



Please note the meeting will be held in person at the Carver County Government Center on the Wednesday, January 18, 2023. The meeting will also be available virtually using this [link](#).

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Lower Minnesota River Watershed District

7:00 PM

Wednesday February 15, 2023

Carver County Government Center

602 East Fourth Street, Chaska, MN 55318

Agenda Item	Discussion
1. Call to order	A. Oath of Office Joseph Barisonzi, term of office expires, 2/28/2024 B. Roll Call
2. Approval of agenda	
3. Citizen Forum	<i>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.</i>
4. Consent Agenda	<p><i>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.</i></p> A. Approve Minutes January 18, 2023 Regular Meetings B. Receive and file January 2023 Financial reports C. Approval of Invoices for payment <ul style="list-style-type: none"> i. Clifton Larson Allen (CLA) – Financial services through December 31, 2022 ii. Daniel Hron –January, February & March 2023 office rent iii. Rinke Noonan, Attorneys at Law – December 2022 legal services iv. Scott County SWCD – Q4 2022 monitoring, TACS & Education services v. Carver WMO – 2022 monitoring, TACS & Education services vi. Frenette Legislative Advisors – January/February 2023 Legislative Services vii. HDR Engineering, Inc. – Web services through Jan 28 viii. TimeSaver Off Site Secretarial, Inc. - Preparation of January 18, 2023 meeting minutes ix. US Bank Equipment Finance – payment on copier lease x. Young Environmental Consulting Group, LLC – January 2023 technical, and Education & Outreach services

	<ul style="list-style-type: none"> xi. Naiad Consulting, LLC –January 2023 administrative services, mileage & expenses xii. 4M Fund – December 2022 Bank Service Fee <p>D. Receive and file December 2022 Citizen Advisory Committee meeting minutes</p>
5. New Business/ Presentations	A. No new business
6. Old Business	<ul style="list-style-type: none"> A. 2021 Financial Audit B. Cost Share Application - S. Mueller, 10745 Lyndale Bluffs Trail - no new information to report since the last update C. City of Carver Levee – no new information to report since last update D. Dredge Management E. Watershed Management Plan – no new information since last update F. 2023 Legislative Action G. Education & Outreach H. LMRWD Projects <i>(only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)</i> <ul style="list-style-type: none"> i. No projects require action this month I. Permits & Project Reviews <i>(only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)</i> <ul style="list-style-type: none"> i. Permit Renewals ii. 3rd Street West Bridge Replacement (LMRWD No. 2022-042) iii. Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No.2022-041) iv. Permit Program Summary v. 535 Lakota Lane, Chanhassen – work without a permit
7. Communications	<ul style="list-style-type: none"> 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 7:00 pm Wednesday, March 15, 2023.

Upcoming meetings/Events

Managers are invited to attend any of these meetings. Most are free of charge and if not the LMRWD will reimburse registration fees.

- UMWA monthly meeting – Thursday, February 16, 2023, 12:00 noon Lilydale Pool & Yacht Club
- Lower MN River East 1W1P Advisory Committee Meeting & Steering Committee – Wednesday, February 15, 2023, 10:00 am and 1:00 pm respectively – Scott SWCD, Jordan, MN
- Lower MN River East 1W1P Policy Committee meeting – February 16, 2023, 3:00pm to 5:00 pm, in-person at 181 W Minnesota Street, Le Center, MN and virtual. Contact Administrator for information to participate virtually
- [Ag-Urban Forum](#) – Wednesday, March 1, 2023, 9:00am to Noon, College of St. Benedict’s Gorecki Center, St. Joseph, MN
- [LMRWD Citizen Advisory Committee meeting](#) – Tuesday, March 7, 2023, 9:00 am, virtual

For Information Only

- **WCA Notices**
 - City of Eden Prairie – Peterson Wetland Bank – Notice of Decision Extension and Notice of Decision received February 8, 2023
- **DNR Public Waters Work permits**
 - Scott County – City of Savage – Cargill Savage West Safety Improvement project; permit issued February 3, 2023; request for comments received December 22, 2022 (LMRWD submitted comments and has met with representatives from Cargill to determine a LMRWD permit is not necessary)
- **DNR Water Appropriation permits**
 - Scott County – City of Shakopee – Dean Lake Industrial – permit amendment to extend the expiration date of the permit



Item 4A
LMRWD 2-15-2023

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Minutes of Regular Meeting
Board of Managers
Wednesday, January 18, 2023
Carver County Government Center, 602 East 4th Street, Chaska, MN 7:00 p.m.
Approved _____

1. CALL TO ORDER AND ROLL CALL

On Wednesday, January 18, 2023, at 7:00 PM CST, 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: President Jesse Hartmann, Manager Laura Amundson, Manager Theresa Kuplic and Manager Lauren Salvato. Manager David Raby joined virtually. Manager Raby was not able to join from a location accessible to the public as required under Minnesota Open Meeting Laws, due to COVID-19 Quarantine Protocols, so he observed the meeting, but was not part of the quorum. In addition, the following attended the meeting: Linda Loomis, Naiad Consulting, LLC, LMRWD Administrator; John Kolb, Rinke Noonan, LMRWD legal counsel; Della Schall Young, Young Environmental Consulting Group, LLC, LMRWD Technical Consultant; and Scott County Commissioner Jody Brennan. Hannah LeClaire, Young Environmental Consulting Group, LLC, LMRWD Technical Consultant; and Ben Burnett, Prior Lake Spring Lake Manager; joined the meeting virtually.

2. APPROVAL OF THE AGENDA

Administrator Loomis asked to add delete Item 4. C. vii. – Rinke Noonan for December 2022 legal services and Item 4.C. x. - Daniel Hron for January 2023 office rent and to add Item 4. C. xiii. – Reimburse Judy Berglund for registration to Best Management Practices for Pollinators Summit.

Manager Amundson made a motion to approve the agenda with the deletion of delete Item 4. C. vii. – Rinke Noonan for December 2022 legal services and Item 4.C. x. - Daniel Hron for January 2023 office rent and to add Item 4. C. xiii. – Reimburse Judy Berglund for registration to Best Management Practices for Pollinators Summit. President Hartmann seconded the motion. Upon a vote being taken motion carried unanimously.

3. CITIZEN FORUM

Scott County Commissioner Jody Brennan introduced herself and informed the Board that she has been appointed as the liaison to the LMRWD from the Scott County Board of Commissioners. She noted that prior to election to the Scott County Board, she served on the Shakopee City Council.

She shared that the Scott County water report is available on their website and they are notifying residents in the County to get their water tested.

The Board asked if this was routine testing. Ms. Brennan said yes.

4. CONSENT AGENDA

President Hartmann introduced the item.

- A. Approve Minutes December 14, 2022, Regular Meeting**
- B. Receive and file December 2022 Financial reports**
- C. Approval of Invoices for payment**
 - i. Clifton Larson Allen (CLA) - Financial services through December 31, 2022
 - ii. TimeSaver Off Site Secretarial – Preparation of November 16, 2022, meeting minutes
 - iii. TimeSaver Off Site Secretarial, Inc. - Preparation of December 14, 2022, meeting minutes
 - iv. Managers’ Per diem payments, mileage, and expense reimbursement
 - v. Inter-Fluve, Inc. – Engineering and design services for Area #3 stabilization
 - vi. US Bank Equipment Finance – January 2023 payment on copier lease
 - ~~vii. Rinke Noonan, Attorneys at Law – December 2022 legal services~~
 - viii. Young Environmental Consulting Group, LLC – December 2022 technical, and Education & Outreach services
 - ix. Dakota County SWCD Q4 2022 invoice for monitoring, education and TACS services
 - ~~x. Daniel Hron – January 2023 office rent~~
 - xi. Naiad Consulting, LLC – November 2022 administrative services, mileage & expenses
 - xii. 4M Fund – November 2022 bank service charges
- D. Authorize payment of 2019 Watershed Based Funding Grant to City of Savage**
- E. Receive and file December 2022 Citizen Advisory Committee meeting minutes**
- F. Approve Memorandum of Agreement Between Dakota Soil & Water Conservation District and the LMRWD Regarding Water Quality Monitoring**
- G. Designation of 2023 Official newspaper**
- H. Designation of Data Practices Compliance Official**
- I. Designation of Official Depository**
- J. Set 2023 meeting Calendar**
- K. Approve 2023 Cost Share Incentive and Water Quality Restoration Grant Program**
- L. Authorize execution of FY 2022 Lower MN River Dredge Management Grant Amendment**
- M. Order preparation of 2022 Annual Report**

Administrator Loomis asked that Item 4. J. – Set 2023 meeting Calendar be removed from the Consent Agenda and considered in its normal sequence on the Agenda.

President Hartmann made a motion to approve the Consent Agenda as amended under the approval of the agenda and Item 4. J. - Set 2023 meeting Calendar removed. Manager Salvato seconded the motion. Upon a vote being taken the motion carried unanimously.

- J. Set 2023 meeting Calendar**

Administrator Loomis asked that the meeting date for the May Board meeting be re-considered. She will not be in town at the time of the meeting. It was decided to move the date of the meeting to Tuesday, May 9, 2023, at the same time and location as scheduled.

The Board also decided to re-visit the meeting schedule later in March.

Manager Amundson made a motion to schedule the May Board meeting, Tuesday, May 9, 2023, and revisit the meeting schedule in March. President Hartmann seconded the motion. Upon a vote being taken the motion carried unanimously.

5. NEW BUSINESS/PRESENTATIONS

A. 2023 Salt Symposium Sponsorship

Administrator Loomis introduced this item and stated that the LMRWD has sponsored this event in the past at the Bronze level which is \$500 and shared that they have been asked to sponsor again in 2023. She stated the event will still be held virtually.

President Hartmann made a motion to sponsor the 2023 Salt Symposium at the Bronze Level of \$500. Manager Salvato seconded the motion. Upon a vote being taken the motion carried unanimously.

6. OLD BUSINESS

A. 2021 Financial Audit

No new information to report since last update.

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

No new information to report since last update.

C. City of Carver Levee

No new information to report since last update.

D. Dredge Management

i. Vernon Avenue Dredge Material Management site

Administrator Loomis introduced this item and explained that Cargill is planning to do some improvements to their west terminal which would involve some dredging and placing of materials on the dredge site.

The Board asked if this compromises the ability to take additional dredging materials. Administrator Loomis explained that she had the same question for the site operator and has not received a response yet. She stated that this can be made a condition. She stated they will get answers to all of the unknowns before this is allowed.

Manager Amundson made a motion to allow placement of material from the terminal improvements planned by Cargill at its West Terminal, contingent upon said placement of material not interfering with other obligations of the LMRWD for material placement. Manager Kuplic seconded the motion. Upon a vote being taken, the motion carried unanimously.

ii. Private Dredge Material Placement

No new information to report since last update.

E. Watershed Management Plan

Administrator Loomis introduced this item and stated that this is item that was tabled at last month's Board meeting and that was discussed in a work session.

President Hartmann made a motion to approve workplan and authorize implementation and to receive and file the LMRWD Municipal Coordination Updates dated December 8, 2022 and January 11, 2023. Manager Salvato seconded the motion. Upon a vote being taken the motion carried unanimously.

F. 2022 Legislative Action

Administrator Loomis introduced this item and shared that she had received the estimated cost for the Area 3 project from Young Environmental. She stated that the bill will be the same as they introduced last year. She shared the revised cost estimate of \$5.2 million. She added that they are putting everything together for legislators when it comes to committees for a hearing and can let them know that they have grants in addition to the State money and they have also done additional work and studies on this area. The revised information was shared with Lisa Frenette, the legislative liaison for the LMRWD.

The Board asked when they expect a decision. Administrator Loomis stated that she was not sure about the legislator schedule. She added that typically the bills need to be submitted sometime in March and hearings follow this. She stated that if the Board would like, Ms. Frenette can attend the next meeting to address questions.

The Board discussed the deadlines for the bills. Attorney Kolb advised the Board of the dates the legislature has set. The Board asked if there is any utility in doing a Minnesota River Watershed District to introduce things given that there are new legislators in the district. Administrator Loomis stated that Ms. Frenette normally does a good job of meeting with all the legislators in the district and educating them about the LMRWD issues. Administrator Loomis said she will discuss this idea with Ms. Frenette.

G. Education and Outreach Plan

The 2023 Workplan for Education & Outreach was considered under Item 6. E. – Watershed Management Plan.

H. LMRWD Projects

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

i. MN River Corridor Management Plan

Administrator Loomis introduced this item and explained that this item had been tabled at the January Board meeting. It was discussed at the work session.

President Hartmann made a motion to receive report and authorize distribution. Manager Salvato seconded the motion. Upon a vote being taken the motion carried unanimously.

ii. MAC (Metropolitan Airport Commission) Boundary Change

Administrator Loomis introduced this item and shared that this item has been in the comprehensive plan for a while to adjust the boundaries to match the hydrological zones of the Minneapolis/St. Paul Airport (MAC). She stated that they are working with BWSR and the Minnehaha Creek Watershed District. She added that they have the GIS files from the airport. She stated they are working with BWSR to see what is needed to petition for the change.

The Board asked if there are any other applications for this. Administrator Loomis stated this change would better align the boundaries of the LMRWD with hydrologic boundaries at the airport.

Ms. Young explained that MAC is an area that would be self-regulated once they are approved for an LGU permit.

Administrator Loomis added that this does not have any tax-base implications.

President Hartmann made a motion to approve proposed boundary realignment, conditioned upon coordinating with MAC, and Minnehaha Creek Watershed District. The motion was seconded by Manager Salvato. Upon a vote being taken the motion carried unanimously.

iii. Area #3 Permitting requirements

Administrator Loomis introduced this item and explained that Young Environmental has been doing investigations as to the needed permits.

Ms. Young explained that after the desktop review is complete, if it is determined that a phase 1 investigation or wetland delineation is required it will come back to the Board for authorization to proceed with those investigations.

iv. MN River Floodplain Modeling

Administrator Loomis introduced this item and shared that they had applied for a grant this week. Ms. Young added that they applied for less than \$25,000 as the estimated cost of this project is just over \$85,000.

The Board asked if this would overlap with the work the US Army Corps of Engineers is doing to determine flood risks. Ms. Young said that the Corps will be notified and if there is an opportunity to work together the LMRWD work with them.

I. Project/Plan Reviews

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

i. Former Knox Site (LMRWD No. 2022-039)

Administrator Loomis introduced this item and stated that Ms. LeClaire could answer any other questions.

Manager Amundson made a motion to conditionally approve subject to receipt of the final construction plans, signed by a professional engineer; name and contact information for all contractors undertaking land-disturbing activities as part of the proposed project; name and contact information for the person(s) responsible for erosion control inspections and maintenance of erosion control measures; a copy of the NPDES permit and Documentation that the Applicant has received full approval for the project from the City of Burnsville. Manager Kuplic seconded the motion. Upon a vote being taken the motion carried unanimously.

ii. City of Shakopee – Draft Minnesota Riverbank Stabilization Study

Administrator Loomis introduced this item and stated that Ms. LeClaire reviewed the study the LMRWD received and laid out recommendations for the Board.

Ms. Young noted that the City of Shakopee will likely come forward for a partnership request.

The Board asked what approach is being used to stabilize the riverbank. Ms. LeClaire explained the stabilization approach varies along the reach depending upon the section of the project. Techniques include rock toe or riprap revetment and rock weirs.

iii. Permit Program Summary

Administrator Loomis introduced and provided background on this item.

iv. 535 Lakota Lane, Chanhassen – work without a permit

Administrator Loomis introduced this item and turned it over to legal counsel for an update.

Attorney Kolb provided an update concerning the work without a permit and shared that they have affected service for the property owner who now resides in Colorado. He stated that the owner's attorney reached out to LMRWD legal counsel asking for an extension for an answer. He said that if the LMRWD gives him an extension, it could be revoked on 20 days' notice. He added that an after-the-fact permit was applied for. He explained the proposed course of action moving forward.

The Board discussed the origins of this matter and if they are fully aware of all the work that has been done without a permit. Attorney Kolb explained the history of this matter and stated that there is an opportunity to investigate further if necessary.

Legal Counsel advised that the next step would be to have a coordination meeting with the City to come up with a definitive list and communicate that back to the property owner. Since he is out of state he will likely have to retain a project manager. If that is the case, we want to see the engagement documents and then communicate the dates to inform the LMRWD that we want a contractor and contract in place be and other milestones. That is part of the coordination between the City and the LMRWD.

6. COMMUNICATIONS

- A. **Administrator Report:** Administrator Loomis stated that she sent the link to everyone to her report. She added that Hennepin County received an application to replace Manager Raby. She shared that Managers Hartmann and Salvato's terms are expiring at the end of February. She noted that they met with the City of Eagan and the meeting went well. She also reported that the One Watershed, One Plan for the Lower Minnesota River East had an advisory committee meeting and steering committee meeting today. The next meeting, February 16, 2023, of the One Watershed, One Plan for the Lower Minnesota River East policy committee was discussed. Manager Amundson noted she will not be in town for that meeting and would like to participate virtually if possible. The Board discussed the global concept of the One Watershed One Plan Program.
- B. **President:** No report
- C. **Managers:** No report
- D. **Committees:** No report
- E. **Legal Counsel:** No report
- F. **Engineer:** No report

7. ADJOURN

At 7:55 PM, President Hartmann made a motion to adjourn the meeting. Manager Salvato 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, February 15, 2023, and will be held at the Carver County Government Center, 602 East 4th Street, Chaska, MN. Electronic access will also be available.

Attest:

Lauren Salvato, Secretary

Linda Loomis, Administrator

Item 4.B.
LMRWD 2-15-2023

BEGINNING BALANCE	31-Dec-22	\$ 1,464,724.75
ADD:		
General Fund Revenue:		
January Dividend		\$ 5,293.07
Carver County 2nd half Final		\$ 525.25
Dakota County 2nd half-Final		\$ 2,342.37
Hennepin County 2nd Half tax Settlement		\$ 1,385.65
Scott County 2nd Half tax Settlement		\$ 1,372.66
		\$ 10,919.00
Total Revenue and Transfers In		
		\$ 10,919.00
DEDUCT:		
Debits/Reductions		
Young Environmental Consulting	November invoices for technical services	\$ 47,117.50
Young Environmental Consulting	December invoices for technical services	\$ 41,434.73
City of Savage	Reimbursement for Schroeder Acres study	\$ 53,768.61
CLA (Clifton Larson Allen)	December 2022 financial services	\$ 706.56
Dakota County SWCD	Q4 2022 monitoring & education services	\$ 2,125.00
Managers	2nd half 2022 per diem, mileage & expenses	\$ 791.25
Inter-Fluve	December expenses for Area #3	\$ 18,143.46
Naiad Consultitng, LLC	Dec 2022 Administrative services & expenses	\$ 10,673.10
TimeSaver Off Site Secretarial	Preparation of December 2022 meeting minutes	\$ 154.00
TimeSaver Off Site Secretarial	Preparation of November 2022 meeting minutes	\$ 154.00
US Bank Equipment Finance	January 2023 copier lease payment	\$ 168.10
4M Fund	Bank Service Charges	\$ 40.00
		\$ 175,276.31
Total Debits/Reductions		
		\$ 175,276.31
ENDING BALANCE	31-Dec-22	\$ 1,300,367.44

Lower Minnesota River Watershed District
 General Fund Financial Report
 Fiscal Year: January 1, 2022 through December 31, 2022
 Meeting Date: February 15, 2023

FY 2022

	2022 Budget	January Actuals	YTD 2022	Over (Under) Budget
Administrative expenses	\$ 250,000.00	\$ 37,356.41	\$ 370,977.11	\$ 120,977.11
Cooperative Projects				
Eden Prairie Bank Stabilization Area #3	\$ 100,000.00	\$ 28,349.71	\$ 91,603.35	\$ (8,396.65)
Gully Erosion Contingency Fund	\$ -	\$ -	\$ -	\$ -
USGS Sediment & Flow Monitoring	\$ -	\$ -	\$ -	\$ -
Ravine Stabilization at Seminary Fen in Chaska	\$ -	\$ -	\$ -	\$ -
Seminary Fen Ravine Restoration site A	\$ -	\$ -	\$ -	\$ -
Seminary Fen Ravine Restoration site C-2	\$ -	\$ -	\$ 20,000.00	\$ 20,000.00
509 Plan Budget				
<i>Resource Plan Implementation</i>				
Watershed Resource Restoration Fund	\$ 120,000.00	\$ -	\$ 142,500.00	\$ 22,500.00
Gully Inventory	\$ -	\$ -	\$ 5,830.50	\$ 5,830.50
MN River Corridor Management Project	\$ -	\$ 7,648.25	\$ 38,902.28	\$ 38,902.28
Gun Club Fen Intrusion investigation	\$ -	\$ -	\$ 6,393.45	\$ 6,393.45
Assumption Creek Hydrology Restoration	\$ -	\$ -	\$ 34,542.73	\$ 34,542.73
Carver Creek Restoration	\$ -	\$ -	\$ -	\$ -
Groundwater Screening Tool Model	\$ -	\$ -	\$ -	\$ -
MN River Floodplain Model Feasibility Study	\$ -	\$ -	\$ 13,301.32	\$ 13,301.32
Schroeder Acres Park Study	\$ -	\$ 53,768.61	\$ 53,768.61	\$ 53,768.61
Downtown Shakopee Stormwater BMPs	\$ 50,000.00	\$ -	\$ 25,000.00	\$ (25,000.00)
PLOC Realignment/Wetland Restoration	\$ 30,000.00	\$ -	\$ -	\$ (30,000.00)
Spring Creek Project	\$ -	\$ -	\$ 12,336.30	\$ 12,336.30
West Chaska Creek	\$ -	\$ -	\$ 27,441.00	\$ 27,441.00
Sustainable Lakes Mgmt. Plan (Trout Lakes)	\$ 50,000.00	\$ -	\$ -	\$ (50,000.00)
Geomorphic Assessments (Trout Streams)	\$ -	\$ -	\$ 9,913.85	\$ 9,913.85
Fen Stewardship Program	\$ 25,000.00	\$ 1,757.50	\$ 47,671.03	\$ 22,671.03
District Boundary Modification	\$ -	\$ -	\$ -	\$ -
E. Chaska Creek Bank Stabilization Project	\$ -	\$ -	\$ 4,526.32	\$ 4,526.32
E. Chaska Creek Treatment Wetland Project	\$ -	\$ -	\$ -	\$ -
MN River Sediment Reduction Strategy	\$ -	\$ -	\$ -	\$ -
Local Water Management Plan reviews	\$ 5,000.00	\$ 2,199.01	\$ 9,538.31	\$ 4,538.31
Project Reviews	\$ 75,000.00	\$ 18,010.47	\$ 239,647.69	\$ 164,647.69
<i>Monitoring</i>	\$ 75,000.00	\$ 2,125.00	\$ 28,147.50	\$ (46,852.50)
<i>Watershed Management Plan</i>	\$ -	\$ 11,191.25	\$ 39,032.50	\$ 39,032.50
<i>Public Education/CAC/Outreach Program</i>	\$ 75,000.00	\$ 11,080.50	\$ 66,592.44	\$ (8,407.56)
<i>Cost Share Program</i>	\$ 20,000.00	\$ -	\$ 20,606.43	\$ 606.43
Nine Foot Channel				
Transfer from General Fund	\$ -	\$ -	\$ -	\$ -
Dredge Site Improvements	\$ 240,000.00	\$ 1,621.50	\$ 16,132.25	\$ (223,867.75)
Total:	\$ 1,115,000.00	\$ 175,108.21	\$ 1,324,404.97	\$ 209,404.97

	2023 Budget	January Actuals	YTD 2023	Over (Under) Budget
Administrative expenses	\$ 250,000.00	\$ 168.10	\$ 168.10	\$ (249,831.90)
Cooperative Projects				
Eden Prairie Bank Stabilization Area #3	\$ -	\$ -	\$ -	\$ -
Gully Erosion Contingency Fund	\$ -	\$ -	\$ -	\$ -
Seminary Fen Ravine Restoration site A	\$ -	\$ -	\$ -	\$ -
Seminary Fen Ravine Restoration site C-2	\$ 20,000.00	\$ -	\$ -	\$ (20,000.00)
509 Plan Budget				
<i>Resource Plan Implementation</i>				
Watershed Resource Restoration Fund	\$ 100,000.00	\$ -	\$ -	\$ (100,000.00)
Gully Inventory	\$ 90,500.00	\$ -	\$ -	\$ (90,500.00)
MN River Corridor Management Project	\$ -	\$ -	\$ -	\$ -
Gun Club Fen Intrusion investigation	\$ -	\$ -	\$ -	\$ -
Assumption Creek Hydrology Restoration	\$ -	\$ -	\$ -	\$ -
Carver Creek Restoration	\$ -	\$ -	\$ -	\$ -
Groundwater Screening Tool Model	\$ -	\$ -	\$ -	\$ -
MN River Floodplain Model Feasibility Study	\$ 75,000.00	\$ -	\$ -	\$ (75,000.00)
	\$ -	\$ -	\$ -	\$ -
Downtown Shakopee Stormwater BMPs	\$ 50,000.00	\$ -	\$ -	\$ (50,000.00)
PLOC Realignment/Wetland Restoration	\$ -	\$ -	\$ -	\$ -
Spring Creek Project	\$ 90,000.00	\$ -	\$ -	\$ (90,000.00)
West Chaska Creek	\$ -	\$ -	\$ -	\$ -
Sustainable Lakes Mgmt. Plan (Trout Lakes)	\$ -	\$ -	\$ -	\$ -
Geomorphic Assessments (Trout Streams)	\$ -	\$ -	\$ -	\$ -
Fen Stewardship Program	\$ 75,000.00	\$ -	\$ -	\$ (75,000.00)
District Boundary Modification	\$ -	\$ -	\$ -	\$ -
MN River Sediment Reduction Strategy	\$ -	\$ -	\$ -	\$ -
Local Water Management Plan reviews	\$ 5,000.00	\$ -	\$ -	\$ (5,000.00)
Project Reviews	\$ 50,000.00	\$ -	\$ -	\$ (50,000.00)
<i>Monitoring</i>	\$ 75,000.00	\$ -	\$ -	\$ (75,000.00)
<i>Watershed Management Plan</i>	\$ -	\$ -	\$ -	\$ -
<i>Public Education/CAC/Outreach Program</i>	\$ 85,000.00	\$ -	\$ -	\$ (85,000.00)
<i>Cost Share Program</i>	\$ 20,000.00	\$ -	\$ -	\$ (20,000.00)
Nine Foot Channel				
Transfer from General Fund	\$ -	\$ -	\$ -	\$ -
Dredge Site Improvements	\$ 240,000.00	\$ -	\$ -	\$ (240,000.00)
Total:	\$ 1,225,500.00	\$ 168.10	\$ 168.10	\$ (1,225,331.90)



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, February 15, 2023

Agenda Item

Item 4. D. – Receive and file December 2022 Citizen Advisory Committee meeting minutes

Prepared By

Linda Loomis, Administrator

Summary

A quorum was not present at the February Citizen Advisory Committee (CAC) meeting, so no business was conducted. A speaker from the Dakota County Master Gardener Program spoke about low maintenance and alternate lawns. The Board has an opportunity to appointment to new members to the CAC and this may help attendance, Additionally, the members of the CAC present at the February agreed that all members of the CAC should be surveyed to see if a different time and/or day of the month would work better for the majority of the members. IF the CAC changes the time, it is likely that another person will apply for CAC membership.

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, February 15, 2023

Agenda Item

Item 6. D. – Dredge Management

Prepared By

Linda Loomis, Administrator

Summary

The LMRWD is required to report annually on each grant that is outstanding. Reports are due on February 1st of every year. A report was submitted and accepted on the state money that the LMRWD receives for dredge management. BWSR has allowed the LMRWD to include a portion of administrative cost to the grant. The current percentage of administrative costs (rent, copier lease, lobbying, etc.) that is used toward dredge management is 10%. The report the LMRWD received from BWSR following submittal of the 2022 LMRWD expenses is attached.

At the January 18th Board meeting, the Board was informed of a project that is being planned at Cargill's west terminal. Young Environmental Consulting, on behalf of the LMRWD, met with representatives from Cargill and determined that the project will not require a permit from the LMRWD. The issue of whether Cargill will need to place excavated materials from the project on the LMRWD's Vernon Avenue dredge materials management site has not been determined. At the January Board meeting, the Board authorized placement of materials if it did not interfere with the LMRWD operations of the site.

Young Environmental Consulting, on behalf of the LMRWD, sent a request for information to the LMRWD engineering pool requesting proposals for the Vernon Avenue improvements and access road culvert replacement project. The deadline for submission of proposals was February 10th. Three of four consultants responded with proposals: Bolton & Menk, WSB and ISG. HR Green did not submit, but informed the LMRWD that its workload was such that they could not take on the project. There was not time to review the proposals in time for this summary, but a verbal report may be given at the Board of Managers meeting on the 15th.

Attachments

P21-4620 All Details Report dated February 2, 2023

Lower Minnesota River Watershed District (LMRWD) Vernon Avenue Improvements and Access Road Culvert Replacement Project—Engineering Consulting Pool Request for Information (RFI)

Recommended Action

No action recommended



Grant All-Detail Report

Lower MN River Dredge Management 2022

Grant Title - 2022 - Lower MN River Dredge Management (Lower Minnesota River WD)

Grant ID - P21-4620

Organization - Lower Minnesota River WD

Original Awarded Amount	\$240,000.00	Grant Execution Date	5/27/2022
Required Match Amount	\$0.00	Original Grant End Date	12/31/2023
Required Match %	0%	Grant Day To Day Contact	Linda Loomis
Current Awarded Amount	\$480,000.00	Current End Date	12/31/2024

Budget Summary

	Budgeted	Spent	Balance Remaining*
Total Grant Amount	\$73,186.59	\$73,186.59	\$406,813.41
Total Match Amount	\$0.00	\$0.00	\$0.00
Total Other Funds	\$0.00	\$0.00	\$0.00
Total	\$73,186.59	\$73,186.59	\$406,813.41

*Grant balance remaining is the difference between the Awarded Amount and the Spent Amount. Other values compare budgeted and spent amounts.

Budget Details

Activity Name	Activity Category	Source Type	Source Description	Budgeted	Spent	Last Transaction Date	Matching Fund
2022 LMRWD Dredge Management Administrative Expenses	Administration /Coordination	Current State Grant	2022 - Lower MN River Dredge Management (Lower Minnesota Riv..	\$57,054.34	\$57,054.34	12/31/2022	N
Review of Soil Reference Values	Technical/Engineering Assistance	Current State Grant	2022 - Lower MN River Dredge Management (Lower Minnesota Riv..	\$4,213.00	\$4,213.00	12/31/2022	N

Activity Name	Activity Category	Source Type	Source Description	Budgeted	Spent	Last Transaction Date	Matching Fund
Site evaluation & Investigation	Technical/Engineering Assistance	Current State Grant	2022 - Lower MN River Dredge Management (Lower Minnesota Riv..	\$11,919.25	\$11,919.25	12/31/2022	N

Activity Details Summary

Activity Details	Total Action Count	Total Activity Mapped	Proposed Size / Unit	Actual Size / Unit
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Proposed Activity Indicators

Activity Name	Indicator Name	Value & Units	Waterbody	Calculation Tool	Comments
---------------	----------------	---------------	-----------	------------------	----------

Final Indicators Summary

Indicator Name	Total Value	Unit
----------------	-------------	------

Grant Activity

Grant Activity - 2022 LMRWD Dredge Management Administrative Expenses	
Description	Expenses incurred by LMRWD apportioned to Dredge Management
Category	ADMINISTRATION/COORDINATION
Start Date	End Date
Has Rates and Hours?	No
Actual Results	

Grant Activity - Review of Soil Reference Values

Description	MOCA established Soil Reference Values (SRV) for allowable pollutant levels. Barr Engineering reviewed the SRVs and determined impacts to LMRWD dredge material management		
Category	TECHNICAL/ENGINEERING ASSISTANCE		
Start Date		End Date	
Has Rates and Hours?	No		
Actual Results			

Grant Activity - Site evaluation & Investigation

Description	Expenses from Young Environmental Consulting Group in 2022 for site inspection, condition assessments and reporting		
Category	TECHNICAL/ENGINEERING ASSISTANCE		
Start Date		End Date	
Has Rates and Hours?	No		
Actual Results			

Grant Attachments

Document Name	Document Type	Description
2022 Dredge Mgmt Amendment EXECUTED	Grant Agreement Amendment	
2022 Lower MN River Dredge Management	Grant Agreement	2022 Lower MN River Dredge Management - Lower Minnesota River WD
2022 Lower MN River Dredge Management EXECUTED	Grant Agreement	2022 Lower MN River Dredge Management - Lower Minnesota River WD
All Details Report	Workflow Generated	Workflow Generated - All Details Report - 02/01/2023
Grant agreement amendment executed by LMRWD	Grant	2022 - Lower MN River Dredge Management (Lower Minnesota River WD)
Unexecuted Dredge Management	Grant Agreement Amendment	

Technical Memorandum

To: Julie Blackburn, ISG Environmental; Practice Group Lead
Bridget Osborn, HR Green Water Resources; Project Manager
Timothy Olson, Bolton & Menk Inc; Principal Water Resources Engineer
Earth Evans, WSB Water Resources; Director

From: Karina Weelborg, Water Resources Scientist
Della Schall Young, CPESC, PM

CC: Linda Loomis, LMRWD Administrator
Hannah LeClaire, PE

Date: January 31, 2023

Re: Lower Minnesota River Watershed District (LMRWD) Vernon Avenue
Improvements and Access Road Culvert Replacement Project—Engineering
Consulting Pool Request for Information (RFI)

This RFI is intended to solicit responses from qualified consultants in the LMRWD Engineering Consulting Pool for services related to the reconstruction of approximately 0.7 miles of Vernon Avenue and an access road to the Cargill East River (MN – 14.2 RMP) Dredge Site (Site) and replacement of the associated access road culvert located in Savage, Minnesota (Figure 1). The selected consultant will submit prepared design and construction documents, address applicable permitting requirements, and coordinate regularly with the LMRWD’s technical consultant for the Vernon Avenue Improvements and Access Road Culvert Replacement Project.

Project Background

As part of the LMRWD’s role as the local sponsor for the United States Army Corps of Engineers dredging activities, the LMRWD provides a dredge material placement site located on the Minnesota River in Savage, Minnesota, between Port Richards to the west, the Minnesota River to the north and east, and natural area to the south.

In 2010, an access road from Vernon Avenue to the Site was constructed over an existing drainage way to the Minnesota River and included a 48-inch concrete pipe culvert under the access road. In 2015 American Engineering Testing (AET) conducted a pavement condition analysis of Vernon Avenue that revealed the roadway surface ranged from 0 to 2.5 inches of deteriorated bituminous pavement. AET concluded that the roadway was nearing the end of its life span, and the pavement strength was not adequate for heavy truck loading. The full report is available as Attachment 2.

Continued operation and management activities on the Site include maintenance of Vernon Avenue and the access road and regular culvert cleaning. As part of these activities, Young Environmental Consulting Group, LLC (Young Environmental), the LMRWD's technical consultant, inspected Vernon Avenue, the access road, and the culvert in fall 2022. Inspections found Vernon Avenue in poor condition with most of the roadway composed of sandy material overlaying decomposed bituminous pavement and the access road obscured by heavy vegetation and debris. The access road culvert showed evidence of joint separation and was blocked by sediment and debris. Full inspection details are available in Attachment 3. Through this RFI, the LMRWD wants your firm to submit a work plan and cost estimate for preparing design and construction documents to address Vernon Avenue, access road, and culvert concerns, address applicable permitting requirements, and coordinate regularly with the LMRWD's technical consultant. Below are the general expectations for the work plan and cost estimate.

Work Plan Guidelines

To be considered fully responsive and eligible for the award, submissions must contain the items specified below. Remember, your firm is in LMRWD's engineering pool; thus, we are aware of your qualifications. We require you to demonstrate that you understand the issue and have the capability to solve it using the work plan while staying within an appropriate budget and schedule.

1. Project understanding and approach
2. Project work plan
 - a. Describe in detail how services will be provided.
 - b. Include a detailed listing and description of tasks, deliverables, assumptions, and expectations of LMRWD staff.
 - c. Include a proposed project schedule to have the design completed in late spring/ early summer.
3. Project team
 - a. Highlight the project manager and supporting personnel.
 - b. Include subcontractors, if applicable.
4. Cost proposal
 - a. Tie the cost back to the work plan tasks.

- b. Provide the hourly rates for all personnel as well as any reimbursable expenses.

Work Plan Submission and Evaluation

Submission Details

All communications including questions, related to this request shall be directed **via email only** to the following:

admin@lowermnriverwd.org

An electronic copy (pdf) of the workplan and cost proposal materials must be submitted to Linda Loomis, district administrator, at admin@lowermnriverwd.org by February 10, 2023, at 2:00 p.m. The subject line should be as follows: "Response to RFI for Vernon Avenue Improvements and Access Road Culvert Replacement Project."

Evaluation Details

The LMRWD (administrator and possible manager[s]) and Young Environmental will review responses to this RFI and will evaluate them based on the following criteria:

- Demonstrated project understanding
- Work plan suitability in meeting project objectives
- Project cost consideration

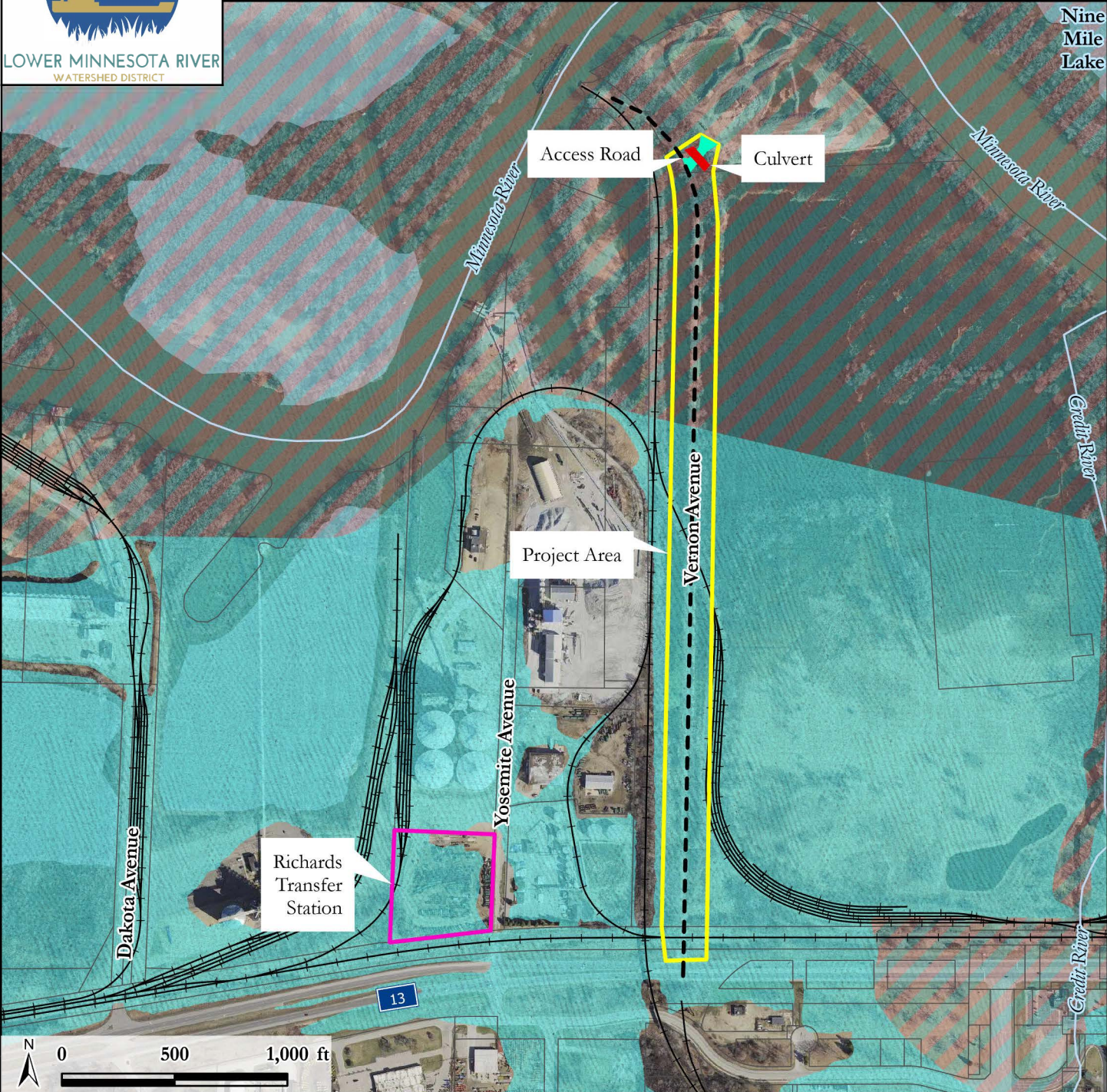
Any determination relative to the selection of a consultant the LMRWD makes shall be considered final. Upon review, a recommendation will be submitted to the LMRWD board for approval.

Attachments

- Figure 1. Project Location Map
- 2015 Vernon Avenue Evaluation (AET)
- [LMRWD Dredge Site Update Memo](#)



Vernon Avenue Improvements and Access Road Culvert Replacement Project



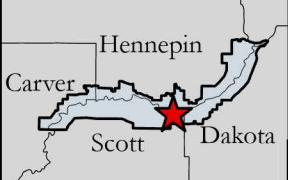
Nine Mile Lake

Projects \LMRWD \Cap. Improvement Projects \Dredge Site_04 GIS\02 Maps

Legend

- Vernon Avenue
- Access Road
- Culvert
- Project Area
- Richards Transfer Station
- Public Waters
- Public Waterbodies
- 100-yr Floodplain
- Floodway
- Railroads
- Parcels

LMRWD Watershed Location Map





AMERICAN
ENGINEERING
TESTING, INC.

CONSULTANTS
· ENVIRONMENTAL
· GEOTECHNICAL
· MATERIALS
· FORENSICS

REPORT OF PAVEMENT EVALUATION SERVICES

Vernon Avenue

Savage, Minnesota

AET Project No. 28-00966

Date:

June 25, 2015

Prepared for:

Lower Minnesota River Watershed District
112 East Fifth Street
Chaska, Minnesota 55318



CONSULTANTS
• ENVIRONMENTAL
• GEOTECHNICAL
• MATERIALS
• FORENSICS

June 25, 2015

Lower Minnesota River Watershed District
112 East Fifth Street
Chaska, Minnesota 55318

Attn: Mr. Len Kremer, President

RE: Pavement Evaluation Services
Vernon Avenue between Hwy 13 and the Minnesota River
Savage, Minnesota
AET Project No. 28-00966

Dear Mr. Kremer:

American Engineering Testing, Inc. (AET) is pleased to present the results of our pavement evaluation services for Vernon Avenue in Savage, Minnesota. These services were performed according to our proposal to Linda Loomis dated March 16, 2015, signed by you on March 18, 2015.

We are submitting this report to you electronically, and will send one copy by mail.

A handwritten signature in blue ink that reads 'Melanie Fiegen'.

Sincerely,

American Engineering Testing, Inc.

Melanie Fiegen, P.E.
Pavement Engineer
Phone: 651.603.6618
Cell: 651.470.2228
mfiegen@amengtest.com

Report of Pavement Evaluation Services
Vernon Avenue, Savage, Minnesota
June 25, 2015
Report No. 28-00966

AMERICAN
ENGINEERING
TESTING, INC.


SIGNATURE PAGE

Prepared for:

Lower Minnesota River Watershed District
112 East Fifth Street
Chaska, MN 55318

Attn: Mr. Len Kremer

Authored by:


Melanie Fiegen, P.E.
Pavement Engineer


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

Date: June 25, 2015 License #: 16711

Prepared by:

American Engineering Testing, Inc.
550 Cleveland Avenue North
St. Paul, Minnesota 55114
(651) 659-9001/www.amengtest.com

Reviewed by:


Chunhua Han, P.E.
Principal Engineer/Pavement Division

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FIGURES

Figure 1 – Soil Boring Locations and GPR/FWD Route

APPENDIX A – Ground Penetrating Radar Field Exploration and Testing
 Summary of GPR Data

APPENDIX B – Pavement Condition Index Field Testing

APPENDIX C – Falling Weight Deflectometer Field Exploration and Testing
 Summary of FWD Data

APPENDIX D – Subsurface Field Exploration and Testing
 Boring Log Notes
 Unified and AASHTO Classification Systems
 Soil Boring Logs

APPENDIX E – Pavement Report Limitations and Guidelines for Use

1.0 INTRODUCTION

The Lower Minnesota River Watershed District (the District) is preparing to use Vernon Avenue in Shakopee, Minnesota, to haul sand dredged from the Minnesota River to various project sites. To assist in the planning and to aid in haul road evaluation and maintenance, the District has authorized American Engineering Testing, Inc. (AET) to perform video logging at the site, and perform a pavement condition analysis for the project. This report presents the pre-construction results of the above services.

2.0 SCOPE OF SERVICES

AET's scope of services included geotechnical sampling, ground penetrating radar (GPR) testing, digital video log (DVL) collection, Falling Weight Deflectometer (FWD) testing, and pavement condition observations on Vernon Avenue. The proposed scope consisted of the following:

1. Perform 2-way van-mounted GPR survey at 1 foot intervals in both lanes of the selected roadway. The total length of roadway to be surveyed is approximately 4000 feet.
2. Analyze the GPR data for pavement thickness information.
3. Perform DVL collection on the road, prior to construction, using a digital video camera.
4. Analyze digital video data to determine the basic pavement condition. Store the digital video and GPR data for future use.
5. Perform FWD testing on the roadway.
6. Perform 4-foot deep Geoprobe borings at approximately 1000-foot intervals along the haul road to collect soil samples.
7. Prepare a written report documenting the existing preconstruction pavement condition of the public road to be used for hauling.

These services are intended for pavement evaluation purposes. The scope is not intended to explore for the presence or extent of environmental contamination in the soil or ground water.

3.0 PROJECT INFORMATION

The US Corp of Engineers has been performing dredging on the Minnesota River, stockpiling the dredge sands near the terminus of Vernon Avenue. The District will be performing hauling of the sands on Vernon Avenue between Highway 13 on the south and the Minnesota River on the north in Savage, Minnesota. The roadway has not been much used recently as it is overgrown with vegetation. The roadway was constructed on a causeway through the low-lying area near the Minnesota River. The roadway to be assessed is shown in Figure 1.

We understand the stockpile is on the order of 30,000 cubic yards of sand. Using information from your contractor, we assume continuous hauling using trucks with an estimated total weight of 35,000 to 80,000 pounds. These trucks typically haul approximately 10 to 17 cubic yards of material per load resulting in a total truck count on the order of 2,000.

The above stated information represents our understanding of the proposed construction. This information is an integral part of our engineering review. It is important that you contact us if there are changes from that described so that we can evaluate whether modifications to our recommendations are appropriate.

4.0 PAVEMENT TESTING

4.1 Pavement Thickness Testing

The pavement thickness testing program consisted of a high speed (air coupled) GPR antenna collecting the pavement thickness data at one scan per foot. The data was collected of 4000 lane-feet in two directions using a 2 GHz antenna on March 31, 2015. The test data and details of the methods used appear in Appendix A. Figure 1 shows the GPR scanning route.

Scans of the pavement were collected according to SIR-20 processor settings established by GSSI RoadScan system, approximately in the middle of the traveling lane and in two directions of travel. A calibration file, required for data post-processing, was collected prior to testing.

The GPR interface identification was accomplished using RADAN 7.0, a proprietary software package included with the GSSI RoadScan system. The software includes tools to aid in delineating pavement layer transitions, and automatically calculates their depths from the pavement surface using the calibration file(s) collected prior to testing. The identified layer was also compared to the boring data to validate the accuracy of the layer thicknesses.

The total depth of pavement is not always explicitly clear. Where gaps in clear identification of pavement and base layer thicknesses are encountered, they are reported as a percent of the picking rate of the layer interface. A picking rate of 100 percent indicates the layer interfaces were visible in 100 percent of the scanned points. Factors influencing definition of radar scans include ambient electromagnetic interference, the presence of moisture, the presence of voids and the similarity of material layer type between layers (gravel vs. gravelly sand).

4.2 Digital Video Log

The pavement condition survey program consisted of collecting a Digital Video Log (DVL) on March 31, 2015. The test data and details of the methods used appear in Appendix B.

For bituminous pavements, the pavement condition survey includes identification and classification of various types of surface cracks, patching and potholes. Determination of surface deformation and defects, such as rutting, polished aggregate, and raveling, are also made in the testing program.

4.3 Pavement Deflection Testing

The pavement deflection testing program conducted for the project consisted of FWD testing on 4000 feet of roadway at net 0.1-mile spacing in two directions of travel. After seating drops, data for four impulse loads (two at 6,000 lbs. and two at 9,000 lbs. nominal load) were collected at each test point. The test data and details of the methods used appear in Appendix C.

The FWD testing was performed on April 13, 2015 using a Dynatest 9000 falling weight deflectometer (FWD). As an enhancement to the work our FWD data collection is tied to GPS coordinates. The deflection data were analyzed using the FWD Viewer Tools (MnDOT methods) for determining the in-place (effective) subgrade and pavement strength, as well as allowable axle loads for a roadway (MnDOT Investigation 183 revised in 1983). The MnDOT methods use the Hogg Model for estimating the subgrade modulus. The effective GE of a pavement system is estimated from the deflection relationship equation, derived from MnDOT Investigations 183 and 195. This methodology uses the TONN program for calculation of an estimated spring load capacity and required overlay to estimate the structure for future assumed traffic loading.

4.4 Pavement Cores and Subsurface Sampling

Our subsurface exploration program for the project consisted of four direct push borings on April 3, 2015, each to a depth of about 4 feet. We selected the final boring locations, which are shown in Figure 1.

The logs of the soil samples and details of the methods used appear in Appendix C. The logs contain information concerning soil layering, soil classification, geologic description, and moisture condition.

4.5 Laboratory Testing

The laboratory test program included moisture content, organic content, Atterberg limits and washed 200 sieve analyses. The test results appear on the individual boring logs adjacent to the samples upon which they were performed or on the data sheets attached in Appendix D.

5.0 RESULTS

5.1 Pavement Thickness from Ground Penetrating Radar

The GPR data show clear interfaces between bituminous and aggregate base with 100% picking rate. The interface between aggregate base/gravel surface and subgrade soil was also picked at a

where it was detected and/or encountered. The data sheets and plots of the layer thicknesses averaged over 25 feet for the studied roadway is included in Appendix A.

Table 5.1 shows the statistical results of GPR data. The 15th percentile represents the value that 85% of the pavement layer thickness is greater than, which is the value we generally recommend using for design purposes.

Table 5.1 – Summary of GPR Analysis

Roadway	Termini		Length (ft)	Surface			Base		
	From	To		Avg	CV	15th	Avg	CV	15th
Vernon Avenue	Hwy 13	North terminus	4000	2.4	43	1.8	8.0	20	6.2

Note: Avg – Average; CV – Coefficient of Variation; 15th – 15th Percentile.

5.2 Pavement Condition

The results of our pre-construction condition survey show the roadway has too much distress to effectively determine a PCI value. In general, transverse and longitudinal cracking, raveling and weathering were the distresses visible on the pavement surface. We will retain the video in our files for at least one year and you may request a copy.



5.3 Pavement Strength

Table 5.3 summarizes the results of our FWD testing. We used the average layer thickness from GPR test data taken in the same test direction as the FWD test direction. The future 20 years of the existing traffic were used to estimate the spring load capacity.

The calculated average effective R-value was 5.6, with the 15th percentile being 3.5. From this data we judge the subgrade soils to be in poor condition with somewhat low strength during the spring thaw. Our measurements indicate the subgrade soils appear relatively uniform in strength throughout the length of the roadway sections.

The effective GE calculated ranged from 10.0 to 27.7 inches, with the average at 13.5 and the 15th percentile at 10.0 inches.

Table 5.3 - Summary of FWD Analysis Results

Roadway	Location	Effective R-value			Effective GE			Spring Load Capacity (tons/axle)		
		Avg	CV	15th	Avg	CV	15th	Avg	CV	15th
Vernon Ave	Hwy 13 to N terminus	5.6	61	3.5	13.5	42	10	6.2	52	4.2

Note: Avg – Average; CV – Coefficient of Variation; 15th – 15th Percentile.

5.4 Pavement Cores and Subsurface Soils

The bituminous thickness measured at the borings locations ranged from 0.25 inches of chip seal at boring B-3 to 2.5 inches of deteriorated bituminous pavement. Below the bituminous surface, each of the borings encountered a silty sand layer with pieces of bituminous that could be the lower areas of a previous bituminous pavement or a reclaimed aggregate base layer. Below this layer, the borings encountered another base-like layer of sand with silt and gravel (at boring B-4 this layer included some sandy lean clay). Additional fill, extending to a depth of about 2 feet, was encountered next consisting of sand with silt at B-1, and lean clay with sand and a little gravel and then gravel with silt and sand at B-2.

Three of the borings encountered slightly organic topsoil below the fill. This layer was less than 1 foot thick at B-1, 2 feet thick at boring B-3, and at B-2 extended to the termination depth of the boring (3.8 feet). Below the fill and topsoil at boring B-1 and B-3, and directly below the fill at B-4 the borings encountered lean clay fine alluvium.

6.0 CONCLUSIONS

The conclusions made here are based on our understanding of the project as described above.

6.1 Pavement Condition

Based on our review of the digital video log, the roadway is in very poor condition.

6.2 Summary

The pre-existing structural defects in the haul roads from edge of road to edge of road were identified, measured and recorded prior to construction. The relatively thin asphalt concrete is in very poor condition and surface distresses are primarily transverse and longitudinal cracking, raveling and weathering.

The road to be used for dredge sand hauling was not built to current standards and is approaching the end of its service life. It is our opinion the pavement strength and subgrade soil support is not adequate for heavy truck loading. The narrow road without shoulder limits the future hauling to one way operation, thereby requiring traffic control or restricted hauling schedule.

We recommend reclaiming the existing bituminous and aggregate base as a new base to the depth of 4 inches and surfacing with 3 inches of Class 1 surface aggregate prior to the construction. We also recommend stripping the vegetation along the edge prior to reclaiming. It will be necessary to schedule the haul trucks with one-way operation if multiple trucks are to be used in the future hauling.

7.0 LIMITATIONS



Within the limitations of scope, budget, and schedule, our services have been conducted according to generally accepted pavement engineering practices at this time and location. Other than this, no warranty, express or implied, is intended.

Important information regarding risk management and proper use of this report is given in Appendix D entitled "Pavement Report Limitations and Guidelines for Use".

Figure 1

Vernon Avenue
AET Project 28-00966
April 27, 2015

Legend

-  Boring Location
-  GPR route



Google earth

© 2015 Google

1000 ft



Appendix A

Ground Penetrating Radar Field Exploration and Testing
Summary of GPR Data

Appendix A

Ground Penetrating Radar Field Exploration and Testing

AET Report No. 28-00966

A.1 FIELD EXPLORATION

The pavement structural conditions at the site were evaluated nondestructively using Ground Penetrating Radar (GPR). The description of the equipment precedes the GPR Data and Analysis Results in this appendix.

A.2 EQUIPMENT DESCRIPTION

A.2.1 GSSI GPR Test System

The GPR test system owned by AET is a GSSI Roadscan System that consists of a bumper-mounted, 2 GHz air-coupled antenna and a SIR-20 control and data acquisition processor, featuring dual channels. The GPR processor, including a SIR-20 data acquisition system, wheel-mounted DMI (Distance Measuring Instrument), and a tough book with the SIR-20 Field Program constitutes the newest, most sophisticated GSSI Test System, which fulfills or exceeds all requirements to meet ASTM-4748, ASTM D-6087 Standards. Figure C1 provides a view of this equipment.



Figure A.1 GSSI 2 GHz air-coupled GPR Test System

The GPR antenna emits a high frequency electromagnetic wave into the material under investigation. The reflected energy caused by changes in the electromagnetic properties within the material is detected by a receiver antenna and recorded for subsequent analysis. The 2 GHz air-coupled GPR is capable of collecting radar waveforms at more than 100 signals per second, allows for data to be collected at driving speeds along the longitudinal dimension of the pavements or bridge decks with the antennas fixed at the rear or in front of the vehicle.

The antenna used for Roadscan is the Horn antenna Model 4105 (2 GHz). The 2 GHz antenna is the current antenna of choice for road survey because it combines excellent resolution with reasonable depth penetration (18-24 inches in pavement materials). The data collection is performed at normal driving speeds (45-55 mph), requiring no lane closures nor causing traffic congestion. At this speed the 2 GHz antenna is capable of collecting data at 1-foot interval (1 scan/foot).

The data were collected at a rate of about 4 vertical scans per foot. Each vertical scan consisted of 512 samples and the record length in time of each scan was 12 nanoseconds. Filters used during acquisition were 300 MHz high pass and 5,000 MHz low pass.

In a GPR test, the antenna is moved continuously across the test surface and the control unit collects data at a specified distance increment. In this way, the data collection rate is independent of the scan rate. Alternatively, scanning can be performed at a constant rate of time, regardless of the scan distance. Single point scans can be performed as well. Data is reviewed on-screen and in the field to identify reflections and ensure proper data collection parameters.

Field testing is performed in accordance with the standard ASTM procedures as described in ASTM D 4695-96, "Standard Guide for General Pavement Deflection Measurements".

Appendix A
Ground Penetrating Radar Field Exploration and Testing
AET Report No. 28-00966

A.2.2 System Calibrations

Horn antenna processing is used to get the velocity of the radar energy in the material by comparing the reflection strengths (amplitudes) from a pavement layer interface with a perfect reflector (a metal plate). The calibration scan is obtained with the horn antenna placed over a metal plate at the same elevation as a scan obtained over pavement.

The same setting for data collection is used for metal plate calibration. Fifteen seconds are need for jumping up and down on the vehicle's bumper to collect the full range of motion for the vehicle's shocks. The filename of raw calibration file is recorded.

Survey wheel is calibrated by laying out a long distance (> 50 feet) with tape measure.

A.2.3 Linear Distance and Spatial Reference System

Distance measuring instrument (DMI) is a trailer mounted two phase encoder system. When DMI is connected to the SIR-20 it provides for automatic display and recording distance information in both English and metric units with a 1 foot (0.3 meters) resolution and four percent accuracy when calibrated using provided procedure in the Field Program.

Spatial reference system is a Trimble ProXH Global Positioning System (GPS) that consists of fully integrated receiver, antenna and battery unit with Trimble's new H-Star™ technology to provide subfoot (30 cm) post processed accuracy. The External Patch antenna is added to the ProXH receiver for the position of the loading plate. The External Patch antenna can be conveniently elevated with the optional baseball cap to prevent any signal blockage.

A.2.4 Camera Monitoring System

A battery operated independent DC-1908E multi-functional digital camera with a SD card is used for easy positioning of the loading plate or viewing of the pavement surface condition at the testing locations.

A.3 SAMPLING METHODS

At the project level, the testing interval is set at 12 scans per foot in the Outside Wheel Path (OWP) = 2.5 ft ± 0.25 ft (0.76 m ± 0.08 m) for nominal 12 ft (3.7 m) wide lanes at a survey speed of approximately 10 mph. Where a divided roadbed exists, surveys will be taken in both directions if the project will include improvements in both directions. If there is more than one lane in one direction the surveys will be taken in the outer driving lane (truck lane) versus the passing lane of the highway. GPR tests are performed at a constant lateral offset down the test section. When GPR tests are performed on bridge decks, multiple survey lines are followed transversely at 2-foot spacing between survey lines.

At the network level, GPR tests on one scan per foot are set to be able to collect data on pavements at driving speeds, without statistically compromising the quality of the data collected. If GPR tests are for the in situ characterization of material GPR data will be collected at two scan per foot at slower driving speeds.

A.4 QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

Beside the daily metal plate calibration the DMI is also calibrated monthly by driving the vehicle over a known distance to calculate the distance scale factor. The GPR will be monitored in real time in the data collection vehicle to minimize data errors. The GPR units will be identified with a unique number and that number will accompany all data reported from that unit as required in the QC/QA plan.

Scheduled preventive maintenance ensures proper equipment operation and helps identify potential problems that can be corrected to avoid poor quality or missing data that results if the equipment malfunctions while on site. The routine and major maintenance procedures established by the LTPP are adopted and any maintenance has been done at the end of the day after the testing is complete and become part of the routine performed at the end of each test/travel day and on days when no other work is scheduled.

Appendix A
Ground Penetrating Radar Field Exploration and Testing
AET Report No. 28-00966

To insure quality data, the GPR assessments took place on generally dry pavement surfaces, and data was collected in each wheel path.

A.5 DATA ANALYSIS METHODS

A.5.1 Data Editing

Field acquisition is seldom so routine that no errors, omissions or data redundancy occur. Data editing encompasses issues such as data re-organization, data file merging, data header or background information updates, repositioning and inclusion of elevation information with the data.

A.5.2 Basic Processing

Basic data processing addresses some of the fundamental manipulations applied to data to make a more acceptable product for initial interpretation and data evaluation. In most instances this type of processing is already applied in real-time to generate the real-time display. The advantage of post survey processing is that the basic processing can be done more systematically and non-causal operators to remove or enhance certain features can be applied.

The Reflection Picking procedure is used to eliminate unwanted noise, detects significant reflections, and records the corresponding time and depth. It uses antenna calibration file data to calculate the radar signal velocity within the pavement.

A.5.3 Advance Processing

Advanced data processing addresses the types of processing which require a certain amount of operator bias to be applied and which will result in data which are significantly different from the raw information which were input to the processing.

A.5.4 Data Interpretation

The EZ Tracker Layer Interpretation procedure uses the output from the first step to map structural layers and calculate the corresponding velocities and depths.

A.6 TEST LIMITATIONS

A.6.1 Test Methods

The data derived through the testing program have been used to develop our opinions about the pavement conditions at your site. However, because no testing program can reveal totally what is in the subsurface, conditions between test locations and at other times, may differ from conditions described in this report. The testing we conducted identified pavement conditions only at those points where we measured pavement thicknesses and observed pavement surface conditions. Depending on the sampling methods and sampling frequency, every location may not be tested, and some anomalies which are present in the pavement may not be noted on the testing results. If conditions encountered during construction differ from those indicated by our testing, it may be necessary to alter our conclusions and recommendations, or to modify construction procedures, and the cost of construction may be affected.

A.6.2 Test Standards

Pavement testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.

A.7 SUPPORTING TEST METHODS

Soil Boring/Coring Field Exploration

If both pavement thicknesses and subgrade soil types and conditions are desired the shallow coring/boring and sampling is used. The limited number of coring/boring is necessary to verify the GPR layer thickness data.



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SUMMARY OF GROUND PENETRATING RADAR

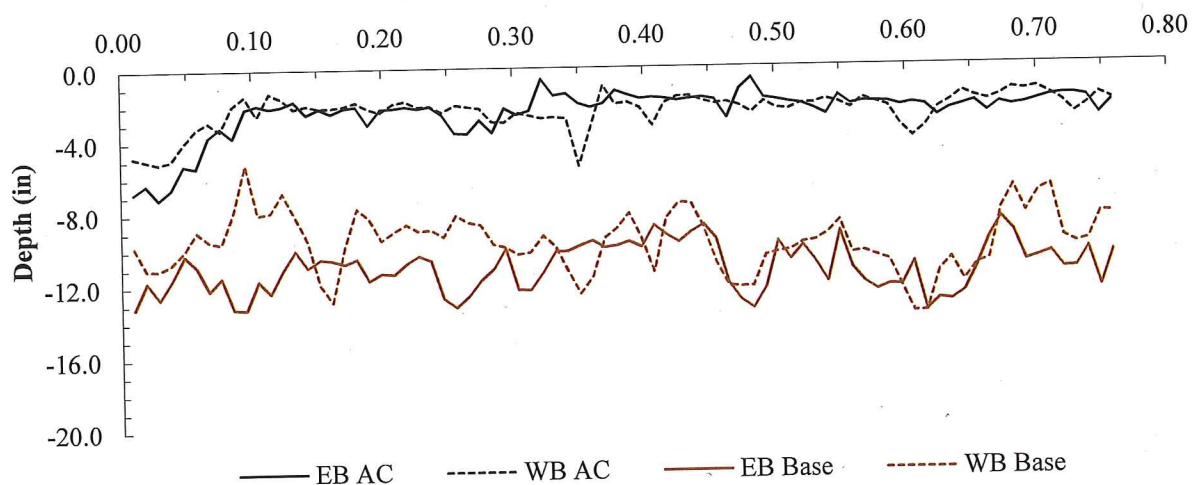
		Report Date	4/17/2015
PROJECT NO.	28-00966	Test Date	3/30/2015
ROAD	VERNON AVE		
TERMINI	HWY 13 to 0.75 MI N OF HWY 13		

SUMMARY STATISTICS

Units: inches

Layer	EB				WB			
	Average	CV	15th	Min.	Average	CV	15th	Min.
AC	2.5	49%	1.8	0.6	2.4	37%	1.8	1.0
Base	8.6	17%	7.4	5.0	7.3	20%	5.9	3.8

Ground Penetrating Radar Pavement Thickness Survey
GPR Mileage



Appendix B

Pavement Condition Index Field Testing

Appendix B Pavement Condition Index Field Testing Report No. 28-00966

B.1 FIELD WORK

The pavement surface conditions at the site were evaluated nondestructively using Digital Video Log (DVL) and Pavement Condition Index (PCI).

B.2 EQUIPMENT DESCRIPTION

B.2.1 MicroPAVER™ PMS System

MicroPAVER™ -- The Pavement Maintenance Management (PMS) System -- originally was developed in the late 1970s to help the Department of Defense (DOD) manage M&R for its vast inventory of pavements. It uses inspection data and a pavement condition index (PCI™) rating from zero (failed) to 100 (excellent) for consistently describing a pavement's condition and for predicting its M&R needs many years into the future. The PCI™ for airports became an ASTM standard in 1993 (D5340-10). The PCI™ for roads and parking lots became an ASTM standard in 1999 (D6433-09). Figure A1 provides a view of this equipment.

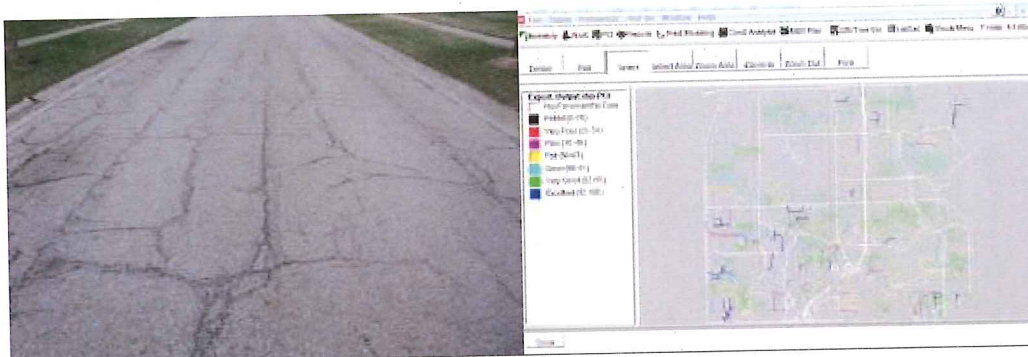


Figure B.1 MicroPAVER™ PMS System

External indicators of pavement deterioration caused by loading, environmental factors, construction deficiencies, or a combination thereof. Typical distresses are cracks, rutting, and weathering of the pavement surface. Distress types and severity levels detailed in Inspection Manual must be used to obtain an accurate PCI value.

- A battery operated independent DC-1908E multi-functional digital camera with a SD card is used for easy positioning of the loading plate or of the pavement surface condition at the testing locations.
- Hand Odometer Wheel that reads to the nearest 0.1 ft (30 mm).
- Straightedge or String Line, (AC only), 10 ft (3 m).
Scale, 12 in. (300 mm) that reads to 1/8 in. (3 mm) or better. Additional 12-in. (300 mm) ruler or straightedge is needed to measure faulting in PCC pavements.
- Layout Plan, for network to be inspected.

B.2.2 PCI Calibrations

Since the collection of the pavement distress data is such a critical component of any PMS implementation or update, AET has in place the PCI calibration as a quality control.

The PCI raters undergo internal calibrations every two months. This calibration exercise is conducted by our chief inspector and/or quality control engineer and is performed to ensure that the ratings of pavement distresses are consistent among the crews and in accordance with the ASTM D6344-07.

Survey wheel is calibrated by laying out a long distance (> 50 feet) with tape measure.

B.2.3 Linear Distance and Spatial Reference System

Distance measuring instrument (DMI) is a trailer mounted two phase encoder system. When DMI is connected to the HD Camera it provides for automatic display and recording distance information in both English and metric units with a 1 foot (0.3 meters) resolution and four percent accuracy when calibrated using provided procedure in the Field Program.

Appendix B
Pavement Condition Index Field Testing
Report No. 28-00966

Spatial reference system is a Trimble ProXRT Global Positioning System (GPS) that consists of fully integrated receiver, antenna and battery unit with Trimble's new H-Star™ technology to provide subfoot (30 cm) post processed accuracy. The External Patch antenna is added to the ProXH receiver for the position of the loading plate. The External Patch antenna can be conveniently elevated with the optional baseball cap to prevent any signal blockage.

B.3 TRAFFIC CONTROL

Traffic control during the PCI data collection operation will be maintained in compliance with The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) and part VI, "Field Manual for Temporary Traffic Control Zone Layouts." The PCI operation will be mobile in nature and will be moderately disruptive to traffic.

B.4 QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

Beside the daily metal plate calibration the DMI is also calibrated monthly by driving the vehicle over a known distance to calculate the distance scale factor. The HD video camera will be monitored in real time in the data collection vehicle to minimize data errors. The HD video cameras will be identified with a unique number and that number will accompany all data reported from that unit as required in the QC/QA plan.

Scheduled preventive maintenance ensures proper equipment operation and helps identify potential problems that can be corrected to avoid poor quality or missing data that results if the equipment malfunctions while on site. The routine and major maintenance procedures established by AET are adopted and any maintenance has been done at the end of the day after the testing is complete and become part of the routine performed at the end of each test/travel day and on days when no other work is scheduled.

To insure quality data, the PCI assessments only took place in day light, and data was collected in one lane.

B.5 DATA ANALYSIS METHODS

B.5.1 Data Editing

Field acquisition is seldom so routine that no errors, omissions or data redundancy occur. Data editing encompasses issues such as video editing, video file merging, video log header or background information updates, repositioning and inclusion of elevation information with the video.

B.5.2 Sampling Methods

The sampling rate is set at 10 percent in one lane (OWP) = 500 ft ± 50 ft (23.6 m ± 2.4 m) for nominal 12 ft (3.7 m) wide lanes at a survey speed of approximately 30 mph. Where a divided roadbed exists, surveys will be taken in both directions if the project will include improvements in both directions. If there is more than one lane in one direction the surveys will be taken in the outer driving lane (truck lane) versus the passing lane of the highway.

Basic data processing addresses some of the fundamental manipulations applied to data to make a more acceptable product for initial interpretation and data evaluation. In most instances this type of processing is already applied in real-time to generate the real-time display. The advantage of post survey processing is that the basic processing can be done more systematically and non-causal operators to remove or enhance certain features can be applied.

B.5.3 Advance Processing

Advanced data processing addresses the types of processing which require a certain amount of operator bias to be applied and which will result in data which are significantly different from the raw information which were input to the processing.

B.6 TEST LIMITATIONS

B.6.1 Test Methods

The data derived through the testing program have been used to develop our opinions about the pavement conditions at your site. However, because no testing program can reveal totally what is in the subsurface, conditions between test locations and at other times, may differ from conditions described in this report. The testing we conducted identified pavement conditions only at those areas where we observed pavement surface conditions. Depending on the sampling methods and sampling frequency, every location may not be rated, and some anomalies which are present in the pavement may not be noted on the testing results. If conditions encountered during construction differ from those indicated by our testing, it may be necessary to alter our conclusions and recommendations, or to modify construction procedures, and the cost of construction may be affected.

Appendix B
Pavement Condition Index Field Testing
Report No. 28-00966

B.6.2 Test Standards

Pavement testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.

B.7 SUPPORTING TEST METHODS

B.7.1 Falling Weight Deflectometer (FWD)

If the pavement layer moduli and subgrade soil strength are desired the deflection data are collected using a Dynatest 8000 FWD Test System that consists of a Dynatest 8002 trailer and a third generation control and data acquisition unit developed in 2003, called the Dynatest Compact15, featuring fifteen (15) deflection channels. The new generation FWD, including a Compact15 System and a standard PC with the FwdWin field Program constitutes the newest, most sophisticated Dynatest FWD Test System, which fulfills or exceeds all requirements to meet ASTM-4694, ASTM D-4695 Standards. The system provides continuous data at pre-set spacing.

B.7.2 Ground Penetrating Radar

If the pavement layer thicknesses are desired the thickness data are collected using a GSSI air-coupled 2 GHz Test System that consists of a bumper-mounted, 2 GHz air-coupled antenna and a SIR-20 control and data acquisition processor, featuring dual channels. The GPR processor, including a SIR-20 data acquisition system, wheel-mounted DMI (Distance Measuring Instrument), and a tough book with the SIR-20 Field Program constitutes the newest, most sophisticated GSSI Test System, which fulfills or exceeds all requirements to meet ASTM-4748, ASTM D-6087 Standards. The antenna used for Roadscan is the Horn antenna Model 4105 (2 GHz). The 2 GHz antenna is the current antenna of choice for road survey because it combines excellent resolution with reasonable depth penetration (18-24 inches in pavement materials). The data collection is performed at normal driving speeds (45-55 mph), requiring no lane closures nor causing traffic congestion. At this speed the 2 GHz antenna is capable of collecting data at 1-foot interval (1 scan/foot).

B.7.3 Soil Boring/Coring Field Exploration

If both pavement thicknesses and subgrade soil types and conditions are desired the shallow coring/boring and sampling is used. The limited number of coring/boring is necessary to verify the GPR layer thickness data.

Appendix C

Falling Weight Deflectometer Field Exploration and Testing
FWD Data and Analysis Results Sheet

Appendix C
Falling Weight Deflectometer Field Exploration and Testing
Report No. 28-00966

C.1 PAVEMENT TESTING

The pavement structural conditions at the site were evaluated nondestructively using Falling Weight Deflectometer (FWD). The description of the equipment precedes the Deflection Data and Analysis Results in this appendix.

C.2 EQUIPMENT DESCRIPTION

C.2.1 Dynatest 8000 FWD Test System

The FWD owned by AET is a Dynatest 8000 FWD Test System that consists of a Dynatest 8002 trailer and a third generation control and data acquisition unit developed in 2003, called the Dynatest Compact15, featuring fifteen (15) deflection channels. The new generation FWD, including a Compact15 System and a standard PC with the FwdWin field Program constitutes the newest, most sophisticated Dynatest FWD Test System, which fulfills or exceeds all requirements to meet ASTM-4694 Standards. Figure A1 provides a view of this equipment.



Figure 1 Dynatest 8002 FWD Test System

The FWD imposes a dynamic impulse load onto the pavement surface through a load plate. Total pulse is an approximately half sine shape with a total duration typically between 25 to 30 ms. The FWD is capable of applying a variety of loads to the pavement ranging from 1,500 lbf (7 kN) to 27,000 lbf (120 kN) by dropping a variable weight mass from different heights to a standard, 11.8-inch (300-mm) diameter rigid plate.

The drop weights and the buffers are constructed so that the falling weight buffer subassembly may be quickly and conveniently changed between falling masses of 440 lbm (200 kg) for highways and 770 lbm (350 kg) for airports. With the 440 lbm (200 kg) package for highways three drop heights are used with the target load of 6,000 lbf (27 kN) at drop height 1, 9,000 lbf (40 kN) at drop height 2, and 12,000 lbf at drop height 3 (53 kN). The drop sequence consists of two seating drops from drop height 3 and 2 repeat measurements at drop height 1 and 1 measurement at drop height 2 for flexible pavements and 2 repeat measurements at drop height 2 and 1 measurement at drop height 3 for rigid pavements. The data from the seating drops is not stored.

The FWD is equipped with a load cell to measure the applied forces and nine geophones or deflectors to measure deflections up to 100 mils (2.5 mm). The load cell is capable of accurately measuring the force that is applied perpendicular to the loading plate with a resolution of 0.15 psi (1 kPa) or better. The force is expressed in terms of pressure, as a function of loading plate size.

Nine deflectors at the offsets listed in the following table in the Long Term Performance Program (LTPP) configuration are capable of measuring electronically discrete deflections per test, together with nine (9) separate deflection measuring channels for recording of the data. One (1) of the deflectors measures the deflection of the pavement surface through the center of the loading plate, while seven (7) deflectors are capable of being positioned behind the loading plate along the housing bar, up to a distance of 5 ft (2.5 m) from the center of the loading plate and one (1) being positioned in front of the loading plate along the bar.

Deflector	D9	D1	D2	D3	D4	D5	D6	D7	D8
Offset (in.)	-12	0	8	12	18	24	36	48	60

Appendix C
Falling Weight Deflectometer Field Exploration and Testing
Report No. 28-00966

Field testing is performed in accordance with the standard ASTM procedures as described in ASTM D 4695-96, "Standard Guide for General Pavement Deflection Measurements" and the calibration of our equipment is verified each year at the Long Term Pavement Performance Calibration Center in Maplewood, MN.

C.2.2 Linear Distance and Spatial Reference System

Distance measuring instrument (DMI) is a trailer mounted two phase encoder system. When DMI is connected to the Compact15 it provides for automatic display and recording distance information in both English and metric units with a 1 foot (0.3 meters) resolution and four percent accuracy when calibrated using provided procedure in the Field Program.

Spatial reference system is a Trimble ProXH Global Positioning System (GPS) that consists of fully integrated receiver, antenna and battery unit with Trimble's new H-Star™ technology to provide subfoot (30 cm) post-processed accuracy. The External Patch antenna is added to the ProXH receiver for the position of the loading plate. The External Patch antenna can be conveniently elevated with the optional baseball cap to prevent any signal blockage.

C.2.3 Air and Pavement Temperature Measuring System

A temperature monitoring probe, for automatic recording of air temperature, is an electronic (integrated circuit) sensing element in a stainless steel probe. The probe mounts on the FWD unit in a special holder with air circulation and connects to the Compact15. A non-contact Infra-Red (IR) Temperature Transmitter, for automatic recording of pavement surface temperature only, features an integrated IR-detector and digital electronics in a weather proof enclosure. The IR transmitter mounts on the FWD unit in a special holder with air circulation and connects to the Compact15. Both probe and IR transmitter have a resolution of 0.9 °F (0.5 °C) and accuracy within ± 1.8°F (1 °C) in the 0 to 158 °F (-18 to +70°C) range when calibrated using provided procedure.

C.2.4 Camera Monitoring System

A battery operated independent DC-1908E multi-functional digital camera with a SD card is used for easy positioning of the loading plate or of the pavement surface condition at the testing locations.

C.3 SAMPLING METHODS

At the project level, the testing interval is set at 0.1 mi. (maximum) or 10 locations per uniform section in the Outside Wheel Path (OWP) = 2.5 ft ± 0.25 ft (0.76 m ± 0.08 m) for nominal 12 ft (3.7 m) wide lanes. Where a divided roadbed exists, surveys will be taken in both directions if the project will include improvements in both directions. If there is more than one lane in one direction the surveys will be taken in the outer driving lane versus the passing lane of the highway. FWD tests are performed at a constant lateral offset down the test section.

C.4 QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

Beside the annual reference calibration the relative calibration of the FWD deflection sensors is conducted monthly but not to exceed 6 weeks during the months in which the FWD unit is continually testing. The DMI is also calibrated monthly by driving the vehicle over a known distance to calculate the distance scale factor. The accuracy of the FWD air temperature and infra-red (IR) sensors are checked on a monthly basis or more frequently if the FWD operator observes "suspicious" temperature readings.

Some care in the placement of the load plate and sensors is taken by the survey crew, especially where the highway surface is rutted or cracked to ensure that the load plate lays on a flat surface and that the load plate and all geophones lie on the same side of any visible cracks. Liberal use of comments placed in the FWD data file at the time of data collection is required. Comments pertaining to proximity to reference markers, bridge abutments, patches, cracks, etc., are all important documentation for the individual evaluating the data.

Scheduled preventive maintenance ensures proper equipment operation and helps identify potential problems that can be corrected to avoid poor quality or missing data that results if the equipment malfunctions while on site. The routine and major maintenance procedures established by the LTPP are adopted and any maintenance has been done at the end of the day after the testing is complete and become part of the routine performed at the end of each test/travel day and on days when no other work is scheduled.

Appendix C
Falling Weight Deflectometer Field Exploration and Testing
Report No. 28-00966

C.5 DATA ANALYSIS METHODS

C.5.1 Inputs

The two-way AADT and HCADT are required to calculate the ESALs. The state average truck percent and truck type distribution are used when HCADT is not provided. The as-built pavement information (layer type, thickness, and construction year) are required and if not provided, either GPR and/or coring and boring is needed.

C.5.2 Adjustments

Temperature adjustment to the deflections measured on bituminous pavements is determined from the temperature predicted at the middle depth of the pavement using the LTPP BELLS3 model that uses the pavement surface temperature and previous day mean air temperature. The predicted middle depth temperature and the standard temperature of 80 degrees Fahrenheit are used to calculate the temperature adjustment factor for deflection data analysis. Seasonal adjustment developed by Mn/DOT is also used.

C.5.3 Methods

For bituminous pavements, the deflection data were analyzed using the AASHTO method for determining the in-place (effective) subgrade and pavement strength and the Mn/DOT method for determining allowable axle loads for a roadway (Investigation 603) revised in 1983 and automated with spreadsheet format in 2010. The Mn/DOT method also uses the TONN method for estimating Spring Load Capacity and Required Overlay, as described in the Mn/DOT publication "Estimated Spring Load-Carrying Capacity".

For gravel roads, the deflection data were analyzed using the American Association of State Highway and Transportation Officials' (AASHTO) method for determining the in-place (effective) subgrade and pavement strength, as well as allowable axle loads for a roadway as in the AASHTO Guide for Design of Pavement Structures, 1993.

For concrete pavements, the deflection data were analyzed using the FAA methods for determining the modulus of subgrade reaction (k-value), effective elastic modulus of concrete slabs, load transfer efficiency (LTE) on approach and leave slabs of a joint, slab support conditions (void analysis) and impulse stiffness modulus ratio (durability analysis) as in the FAA AC 150/5370-11A, Use of Nondestructive Testing Devices in the Evaluation of Airport Pavement, 2004.

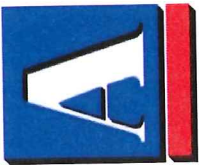
C.6 TEST LIMITATIONS

C.6.1 Test Methods

The data derived through the testing program have been used to develop our opinions about the pavement conditions at your site. However, because no testing program can reveal totally what is in the subsurface, conditions between test locations and at other times, may differ from conditions described in this report. The testing we conducted identified pavement conditions only at those points where we measured pavement surface temperature, deflections, and observed pavement surface conditions. Depending on the sampling methods and sampling frequency, every location may not be tested, and some anomalies which are present in the pavement may not be noted on the testing results. If conditions encountered during construction differ from those indicated by our testing, it may be necessary to alter our conclusions and recommendations, or to modify construction procedures, and the cost of construction may be affected.

C.6.2 Test Standards

Pavement testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.



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AET Project No. 28-00966
 Client: Lower MN River Watershed Dist.
 Test Date: April 13, 2015
 Roadway: Vernon Ave
 From: Highway 13
 To: 4000 ft north of Hwy 13

Summary of Falling Weight Deflectometer Data

Station	Drop	Time	Bit °F	Load	D1	D2	D3	D4	D5	D6	D7	D8	D9	Effective Values		TONN		
														R-value	G.E. inches	Capacity tons/axle	Capacity tons/axle	
0.0	4	14:18	75.0	8682	27.6	21.1	18.3	15.0	11.1	6.7	3.8	2.3	1.6	10.4	27.7	14.6	9.0	
533.5	4	14:22	70.5	8301	62.0	50.1	40.6	31.7	24.7	15.4	9.1	5.9	4.2	4.1	20.5	6.6	5.5	
1056.0	4	14:23	77.9	8349	75.5	58.5	45.7	32.3	19.8	11.3	7.8	5.8	4.6	4.6	15.0	5.7	4.2	
1580.1	4	14:24	77.2	8743	46.2	31.1	20.9	12.8	8.4	5.2	3.8	3.0	2.6	13.9	11.5	9.4	6.4	
2109.0	4	14:26	64.0	8187	81.7	64.4	47.9	30.0	19.1	10.8	7.4	5.4	3.9	4.5	10.5	4.8	3.3	
2642.5	4	14:27	72.6	8012	90.5	68.9	52.3	32.4	21.0	12.7	8.7	6.9	5.4	4.1	10.0	4.5	3.1	
2642.5	4	14:28	72.5	7941	90.5	69.7	52.9	32.8	21.0	12.7	8.7	7.1	5.4	4.0	10.1	4.5	3.1	
3217.9	4	14:29	73.9	7901	104.9	79.3	62.9	43.4	27.5	13.4	8.5	6.6	5.3	3.0	10.5	3.9	2.8	
3217.9	4	14:30	72.6	7856	106.6	80.3	63.6	44.2	28.0	13.6	8.8	6.8	5.7	3.0	10.1	3.8	2.8	
3687.0	4	14:31	67.6	8385	72.2	52.7	40.3	28.3	19.5	10.7	6.9	5.1	3.7	5.2	12.8	5.7	4.7	
4016.7	4	14:32	76.0	8111	91.5	64.7	48.1	31.7	21.0	10.6	6.3	4.5	3.6	4.3	9.9	4.6	3.4	
														Avg	5.6	13.5	6.2	4.4
														CV	61%	42%	52%	44%
														15th	3.5	10.0	4.2	3.0

Note: Avg – Average; CV – Coefficient of Variation; 15th – 15th Percentile

Appendix D

Subsurface Field Exploration and Testing
Boring Log Notes
Unified Soil Classification System
AASHTO Classification System
Subsurface Boring Logs

Appendix D
Geotechnical Field Exploration and Testing
Report No. 28-00966

D.1 FIELD EXPLORATION

The subsurface conditions at the site were explored by drilling and sampling direct push soil borings. The locations of the borings appear on Figure 1.

D.2 SAMPLING METHODS

D.2.1 Direct Push Samples (DP)

Sample types described as “DP” on the boring logs are continuous core samples collected by the direct push method. The method consists of a 2.125 OD outer casing with an inner 1.5 inch ID plastic tube driven continuously into the ground.

D.2.3 Sampling Limitations

Unless actually observed in a sample, contacts between soil layers are estimated based on the spacing of samples and the action of drilling tools. Cobbles, boulders, and other large objects generally cannot be recovered from test borings, and they may be present in the ground even if they are not noted on the boring logs.

Determining the thickness of “topsoil” layers is usually limited, due to variations in topsoil definition, sample recovery, and other factors. Visual-manual description often relies on color for determination, and transitioning changes can account for significant variation in thickness judgment. Accordingly, the topsoil thickness presented on the logs should not be the sole basis for calculating topsoil stripping depths and volumes. If more accurate information is needed relating to thickness and topsoil quality definition, alternate methods of sample retrieval and testing should be employed.

D.3 CLASSIFICATION METHODS

Soil descriptions shown on the boring logs are based on the Unified Soil Classification (USC) system. The USC system is described in ASTM: D2487 and D2488. Where laboratory classification tests (sieve analysis or Atterberg Limits) have been performed, accurate classifications per ASTM: D2487 are possible. Otherwise, soil descriptions shown on the boring logs are visual-manual judgments. Charts are attached which provide information on the USC system, the descriptive terminology, and the symbols used on the boring logs.

Visual-manual judgment of the AASHTO Soil Group is also noted as a part of the soil description. A chart presenting details of the AASHTO Soil Classification System is also attached.

The boring logs include descriptions of apparent geology. The geologic depositional origin of each soil layer is interpreted primarily by observation of the soil samples, which can be limited. Observations of the surrounding topography, vegetation, and development can sometimes aid this judgment.

D.4 WATER LEVEL MEASUREMENTS

The ground water level measurements are shown at the bottom of the boring logs. The following information appears under “Water Level Measurements” on the logs:

- ♦ Date and Time of measurement
- ♦ Sampled Depth: lowest depth of soil sampling at the time of measurement
- ♦ Casing Depth: depth to bottom of casing or hollow-stem auger at time of measurement
- ♦ Cave-in Depth: depth at which measuring tape stops in the borehole
- ♦ Water Level: depth in the borehole where free water is encountered
- ♦ Drilling Fluid Level: same as Water Level, except that the liquid in the borehole is drilling fluid

The true location of the water table at the boring locations may be different than the water levels measured in the boreholes. This is possible because there are several factors that can affect the water level measurements in the borehole. Some of these factors include: permeability of each soil layer in profile, presence of perched water, amount of time between water level readings, presence of drilling fluid, weather conditions, and use of borehole casing.

Appendix D
Geotechnical Field Exploration and Testing
Report No. 28-00966

D.5 LABORATORY TEST METHODS

D.5.1 Water Content Tests

Conducted per AET Procedure 01-LAB-010, which is performed in general accordance with ASTM: D2216 and AASHTO: T265.

D.5.2 Atterberg Limits Tests

Conducted per AET Procedure 01-LAB-030, which is performed in general accordance with ASTM: D4318 and AASHTO: T89, T90.

D.5.3 Sieve Analysis of Soils (thru #200 Sieve)

Conducted per AET Procedure 01-LAB-040, which is performed in general conformance with ASTM: D6913, Method A.

D.5.4 Particle Size Analysis of Soils (with hydrometer)

Conducted per AET Procedure 01-LAB-050, which is performed in general accordance with ASTM: D422 and AASHTO: T88.

D.5.5 Unconfined Compressive Strength of Cohesive Soil

Conducted per AET Procedure 01-LAB-080, which is performed in general accordance with ASTM: D2166 and AASHTO: T208.

D.5.6 Laboratory Soil Resistivity using the Wenner Four-Electrode Method

Conducted per AET Procedure 01-LAB-090, which is performed using Soil Box apparatus in the laboratory in general accordance with ASTM: G57

D.6 TEST STANDARD LIMITATIONS

Field and laboratory testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.

D.7 SAMPLE STORAGE

Unless notified to do otherwise, we routinely retain representative samples of the soils recovered from the borings for a period of 30 days.

BORING LOG NOTES

DRILLING AND SAMPLING SYMBOLS

Symbol	Definition
AR:	Sample of material obtained from cuttings blown out the top of the borehole during air rotary procedure.
B, H, N:	Size of flush-joint casing
CAS:	Pipe casing, number indicates nominal diameter in inches
COT:	Clean-out tube
DC:	Drive casing; number indicates diameter in inches
DM:	Drilling mud or bentonite slurry
DR:	Driller (initials)
DS:	Disturbed sample from auger flights
DP:	Direct push drilling; a 2.125 inch OD outer casing with an inner 1½ inch ID plastic tube is driven continuously into the ground.
FA:	Flight auger; number indicates outside diameter in inches
HA:	Hand auger; number indicates outside diameter
HSA:	Hollow stem auger; number indicates inside diameter in inches
LG:	Field logger (initials)
MC:	Column used to describe moisture condition of samples and for the ground water level symbols
N (BPF):	Standard penetration resistance (N-value) in blows per foot (see notes)
NQ:	NQ wireline core barrel
PQ:	PQ wireline core barrel
RDA:	Rotary drilling with compressed air and roller or drag bit.
RDF:	Rotary drilling with drilling fluid and roller or drag bit
REC:	In split-spoon (see notes), direct push and thin-walled tube sampling, the recovered length (in inches) of sample. In rock coring, the length of core recovered (expressed as percent of the total core run). Zero indicates no sample recovered.
SS:	Standard split-spoon sampler (steel; 1.5" is inside diameter; 2" outside diameter); unless indicated otherwise
SU	Spin-up sample from hollow stem auger
TW:	Thin-walled tube; number indicates inside diameter in inches
WASH:	Sample of material obtained by screening returning rotary drilling fluid or by which has collected inside the borehole after "falling" through drilling fluid
WH:	Sampler advanced by static weight of drill rod and hammer
WR:	Sampler advanced by static weight of drill rod
94mm:	94 millimeter wireline core barrel
▼:	Water level directly measured in boring
▽:	Estimated water level based solely on sample appearance

TEST SYMBOLS

Symbol	Definition
CONS:	One-dimensional consolidation test
DEN:	Dry density, pcf
DST:	Direct shear test
E:	Pressuremeter Modulus, tsf
HYD:	Hydrometer analysis
LL:	Liquid Limit, %
LP:	Pressuremeter Limit Pressure, tsf
OC:	Organic Content, %
PERM:	Coefficient of permeability (K) test; F - Field; L - Laboratory
PL:	Plastic Limit, %
q _p :	Pocket Penetrometer strength, tsf (<u>approximate</u>)
q _c :	Static cone bearing pressure, tsf
q _u :	Unconfined compressive strength, psf
R:	Electrical Resistivity, ohm-cms
RQD:	Rock Quality Designation of Rock Core, in percent (aggregate length of core pieces 4" or more in length as a percent of total core run)
SA:	Sieve analysis
TRX:	Triaxial compression test
VSR:	Vane shear strength, remolded (field), psf
VSU:	Vane shear strength, undisturbed (field), psf
WC:	Water content, as percent of dry weight
%-200:	Percent of material finer than #200 sieve

STANDARD PENETRATION TEST NOTES (Calibrated Hammer Weight)

The standard penetration test consists of driving a split-spoon sampler with a drop hammer (calibrated weight varies to provide N₆₀ values) and counting the number of blows applied in each of three 6" increments of penetration. If the sampler is driven less than 18" (usually in highly resistant material), permitted in ASTM: D1586, the blows for each complete 6" increment and for each partial increment is on the boring log. For partial increments, the number of blows is shown to the nearest 0.1' below the slash.

The length of sample recovered, as shown on the "REC" column, may be greater than the distance indicated in the N column. The disparity is because the N-value is recorded below the initial 6" set (unless partial penetration defined in ASTM: D1586 is encountered) whereas the length of sample recovered is for the entire sampler drive (which may even extend more than 18").

UNIFIED SOIL CLASSIFICATION SYSTEM
ASTM Designations: D 2487, D2488

**AMERICAN
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Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A			Soil Classification			
			Group Symbol	Group Name ^B		
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines ^C	GW	Well graded gravel ^F		
		Cu ≥ 4 and 1 < Cc < 3 ^E	GP	Poorly graded gravel ^F		
	Sands 50% or more of coarse fraction passes No. 4 sieve	Gravels with Fines more than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{G, H, I}	
			Fines classify as CL or CH	GC	Clayey gravel ^{G, H, I}	
		Sands with Fines more than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}	
Fine-Grained Soils 50% or more passes the No. 200 sieve (see Plasticity Chart below)	Silt and Clays Liquid limit less than 50	inorganic	CL	Lean clay ^{K, L, M}		
			ML	Silt ^{K, L, M}		
		organic	OL	Organic clay ^{K, L, M, N}		
				Organic silt ^{K, L, M, O}		
	Silt and Clays Liquid limit 50 or more	inorganic	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}	
			PI plots below "A" line	MH	Elastic silt ^{K, L, M}	
		organic	Liquid limit - oven dried < 0.75	OH	Organic clay ^{K, L, M, P}	
			Liquid limit - not dried		Organic silt ^{K, L, M, Q}	
			Primarily organic matter, dark in color, and organic in odor		PT	Peat ^R

Notes

^ABased on the material passing the 3-in (75-mm) sieve.

^BIf field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^CGravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GP-GM poorly graded gravel with silt
GC-GC poorly graded gravel with clay
GP-GC poorly graded gravel with clay

^DSands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SP-SM poorly graded sand with silt
SW-SC well-graded sand with clay
SP-SC poorly graded sand with silt
SP-SC poorly graded sand with clay

$F_{Cu} = D_{60} / D_{10}$, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

^FIf soil contains ≥ 15% sand, add "with sand" to group name.

^GIf fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^HIf fines are organic, add "with organic fines" to group name.

^IIf soil contains ≥ 15% gravel, add "with gravel" to group name.

^JIf Atterberg limits plot is hatched area, soils is a CL-ML silty clay.

^KIf soil contains 15 to 29% plus No. 200 add "with sand" or "with gravel", whichever is predominant.

^LIf soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.

^MIf soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

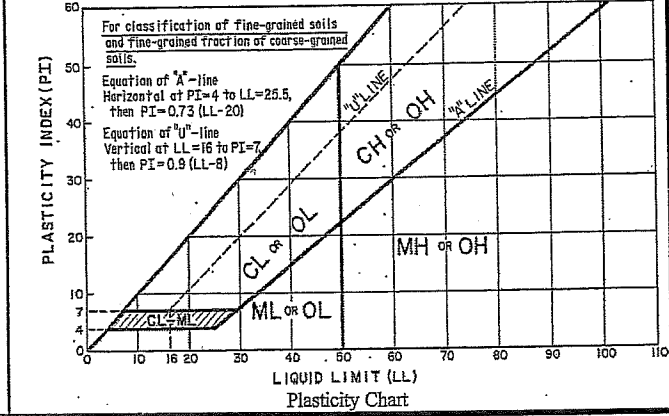
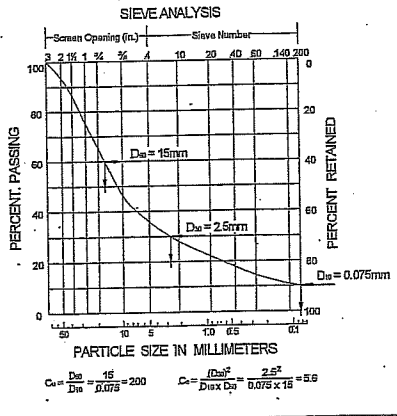
^NPI ≥ 4 and plots on or above "A" line.

^OPI < 4 or plots below "A" line.

^PPI plots on or above "A" line.

^QPI plots below "A" line.

^RFiber Content description shown below.



ADDITIONAL TERMINOLOGY NOTES USED BY AET FOR SOIL IDENTIFICATION AND DESCRIPTION

Grain Size		Gravel Percentages		Consistency of Plastic Soils		Relative Density of Non-Plastic Soils	
Term	Particle Size	Term	Percent	Term	N-Value, BPF	Term	N-Value, BPF
Boulders	Over 12"	A Little Gravel	3% - 14%	Very Soft	less than 2	Very Loose	0 - 4
Cobbles	3" to 12"	With Gravel	15% - 29%	Soft	2 - 4	Loose	5 - 10
Gravel	#4 sieve to 3"	Gravelly	30% - 50%	Firm	5 - 8	Medium Dense	11 - 30
Sand	#200 to #4 sieve			Stiff	9 - 15	Dense	31 - 50
Fines (silt & clay)	Pass #200 sieve			Very Stiff	16 - 30	Very Dense	Greater than 50
				Hard	Greater than 30		
Moisture/Frost Condition (MC Column)		Lavering Notes		Peat Description		Organic Description (if no lab tests)	
D (Dry):	Absence of moisture, dusty, dry to touch.	Laminations:	Layers less than 1/2" thick of differing material or color.	Term	Fiber Content (Visual Estimate)	Soils are described as <i>organic</i> , if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. <i>Slightly organic</i> used for borderline cases.	
M (Moist):	Damp, although free water not visible. Soil may still have a high water content (over "optimum").	Lenses:	Pockets or layers greater than 1/2" thick of differing material or color.	Fibric Peat:	Greater than 67%	Root Inclusions	
W (Wet/Waterbearing):	Free water visible intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt.			Hemic Peat:	33 - 67%	With roots: Judged to have sufficient quantity of roots to influence the soil properties.	
F (Frozen):	Soil frozen.			Sapric Peat:	Less than 33%	Trace roots: Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties.	

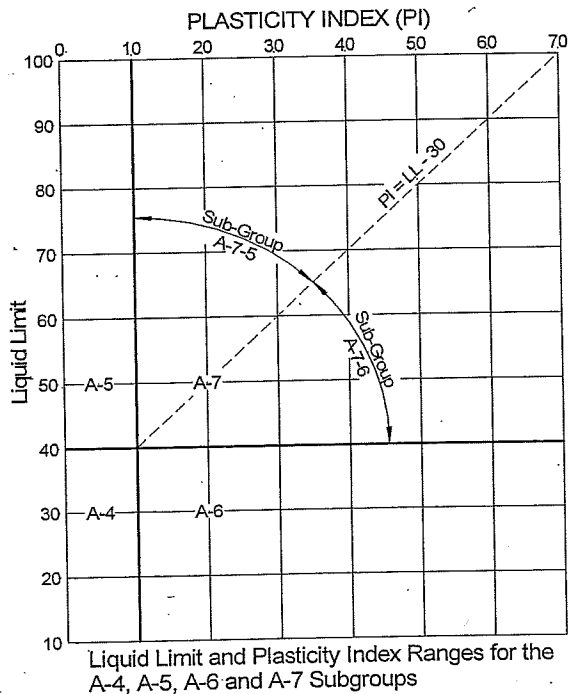
AASHTO SOIL CLASSIFICATION SYSTEM

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35% or less passing No. 200 sieve)							Silt-Clay Materials (More than 35% passing No. 200 sieve)			
	A-1		A-3	A-2				A-4	A-5	A-6	A-7
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6
Sieve Analysis, Percent passing:											
No. 10 (2.00 mm)	50 max.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 40 (0.425 mm)	30 max.	50 max.	51 min.	.....	.....	.....	.....	.....	.....	.....	.....
No. 200 (0.075 mm)	15 max.	25 max.	10 max.	35 max.	35 max.	35 max.	35 max.	36 min.	36 min.	36 min.	36 min.
Characteristics of Fraction Passing No. 40 (0.425 mm)											
Liquid limit .....	.....	.....	40 max.	41 min.	40 max.	41 min.	40 max.	41 min.	40 max.	41 min.	41 min.
Plasticity index	6 max.	N.P.	10 max.	10 max.	11 min.	11 min.	10 max.	10 max.	11 min.	11 min.	11 min.
Usual Types of Significant Constituent Materials											
Stone Fragments, Gravel and Sand			Fine Sand	Silty or Clayey Gravel and Sand				Silty Soils		Clayey Soils	
General Ratings as Subgrade											
Excellent to Good								Fair to Poor			

The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.
 Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30.
 Group A-8 soils are organic clays or peat with organic content >5%.



Definitions of Gravel, Sand and Silt-Clay

The terms "gravel", "coarse sand", "fine sand" and "silt-clay", as determinable from the minimum test data required in this classification arrangement and as used in subsequent word descriptions are defined as follows:

GRAVEL - Material passing sieve with 3-in. square openings and retained on the No. 10 sieve.

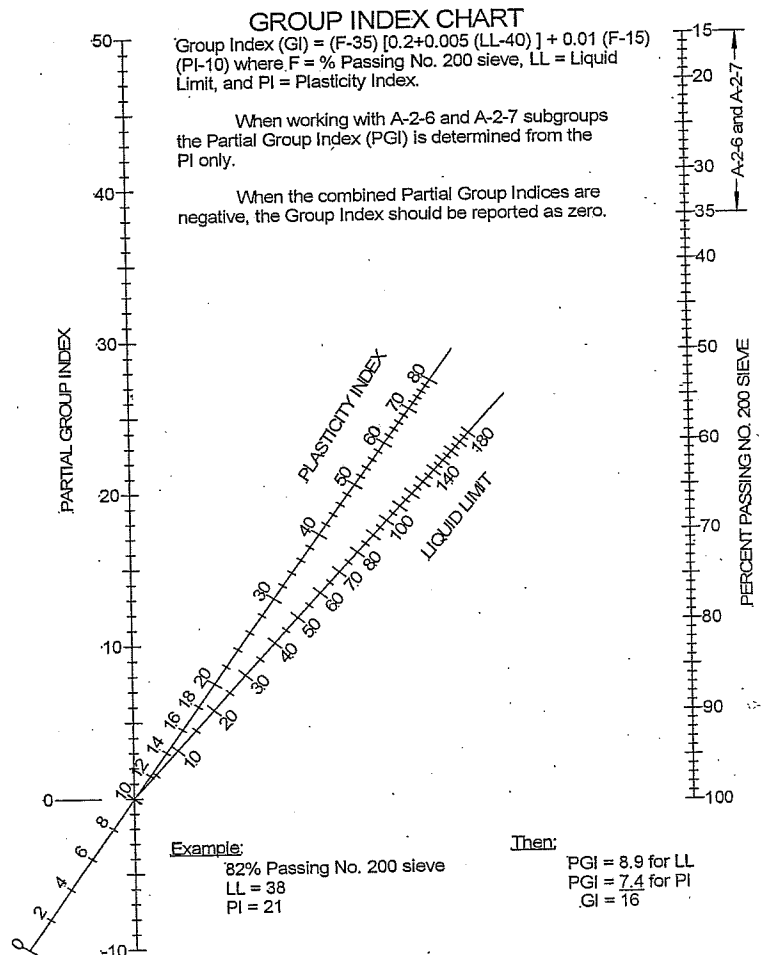
COARSE SAND - Material passing the No. 10 sieve and retained on the No. 40 sieve.

FINE SAND - Material passing the No. 40 sieve and retained on the No. 200 sieve.

COMBINED SILT AND CLAY - Material passing the No. 200 sieve

BOULDERS (retained on 3-in. sieve) should be excluded from the portion of the sample to which the classification is applied, but the percentage of such material, if any, in the sample should be recorded.

The term "silty" is applied to fine material having plasticity index of 10 or less and the term "clayey" is applied to fine material having plasticity index of 11 or greater.





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SUBSURFACE BORING LOG

AET No: 28-00966 Log of Boring No. B-1 (p. 1 of 1)
 Project: Vernon Avenue; Savage, MN

DEPTH IN FEET	Surface Elevation _____ MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS									
							WC	OC	LL	PL	%-#200					
1	2" Deteriorated bituminous pavement	FILL														
	6" FILL, sand with gravel and pieces of bituminous, black (A-1-a)														2	0.7
	3.5" FILL, sand with silt and gravel, brown (A-1-b)														5	7.2
	FILL, sand with silt, a little gravel, brown and gray (A-3)															
2	SLIGHTLY ORGANIC LEAN CLAY, trace roots, dark brown (OL) (A-6)	TOPSOIL														
3	SAND, fine grained, grayish brown, wet (SP) (A-3)	FINE ALLUVIUM														
END OF BORING																

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-3.8' Direct Push								
BORING COMPLETED: 4/3/15								
DR: AJ LG: MF Rig: R26								

AET CORP 28-00966.GPJ AET+CPT+WELL.GDT 6/25/15



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SUBSURFACE BORING LOG

AET No: 28-00966 Log of Boring No. B-2 (p. 1 of 1)
 Project: Vernon Avenue; Savage, MN

DEPTH IN FEET	Surface Elevation _____ MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	2.5" Deteriorated bituminous pavement	FILL										
	6" FILL, sand with gravel and pieces of bituminous, black (A-1-a)											
	5" FILL, sand with silt and gravel, brown (A-1-b)											
	FILL, mostly lean clay, a little gravel, gray (A-6)											
2	FILL, gravel with silt and sand, tan and gray (A-1-b)	TOPSOIL				DP	31					
	SLIGHTLY ORGANIC LEAN CLAY, dark brown (OL) (A-6)											
3												
END OF BORING												

AET CORP 28-00966.GPJ AET-CPT+WELL.GDT 6/25/15

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-3.8'	Direct Push								
BORING COMPLETED: 4/3/15									
DR: AJ LG: MF Rig: R26									



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SUBSURFACE BORING LOG

AET No: 28-00966 Log of Boring No. B-3 (p. 1 of 1)
 Project: Vernon Avenue; Savage, MN

DEPTH IN FEET	Surface Elevation _____ MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	OC	LL	PL	%-#200		
1	0.25" Chip seal	FILL											
	7" FILL, sand with gravel and pieces of bituminous, black (A-1-a)												
	4.5" FILL, sand with silt, a little gravel, brown (A-1-b)												
2	SLIGHTLY ORGANIC LEAN CLAY WITH SAND, black (OL) (A-6)	TOPSOIL					DP	40	24	4			
3	LEAN CLAY, dark brown, lenses of silty sand (CL) (A-6)	FINE ALLUVIUM											
END OF BORING													

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-3.8' Direct Push								
BORING COMPLETED: 4/3/15								
DR: AJ LG: MF Rig: R26								

AET CORP 28-00966.GPJ AET+CPT+WELL.GDT 6/25/15



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SUBSURFACE BORING LOG

AET No: 28-00966 Log of Boring No. B-4 (p. 1 of 1)
 Project: Vernon Avenue; Savage, MN

DEPTH IN FEET	Surface Elevation _____ MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	1.5" Deteriorated bituminous pavement	FILL										
	7" FILL, sand with gravel and pieces of bituminous, black (A-1-a)											
	FILL, silty sand, some sandy clay, a little gravel, brown (A-2-6)											
2	LEAN CLAY, brown (CL) (A-6)	FINE ALLUVIUM			DP	33						
3							22		31	19		
END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-3.8'	Direct Push								
BORING COMPLETED: 4/3/15									
DR: AJ LG: MF Rig: R26									

AET CORP 28-00966.GPJ AET+CPT+WELL.GDT 6/25/15

American Engineering Testing, Inc.

550 Cleveland Ave. North

St. Paul, MN 55114

651-659-9001

AET Project No.: 28-00966
Project Name: Vernon Avenue
Project Location: Savage, MN
Date: 4/28/2015

Tested By: BAP
Checked By: MF

Sample Location: B-1, 0.2'-0.6'
On Site/Off Site:
Intended Use:

WASHED GRADATION TEST RESULTS

ASTM: D422

SAMPLE NUMBER	DRY WEIGHT (g)	WASHED WEIGHT (g)	PASSING WEIGHT (g)	MC %
B-1, 0.2'-0.6'	193.3	192.2	1.4	2%

SIEVE SIZE	ACCUMULATIVE WEIGHT (g)	TOTAL % PASSING	GRADATION REQUIREMENTS **
2 inch			
1 1/2 inch			
1 inch			
3/4 inch	0.0	100.0	
1/2 inch	4.3	97.8	
3/8 inch	23.5	87.8	
No. 4	82.6	57.3	
No.10	138.31	28.5	
No. 20	171.04	11.5	
No. 40	184.24	4.7	
No. 80	190.15	1.6	
No. 100	190.79	1.3	
No. 200	191.91	0.7	

American Engineering Testing, Inc.

550 Cleveland Ave. North

St. Paul, MN 55114

651-659-9001

AET Project No.: 28-00966
Project Name: Vernon Avenue
Project Location: Savage, MN
Date: 4/28/2015

Tested By: BAP
Checked By: MF

Sample Location: B-1, 0.6'-0.9'
On Site/Off Site:
Intended Use:

WASHED GRADATION TEST RESULTS

ASTM: D422

SAMPLE NUMBER	DRY WEIGHT (g)	WASHED WEIGHT (g)	PASSING WEIGHT (g)	MC %
B-1, 0.6'-0.9'	200.9	188.0	14.6	5%

SIEVE SIZE	ACCUMULATIVE WEIGHT (g)	TOTAL % PASSING	GRADATION REQUIREMENTS **
2 inch			
1 1/2 inch			
1 inch			
3/4 inch	0.0	100.0	
1/2 inch	12.1	94.0	
3/8 inch	13.9	93.1	
No. 4	44.4	77.9	
No.10	80.16	60.1	
No. 20	114.12	43.2	
No. 40	147.00	26.8	
No. 80	176.55	12.1	
No. 100	179.91	10.4	
No. 200	186.32	7.2	

Appendix E

Pavement Report Limitations and Guidelines for Use

Appendix E
Pavement Report Limitations and Guidelines for Use
Report No. 28-00966

E.1 REFERENCE

This appendix provides information to help you manage your risks relating to subsurface problems which are caused by construction delays, cost overruns, claims, and disputes. This information was developed and provided by ASFE¹, of which, we are a member firm.

E.2 RISK MANAGEMENT INFORMATION

E.2.1 Engineering Services Performed for Specific Purposes, Persons, and Projects

Pavement engineers structure their services to meet the specific needs of their clients. A pavement engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each pavement engineering study is unique, each pavement engineering report is unique, prepared solely for the client. No one except you should rely on your pavement engineering report without first conferring with the pavement engineer who prepared it. And no one, not even you, should apply the report for any purpose or project except the one originally contemplated.

E.2.2 Read the Full Report

Serious problems have occurred because those relying on a pavement engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

E.2.3 A Pavement Engineering Report Based on a Unique Set of Project-Specific Factors

Pavement engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typically factors include: the client's goals, objectives, and risk management preferences; road name and termini; current and future traffic loading; the general nature of the pavement structure involved, its type, its length, and cross section; pavement layer type and thicknesses; and other planned or existing pavement improvements, such as access roads, parking lots, and underground utilities. Unless the pavement engineer who conducted the study specifically indicates otherwise, do not rely on a pavement engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific pavement tested, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing pavement engineering report include those that affect:

- the function of the proposed pavement, as when it's changed from a minor collector to a major collector, or from a rural to a urban,
- traffic loading or traffic volume, mix, loading factors and growth rates that used to calculate traffic loading
- elevation, depth, location, width, or layer of the proposed pavement,
- composition of the design team, or
- project ownership.

As a general rule, always inform your pavement engineer of project changes, even minor ones, and request an assessment of their impact. Pavement engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.

E.2.4 Pavement Conditions Can Change

A pavement engineering report is based on conditions that existed at the time the study was performed. Do not rely on a pavement engineering report whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact the pavement engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

¹ ASFE, 8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733: www.asfe.org

Appendix E
Pavement Report Limitations and Guidelines for Use
Report No. 28-00966

E.2.5 Most Pavement Findings Are Professional Opinions

Pavement testing identified pavement conditions only at those points where pavement tests are conducted or samples are taken. Pavement engineers review field and laboratory data, analyze the data and then apply their professional judgment to render an opinion about pavement conditions throughout the section. Actual pavement conditions may differ, sometimes significantly, from those indicated in your report. Retaining the pavement engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

E.2.6 A Report's Recommendations Are Not Final

Do not over rely on the construction recommendations included in your report. Those recommendations are not final, because pavement engineers develop them principally from judgment and opinion. Pavement engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. The pavement engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

E.2.7 A Pavement Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of pavement engineering reports has resulted in costly problems. Lower that risk by having your pavement engineer confer with appropriate members of the design team after submitting the report. Also retain your pavement engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your pavement engineer participate in prebid and preconstruction conferences, and by providing construction observation.

E.2.8 Do Not Redraw the Engineer's Tables and Plots

Pavement engineers prepare final testing and analysis tables and plots based upon their interpretation of field testing and laboratory data. To prevent errors or omissions, the tables and plots included in a pavement engineering report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but it is recognized that separating tables and plots from the report can elevate risk.

E.2.9 Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete pavement engineering report, but preface it with a clearly written letter of transmittal. In the letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the pavement engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

E.2.10 Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that pavement engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, pavement engineers commonly include a variety of explanatory provisions in their report. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. Read these provisions closely. Ask questions. Your pavement engineer should respond fully and frankly.

E.2.11 Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a geoenvironmental study differ significantly from those used to perform a geotechnical study. For that reason, a pavement engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Unanticipated environmental problems have led to numerous project failures. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. Do not rely on an environmental report prepared for someone else.



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, February 15, 2023

Agenda Item

Item 6. F. – 2023 Legislative Action

Prepared By

Linda Loomis, Administrator

Summary

A bill to fund Area #3 has been introduced in both houses of the legislature. Representatives Kotyza-Witthuhn, Pryor and Tabke introduced H.F. 419 – A bill for an act relating to capital investment; appropriating money for riverbank stabilization in the lower Minnesota River; authorizing the sale and issuance of state bonds. Senators Czwodzinski and Pratt have authored the companion bill, S.F. 614, and introduced the bill in the Senate.

The LMRWD was asked to provide information about previous attempts to enact this legislation and provided the requested information. The explanation of the project provided last year was updated along with a table of the costs of the project. Both documents are attached to this summary.

In addition to the Area #3, other bills have been introduced that the LMRWD is following:

H.F. 243/S.F. 38 - Representatives Tabke, Bakeberg, Kotyza-Witthuhn and Rehm introduced: A bill for an act relating to capital investment; appropriating money for restoration of the Minnesota River riverbank in the Shakopee area; authorizing the sale and issuance of state bonds. (Companion introduced in Senate by Pratt)

H.F. 820/S.F. 755 - Representatives Tabke, Heintzeman, Acomb, Her and Fischer introduced: A bill for an act relating to environment; establishing certified salt applicator program; limiting liability; requiring a report; proposing coding for new law in Minnesota Statutes, chapter 116.

The bill was read for the first time and referred to the Committee on Judiciary Finance and Civil Law. (Companion introduced in the Senate by Morrison)

H.F. 847/S.F. 1142 - Representatives Tabke, Harder and Bakeberg introduced: A bill for an act relating to capital investment; appropriating money for riverbank stabilization in Scott County; authorizing the sale and issuance of state bonds. This bill will fund the Merriam Junction Trail and Riverbank Stabilization. (Companion introduced in the Senate by Pratt and Coleman)

Attachments

Area #3 Flyer

Opinion of probable cost – January 2023

Recommended Action

No action recommended



LOWER MINNESOTA RIVER
WATERSHED DISTRICT

EDEN PRAIRIE AREA 3

Located on the north bank of the Minnesota River, this area has been prone to erosion for some time. The Lower Minnesota River Watershed District, in partnership with the City of Eden Prairie, has evaluated options to stabilize the slope, protect public and private infrastructure, and prevent future degradation of the Minnesota River water quality resulting from Area 3 bank erosion.

PROBLEM

- The underlying soils and groundwater seeps, combined with bluff development and erosive flows from the Minnesota River, have destabilized the slope and resulted in continual erosion since at least 2008.
- Using inclinometers, the Lower Minnesota River Watershed District (LMRWD) has monitored slope movements since 2010. However, geotechnical engineers have warned the LMRWD that due to the nature of the soils in Area 3, the slope is more likely to catastrophically fail without advanced warning.
- The City of Eden Prairie has a stormwater pond just downstream of Area 3 that is exacerbating the natural erosion processes of the river on the slope, causing further instability.
- This is a larger, more complex problem than either the LMRWD or the City can tackle alone.



Bank erosion caused by city stormwater pond

SOLUTION

1. Remove the city stormwater pond, capture city stormwater currently being directed to the pond, and convey it to the Minnesota River in a less erosive and bank-destructive manner.
2. Armor the bluff toe and flatten the slope as needed to protect the slope from the Minnesota River.

REQUEST

- To complete the construction, the estimated cost is \$5.5M.

For more information, contact Linda Loomis, LMRWD Administrator
Email: admin@lowermnriverwd.org | Phone: (763) 545-4659

Minnesota River Area 3
60% Design Budgetary Opinion of Probable Construction Cost
January 2023

General						
Item #	Item	Unit	Quantity	Unit Cost	Line Item Total	Notes
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	1	\$377,000	\$377,000	Assumed 12% of items 4 and higher, assumed one mobilization for all project components
2	SITE ACCESS AND STAGING	LUMP SUM	1	\$157,000	\$157,000	Assumed 5% of items 4 and higher, assumed stormwater feature reconstruction is in the same general vicinity
3	AS-BUILT SURVEY	LUMP SUM	1	\$15,000	\$15,000	RTK survey of final grade
SUBTOTAL					\$549,000	
Launchable Rock Toe at Area 3						
Item #	Item	Unit	Quantity	Unit Cost	Line Item Total	Notes
4	CONTROL OF WATER	LUMP SUM	1	\$182,140	\$182,140	Assumed 8% of other construction items, assumes localized dewatering and turbidity curtain.
5	EROSION AND SEDIMENT CONTROL	LUMP SUM	1	\$20,000	\$20,000	
6	REMOVE AND DISPOSE OF EXISTING STORMWATER POND DEBRIS	LUMP SUM	1	\$10,000	\$10,000	
7	SHEETPILE	LUMP SUM	1	\$650,000	\$650,000	
8	MNDOT CLASS II RIPRAP	CY	12,600	\$100	\$1,260,000	Assumes no filter gravel is required.
9	EARTHWORK CUT	CY	16,400	\$12	\$196,800	Includes excavation required for bluff toe launchable rock toe, trenched rock in floodplain, and stormwater pond bank grading.
10	PLACE AND COMPACT SALVAGED FILL	CY	4,200	\$9	\$37,800	Salvaged fill placed over trenched rock. Topsoil salvage and respread in floodplain rock trench areas is incidental.
11	HAUL AND OFFSITE DISPOSAL OF CLEAN FILL	CY	12,200	\$60	\$732,000	Portion not included as fill over riprap trenches.
12	F&I NONWOVEN COIR FABRIC	SY	1,200	\$6	\$7,200	Installed in Stormwater Pond Grading areas.
13	F&I MNDOT CATEGORY 20 EROSION CONTROL BLANKET	SY	7,000	\$2	\$14,000	Installed in Floodplain Trench and Bluff Toe Area.
14	NATIVE RIPARIAN SEED MIX	ACRE	3.0	\$8,000	\$24,000	Includes all treatment areas.
15	WILLOW LIVE STAKES	EACH	320	\$10	\$3,200	Assumes 10 foot O.C. planting on floodplain trench and stormwater pond grading areas.
16	BARE ROOT STOCK	EACH	60	\$30	\$1,800	Assumes one row of 15 foot O.C. planting on floodplain trench and stormwater pond grading areas.
SUBTOTAL					\$3,138,940	

Rounded Combined Subtotal	\$3,688,000
Contingency 25%	\$922,000
ROUNDED ESTIMATED TOTAL	\$4,600,000
AACE Class 2 Low Range (-15%)	\$3,900,000
AACE Class 2 High Range (+20%)	\$5,500,000



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, February 15, 2023

Agenda Item

Item 6. G. – Education and Outreach

Prepared By

Linda Loomis, Administrator

Summary

The LMRWD has two individuals interested in joining the Citizen Advisory Committee (CAC), Thomas Hartle and Patty Thomsen. There is a third person interested in joining the CAC but that individual has not yet submitted an application. A summary of the experience of each applicant is attached. Resolution 23-04 appointing Thomas Hartle and Patty Thomsen to the CAC is attached for the Board's approval.

At the November 2022 LMRWD Board meeting, the Board authorized staff to investigate locations for interpretive sign and report back to the Board. LMRWD staff has identified two locations for interpretive signage and has obtained cooperation from the affected cities. A report with recommendations is attached for the Board's information. The memo to the Board from November is also attached.

Attachments

Technical Memorandum – Applicants under Consideration for LMRWD Citizen Advisory Committee

Resolution 23-04 – 2023 Citizen Advisory Committee Appointments

Technical Memorandum - LMRWD Interpretive Signage Recommendation – dated February 8, 2023

Technical Memorandum – LMRWD Creek Crossing Interpretive Signage Update – dated November 7, 2023

Excerpt from November 2022 meeting minutes

Recommended Action

Motion to Adopt Resolution 23-04 2023 Citizen Advisory Committee Appointments

Motion to authorize to procure illustrations and rights to use illustrations in other publications and media and to proceed with fabrication and installation of signage for Courthouse Lake

Technical Memorandum

To: Linda Loomis, District Administrator
Lower Minnesota River Watershed District

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

Date: February 8, 2023

Re: Applicants under Consideration for LMRWD Citizen Advisory Committee

Young Environmental received applications from Thomas Hartle and Patty Thomsen, who are both interested in joining the Lower Minnesota River Watershed District (LMRWD) Citizen Advisory Committee (CAC). We introduce both applicants below.

1. Thomas Hartle lives on the Minnesota River Bluff in Bloomington, Minnesota, and is an avid hiker who enjoys access to the river. His land backs up to Colman Lake and the river, and he has a vested interest in better understanding how to protect the land from erosion and how to protect the overall watershed of the lake and river. By participating on the CAC, Thomas hopes to learn more about the environmental factors that affect the waterways in his community, participate in decisions that benefit the environment, and take part in being a good steward of his community resources and educating and informing others. A devoted gardener, Thomas has developed corporate skills such as leading remote and in-person meetings, moderating discussions to reach agreements and decisions, and working as a designer and planner for large projects.
2. Patty Thomsen also lives in Bloomington and is a retired educator who is currently serving a two-year term as precinct chair in Senate District 50. Patty has lived within the LMRWD her whole life and has seen the changes it has gone through. She works to remove invasive plants and is interested in restoring the watershed to a healthier condition to improve water quality and keep silt out of the Minnesota River by replanting with long-rooted native plants. Patty is a nature lover who is comfortable communicating with people and educating residents about the watershed and encouraging them to protect and improve it. She has hands-on experience working outside and has adopted several storm drains in

her community, while also leading several volunteer buckthorn busts in her neighborhood.

Young Environmental reviewed both candidates' applications and has no concerns. As such, we recommend that the board approve both candidates for a one-year appointment to serve on the CAC. Applications are available upon request.

RESOLUTION 23-04

RESOLUTION OF THE LOWER MINNESOTA RIVER WATERSHED DISTRICT BOARD OF MANAGERS

2023 Citizen Advisory Committee Appointments

Manager _____ offered the following Resolution and moved its adoption, seconded by Manager Salvato:

WHEREAS, pursuant to Minnesota Statute 103D.331, the Lower Minnesota River Watershed District (LMRWD) Board of Managers must annually appoint a Citizen Advisory Committee (CAC); and

WHEREAS, the CAC is organized to assist the LMRWD Board of Managers on matters affecting the interests of the watershed district; and

WHEREAS, statute requires the committee consist of at least five (5) members; and

WHEREAS, the District advertised openings for new CAC membership on the LMRWD website, and distributed the notice through a press release to all LMRWD partners and stakeholders; and

WHEREAS, in 2023 the LMRWD received an two applications for the CAC; and

WHEREAS, LMRWD staff has reviewed the applicant's background, experience, community service and geographic representation within the watershed and recommends the appointment.

NOW, THEREFORE, BE IT RESOLVED NOW, THEREFORE, BE IT RESOLVED that the Lower Minnesota River Watershed District Board of Managers hereby appoint the following individuals to the 2021 Citizen Advisory Committee:

Patty Thomsen

Thomas Hartle

The question was on the adoption of the Resolution and there were ___ yeas and ___ nays as follows:

	<u>Yea</u>	<u>Nay</u>	<u>Absent</u>	<u>Abstain</u>
AMUNDSON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HARTMANN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KUPLIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RABY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALVATO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Upon vote, the President declared the Resolution adopted.

(signature on following page)

Jesse Hartmann, President

ATTEST:

Lauren Salvato, Secretary

I, Lauren Salvato, Secretary of the Lower Minnesota River Watershed District, do hereby certify that I have compared the above Resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcript thereof.

IN TESTIMONY WHEREOF, I hereunto set my hand this 15th day of February 2023.

Lauren Salvato, Secretary

Technical Memorandum

To: Linda Loomis, LMRWD Administrator
Lower Minnesota River Watershed District (LMRWD)

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

Date: February 8, 2023

Re: LMRWD Interpretive Signage Recommendation

As approved in the 2023 Public Education and Outreach workplan, Young Environmental has begun evaluating potential interpretive sign locations (Table 1).

Table 1: LMRWD Interpretive Sign Locations

Resource Potential Message	Sign Location	Resource Manager	Findings
Courthouse Lake History Habitat requirements and features of trout lakes Native restoration	Government Center	Carver County/City of Chaska	City of Chaska (Brent Alcott) is willing to coordinate sign installation. Carver County (Brent Kath) is agreeable with this location.
Quarry Lake History Habitat requirements and features of trout lakes	Quarry Lake Park	City of Shakopee	City of Shakopee (Kirby Templin) is agreeable with the proposed location.

Considering the proposed locations, Young Environmental has contacted and received the attached estimates for the design and fabrication of the two signs by Studio Lola, the company used in 2021–2022 for the interpretive signs at East Chaska Creek and Eagle Creek/Savage Fen. The prices have increased compared with those in 2021–2022. In 2021–2022, the design, fabrication, and purchase of the rights to the illustrations was \$7,996.25. The current estimate for design, fabrication, and full rights to the illustration we are proposing ranges from \$6,355 to \$10,440. The increase could be attributed to inflation, the cost of materials, the change in status of the illustrator (she went from a student to a full-fledged professional), and a more accurate estimate of the number of text and rendering editing iterations.

Recommendation

Based on the information presented, Young Environmental suggests moving forward this spring with an illustration of a trout lake surrounded with native vegetation for both Courthouse and Quarry Lakes and purchasing the full rights to the illustration for use by the LMRWD in other publications and media. Following the completion of the illustration, we recommend proceeding with the fabrication and installation of the Courthouse Lake sign. We suggest delaying the fabrication of the Quarry Lake sign until the City of Shakopee completes the Quarry Lake Park design concepts and park improvements.

Technical Memorandum

To: Linda Loomis, LMRWD Administrator
Lower Minnesota River Watershed (LMRWD)

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

Date: November 7, 2022

Re: LMRWD Creek Crossing and Interpretive Signage Update

The approved Lower Minnesota River Watershed (LMRWD) 2022 Public Education and Outreach workplan includes a review of potential signage locations at creek crossings and high value resource areas. The following is the current status of this project.

I. Crossing Signs

Young Environmental reviewed crossings under local jurisdiction in 2021. Only one location at Riley Creek presents an opportunity for a potential crossing sign. This location appears to be half within the Riley Purgatory Bluff Creek Watershed District (RPBCWD). Young Environmental contacted Eleanor Mahon, Education and Outreach Coordinator with RPBCWD, for potential collaboration and to ensure efforts are not being duplicated. RPBCWD is interested in working together on this signage project. Young Environmental also contacted Paul Rugar, Division Supervisor Traffic Transportation Operations Department, Medina Office with Hennepin County, to determine the feasibility of fabricating and installing a sign on Riley Creek. We are waiting for a County Process Form, which will provide further information and initiate this process, should that be the direction of the board. Map of proposed location provided as Attachment 1.

II. Interpretive Signs

Young Environmental investigated several other locations for interpretive signage, focusing on the unique habitats and ecosystems found within the LMRWD. The sites reviewed, the impetus of the review, and the summary of discussions with potential local partners are documented below in Table 1.

Table 1: Potential LMRWD Interpretive Sign Locations

Resource / Potential Message	Potential Sign Location	Manager of Resource	Findings
Quarry Lake / Habitat requirements and features of trout lakes. Recent improvements to the park.	Quarry Lake Park	City of Shakopee	Potential location. Waiting for city response regarding the location. City contact: Kirby Templin.
Courthouse Lake / Habitat requirements and features of trout lakes, and what makes a suitable environment for trout.	Government Center	Carver County / City of Chaska	City of Chaska is interested in this location and willing to coordinate on sign installation. Waiting on county response about location and partnership. City contact: Brent Alcott. County contact: Brent Kath.
Black Dog Fen / Unique features of calcareous fens.	Cliff Fen Park, City of Burnsville	U.S. Fish and Wildlife Service	Not a potential location based on response from City of Burnsville, since the sign would be on city property, even though fen is not managed by the city. Also, fen is not showing signs of being healthy and established anymore. Already a kiosk at the trailhead on the east side of the park. City contact: Caleb Ashling.
Gun Club Lake Fen / Unique features of calcareous fens.	Mendota Heights Trailhead	Dakota County	Not a potential location based on response from county. An interpretive walk/experience was just completed at the Mendota Overlook, and they are not looking to add anything additional. County contact: Autumn Hubbell.
Ike's Creek / Habitat requirements that create a suitable environment for trout.	Bass Ponds Trailhead	Minnesota Valley National Wildlife Refuge (Minnesota Valley NWR)	Potential location. Waiting for the Minnesota Valley NWR response. Minnesota Valley NWR contact: Vicki Sherry.

Recommendation

Staff recommends moving forward with road crossing signs at Riley Creek, which will include taking the following actions. Additionally, staff will continue to investigate potential interpretive sign locations and report back to the board for review of suggested next steps.

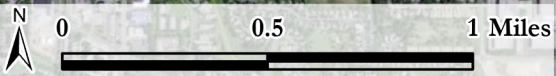
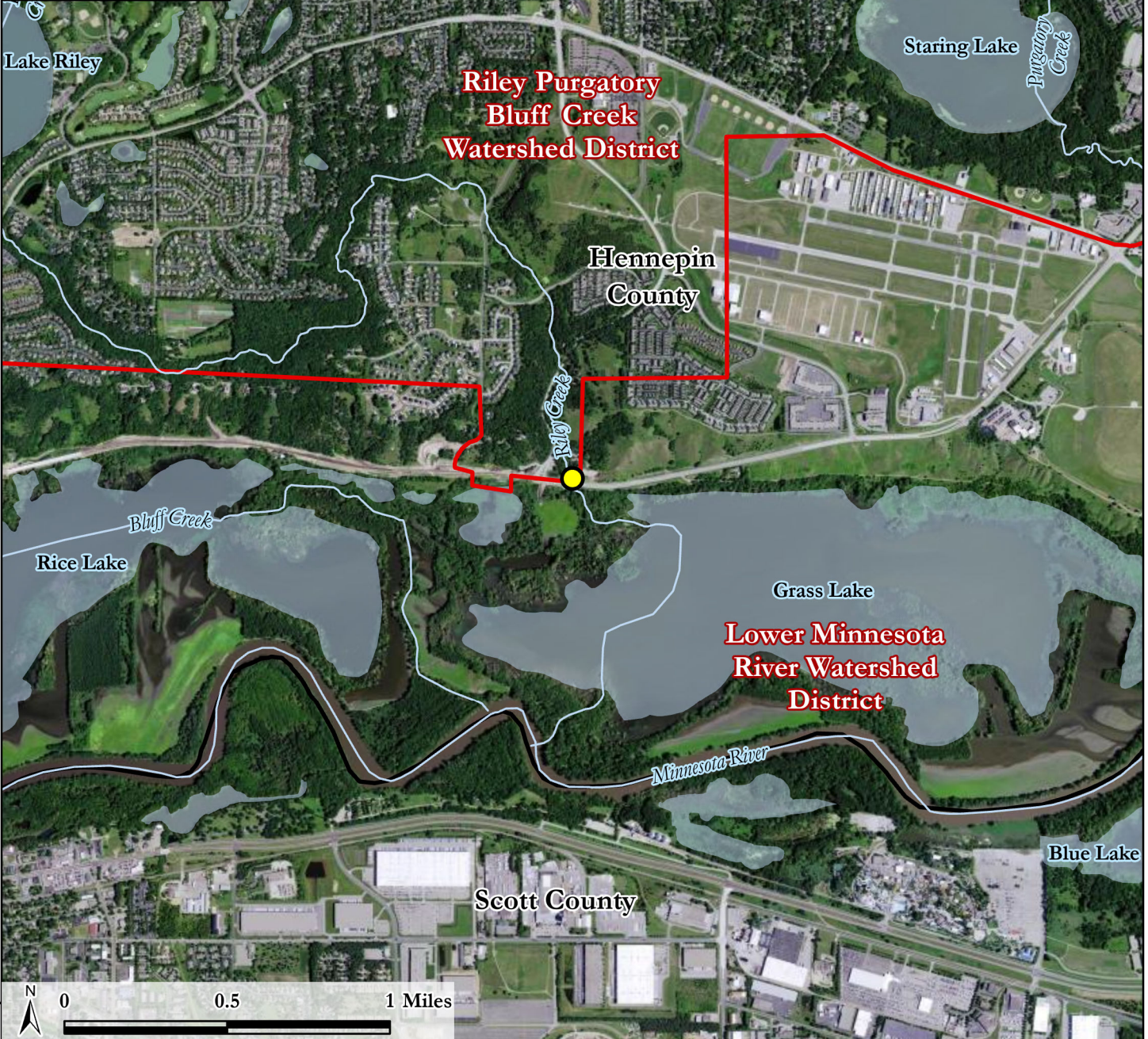
- Review Hennepin County Process Form
- Draft a contract with Hennepin County and RPBCWD for road crossing signage
- Bring a contract to the board for review and approval consideration
- Proceed with design and fabrication
- Work with Hennepin County on installation

Attachment I:

Riley Creek Crossing Sign Location



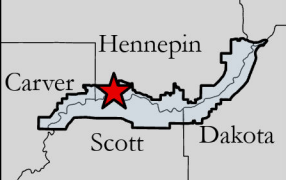
LOWER MINNESOTA RIVER
WATERSHED DISTRICT



Legend

- Potential Sign Location
- Public Waters
- Watershed District Boundaries
- County Boundary
- Public Waterbodies

LMRWD Watershed Location Map



Young Environmental
Consulting Group, LLC

Administrator Loomis said she neglected to include any information in the Executive Summary regarding the recommendation from the Creek Crossing and Interpretive Signage Update - Technical Memorandum dated November 7, 2022.

Manager Raby made a motion to direct staff to move ahead with a creek crossing sign at Riley Creek and to continue to investigate potential interpretive signage locations and report back to the Board for review. Manager Kuplic seconded the motion. Upon a vote being taken the following voted in favor of the motion: Amundson, Hartmann, Kuplic, and Raby; the following voted against: None

H. LMRWD Projects

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

i. Area #3 MN Riverbank Stabilization Project Update

Administrator Loomis introduced and provided an update on this project. She said soil borings require a permit from the Department of Health and that the permit requires permission from the property owner. The LMRWD is waiting on approval from the property owner to perform soil borings on their property.

The Board discussed alternative actions if approval is not given from the property owners. MS. Schall Young said that the project will move forward without the soil borings if permission is not granted by the property owners.

I. Project/Plan Reviews

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

i. Metropolitan Airports Commission's Municipal Permit Update

Administrator Loomis introduced and provided an overview of this item. She stated that Ms. LeClaire wrote up a report for the Board to review. She noted staff will be meeting with MAC in December and will discuss an LGU permit at that time.

President Hartmann made a motion to conditionally approve a Municipal; LGU Permit for the City of Burnsville subject to resolving outstanding items listed in the Technical Memorandum – City of Burnsville Municipal LGU Permit (Surface Water Management Plan and Ordinance Controls Review) dated September 14, 2022. Manager Amundson seconded the motion. Upon a vote being taken the following voted in favor of the motion: Amundson, Hartmann, Mraz, and Raby; the following voted against: None

ii. Peterson Wetland Bank Application (LMRWD No. 2022-037)

Administrator Loomis introduced and provided an overview of this item. She noted that this is an update on this project for the Board. She answered questions from the Board.

President Hartmann made motion to renew permits as recommended in the Technical Memorandum – October 2022 Permit Renewal Requests, dated October 12, 2022. Manager MRAZ seconded the motion. Upon a vote being taken the following voted in favor of the motion: Amundson, Hartmann, Mraz, and Raby; the following voted against: None

iii. Permit Program Summary

Administrator Loomis introduced and provided background on this item.

iv. 535 Lakota Lane, Chanhassen – work without a permit

Administrator Loomis introduced and provided background on this item. Attorney Kolb provided an update of the legal action progress.



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, February 15, 2023

Agenda Item

Item 6. I. – Permits & Projects

Prepared By

Linda Loomis, Administrator

Summary

i. Permit Renewals

Several permits are closing in on their one-year permit expiration date. Young Environmental Consulting Group, on behalf of the LMRWD, has contacted permit holder to inquire after the status of the project. There are four projects that have requested extension. Projects are listed in Table 1 of the Technical Memorandum – February 2023 Permit Renewal Requests dated February 8, 2023.

Attachments

Technical Memorandum – February 2023 Permit Renewal Requests dated February 8, 2023

Recommended Action

Motion to extend all permits listed in Table 1 of Technical Memorandum – February 2023 Permit Renewal Requests dated February 8, 2023.

ii. 3rd Street West Bridge Replacement (LMRWD No. 2022-042)

The City of Carver plans to replace the 3rd Street crossing of Spring Creek in anticipation of the City's Levee Improvement Project. A LMRWD permit is required because a portion of this project is in the 100-year floodplain.

Attachments

Technical Memorandum – 3rd Street West Bridge Replacement (LMRWD No. 2022-042) dated February 8, 2023

Recommended Action

Motion to conditionally approve subject to receipt of the final construction plans, signed by a professional engineer; name and contact information for all contractors undertaking land-disturbing activities as part of the proposed project; and name and contact information for the person(s) responsible for erosion control inspections and maintenance of erosion control measures.

iii. Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No.2022-041)

MnDOT plans improvements to 35W which includes road resurfacing, drainage and ADA improvements, and the constructions of auxiliary and acceleration lanes. Details of the project and the review of the project conducted by Young Environmental, on behalf of the LMRWD, are presented in Technical Memorandum – Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No. 2022-041) dated February 10, 2023.

Attachments

Technical Memorandum – Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No. 2022-041) dated February 10, 2023

Recommended Action

Motion to conditionally approve a permit for Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No.2022-041) subject to receipt of a copy of the NPDES Construction Stormwater Permit; name and contact information for the contractor; name and contact information for the person(s) responsible for erosion control inspections and maintenance of erosion control measures; and Documentation that the Applicant has received full approval for the project from the Nine Mile Creek Watershed District.

iv. Permit Program Summary

A Summary of all the open LMRWD permits is attached.

v. 535 Lakota Lane, Chanhassen – work without a permit

The LMRWD contacted the property owner and informed him that he and/or his representatives need to schedule a meeting with the LMRWD. The owner was also provided with a summary of findings by Young Environmental, on behalf of the LMRWD. On February 6, 2023, the LMRWD received a message from the owner in which he is asking his local representative to schedule a meeting with the LMRWD, however, nothing has been scheduled yet.

The LMRWD has kept the City apprised of any and all communications between the LMRWD and the property owner.

Attachments

No attachments

Recommended Action

No action recommend – Legal Counsel will be available at the meeting to advise.



Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Erica Bock
Hannah LeClaire, PE

Date: February 8, 2023

Re: February 2023 Permit Renewal Requests

Per Lower Minnesota River Watershed District (LMRWD) Rule A, it is the permittee's responsibility to request permit renewals when necessary. However, LMRWD staff has taken a proactive approach by sending out monthly reminders to current permit holders with upcoming permit expirations.

Table 1 summarizes the permittees who have responded to the permit expiration reminder, confirmed that no significant changes to the proposed project have occurred since the original permit was issued, and requested a permit extension to complete their projects.

Table 1. Summary of February 2023 LMRWD permit renewal request.

LMRWD No.	Project Name	City	Previous Expiration	Recommended Expiration Date
2021-025	SP 7001-128 TH 13	Savage	05/20/2023	05/20/2024
	<u>Reason for Extension:</u> Project was planned to be a two-year project based on the amount of work prescribed			
2021-058	2022 Perimeter Gate Security	Fort Snelling	04/27/2023	10/31/2023
	<u>Reason for Extension:</u> Work on the building is still in progress			
2022-013	Normandale Blvd & 98 th St. Intersection	Bloomington	04/22/2023	11/30/2023
	<u>Reason for Extension:</u> Material procurement and supply issues did not allow it to complete in Fall 2022			
2021-022	2021 Safety and Security Center Phase I	Fort Snelling	03/18/2023	03/18/2024
	<u>Reason for Extension:</u> Multi-year project, construction is still in progress			

Recommendation

Staff recommends renewing the permits provided in Table 1.



Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Karina Weelborg
Hannah LeClaire, PE

Date: February 8, 2023

Re: 3rd Street West Bridge Replacement (LMRWD No. 2022-042)

The City of Carver (City, applicant) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD). The City proposes replacing the existing 15-foot concrete arch culvert under 3rd Street between Jorgenson Street and Broadway Street in the City (Figure 1) because of significant cracking and structural concerns; the City also aims to reconstruct the road to prepare for future levee improvements to both Spring Creek and the Minnesota River. The applicant's engineer, Bolton & Menk, has provided site plans for the 3rd Street West Bridge Replacement project along with the permit application.

The proposed project consists of a street reconstruction, culvert replacement, utility reconstruction, and minor realignment of Spring Creek at the 3rd Street crossing. The project would disturb approximately 0.4 acres and create 0.001 acres of new impervious surface. The project is not within the High Value Resource Area or Steep Slopes Overlay District, but it is partially located within the 100-year floodplain of the Minnesota River. The City proposes to begin construction in May 2023.

The City has obtained a Municipal Permit from the LMRWD and is, therefore, considered the primary permitting authority for projects within the LMRWD. However, the LMRWD has retained permitting authority for Rule C—Floodplain and Drainage Alteration. The project requires an LMRWD individual permit and is subject to an LMRWD permitting review.

Summary

Project Name: 3rd Street West Bridge Replacement

Purpose: Replacement of the 3rd Street West Bridge and deficient culvert in preparation for a future levee improvement project

Project Size:

Area Disturbed	Existing Impervious Area	Proposed Impervious Area	Net Increase Impervious Area
0.4 acres	0.174	0.175	0.001

Location: 3rd Street between Jorgenson Street and Broadway Street, Carver, MN 55315

LMRWD Rules: Rule C—Floodplain and Drainage Alteration

Recommended Board Action: Conditional approval

Discussion

The LMRWD received the following documents for review:

- 3rd St. W. Bridge Replacement LMRWD Memo by Bolton & Menk, dated December 16, 2022, received December 16, 2022
- Minnesota No Rise Certification by Bolten & Menk, dated December 16, 2022, received December 16, 2022
- Carver County Flood Insurance Rate Map Excerpt by FEMA, effective December 21, 2018, received December 16, 2022
- Carver County Flood Insurance Study Excerpt by FEMA, dated December 21, 2018, received December 16, 2022
- Floodplain Work Map by Bolten & Menk, dated October 2022, received December 16, 2022
- 3rd St. W. Bridge Replacement Plan Set by Bolton & Menk, dated December 7, 2022, received December 16, 2022
- 3rd Street W Bridge Replacement SWPPP by Bolton & Menk, dated December 6, 2022, received December 16, 2022
- 3rd St. W. Bridge Replacement LMRWD Memo 02 by Bolton & Menk, dated January 10, 2023, received January 11, 2023
- Bridge Plans by Bolton & Menk, dated December 9, 2022, received January 11, 2023
- Minnesota River HEC-RAS model files, received January 11, 2023
- Spring Creek HEC-RAS model files, received January 11, 2023

The application was deemed complete on January 11, 2023, and the documents received provide the minimum information necessary for permit review.

Rule C—Floodplain and Drainage Alteration

The project is located in the Minnesota River floodplain, shown on the FEMA Flood Insurance Rate Map (FIRM) for Carver County, Panel 0219D (effective December 21, 2018). The effective FIRM shows the project in FEMA Zone AE (or the 100-year floodplain) with a 100-year elevation of 723.3 NAVD88 between cross section V and W.

The alignment of Spring Creek will be adjusted to accommodate the proposed 12'x6' reinforced concrete box culvert, including 140 cubic yards of cut on the north side and 194.3 cubic yards of cut on the south side. The culvert will have an invert of 710.3 feet on the north side and 710.1 feet on the south side. Bolton & Menk provided hydraulic modeling based on the FEMA effective model for the Minnesota River as well as hydraulic modeling for Spring Creek. The proposed grading in the Minnesota River floodplain does not cause a rise in the 100-year flood elevation of the Minnesota River or Spring Creek. The applicant has submitted a no-rise certification by Bolton & Menk, meeting the minimum requirements of Rule C.

Although the project does not trigger LMRWD Rule B—Erosion and Sediment Control, an erosion control plan is required to comply with Rule C. The applicant provided an Erosion Control Plan and Stormwater Pollution Prevention Plan, but contact information for the contractor(s) and person(s) responsible for the inspection and maintenance of all erosion and sediment control features is required before the LMRWD can issue a permit.

Recommendations

Based on our review of the project, we recommend conditional approval contingent on receipt of the following:

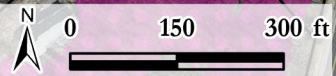
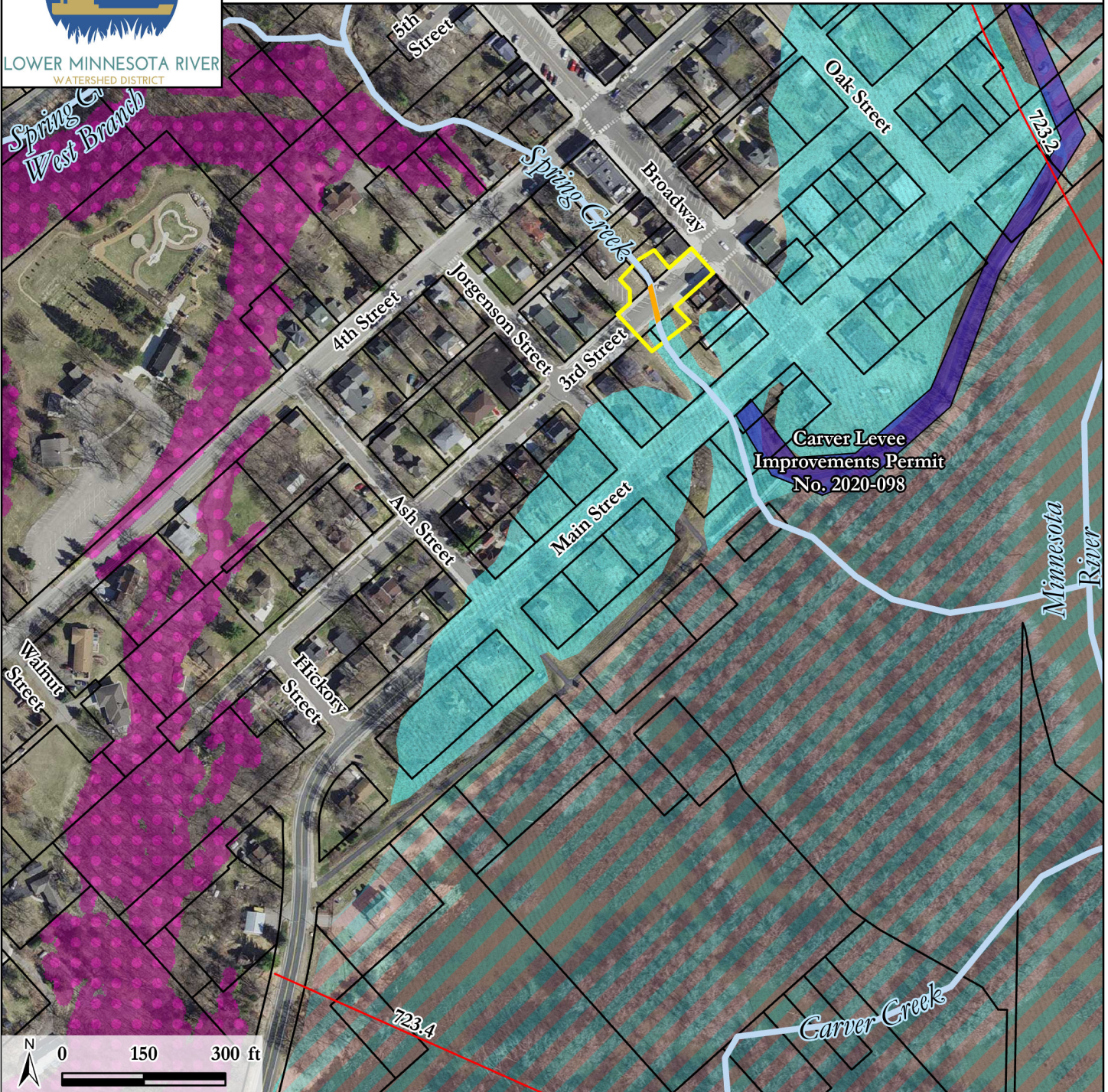
- Final construction plans signed by a professional engineer
- Name and contact information for all contractors undertaking land-disturbing activities as part of the proposed project
- Name and contact information for the person(s) responsible for the inspection and maintenance of all erosion and sediment control features

Attachments

- Figure 1—3rd Street Bridge Replacement Project Location



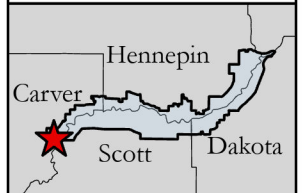
Figure I: 3rd Street Bridge Replacement Project Location
LMRWD No. 2022-042



Legend

- Project Location
- Waterways
- Proposed 12' x 6' Box Culvert
- 100-yr Floodplain
- Steep Slope Overlay District
- FEMA Cross Sections
- Parcels
- Past LMRWD Permits

LMRWD Watershed Location Map





Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Karina Weelborg
Hannah LeClaire, PE

Date: February 10, 2023

Re: Interstate 35W Resurface and Auxiliary Lane Project (LMRWD No. 2022-041)

The Minnesota Department of Transportation (MnDOT) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD) for improvements to Interstate 35W (I-35W) in Bloomington, Minnesota as shown in Figure 1. The applicant has provided site plans for the I-35W Resurface and Auxiliary Lane project (Project) along with the permit application.

The proposed Project consists of road resurfacing, drainage, and Americans with Disabilities Act (ADA) improvements, and the construction of auxiliary and acceleration lanes. The Project is located within the LMRWD and the Nine Mile Creek Watershed District. Although 57.4 acres of the project drainage area are jurisdictionally within the Nine Mile Creek Watershed District, they drain towards the Minnesota River (Figure 2). Within the LMRWD, the Project disturbs 4.17 acres, reconstructs 0.96 acres, and creates 0.78 acres of new impervious surfaces. Within the Minnesota River drainage area, the Project reconstructs 1.37 acres and creates 0.78 acres of new impervious surfaces. The proposed disturbances are not located within the High Value Resource Areas, 100-yr floodplain, or Steep Slopes Overlay District.

The City of Bloomington has a LMRWD municipal LGU permit. However, because the city does not have the authority to permit MnDOT projects, this project requires an LMRWD individual permit and is subject to an LMRWD permitting review for the section of the project that is within its jurisdiction. The project has a proposed letting date of February 24, 2023, and a construction start date of May 2023.

Summary

Project Name: I-35W Resurface and Auxiliary Lane Project

Purpose: I-35W improvements including bituminous mill and overlay, construction of auxiliary and acceleration lanes, and drainage and ADA improvements

Project Size:

	Disturbed Area	Reconstructed Impervious Area	Proposed Impervious Area
Total Project	7.72 acres	2.5 acres	0.85 acres
Within LMRWD Boundary	4.17 acres	0.96 acres	0.78 acres
Within Lower MN River Drainage Area	NA	1.37 acres	0.78 acres

Location: I-35W from the Minnesota River bridge to 0.1 miles south of W 82nd St, Bloomington, MN

LMRWD Rules: Rule B – Erosion and Sediment Control
Rule D – Stormwater Management

Recommended Board Action: Conditional approval

Discussion

The LMRWD received the following documents for review:

- LMRWD individual project permit application; dated December 14, 2022; received December 15, 2022
- 2782352 LMRWD Permit Cover Letter by MnDOT; dated December 12, 2022; received December 15, 2022
- 100% Construction Plans SP 2782-352 by MnDOT; dated December 14, 2022; received December 15, 2022
- City of Bloomington Project SP 2782-358 Construction Plan Sheet for North Pond by City of Bloomington; dated March 8, 2021; received December 15, 2022
- Soil Boring Results for North Pond by Hennepin County; dated March 16, 2022; received December 15, 2022
- MnDOT Project SP 1981-124 Construction Plan Sheets for Nine Mile Filtration Basin and Wet Pond by Ames Team and Alliant Engineering; dated March 31,

- 2021; received December 15, 2022
- Stormwater modeling Results for Nine Mile Wet Pond Outlet Control Structure Weir Adjustment by MnDOT; dated December 12, 2022; received December 15, 2022; updated January 23, 2023; received January 25, 2023
 - Mapping of New and Reconstructed Impervious Areas by MnDOT; dated November 30, 2022; received December 15, 2022
 - Stormwater Modeling Summary Report for North Pond Rate Control Existing by MnDOT; dated December 8, 2022; received December 15, 2022
 - Stormwater Modeling Summary Report for North Pond Rate Control Proposed by MnDOT; dated December 8, 2022; received December 15, 2022; updated January 24, 2023; received January 25, 2023
 - OCS 20 As-Built by City of Bloomington; dated March 8, 2021; received January 25, 2023
 - 2018-301 Plan set 106 and 35W by City of Bloomington; Dated May 6, 2021; received January 25, 2023
 - H2782352 Resubmittal Cover Letter LMRWD by MnDOT; dated January 24, 2023; received January 25, 2023
 - I35W SP 2782-52 LMRWD Permit Request for Variance by MnDOT; dated February 8, 2023; received February 8, 2023
 - I-35W South Corridor Preliminary Drainage Design, Maintenance Scoping, and Cost Estimate technical memorandum by SRF; dated March 2020; received February 8, 2023
 - BMP Sizing Summary – SP 2782-352 by SRF; dated November 6, 2018; received February 8, 2023
 - Drainage Overview Map; received February 8, 2023
 - I35W MN River Bridge North – Hennepin County – As-built HydroCAD Model by MnDOT; received February 8, 2023
 - I35W MN River Bridge North – Hennepin County – As-built HydroCAD and Modified Weir with added imp Model by MnDOT; received February 8, 2023
 - I35W Watershed Coordination Email by Steven Gebauer dated May 3, 2021; received February 8, 2023
 - 11858 – I-35W (82nd to 106th) - SP 2782-352 Preliminary Ponding Design by Bob Leba; dated December 6, 2018; received February 8, 2023
 - Meeting Minutes: Watershed District Information meeting by Steve Gebauer; dated May 24, 2021; received February 8, 2023

Due to the size and complexity of the project, the LMRWD and MnDOT met three different times to discuss the details and goals of the project. The application was deemed complete on January 25, 2023. MnDOT submitted additional information on February 8, 2023, to provide a better understanding of the overall stormwater management proposed.

Background

The Project area within the I-35W corridor is a highly developed area with few undeveloped areas that are suitable for stormwater management facilities. To address these space limitations, MnDOT retained SRF Consulting Group, Inc. (SRF) to assist in determining stormwater best management practice (BMP) locations during the design process. A 2020 technical memorandum (memo) by SRF describes the BMP selection process and includes a BMP site selection matrix and associated map (Attachment 1) that summarizes the feasibility of constructing ponds at various locations along the I-35W corridor. To capture and treat stormwater runoff from the project area, six locations along the I-35W corridor were considered. Four of these locations were discarded due to difficulty routing stormwater runoff from impervious areas, poor soil, insufficient space, and other assessment criteria listed in the BMP Site Selection Matrix (Attachment 1). The remaining two locations included the existing Nine Mile Filtration Basin and Wet Pond (Nine Mile Basin) constructed as part of the I35W River Bridge Project (SP 1981-124) and the North Dry Pond constructed as part of the City of Bloomington's 2018-301 W 106th Street Improvement Project, are proposed to treat the stormwater runoff from this Project. The location of the proposed treatment facilities and their drainage areas are shown in Figure 3.

Rule B – Erosion and Sediment Control

The LMRWD regulates land-disturbing activities that affect one acre or more under Rule B. The proposed project would disturb approximately 4.17 acres within the LMRWD boundary. MnDOT has provided an erosion and sediment control plan and it generally complies with Rule B. However, before a final permit can be issued, a copy of the NPDES permit (either stormwater construction or individual) and contact information for the contractor and person(s) responsible for all erosion and sediment control are needed.

Rule D – Stormwater Management

The LMRWD regulates land-disturbing activities that create new or reconstructed impervious area greater than one acre. Within the LMRWD boundary, the project proposes 0.96 acres of reconstructed impervious surface and 0.78 acres of new impervious surface. However, a portion of the project area that drains to the Minnesota River is located in the Nine Mile Creek Watershed District. To comprehensively evaluate the Project's benefit to the Minnesota River, we included this portion of the drainage area in our stormwater management calculations. Within the Minnesota River drainage area, the Project proposes 1.37 acres of reconstructed impervious surface and 0.78 acres of new impervious surface. Stormwater runoff from the project area is captured by both the Nine Mile Basin and the North Dry Pond.

Section 4.4.1 of Rule D requires the applicant to demonstrate no increase in proposed runoff rates. MnDOT submitted a HydroCAD analysis demonstrating the existing Nine Mile Basin will provide rate control for the Project. The existing and proposed rates are

provided in Table 1 and meet the LMRWD’s rate control requirements.

Table 1. Rate Control Summary

Design Event	Existing Rates (cfs)	Proposed Rates (cfs)	Change (cfs)
2-year/24-hour	58.63	56.16	-2.47
10-year/24-hour	123.25	94.22	-29.03
100-year/24-hour	271.36	204.95	-66.41

Section 4.4.2 of Rule D requires stormwater runoff volume reduction on-site to be equivalent to one inch of runoff from new or reconstructed impervious surface. MnDOT is unable to treat the proposed impervious surface within the LMRWD boundary due to site limitations that are described in the Background section and Attachment 1. MnDOT is proposing to compensate for this by capturing and treating runoff from existing untreated impervious surfaces that currently drain to the Minnesota River. Because MnDOT proposes to treat impervious surface outside the LMRWD boundary, we calculated the volume reduction requirement for this project using the proposed impervious surface area within the Minnesota River drainage area (2.15 acres), which equates to 0.18 acre-feet of volume reduction. While the stormwater BMPs do not treat runoff from the new and reconstructed impervious within the LMRWD, they do treat sufficient runoff from within the project area that ultimately drains to the Minnesota River.

Submitted HydroCAD modeling shows the North Dry Pond, constructed for this project, provides 0.24 acre-feet of volume reduction through infiltration. For additional treatment, MnDOT proposes to elevate the outlet control structure weir of the Nine Mile Basin by 0.2 ft. Submitted HydroCAD modeling shows this increase in elevation would provide an additional 0.15 ac-ft of volume retention. The required and proposed treatment values are shown in Table 2. The project complies with LMRWD’s volume reduction requirements.

Table 2. Volume Reduction Summary

Receiving Waterbody	Volume Reduction Requirement	BMP Name	Provided Treatment Volume
Minnesota River	0.18 acre-feet	North Dry Pond	0.24
		Nine Mile Basin	0.15
		Total	0.39

Section 4.4.3 of Rule D requires no net increase from existing conditions in total phosphorus (TP) and total suspended solids (TSS) to receiving waterbodies. The

project proposes to capture 0.24 acre-feet and 0.15 acre-feet of stormwater runoff in the North Dry Pond (infiltration basin) and Nine Mile Basin (filtration basin) respectively, which is more than double the required treatment volume for the proposed project. The TSS and TP removal provided by the infiltration and filtration basin will reduce the total TP and TSS to the Minnesota River. The project meets the water quality requirements established under Rule D.

Recommendations

Staff recommends conditional approval of the Project, conditioned on the receipt of the following:

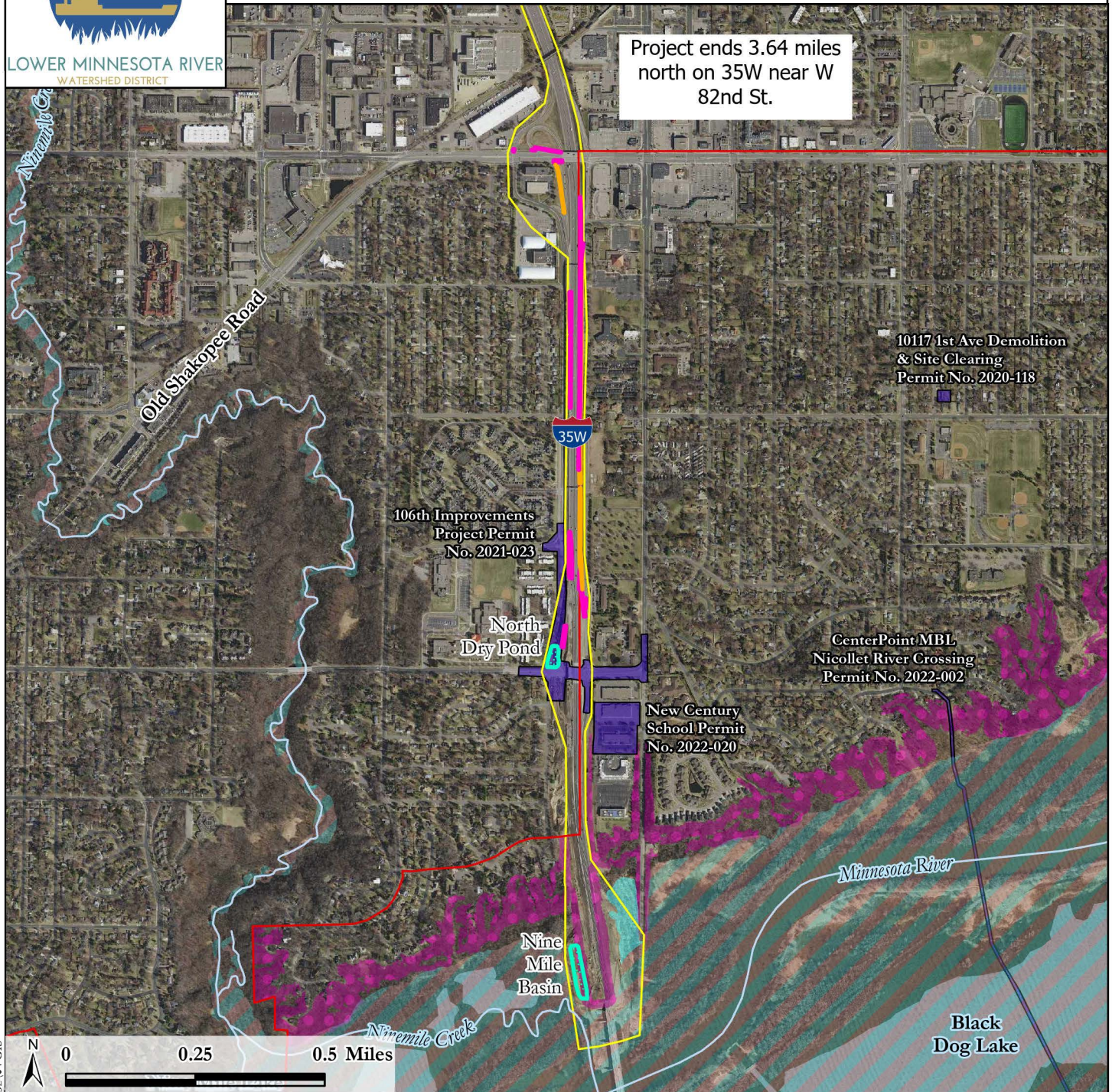
- Copy of the NPDES Construction Stormwater Permit
- Contact information for the contractor
- Contact information for the person(s) responsible for erosion and sediment control
- Documentation that the applicant has received full approval for the project from the Nine Mile Creek Watershed District.

Attachments

- Figure 1 – SP 2782-352 (TH35W) Project Location
- Figure 2 – SP 2782-352 (TH35W) Project Drainage Area
- Figure 3—SP 2782-352 (TH35W) Stormwater BMPs
- Attachment 1—BMP Site Selection Matrix



Figure 1: SP 2782-352 (I-35W) Project Location
LMRWD No. 2022-041



Projects\LMRWD\Project Reviews\02 In Process\SP 2782-352\04 GIS

Legend

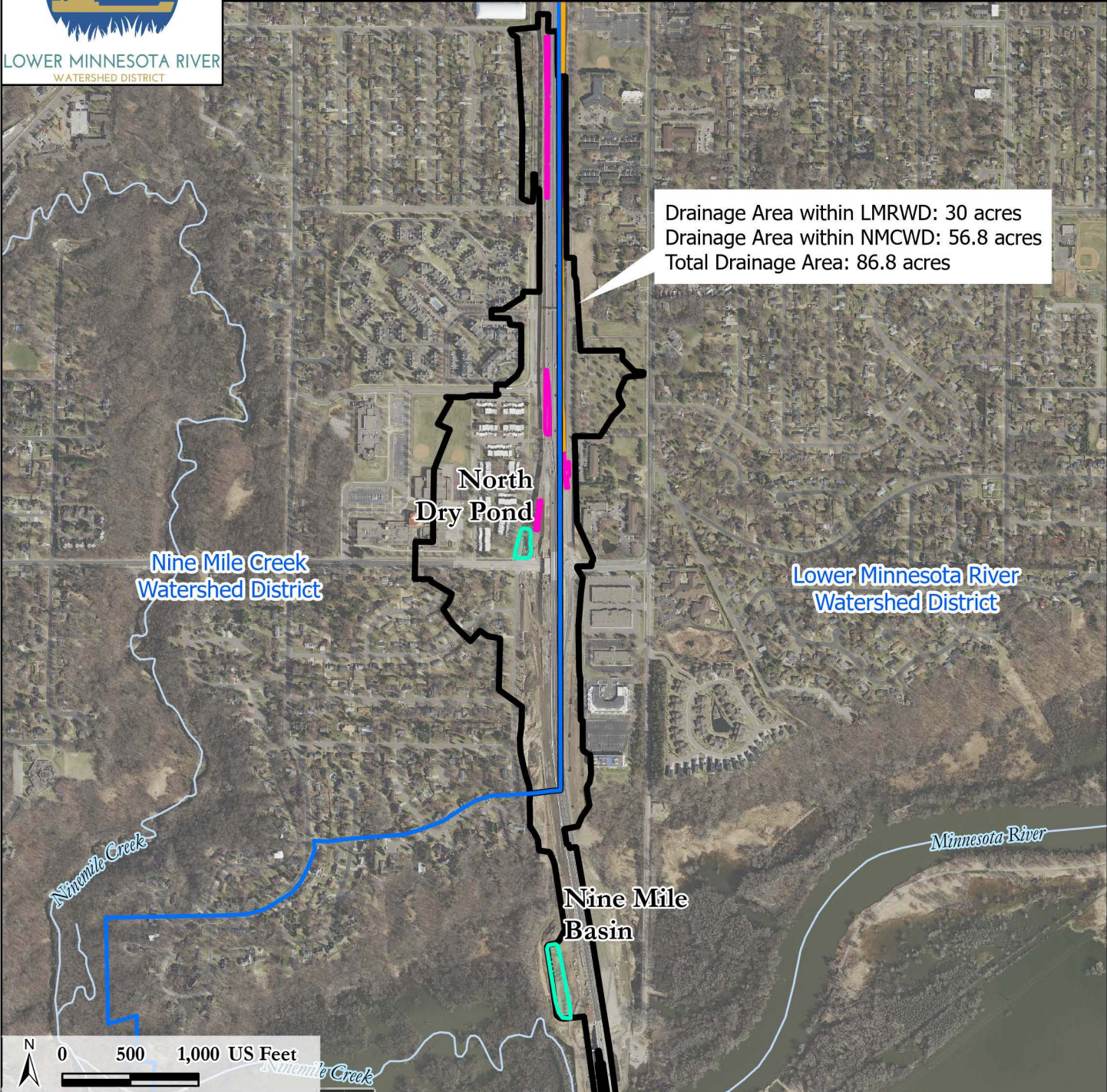
- Public Waters
- Public Waterbodies
- Project Location
- Stormwater BMP
- New Impervious
- Reconstructed Impervious
- LMRWD Boundary
- 100-yr Floodplain
- Floodway
- Past LMRWD Permits
- Steep Slope Overlay District

LMRWD Watershed Location Map

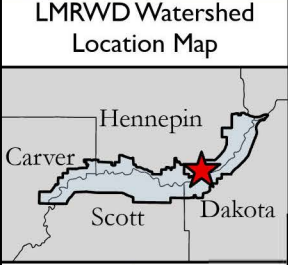




Figure 2: SP 2782-352 (I-35W) Project Drainage Area
LMRWD No. 2022-041



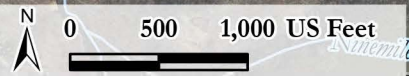
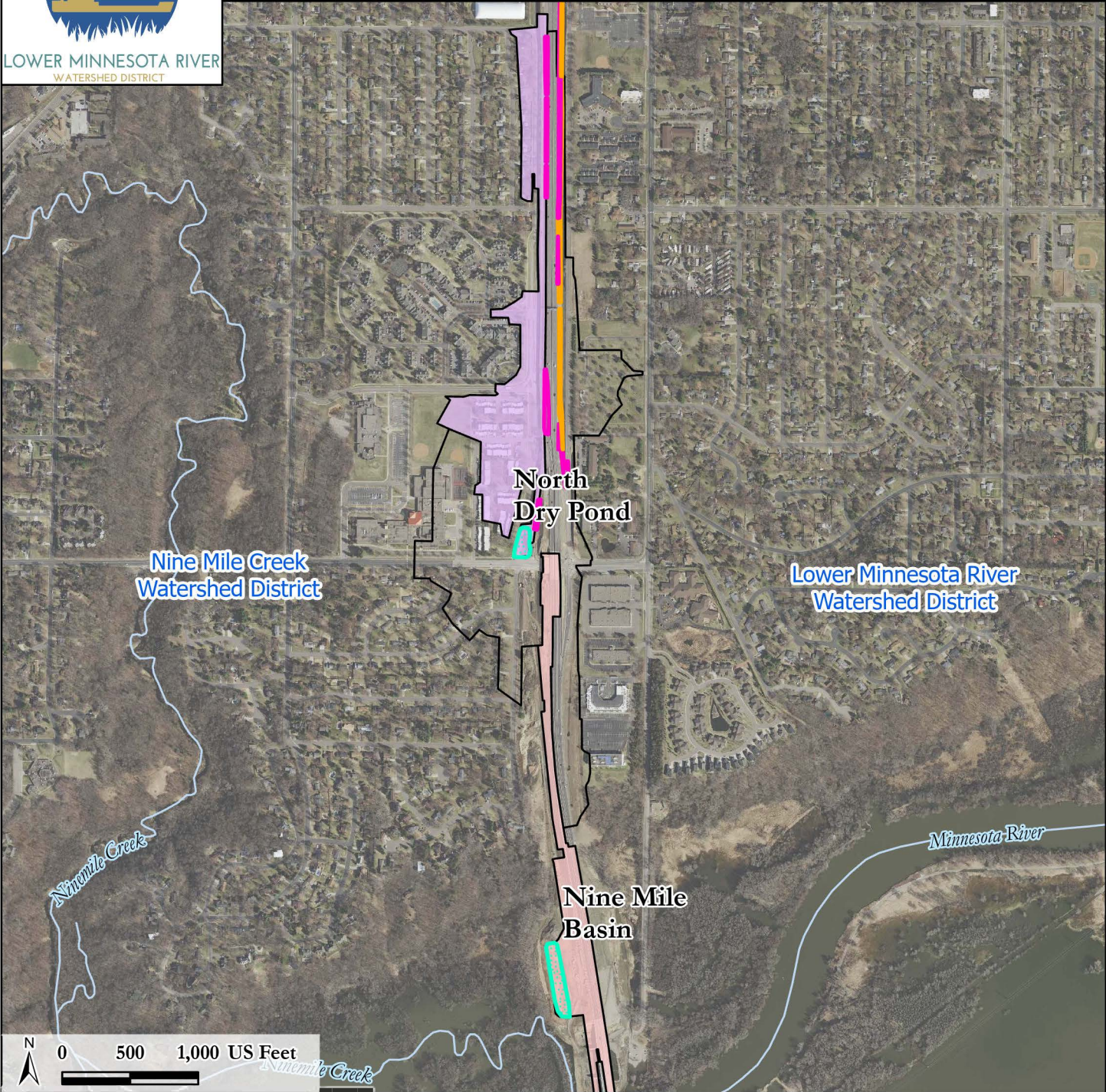
- Legend**
- Public Waters
 - Stormwater BMP
 - New Impervious
 - Reconstructed Impervious
 - LMRWD Boundary
 - Project Drainage Area to Minnesota River



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Figure 3: SP 2782-352 (I-35W) Stormwater BMPs
LMRWD No. 2022-041



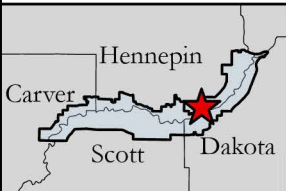
Legend

- Public Waters
- Stormwater BMP
- New Impervious
- Reconstructed Impervious

Treatment Drainage Areas

- Nine Mile Basin
- North Dry Pond
- Other

LMRWD Watershed Location Map



Projects\LMRWD\Project Reviews\02 In Process\SP 2782-352\04 GIS

BMP SITE SELECTION MATRIX

Project Name: SP2782-352 I-35W Preliminary Design (82nd St. to 106th St.)

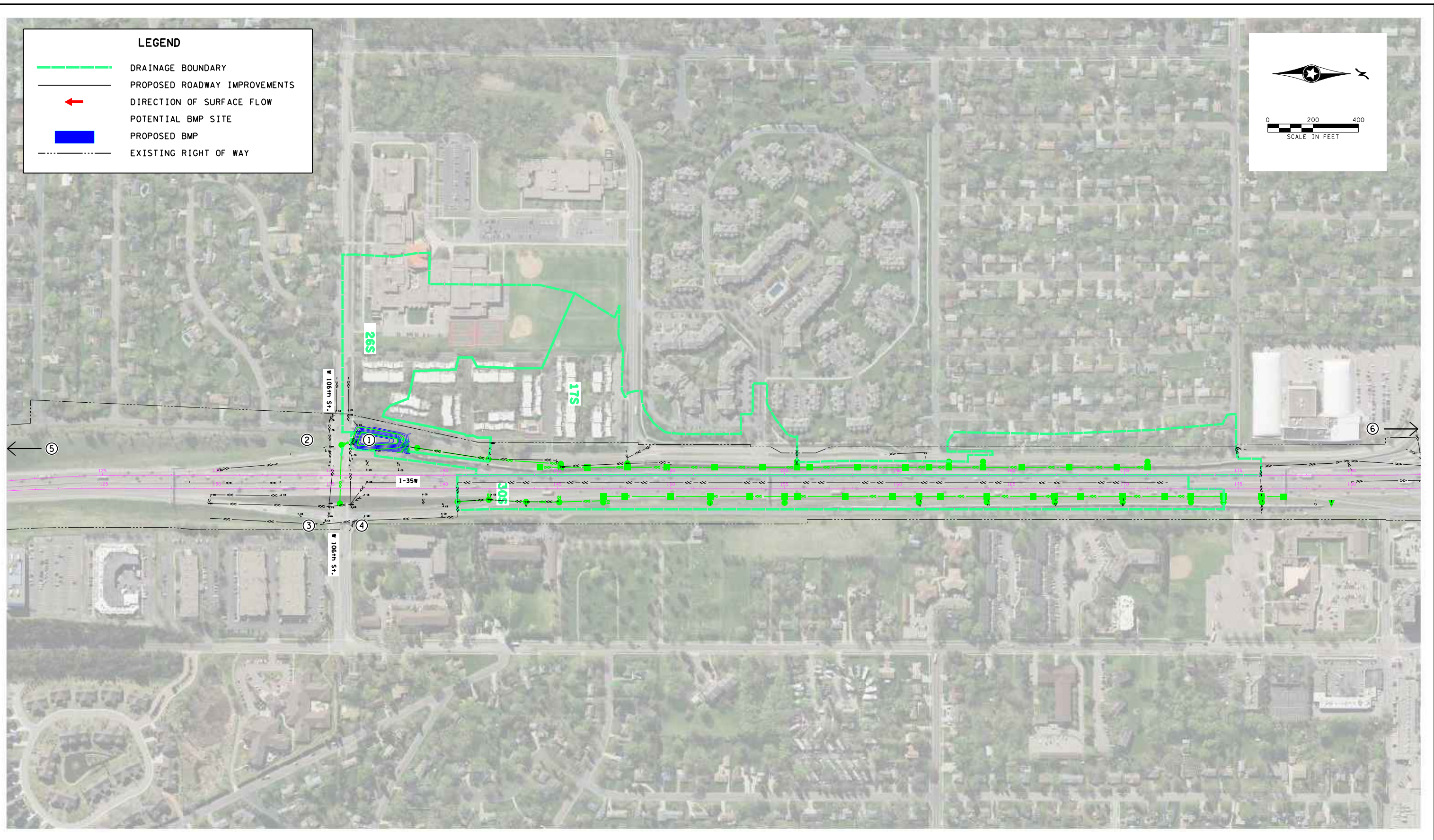
SRF Commission Number: 11858

Designed By: FEB 11/06/18

Checked By: KJL 11/19/18

Site #	BMP NAME	SOIL BORING # (P = PIEZOMETER)	SITE SUITABILITY ASSESSMENT					INFILTRATION ASSESSMENT					SITE CONSTRAINTS	PRELIMINARY BMP TYPE
			NEAR HIGH POINT (LIMITED DRAINAGE AREA)	INSUFFICIENT ROW	INSUFFICIENT SPACE (STEEP GRADES, NARROW, ETC.)	LARGE OFFSITE FLOWS	DIFFICULT ROUTING (TOO HIGH, OBSTRUCTED BY DITCH OR CULVERT, ETC.)	CONTAMINATION (SOIL OR GROUNDWATER) (TBD)	DW/SMA (MODERATE OR HIGHER VULNERABILITY OR ERA)	SOIL WITH LOW INFILTRATION CAPACITY (SOIL BORING AT OR NEAR SITE)	HIGH GROUNDWATER (P = PIEZOMETER, M = MOTTLED SOILS)	WETLAND OR CLOSE PROXIMITY TO WETLAND (INDICATIVE OF SOILS AND GROUNDWATER)		
1	-	7501P				X							• LARGE AMOUNT OF PROJECT IMPERVIOUS Routed HERE • MINIMAL ROOM FOR PRETREATMENT • LARGE OFFSITE FLOWS • HWL IN BASIN AND TROUBLE MEETING RATES	DRY RATES BASIN
2	-	7502P								M			• DIFFICULT LIES ROUTING PROJECT IMPERVIOUS UNDER W 106TH ST • SURVEY NEEDED TO VERIFY IF POND CAN BE DRAINED • PLUMBING DIFFICULTIES.	DRY RATES BASIN
3	-	7503P											• REQUIRES RELOCATION OF LARGE TRUNKLINE • FLOW SPLITTER TO TREAT LOW FLOWS ONLY • DIFFICULT ROUTING • LIMITED PONDING SPACE.	
4	-	7504P		X		X				X		X	• LARGE OFFSITE FLOW • FLOW SPLITTER NEEDED TO TREAT LOW FLOWS ONLY • R/W PURCHASE NEEDED FOR THIS BMP • SMALL TREATMENT AREA	
5	NINE MILE FILTRATION BASIN FROM I-35W DB PROJECT (S.P. 1981-124)												• RAISE WQV DEPTH TO ACCOMMODATE PART OR ALL OF AUX LANE IMPERVIOUS SURFACE INCREASE	EXPANSION OF I-35W RIVER BRIDGE DESIGN BUILD NINE MILE FILTRATION BASIN
6	CONSIDERATION OF OTHER SITES ADJACENT TO 98TH		X										• SITES WERE RULED OUT DUE TO NOT DRAINING TO THE SAME RESOURCE OF CONCERN.	

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BMP SITE SELECTION MATRIX FIGURE

SP 2782-352 I-35W Preliminary Design (82nd St. to 106th St.)
Bloomington, MN

Job # 11858
12/19/2019

Figure

Table I: LMRWD Permit Program Summary — February 8, 2023



Permit No.	Project Name	City	Status	Pre-Permit Meeting	Date Received	Date Applicant Considered Complete	Board Actions			On Hold / Cancelled	Permit Issued	Permit Expiration Date	Renewed	Inspection Date	Date Permit Closed
							Information Only	Conditional Approval	Approval						
2019-085	Minnesota Bluffs LRT Regional Trail Repair	Chanhassen	Closed	-	12/12/2019		-			-	5/20/2020	June 2023	-	7/6/2022	7/22/2022
2019-065	Trunk Highway 101 Improvements	Chanhassen	Closed		11/8/2019			11/20/2019			11/20/2019			7/6/2022	11/22/2022
2020-100	Peterson Farms Road Maintenance	Chanhassen	Closed	-	5/6/2020	5/6/2020	-	-	5/20/2020	-	5/21/2020	5/21/2021	-	7/19/2022	8/11/2022
2020-103	Prairie Heights Development	Eden Prairie	Expired	-	5/27/2020	6/5/2020	-	6/17/2020	-	-	10/23/2020	10/23/2021	-	7/6/2022	-
2020-105	Freeway Landfill Expansion	Burnsville	Pre-Permit	-	8/19/2022		9/21/2022								
2020-108	Hawthorne Ridge (2019-066)	Carver	Cancelled by Applicant	-	6/23/2020	-	7/15/2020	-	-	-	-	-	-	-	-
2020-110	CSAH 11 Reconstruction	Carver	Active Permit	-	9/28/2020	11/3/2020	-	12/16/2020	-	-	4/13/2021	4/13/2022	4/20/2022	7/26/2022	-
2020-112	Vierling Industrial Project	Shakopee	Closed	-	6/25/2020	6/29/2020	-	7/15/2020	-	-	Not Issued		-	7/19/2022	10/14/2022
2020-113	Fort Snelling Redevelopment (2019-057)	Fort Snelling	Active Permit	-	7/20/2020	8/12/2020	-	8/19/2020	-	-	9/11/2020	8/19/2022	7/20/2022	7/20/2022	-
2020-115	Quarry Lake Park Improvements and Mountain Bike Trail	Shakopee	Closed	-	7/23/2020	9/8/2020	-	9/16/2020	-	-	9/16/2020	9/16/2021	-	8/5/2022	3/17/2022
2020-116	Shakopee Memorial Park Pedestrian Bridge	Shakopee	Closed	-	8/24/2020	10/5/2020	-	10/21/2020	-	-	10/23/2020	10/23/2021	-	7/6/2022	7/20/2022
2020-117	Greystone Headquarters	Shakopee	Closed	-	7/24/2020	9/10/2020	-	-	9/16/2020	-	9/16/2020	9/16/2021	-	7/19/2022	10/3/2022
2020-118	10117 1st Ave Demolition	Bloomington	No Permit Required	-	8/18/2020	-	-	-	-	-	-	-	-	-	-
2020-122	Cargo Van-Go	Shakopee	No Permit Required	-	8/20/2020	-	-	-	-	-	-	-	-	-	-
2020-123	Gaughan Companies Demolition	Shakopee	Closed	-	8/27/2020	8/27/2020	-	-	9/16/2020	-	9/17/2020	9/17/2021	-	7/6/2022	10/15/2021
2020-123 (amended)	Shakopee Flats	Shakopee	Closed								2/17/2021	9/17/2021		7/6/2022	
2020-124	Southbridge Crossings 6th Addition	Shakopee	Cancelled by Applicant	-	8/24/2020	-	-	-	-	3/5/2021	-	-	-	-	-
2020-126	Texas Roadhouse	Shakopee	Closed	-	9/17/2020	11/5/2020	-	-	11/18/2020	-	11/19/2020	11/18/2021	-	7/1/2022	7/26/2022
2020-131	Watermark at Savage	Savage	Cancelled by Applicant	10/7/2020	9/25/2020	-	-	-	-	-	-	-	-	-	-
2020-132	77th Street Underpass	Bloomington	Active Permit	10/18/2020	10/21/2020	11/12/2020	11/18/2020	12/16/2020	-	-	7/27/2021	7/27/2022	7/20/2022	7/28/2022	-
2020-133	Shakopee Mix Use	Shakopee	Closed	10/29/2020	11/2/2020	11/2/2020	-	-	11/18/2020	-	Not Issued				-



Table I: LMRWD Permit Program Summary — February 8, 2023



Permit No.	Project Name	City	Status	Pre-Permit Meeting	Date Received	Date Applicant Considered Complete	Board Actions			On Hold / Cancelled	Permit Issued	Permit Expiration Date	Renewed	Inspection Date	Date Permit Closed
							Information Only	Conditional Approval	Approval						
2020-135	Canterbury Crossings	Shakopee	Active Permit	-	11/19/2020	12/3/2020	-	12/16/2020	-	-	5/11/2021	5/11/2022	4/20/2022	7/26/2022	-
2020-137	5501 Warehouse South Improvements	Bloomington	No Permit Required	-	12/9/2020	-	-	-	-	-	-	-	-	-	-
2020-140	10029 Trails End Rd	Chanhassen	No Permit Required	-	12/29/2020	-	-	-	-	-	-	-	-	-	-
2021-001	Mallard Farms	Eden Prairie	No Permit Required	-	1/30/2021	-	-	-	-	-	-	-	-	-	-
2021-002	CSAH 61 Drainage Ditch	Chanhassen	Active Permit	-	2/1/2021	10/11/2021	-	-	10/20/2021	-	10/21/2021	5/31/2022	5/18/2022	-	-
2021-003	Southwest Logistics Center	Shakopee	Closed	-	2/11/2021	3/12/2021	-	3/17/2021	-	-	4/21/2021	4/21/2022	4/20/2022	7/1/2022	11/22/2022
2021-005	Jefferson Chiller Project	Bloomington	No Permit Required	-	3/2/2021	-	-	-	-	-	-	-	-	-	-
2021-007	Burnsville Cemetery Expansion	Burnsville	Active Permit	3/5/2021	9/2/2021	9/17/2021	-	10/20/2021	-	-	11/17/2021	10/20/2022	-	7/28/2022	-
2021-009	Burnsville Industrial IV	Burnsville	Closed	4/2/2021	3/22/2021	3/31/2021	-	4/21/2021	-	-	4/23/2021	4/21/2022	-	7/28/2022	10/5/2022
2021-011	2021 Street & Utility Reconstruction	Shakopee	Closed	3/30/2021	3/30/2021	4/16/2021	-	4/21/2021	-	-	4/28/2021	4/28/2022	-	7/6/2022	7/25/2022
2021-012	Canterbury Park Parking Lots Phase 2	Shakopee	Closed	4/1/2021	4/2/2021	4/10/2021	-	4/21/2021	-	-	5/11/2021	5/11/2022	-	7/19/2022	7/25/2022
2021-013	Summerland Place	Shakopee	Closed	-	4/8/2021	5/27/2021	-	4/21/2021	-	-	4/26/2021	4/22/2022	-	6/20/2022	3/22/2022
2021-014	Quarry Lake Outlet	Shakopee	Cancelled by Applicant	6/7/2021	4/9/2021	9/29/2021	-	10/22/2021	-	11/19/2021	-	-	-	-	-
2021-015	Stagecoach Rd Improvements	Shakopee	Closed	4/16/2021	4/12/2021	4/30/2021	-	5/5/2021	-	-	5/7/2021	5/5/2022	-	7/1/2022	3/23/2022
2021-016	Whispering Waters	Shakopee	Active Permit	-	4/14/2021	6/4/2021	-	6/16/2021	-	-	7/13/2021	7/13/2022	7/20/2022	7/13/2022	-
2021-017	Capstone 35	Burnsville	Closed	-	4/20/2021	5/12/2021	-	5/19/2021	-	-	8/19/2021	8/17/2022	7/20/2022	7/13/2022	11/22/2022
2021-018	Jefferson Court	Shakopee	Active Permit	-	4/22/2021	5/17/2021	-	6/2/2021	-	-	6/3/2021	6/2/2023	7/20/2022	7/6/2022	-
2021-019	Cretex Site	Shakopee	Closed	4/23/2021	4/26/2021	4/30/2021	-	5/5/2021	-	-	5/7/2021	5/5/2022	-	7/1/2022	5/5/2022
2021-020	Core Crossings Apartments (Prev. Southbridge)	Shakopee	Active Permit	-	6/14/2021	7/13/2021	-	7/21/2021	-	-	8/5/2021	6/15/2023	6/17/2022	7/26/2022	-
2021-021	Spirit of Truth Church	Burnsville	Cancelled by Applicant	5/13/2021	6/16/2021	-	-	-	-	7/16/2021	-	-	-	-	-
2021-022	2021 Safety and Security Center	Fort Snelling	Active Permit	-	5/18/2021	10/29/2021	-	11/17/2021	-	-	3/18/2022	3/18/2024*	2/15/2023*	7/20/2022	-
2021-023	106th St Improvements	Bloomington	Active Permit	-	5/25/2021	5/28/2021	-	6/2/2021	-	-	6/17/2022	6/17/2022	4/20/2022	7/28/2022	-



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Permit No.	Project Name	City	Status	Pre-Permit Meeting	Date Received	Date Applicant Considered Complete	Board Actions			On Hold / Cancelled	Permit Issued	Permit Expiration Date	Renewed	Inspection Date	Date Permit Closed
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2021-025	TH 13	Savage	Active Permit	-	6/11/2021	6/15/2021	-	2/16/2022	-	-	5/20/2022	05/20/2024*	02/15/2023*	7/13/2022	-
2021-026	TH 55	Ft Snelling, Mendota, Mendota Heights	No Permit Required	-	6/30/2021	-	-	-	-	-	-	-	-	-	-
2021-027	Minnesota River Greenway Trail	Eagan	Upcoming	-	8/17/2021	11/2/2021	-	11/17/2021	-	-	-	-	-	-	-
2021-029	Northland Paving	Burnsville	No Permit Required	6/29/2021	7/6/2021	-	-	-	-	-	-	-	-	-	-
2021-030	Building Renovation Park Jeep	Burnsville	Active Permit	-	7/9/2021	7/16/2021	-	9/15/2021	-	-	6/21/2022	6/21/2023	-	-	-
2021-031	Caribou Coffee	Savage	Closed	6/1/2021	7/9/2021	8/10/2021	-	8/18/2021	-	-	8/19/2021	-	-	7/13/2022	10/4/2022
2021-032	I-35W Auxiliary Lane	Bloomington	Pre-Permit	5/24/2021; 8/31/21	-	-	-	-	-	-	-	-	-	-	-
2021-033	Minnesota MASH & 130th St Extension	Savage	Active Permit	6/23/2021	9/17/2021	-	-	6/15/2022	-	-	6/17/2022	6/17/2023	-	-	-
2021-034	Circle K Holiday Station Stores	Savage	Closed	8/25/2021	7/26/2021	9/10/2021	-	9/15/2021	-	-	10/19/2021	9/15/2022	-	7/13/2022	7/12/2022
2021-035	I35W Frontage Trail	Burnsville	Active Permit	-	12/15/2021	12/22/2021	-	1/19/2022	-	-	11/3/2022	11/3/2023	-	-	-
2021-039	River Bluffs Improvements	Shakopee	Active Permit	-	7/23/2021	8/12/2021	-	8/18/2021	-	-	10/1/2021	8/18/2022	-	7/6/2022	-
2021-040	Canterbury Independent Senior Living	Shakopee	Active Permit	-	8/11/2021	8/19/2021	-	9/15/2021	9/15/2022	-	8/19/2022	10/1/2023	-	7/26/2022	-
2021-041	Line 0832	Burnsville	Closed	-	9/7/2021	9/7/2021	-	9/15/2021	-	-	9/17/2021	9/15/2022	-	7/28/2022	6/27/2022
2021-042	Hwy 13 & Lone Oak	Eagan	Active Permit	-	8/27/2021	9/16/2021	-	10/20/2021	-	-	10/22/2021	6/30/2023	9/21/2022	-	-
2021-043	Junction 35W & 13, LLC	Burnsville	No Permit Required	-	9/2/2021	-	-	-	-	-	-	-	-	-	-
2021-044	Storage Mart Phase 4 (1900 Stoughton Ave)	Chanhassen	No Permit Required	-	9/7/2021	-	-	-	-	-	-	-	-	-	-
2021-045	Triple Crown Residences Phase II	Shakopee	Active Permit	-	9/22/2021	10/27/2021	-	11/17/2021	-	-	11/19/2021	11/17/2023	10/19/2022	7/26/2022	-
2021-046	CenterPoint Dakota Station Facility	Burnsville	Closed	-	9/21/2021	10/15/2021	-	10/20/2021	-	-	10/22/2021	10/22/2022	-	7/28/2022	9/12/2022
2021-047	River Valley Industrial Center	Chanhassen	On Hold	-	9/21/2021	-	-	-	-	10/1/2021	-	-	-	-	-
2021-048	Minnesota River Greenway Railroad Bridge	Eagan	Pre-Permit	9/28/2021	-	-	-	-	-	-	-	-	-	-	-
2021-049	Stump Road Maintenance	Bloomington	Closed	10/20/2021	10/22/2021	10/29/2021	-	11/17/2021	-	-	11/19/2021	11/17/2022	-	7/28/2022	9/5/2022



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Permit No.	Project Name	City	Status	Pre-Permit Meeting	Date Received	Date Applicant Considered Complete	Board Actions			On Hold / Cancelled	Permit Issued	Permit Expiration Date	Renewed	Inspection Date	Date Permit Closed
							Information Only	Conditional Approval	Approval						
2021-050	Spring Valley Cir & Wentworth Ave S	Bloomington	No Permit Required	10/27/2021	-	-	-	-	-	-	-	-	-	-	-
2021-051	Blue Lake Siphon Landscape Restoration	Eden Prairie	No Permit Required	10/5/2021	10/28/2021	-	-	-	-	-	-	-	-	-	-
2021-052	Shakopee Dental Office	Shakopee	Construction Complete	-	11/3/2021	12/14/2021	-	12/15/2021	-	-	12/17/2021	12/15/2022	-	7/13/2022	-
2021-056	Twin Overlook	Bloomington	No Permit Required	-	12/7/2021	-	-	-	-	-	-	-	-	-	-
2021-057	Cliff Road Ramp	Burnsville	Active Permit	-	12/14/2021	1/4/2022	-	1/19/2022	-	-	6/8/2022	6/8/2023	-	7/13/2022	-
2021-058	MAC Gate Security Improvements	Fort Snelling	Active Permit	-	12/15/2021	12/16/2021	-	1/19/2022	-	-	4/27/2022	10/31/2023*	2/15/2023*	7/28/2022	-
2021-061	Merriam Junction Trail	Burnsville	Pre-Permit	1/31/2022	-	-	-	-	-	-	-	-	-	-	-
2022-001	Centerpoint Shakopee Piggings	Shakopee	No Permit Required	-	1/12/2022	-	-	-	-	-	-	-	-	-	-
2022-002	2022 MBL Nicollet River Crossing	Bloomington, Burnsville	Construction Complete	-	1/18/2022	-	-	3/16/2022	-	-	4/25/2022	4/25/2023	-	-	-
2022-003	Ivy Brook Parking East	Burnsville	Active Permit	-	1/19/2022	2/25/2022	-	3/16/2022	-	-	5/16/2022	5/16/2023	-	-	-
2022-004	CHS Savage Terminal	Savage	Incomplete	-	1/27/2022	-	-	-	-	-	-	-	-	-	-
2022-005	Chaska West Creek Apartments	Chaska	Incomplete	-	2/8/2022	-	-	-	-	-	-	-	-	-	-
2022-006	Quality Forklift	Shakopee	No Permit Required	-	2/10/2022	-	-	-	-	-	-	-	-	-	-
2022-007	Engineered Hillside	Eden Prairie	Active Permit	-	2/15/2022	3/14/2022	-	-	4/20/2022	-	4/21/2022	4/21/2023	-	-	-
2022-008	Ivy Brook Parking West	Burnsville	Active Permit	-	2/16/2022	2/25/2022	-	3/16/2022	-	-	5/31/2022	5/31/2023	-	-	-
2022-010	Quarry Lake Pedestrian Bridge and Trail	Shakopee	Conditional Approval	-	2/24/2022	-	-	4/20/2022	-	-	-	-	-	-	-
2022-011	Biffs Inc.	Burnsville	Active Permit	-	2/28/2022	3/29/2022	-	4/20/2022	-	-	8/16/2022	8/16/2023	-	-	-
2022-012	Quarry Lake Park Improvements - Roadway and Boat Launch	Shakopee	Cancelled by Applicant	-	3/17/2022	-	-	-	-	5/24/2022	-	-	-	-	-
2022-013	Normandale & 98th Intersection Improvements	Bloomington	Active Permit	-	3/22/2022	4/1/2022	-	4/20/2022	-	-	4/22/2022	11/30/2023*	02/15/2023*	-	-
2022-014	TH 41/CSAH 61 Improvements	Chaska	Active Permit	2/16/2021; 1/6/2022	3/23/2022	5/11/2022	-	5/18/2022	-	-	12/13/2022	12/13/2023	-	-	-
2022-015	Xcel Driveway	Shakopee	Incomplete	-	4/20/2022	-	-	-	-	-	-	-	-	-	-
2022-016	Organic Recycling Facility Relocation	Louisville Townsh	Incomplete	-	4/20/2022	-	-	-	-	-	-	-	-	-	-



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2022-017	PLOC Channel Stabilization	Shakopee	Active Permit	-	6/30/2022	7/5/2022	-	-	7/20/2022	-	7/21/2022	7/21/2023	-	-	-
2022-018	Lakota Lane	Chanhausen	Under Review	-	4/19/2022	-	5/18/2022	-	-	-	-	-	-	-	-
2022-019	TH 494 SP 2785-433	Eagan and Bloomington	Conditional Approval	-	4/21/2022	6/24/2022	-	7/20/2022	-	-	-	-	-	-	-
2022-020	New Century School	Bloomington	No Permit Required	-	4/28/2022	-	-	-	-	-	-	-	-	-	-
2022-021	Oak St N (CenterPoint Energy)	Chaska	Active Permit	-	4/29/2022	-	-	-	6/15/2022	-	6/17/2022	6/17/2023	-	-	-
2022-022	Ace Rent A Car	Fort Snelling	Incomplete	-	5/10/2022	-	-	-	-	-	-	-	-	-	-
2022-023	494 Corridors of Commerce	Fort Snelling	Pre-Permit	5/3/2022	5/19/2022	-	7/20/2022	-	-	-	-	-	-	-	-
2022-024	Gedney Pickles Holding Pond Restoration	Chanhausen	Active Permit	6/16/2022	8/10/2022	-	-	9/21/2022	-	-	11/14/2022	11/14/2023	-	-	-
2022-025	10561 E Riverview Drive	Eden Prairie	No Permit Required	-	6/22/2022	-	-	-	-	-	-	-	-	-	-
2022-026	10521 Spyglass Drive	Eden Prairie	Active Permit	5/31/2022	7/13/2022	8/8/2022	-	-	7/20/2022	-	8/8/2022	8/8/2023	-	-	-
2022-027	Ivy Brook Parking Northeast	Burnsville	Active Permit	-	7/5/2022	-	-	8/17/2022	-	-	8/31/2022	8/31/2023	-	-	-
2022-028	Quarry Lake Park Restroom	Fort Snelling	Active Permit	-	7/6/2022	7/8/2022	-	7/20/2022	-	-	7/22/2022	7/22/2023	-	-	-
2022-029	Reliakor	Shakopee	Closed	-	7/20/2022	-	-	8/17/2022	-	-	9/19/2022	9/19/2023	-	-	10/28/2022
2022-030	Frenchies Metals	Chaska	Incomplete	-	7/22/2022	-	-	-	-	-	-	-	-	-	-
2022-031	RSI Marine (Great Plains Blvd)	Chanhausen	Pre-Permit	-	7/18/2022	-	8/17/2022	-	-	-	-	-	-	-	-
2022-032	PMP Street Maintenance	Bloomington	No Permit Required	-	8/31/2022	-	-	-	-	-	-	-	-	-	-
2022-033	Dred Scott Fields Area	Bloomington	No Permit Required	-	8/31/2022	-	-	-	-	-	-	-	-	-	-
2022-034	Valleyfair Parking Lot Expansion	Shakopee	Conditional Approval	-	9/26/2022	10/11/2022	-	10/19/2022	-	-	-	-	-	-	-
2022-035	Concourse G Infill Pods 2-3 EAW Review	Fort Snelling	No Permit Required	-	9/30/2022	-	-	-	-	-	-	-	-	-	-
2022-036	Structures, Inc.	Chaska	Conditional Approval	-	10/6/2022	12/2/2022	-	12/14/2022	-	-	-	-	-	-	-
2022-037	Peterson Wetland Bank	Eden Prairie	Pre-Permit	-	10/3/2022	-	-	-	-	-	-	-	-	-	-
2022-038	Xcel Energy Line 5516	Chaska	No Permit Required	-	10/14/2022	-	-	-	-	-	-	-	-	-	-



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2022-039	Former Knox Site	Burnsville	Conditional Approval	-	11/3/2022	12/19/2022	-	1/18/2023	-	-	-	-	-	-	-
2022-040	Burnsville Sanitary Landfill	Burnsville	Under Review	-	11/21/2022	-	-	-	-	-	-	-	-	-	-
2022-041	SP 2782-352 35W Resurface and Auxiliary Lane	Bloomington	Conditional Approval	-	12/15/2022	-	-	2/15/2023*	-	-	-	-	-	-	-
2022-042	3rd Street Bridge Replacement	Carver	Conditional Approval	-	12/16/2022	2/2/2023	-	02/15/2023*	-	-	-	-	-	-	-
2023-001	Lakota Lane After-the-Fact	Chanhausen	Under Review	-	1/10/2023	-	-	-	-	-	-	-	-	-	-
2023-002	Eagle Creek Bridge	Savage	Under Reivew	-	1/13/2023	-	-	-	-	-	-	-	-	-	-
2023-003	Ernst & Reidele Potential Development	Chaska	No Permit Required	-	1/17/2023	-	-	-	-	-	-	-	-	-	-
2023-004	CenterPoint Hwy 13 and Lynn Project	Savage	No Permit Required	-	1/24/2023	-	-	-	-	-	-	-	-	-	-
2023-005	Cargill Savage West Safety Improvement Project	Savage	No Permit Required	-	1/25/2023	-	-	-	-	-	-	-	-	-	-
2023-006	Borca Family DNR Dewater Review	Eagan	No Permit Required	-	1/23/2023	-	-	-	-	-	-	-	-	-	-

STATUS DEFINITIONS:

- Active Permit:** Applicant has a valid permit issued by LMRWD
- Cancelled by Applicant:** Applicant withdrew their application for a LMRWD permit
- Closed:** Applicant has indicated the project has completed construction and that the permit file may be closed
- Conditional Approval:** LMRWD managers conditionally approved the permit application, pending receipt of additional information from
- Expired:** Applicant either obtained conditional approval, approval, and/or was issued a permit and the expiration date has passed
- Incomplete:** Applicant applied for a permit, but the application is incomplete
- No Permit Required:** Applicant applied for a permit, but during the completeness review, it was determined that the project did not trigger the regulatory thresholds
- On Hold:** Applicant requested their application be placed on hold
- Pre-Permit:** Applicant has requested pre-permit application reviews or meetings, but has not yet applied for a permit from LMRWD
- Under Review:** Permit application is complete and under review by LMRWD staff
- Construction Complete:** project construction is complete but permit is not closed

* Staff recommendation only, has not yet been presented to the Board for action

