC, PMP

Date: May 22, 2021

Re: Quarry Lake Outlet (LMRWD No. 2021-014)

The City of Shakopee (City) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD) to construct a gravity outlet structure between Quarry Lake and the Prior Lake Outlet Channel (PLOC) and to stabilize two erosion locations, shown in Figure 1. In Quarry Lake, an artificial and landlocked lake, water levels rise and fall with changes in precipitation. In 2019, because of above-average precipitation, the lake levels were high for a prolonged period during that summer; this excessive rainfall caused $55,000 in damages to inundated public infrastructure and required emergency pumping to draw down the lake. To prevent this from recurring, the City is proposing this project.

In addition to our review of the LMRWD individual project permit application, the Minnesota Department of Natural Resources (MnDNR) has requested comments on the project through its MPARS system. This memo addresses both reviews.

Background

In June 2020, the City provided LMRWD with a copy of the *Quarry Lake Water Level Management Plan,* which evaluates options to manage the long-term lake levels in Quarry Lake. Multiple Quarry Lake project reviews occurred over the summer and fall of 2020, and final comments on the management plan were provided to the City in October 2020 and resubmitted on May 11, 2021. Young Environmental asked several

questions and requested more information from the City and its engineer, WSB & Associates (WSB; see the attached memo from October 14, 2020).

The proposed project disturbs 1.25 acres and does not create new impervious surface. Quarry Lake is not a State of Minnesota-recognized public water; nonetheless, it is a state-designated trout water that the MnDNR stocks annually with brook and rainbow trout. Although not mapped in the District's High Value Resource Area (HVRA) overlay district, it falls under the District's definition of an HVRA within the LMRWD.

Because the City does not have its LMRWD municipal LGU permit, this project requires an LMRWD individual project permit and, as such, is subject to an LMRWD permitting review. As presented, the project will trigger LMRWD Rules B and C.

Summary

Project Name:	Quarry Lake Outlet
Purpose:	Regulate high water levels in Quarry Lake
Project Size:	1.25 acres disturbed; 0 acres existing impervious; 0 acres proposed impervious
Location:	Quarry Lake Park, Shakopee (Scott Co. Parcel ID 279020202)
LMRWD Rules:	Rule B—Erosion and Sediment Control Rule C—Floodplain and Drainage Alteration
Recommended Board Action:	None, information only

Discussion

The District received the following documents for review:

- LMRWD online permit application; received April 9, 2021
- 60 Percent Construction Plans by WSB, dated March 30, 2021; received April 9, 2021
- Stormwater Pollution Prevention Plan (SWPPP) narrative by WSB, dated April 8, 2021; received April 9, 2021
- Geotechnical Report by WSB, dated November 13, 2020; received May 6, 2021
- MnDNR public waters permit comment request; received April 23, 2021

The applicant has provided the necessary information for Rule B, but the following required information for Rule C is still outstanding:

- Computation by a professional engineer of the cut, fill, and change in water storage capacity and conveyance resulting from the proposed work in Quarry

Lake and the PLOC

Rule B—Erosion and Sediment Control

The District regulates land-disturbing activities that affect one acre or more under Rule B. The proposed project would disturb approximately 1.25 acres within the LMRWD boundary. The City provided an erosion and sediment control plan and an SWPPP. The application is substantially complete for Rule B, and we offer the following comments on the proposed design:

1. Quarry Lake is a State of Minnesota-designated trout water.
    a. Redundant perimeter controls should be placed to protect this area of environmental sensitivity.
    b. The SWPPP should acknowledge that designation, and appropriate erosion and sediment control measures must be incorporated to protect the fishery.
    c. The floating silt curtain does not satisfy the MPCA's NPDES requirement for down-gradient perimeter control because it is not designed to prevent sediment from entering the surface water. See https://www.pca.state.mn.us/sites/default/files/wq-strm2-26.pdf for further details.
2. The 60 percent plans (sheet 4) show regrading and removal of the concrete slab near the pier, but there were no notes about the pier itself. What is the City's plan for the existing pier?

Rule C—Floodplain and Drainage Alteration

The project is not located within a mapped floodplain. However, it appears to propose fill below the 100-year flood elevation of Quarry Lake (elevation 740 feet, per the *2020 Quarry Lake Water Level Management Plan*) and provides an outlet where none previously existed, triggering Rule C. The information provided does not address the District's Rule C requirements, and thus the application is incomplete.

Below are questions and comments for consideration.

1. We understand the concerns the City has with managing fluctuating lake levels but need more information about the following statement made on the LMRWD permit application: "[I]ncreasing water levels will result in flooding of adjacent properties within a few years." Additionally, it is unclear whether the 2019 high water levels (HWLs) were the effects of a historically wet year or part of a larger trend. Please clarify which properties are at risk and when it is expected that Quarry Lake would flood these properties under present conditions.
2. As shown in Table 1, there are several discrepancies in the normal water level (NWL) and HWL elevations provided to the LMRWD for both existing and

proposed conditions; please clarify whether this is intentional or potentially a vertical datum issue.

Table 1. Quarry Lake NWL and HWL Elevation Summary (vertical datum not provided)

	Existing NWL	Proposed NWL	Existing HWL	Proposed HWL
MPARS Application	Not provided	727.08	Not provided	Not provided
60 Percent Quarry Lake Outlet Plans	723.7	726.2	727.1–740	727.1
2020 Quarry Lake Water Level Management Plan	724.4	725.9	739.9	726.4

3. Per the MPARS application, the project proposes 1,000 cubic yards of permanent fill and will raise Quarry Lake's NWL. However, neither compensatory storage nor the no-rise certification required by LMRWD Rule C was provided. Additional information is required, as follows:
    a. Please clarify whether the HWL provided is also the 100-year flood elevation.
    b. Please clarify whether the proposed fill would be placed below the 100-year flood elevation of Quarry Lake.
    c. If the outlet project is proposed to alleviate HWL elevations on Quarry Lake and project-adjacent properties from imminent flooding, will the proposed NWL increase of 2.6 feet also increase the flood risk to these properties under a 100-year flood event?
    d. What effects will raising the NWL elevation have on the 100-year flood elevation of Quarry Lake?
    e. What effects will raising the NWL have on the erosion potential of the adjacent Quarry Lake shoreline?
    f. MPARS application question 15 may have been answered incorrectly. When asked, "Will work at this site result in the draining of any water resources?" the applicant's response was "No." However, because this is a landlocked system, adding an outlet allows Quarry Lake to drain, and the response should be revised.
4. Below are several comments on how the proposed Quarry Lake outlet will function with the PLOC, given the water level in the channel is 730.82 feet, approximately 4.9 feet above the proposed outlet elevation.
    a. Per information provided with the MPARS application, the proposed Quarry Lake Outlet project will not affect the PLOC; however, it does not state what design events were considered to make this determination.
    b. We noted the proposed backflow preventor on the PLOC side of the outlet, but how will the Quarry Lake outlet function if the PLOC elevation is higher than the Quarry Lake elevation?

c. Please provide evidence of what type of flows are anticipated to enter the PLOC from the proposed Quarry Lake outlet, how these additional flows will affect the PLOC's existing capacity, and whether the outlet protections proposed are adequate to prevent scour and erosion.

Additional Considerations

Quarry Lake supports both brook and rainbow trout fisheries; we are concerned that the following effects of this project have not taken this into consideration:

1. How will the outlet project affect the existing trout fisheries and management?
2. Will the increased NWL elevation affect the existing trout fisheries and management?
3. Will the filtration technology proposed at the inlet to prevent Eurasian watermilfoil from escaping Quarry Lake into the PLOC also protect Quarry Lake from invasive species entering from the PLOC?
4. What effects will raising the NWL elevation have on the existing wetlands surrounding Quarry Lake?

Recommendations

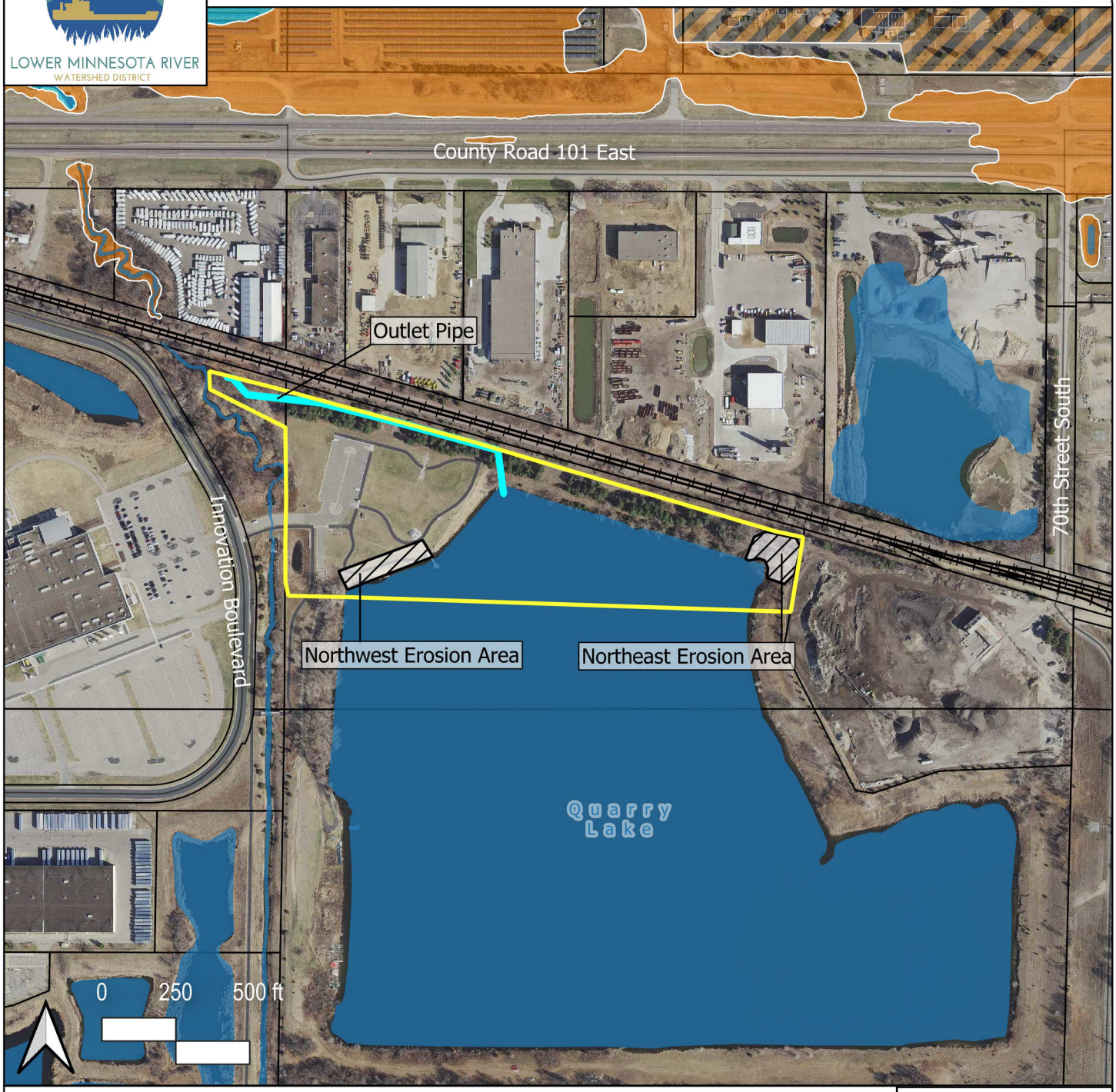
Given the questions, comments, and outstanding items discussed above, the LMRWD individual project permit application is incomplete. Until these issues are resolved, specifically the protection of the state-designated trout water and the placement of floodplain fill, we do not recommend the MnDNR approve the Public Waters Work Permit application for the Quarry Lake Outlet project. Alternatively, we request the MnDNR approval be contingent on the applicant resolving the LMRWD's requirements for Rules B and C.

We will submit this memo and comments to the MnDNR as part of the MPARS comment period. We will also contact the City to schedule a permitting meeting with LMRWD staff to discuss the project, our questions and comments, and the outstanding items.

Attachments

- Figure 1—Quarry Lake Outlet Project Location Map
- October 14, 2020, Quarry Lake Outlet Project Review

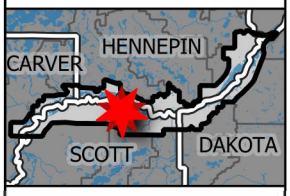
Figure 1: Quarry Lake Outlet Project Location



LEGEND

- Project Location
- Quarry Lake Outlet Project
- Erosion Areas
- Outlet Pipe
- Scott Co. Floodplain
- 100-yr Floodplain
- Floodway
- 500-yr Floodplain
- Public Waterways
- Open Water
- LMRWD Boundary
- County Boundaries

LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Katy Thompson, PE, CFM
Della Schall Young, CPESC, PMP

Date: October 14, 2020

Re: Quarry Lake Outlet Project Review (LMRWD No. 2020-114)

The City of Shakopee (the City) has submitted the Quarry Lake Water Level Management Plan (the Plan) to the Lower Minnesota River Watershed District (LMRWD or the District) for review through its consultant WSB & Associates (WSB). Young Environmental Consulting Group, LLC (Young Environmental), the district engineer, has reviewed the Plan and offers the following comments to the City.

Background

Quarry Lake is an artificial lake, which resulted from past quarry operations breaching the Prairie du Chien bedrock confinement layer, and primarily fed by groundwater springs. It is landlocked and has no normal outlet, causing water levels to rise and fall with changes in precipitation. It has an emergency overflow to the Prior Lake Outlet Channel (PLOC), which runs along the western boundary of the lake at elevation 738 to the north over the railroad tracks at elevation 739.9, and discharges into the Minnesota River (see **Figure 1**).

In 2019, the water levels in Quarry Lake rose high enough to inundate some of the infrastructure within the park. The City installed emergency pumps to draw down the lake levels two feet over a two-month period in 2019. As a result of the cost of the pumping operations, the City has developed a feasibility study to analyze groundwater influences and outlet options for Quarry Lake to control lake levels.

The City is also currently undertaking several capital improvement projects at Quarry

Lake Park. The Quarry Lake Park Improvements Project, a municipal roadway and park improvement project, was presented to the District in July 2020 for an individual project permit. At the time, the proposal included the construction of a new boat launch at Quarry Lake, a roadway to provide access to the boat launch, and a driveway to provide access to the adjacent Xcel Energy facility. On August 27, 2020, the District received a new plan set and a request from the applicant that the proposed permit application be amended to include a mountain-bike park on the south side of the parcel. On September 8, 2020, the District was notified by the applicant that the park and roadway improvements were on hold; the only construction project moving forward would be the construction of the mountain-bike trails. No new impervious surfaces would be constructed as part of the mountain-bike trails at this time. At the September 16, 2020, board meeting, the managers conditionally approved the trail project, pending receipt of their NPDES permit.

While Quarry Lake is not a public water of the state, it is state-designated trout water and stocked. It was missed during the District's high-value resource area (HVRA) overlay of area delineations and designations, but it falls under the definition of the HVRA within the LMRWD. The District will work with the City to define the HVRA around Quarry Lake. An additional review completed by Young Environmental determined that the project area is neither in the FEMA floodplain nor within the District's Steep Slope Overlay District.

The Minnesota Well Index indicates there are many wells in the area. One 1955 well record indicates the groundwater elevation may have been around 724. The more recent 2011 Scott County LiDAR data indicate the lake elevation may have been as low as 718, while 2016 aerial images show lake levels back up to 724. This brief analysis, as well as the nature of a landlocked lake, suggests that the lake has likely experienced frequent lake-level fluctuations since its creation. The draft *Sustainable Lake Management Plan* for Quarry Lake further confirms this, as does the City's *Local Surface Water Management Plan*, which states that varying lake levels are an issue of concern for the City and that there is a desire to coordinate with LMRWD to evaluate the need for a Quarry Lake outlet to prevent further shoreline erosion. The *Sustainable Lake Management Plan* also recommends installing a staff gage to measure lake levels and better assess how the lake surface elevation relates to the elevation of other nearby waters, including groundwater.

Although Young Environmental's review encompasses the evaluation of the outlet and creation of a normal water elevation, it focuses on the District's Floodplain and Drainage Alteration Rule C.4.d, which requires that "no person shall . . . drain surface water . . . without demonstrating the activity has no adverse impact on upstream or downstream landowners or water quality, habitat, or fisheries." Below is a summary of our findings and comments/questions for the City to address.

Lake Level Management Plan Summary

WSB developed the Plan using the city-wide XPSWMM model to simulate stormwater runoff conditions and create a water budget for the lake from 2014 to 2019. Lake level data from 2014 and 2019 were used to match the starting and end elevations in the model. The modeling indicates the lake levels fluctuated between 721 and 724.5 during this time period and are increasing overall due to groundwater inflows. Future conditions modeling predicts this increasing trend will continue with a peak elevation of 730 by year 2030.

The Plan proposed three alternatives to managing lake levels, which are summarized in **Table 1**.

Table 1. Quarry Lake Outlet Alternatives

Alternative	High Water Elevation	Construction and O&M Costs	Estimated Infrastructure Impacts
1. No Build	740.0	$0	$1,400,000
2. Gravity Outlet	726.4	$287,000	$56,000
3. Pumped Outlet	724.4	$482,000	$22,000

Option 2, a gravity outlet, was recommended because of its lower construction costs and maintenance needs. The no-build alternative was not considered because the modeling predicted that water levels would continue to rise, detrimentally affecting the existing parking lot, fishing pier, trails, and trees within Quarry Lake Park. To calculate these infrastructure impacts, the no-build alternative presumed a "probable equilibrium elevation" in Quarry Lake of 740 based on the railroad overflow elevation.

Questions for the City

After reviewing the Plan, we have several points of clarification we would like to discuss with the City.

1. Lake Levels

- We acknowledge the City's concerns with shoreline erosion and potential infrastructure damage from the fluctuating lake levels on Quarry Lake. Recognizing that 2019 was one of the wettest years on record, what is the likelihood of the lake experiencing levels similar to 2019 in the future?
- The Plan mentions that the PLOC has overtopped into Quarry Lake during high-flow events and "has the possibility to create even greater HWLs in Quarry Lake." Does the gravity outlet option include a means for controlling the overtopping of the PLOC in the future?

2. Modeling

- We generally use the Chanhassen weather station or the MSP International Airport for modeling in this area; however, we have noticed that the St. Paul Downtown Airport rainfall record was used. What is the rationale for using the rainfall record from that location?
- We understand groundwater monitoring data were not readily available for the study. Given the assumptions made in the water balance, what is your confidence in the groundwater inflows used in the XPSWMM modeling?
- We typically calibrate models using a stage hydrograph. Can you elaborate on your calibration and validation process used for the XPSWMM model to confirm the predicted water surface elevations?
- What are the anticipated discharge rates and effects of the proposed gravity outfall on the PLOC?

3. Invasive Species

- The Plan and the *Sustainable Lake Management Plan* for Quarry Lake state the lake is infested with Eurasian milfoil and will provide a filtering component to the outfall to prevent it from moving downstream. What about other species entering the lake if there is a gravity connection, such as zebra mussels or invasive carp?
- How frequently do the PLOC and/or Quarry Lake overtop? If they do not, then the gravity outfall would be directly connecting infested water.
- We have not previously seen the proposed filtering box screen device. Please provide more information on its details and effectiveness.

Additionally, as we reviewed the City's official controls, we found the following items from the City's 2019 draft *Local Surface Water Management Plan* that should be addressed as part of the outlet design:

- It is in conformance with the approved Water Resource Management Plan and City's design criteria;
- It does not cause downstream flooding;
- It provides sufficient dead storage to retain back-to-back 100-year, 24-hour rainfalls;
- It will not affect the stability of downstream water resources; and
- It has been demonstrated that volume control practices alone will not address the problem.

Recommendation

The District has not received a project permit application at this time; however, a permit for the proposed outfall is required under Rule C, and the project would need to meet those requirements, including specifically addressing how the proposed outlet would prevent adverse impacts on Quarry Lake, the PLOC, and the Minnesota River for landowners, water quality, habitat, or fisheries. We recommend close coordination with the City to determine whether the need for an outlet exists and additional monitoring data are warranted to determine if 2019 represented an extreme year.

Attachments:

- Figure 1. Quarry Lake Outlet Location Map

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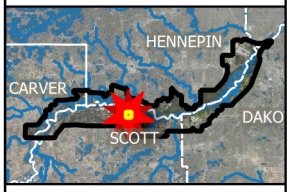
WATERSHED DISTRICT

Figure 1: Quarry Lake Proposed Outlet

LEGEND

- Proposed Outlet Location
- Proposed Gravity Outlet Alignment
- LMRWD Boundary
- Scott Co. 2-ft Contours
- Public Streams
- Public Waters
- Railroads

LMRWD Watershed Location Map



Young Environmental Consulting Group, LLC

Note: 2016 aerial shown indicates a lake level elevation of approximately 722.