



Please note the meeting will be held in person at the Carver County Government Center on the Wednesday, May 18, 2022. The meeting will also be available virtually using this [link](#).

# LOWER MINNESOTA RIVER WATERSHED DISTRICT

Lower Minnesota River Watershed District

7:00 PM

Wednesday, May 18, 2022

Carver County Government Center

602 East Fourth Street, Chaska, MN 55318

Agenda Item	Discussion
1. Call to order	A. Roll Call
2. Approval of agenda	
3. Citizen Forum	<p><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></p>
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> <p>A. Approve Minutes March 16, 2022, Regular Meetings</p> <p>B. Receive and file February and March 2022 Financial reports</p> <p>C. Approval of Invoices for payment</p> <ul style="list-style-type: none"> <li>i. Clifton Larson Allen – April 2022 Financial Accounting Services</li> <li>ii. Dakota County Soil &amp; Water Conservation District – Q1 2022 monitoring services</li> <li>iii. Safeguard – fees to order checks for LMRWD checking account</li> <li>iv. HDR Engineering, Inc. – December 2021 to April 2022 website services</li> <li>v. Naiad Consulting, LLC – March 2022 administrative services &amp; expenses</li> <li>vi. Naiad Consulting, LLC – April 2022 administrative services &amp; expenses</li> <li>vii. State of MN – publication of advertisement for interest in inclusion in an engineering pool</li> <li>viii. Rinke Noonan – April 2022 legal services</li> <li>ix. US Bank Equipment Finance – May payment on copier lease</li> <li>x. Young Environmental Consulting Group, LLC – April 2022 technical, and Education &amp; Outreach services</li> </ul> <p>D. Receive and file March 2022 Citizen Advisory Committee meeting minutes</p>

5. New Business/ Presentations	A. Metro Children’s Water Festival Sponsorship B. Sponsorship of 14 <sup>th</sup> Minnesota River Congress
6. Old Business	A. Audit and Financial Accounting Services B. Cost Share Application - S. Mueller, 10745 Lyndale Bluffs Trail - no new information to report C. City of Carver Levee D. Dredge Management – no new information to report i. Vernon Avenue Dredge Material Management site ii. Private Dredge Material Placement E. Watershed Management Plan F. 2022 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> i. Trout Streams Gaps Analysis and Management Plan ii. Lower Minnesota River Floodplain Model Feasibility Study I. Permits and Project Reviews - See Administrator Report for project updates <i>(only projects that require Board action will appear on the agenda. Informational updates will appear on the Administrator Report)</i> i. LMRWD Permit renewals ii. Minnesota MASH and 130 <sup>th</sup> Street Extension (LMRWD No, 2021-033) iii. Chaska TH 41/CSAH 61 Improvements (LMRWD No. 2022-014) iv. Prior Lake Outlet Channel 2022 Bank Stabilization (LMRWD No. 2022-017) v. 535 Lakota Lane, Chanhassen – work without a permit J. MPCA Soil Reference Values
7. Communications	A. Administrator Report B. President C. Managers D. Committees E. Legal Counsel F. Engineer
8. Adjourn	Next meeting of the LMRWD Board of Managers is 7:00 pm Wednesday, June 15, 2022.

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, May 19, 2022, Lilydale Pool & Yacht Club
- Lower MN River East 1W1P Policy Committee – Thursday, May 26, 3:00 to 5:00,
- LMRWD Citizen Advisory Committee meeting – Tuesday, June 7, 2022, 9:00 am
- 14<sup>th</sup> MN River Congress – June 15, 2022 – Kato Ballroom, Mankato, MN
- Metro MAWD – Tuesday July 19, 2022, 7:00 pm, no meeting details yet
- [Salt Symposium](#) – Tuesday & Wednesday, August 2 & 3, 2022, 8:30 am to 3:30 pm (early bird pricing ends June 30<sup>th</sup>) on-line
- USACE River Resource Forum – Tuesday & Wednesday, August 23 & 24, 2022, 8:30am to 3:00pm,
- MAWD Summer Tour – August 23 – 25m Grand Forks

For Information Only

- **WCA Notices**
  - City of Shakopee – Notice of Application – Prior Lake Outlet Channel Segment 5
- **DNR Public Waters Work permits**
  - City of Shakopee – Request for Comments - Prior Lake/Spring Lake Outlet Channel stabilization
- **DNR Water Appropriation permits**
  - None



# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### **Agenda Item**

**Item 4. B. – Receive and file April 2022 Financial Reports**

### **Prepared By**

Linda Loomis, Administrator

### **Summary**

There are no financial reports this month because of the transition to a new financial accounting system and we are in between the two.

### **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, May 18, 2022

### **Agenda Item**

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

### **Prepared By**

Linda Loomis, Administrator

### **Summary**

The Citizen Advisory Committee (CAC) did not have a quorum at its April or May meetings, so the committee has not been able to approve the March meeting minutes.

The members of the CAC that were available to meet, held a meeting at the Old Cedar Avenue Bridge site in Bloomington. In April, the CAC members that were available heard a presentation from Seth Ristow, of the Carver County Soil & Water Conservation District.

### **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, May 18, 2022

### **Agenda Item**

#### **Item 5. A. – Metro Children’s Water Festival**

### **Prepared By**

Linda Loomis, Administrator

### **Summary**

The Metro Children’s Water Festival has been virtual the past two years due to the COVID 19 Health Emergency. Organizers of the Festival annually solicit sponsors for the event. The LMRWD has been a sponsor for many years and last contributed to the event in 2020, when the event was virtual. Enough funds were raised in 2020 that sponsors were not sought in 2021.

In 2022, the organizers plan to return to an in-person event that will be held at the State Fair Grounds. They are seeking sponsors for this year’s event. In the past, the LMRWD has provided funds for transportation to the event, historically sponsoring 6 buses. This has been the level of sponsorship in past years. Six buses total \$1,650. There are funds in the 2022 LMRWD budget for this expenditure under education.

### **Attachments**

Metro Children’s Water Festival

### **Recommended Action**

Motion to sponsor 2022 Metro Children’s Water Festival



April 12, 2022

Dear Linda Loomis,

We are kicking off the fund-raising campaign for the **25<sup>th</sup> annual Metro Children's Water Festival (MCWF)**. Our last in-person festival was in 2019, before the Covid-19 pandemic. At that festival, we hosted 1,925 students from 24 schools around the metro area. Due to the Covid-19 pandemic, the festival switched to a virtual format for 2020 and 2021. The 2021 virtual festival hosted 1,892 students. The planning committee (committee), who organizes the MCWF, is hoping to hold the festival in-person for 2022. The committee is having conversations with school administrators, principals and teachers, along with public health officials, to discuss safe-guards that would need to be put in place for to ensure a safe festival for all. As this planning is taking place, the committee is fully prepared to switch to an on-line festival at any time it is necessary. But we are cautiously optimistic and excited at the idea of hosting at least some student's in-person.

### **What is the Children's Water Festival?**

The festival is an interactive, hands-on, educational outreach program. The festival educates, motivates and challenges children to understand, conserve and protect water resources. It is one of the premier K-12 education events in the metro area and helps teachers achieve state and school district science standards for 4<sup>th</sup> grade. The festival is one of the largest education collaborations in the metro area and has been increasing awareness of water issues and solutions in students and adults for almost 25 years. Since it began in 1998 over 26,100 and 1,003 teachers have attended the in-person festivals.

### **Why sponsor the Children's Water Festival?**

- It provides free education on water resources to 4<sup>th</sup> graders in the metro area.
- It inspires students to learn more about water resources and protect clean water for future generations.
- It provides science enrichment that helps teachers meet state education standards.
- It creates enthusiasm and awareness around one of our most precious resources.
- Be recognized as a business or entity that supports water and environmental learning. Sponsors are recognized at the festival, in the festival booklet, on <https://metrocnwf.org/sponsors/>, through press releases and articles, and receive a certificate of sponsorship. We can provide the CWF logo to put on your website.

### **How will funds be used?**

The festival is provided free to students. Sponsored funds cover rental charges for the State Fair Grounds where it's hosted, presenter fees, food & beverages for volunteers and presenters, materials for certain activities, and website hosting and maintenance. Sponsorship also covers some busing costs for schools that cannot afford transportation. Most organizers and the planning committee members are from public and private agencies that volunteer their time and expertise.

### **How to sponsor**

Fill out and return the enclosed sponsor form. Thank you for supporting this event that gives so much to the children of Minnesota and identifies the metro area as a national leader in environmental stewardship.

Learn more at <https://metrocnwf.org/>

Thank you,

Jessica Collin-Pilarski

Metro Children's Water Festival Planning Committee

651-430-6703 or [jessica.collin-pilarski@co.washington.mn.us](mailto:jessica.collin-pilarski@co.washington.mn.us)

# Metropolitan Conservation Districts



## 2022 METRO CHILDREN'S WATER FESTIVAL SPONSOR FORM

Sponsors will be recognized in the Festival Program, at Festival site, in press releases, on the website and will receive a certificate of sponsorship. The Festival Program will be distributed to all participants (teachers, presenters, sponsors and volunteers) at and after the Festival.

\_\_\_\_\_ We would like to be a Festival sponsor by funding educational materials, presenters and facility rental:  
(Please circle one.)

**\$250**

**\$500**

**\$1000**

**\$2000**

**Other \$ \_\_\_\_\_**

\_\_\_\_\_ We would like to donate materials (e.g. t-shirts, food, etc.), services or volunteers. Please ask a Festival organizer to call \_\_\_\_\_ at \_\_\_\_\_  
(contact person) (phone number)

We would like to sponsor a school(s) by paying for transportation costs: (approx. \$275/bus.)

**We would like to sponsor 6 buses**

\_\_\_\_\_ We would be interested in having a company representative help the day of the event.

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**Please make check payable to: Metro Conservation Districts**

CONTACT NAME Linda Loomis DATE May 18, 2022

COMPANY Lower Minnesota River Watershed District  
(Please print this exactly as you wish it to appear in the program.)

ADDRESS 112 East 5th Street, Suite #102, Chaska, MN 55318  
(Street, City or Town, Zip)

PHONE 763-545-4659 E-MAIL naiadconsulting@gmail.com

### PLEASE RETURN TO:

Jessica Collin-Pilarski  
Washington County  
Department of Public Health & Environment  
14949 62nd Street North  
Stillwater, MN 55082







# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### Agenda Item

#### Item 5. B. Sponsorship of 14<sup>th</sup> Minnesota River Congress

#### Prepared By

Linda Loomis, Administrator

#### Summary.

The [Minnesota River Congress](#) is a citizen led group that was formed after the Minnesota River Board disbanded in 2014. It is comprised of NGOs, Local Government officials, such as Soil & Water Conservation Districts, State Agency representatives, and citizens that are focused on the natural resource and economic health of the Minnesota River Basin.

The mission of the group is to promote citizen participation from all communities of interest and take cooperative action to protect, conserve and improve the Minnesota River System. The LMRWD has supported the group since its inception.

The LMRWD has sponsored meetings of the Congress and provided matching grants for its work influencing public policy. The Executive Director is Scott Sparlin. The LMRWD has presented at meetings of the Congress and provided volunteers to serve on different teams. Former Manager Yvonne Shirk served on the Action Team for several years.

The Congress has not met since the COVID-19 Health Emergency and is now planning to meet in-person June 15, 2022, at the Kato Ballroom in Mankato. They have asked the LMRWD to sponsor the event with a donation of \$100.

#### Attachments

Flyer for 14<sup>th</sup> Minnesota River Congress

Invoice for sponsorship of 14<sup>th</sup> Minnesota River Congress

#### Recommended Action

Motion to approve sponsorship of 14<sup>th</sup> Minnesota River Congress and authorize payment of \$100.

# 14th MINNESOTA RIVER CONGRESS

WEDNESDAY, JUNE 15, 2022

6:30-9:00 PM

Kato Ballroom - 200 Chestnut St., Mankato, MN



**WHO:** Everyone who cares about the Minnesota River Basin and is willing to help improve watershed conditions.

**WHAT:** The 14th Minnesota River Congress will focus on water storage. Water storage is a top priority way forward to improve water quality.

**WHERE:** Kato Ballroom, 200 Chestnut St., Mankato, MN

## SCHEDULE OF EVENTS

- 6:30 PM Doors open - Refreshments and cash bar
- 6:45 Introductions and Agenda Overview - Scott Sparlin  
Minnesota River Congress Water Storage Initiative, Co-Sponsor IWLA  
Scott Sparlin, Dave Zentner & David Minge IWLA, UMRI
- 7:10 Water Storage and the Minnesota River - Governor Tim Walz
- 7:20 Importance of Water Storage - John Jaschke, BWSR  
Water Storage Program Overview - Rita Weaver, BWSR
- 7:50 Minnesota Department of Agriculture  
Minnesota Department of Natural Resources  
Soil and Water Conservation Districts - Mark Schnobrich
- 8:35 Questionnaire and Planning Next Steps - Scott Sparlin
- 9:00 Adjourn



Governor Tim Walz

## FOR MORE INFORMATION:

Scott Sparlin, 507-276-2280, [sesparlin@gmail.com](mailto:sesparlin@gmail.com)



**\*\*\*Invoice\*\*\***

To: Lower Minnesota River Watershed District  
112 East Fifth Street #102  
Chaska MN 55318

From: The Minnesota River Congress  
P.O. Box 488  
New Ulm, MN 56073

For: Event Sponsorship for the **14th Minnesota River Congress** \$100.00

On 6-15-22  
Kato Ballroom, Mankato, MN

Total Due: \$100.00

Make Checks Payable to  
The Coalition for a Clean Minnesota River



# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### **Agenda Item**

#### **Item 6. A. – Audit and Financial Accounting Sponsorship**

#### **Prepared By**

Linda Loomis, Administrator

#### **Summary**

LMRWD staff is working with the Auditors, Global Portfolio Consulting, to finalize the 2021 financial audit before the June 30, 2022 statutory deadline. If the Board would like the auditor to meet with the Board to present the auditor, please provide direction to staff.

The new bank account has been opened. We do not yet have the invoice payment totally functioning yet but are working with the accountant to get it up and running next week. President Hartmann and Manager Amundson have been given authority to access all the accounts for oversight and redundancy purposes.

#### **Attachments**

No attachments

#### **Recommended Action**

Provide direction to staff regarding presentation of the budget



# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, May 18, 2022

### **Agenda Item**

#### **Item 6. C. – City of Carver Levee**

### **Prepared By**

Linda Loomis, Administrator

### **Summary.**

On April 18, 2022, the City of Carver held a meeting to update stakeholders with the progression of its Levee Project. The meeting notes are attached for the Board's information. A link to the most recent configuration of the project is also provided.

### **Attachments**

Carver Levee Stakeholder Meeting #3 Minutes

[Levee Configuration Layout](#)

### **Recommended Action**

No action recommended – for information only



## Carver Levee



### Stakeholder Meeting #3 Minutes

**April 18, 2022 | 3:00 PM – 4:00 PM | Microsoft Teams Meeting**

1. Schedule / Progress Update
  - a. Given the current funding received or anticipated, some phase of this project is anticipated in 2024 at this time. The project would be completed in phases unless full funding is received.
2. Carver County Coordination:
  - a. Trail design criteria / cross section – need to review to confirm design meets all applicable criteria.
  - b. It was mentioned that the general intent is to salvage and reinstall the existing pedestrian bridge onto new abutments that goes over the Spring Creek System.
  - c. It was mentioned that the current design intent is to reuse the core of the existing levee material to the extent possible vs full reconstruction. This is based on existing geotechnical explorations to date as well as seepage analysis.
  - d. Administrative Items
    - i. Trail and Levee use agreement - Forthcoming
    - ii. Amend memorandum of understanding with City of Carver for the authority to manage the levee. - Forthcoming
    - iii. Need to review all other existing agreements and conditions already in place.
    - iv. This is a rail corridor. Need to review what needs to be preserved with the project.
    - v. County mentioned that there is likely some contaminated soils within the existing levee system due to the rail corridor. County will provide their response action plan for this rail corridor for some additional information.
    - vi. County mentioned that this project would be disturbing an area that was previously constructed using federal funds.
    - vii. A trail detour will be needed for construction.
3. Scott County Coordination:
  - a. Trail Project Update
    - i. Schedule Update - Currently at about 50% design. Project is scheduled to be completed in phases at this point with the south portion in 2025 and the river crossing bridge in 2030. This schedule could be accelerated / compressed should outside funding be received.

- ii. Current Alignment Review – currently proposing to touchdown just east of tugboat park near Broadway Street extension in downtown Carver. This complements the plans the City currently has to redevelop the park in this area.
  - b. Information Sharing: This will likely be available this summer.
    - i. Phase 1 and 2 archaeological survey and EAW findings.
    - ii. Wetland delineation findings / next steps.
    - iii. Latest modeling information for bridge alignment, profile, hydrology.
- 4. DNR Coordination:
  - a. Minimum freeboard requirements
    - i. 3<sup>rd</sup> Street Bridge - 100 yr flood + 3' freeboard vs 10 yr local + 4' freeboard.
      - 1. 3<sup>rd</sup> Street bridge is a separate but tied project to the Spring Creek Levee System. Additional discussions will be had on this as the bridge replacement project moves into final design this summer.
  - b. CLOMR timing – likely this summer / fall.
- 5. USACE Coordination:
  - a. Initial eligibility inspection / over the shoulder review timing – likely 60% plan stage.
  - b. Freeboard requirements consistent with FEMA guidance.
  - c. Lighting and other recreational features are generally allowed in levee system. Need to work through design and make features movable to the extent possible.
- 6. LMRWD Coordination:
  - a. Grant reimbursement request is in progress.
  - b. BMI to provide copies of wetland delineation report once prepared.
  - c. The city can provide a 60% plan set to review when ready. Can also provide a presentation to the board if desired.
  - d. LMRWD has more stringent standards that must be met for floodway and floodplain fill vs DNR. Ensure all rules are being met.
- 7. Funding Updates:
  - a. \$2.25M in Federal funding has been apportioned to date. Continuing to work with DNR on additional funding through the Flood Damage Reduction Program.
  - b. EIS / EA – this process will be started this summer / fall after funding becomes available.
- 8. Other Discussion Items
  - a. Review any extension required for outfall pipes, lift station discharge pipes, etc. to make sure additional wetland impacts are not anticipated.
  - b. The overall “No Rise” condition for the river is being considered as the cumulative impact of all projects.
- 9. Schedule and Timing of Next Meeting

- a. Will wait until close of legislative session at which time the project schedule can be refined based on funding amounts and availability.





# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### **Agenda Item**

#### **Item 6. E. – Watershed Management Plan**

### **Prepared By**

Linda Loomis, Administrator

### **Summary**

The LMRWD Comprehensive Watershed Management Plan was adopted in 2018. Many of the activities included in the Capital Improvement Program (CIP) have been completed or are underway. Therefore, staff has planned a new 5-year CIP. A draft CIP is attached for the Board's review along with a Technical Memorandum prepared by Young Environmental.

Once the Board has approved the draft CIP, it will be shared with all LMRWD partners for comment, according to statutory requirements.

### **Attachments**

Watershed Management Plan Draft Implementation Program Table

### **Recommended Action**

Provide comments and direction to staff

# Technical Memorandum

**To:** Linda Loomis, Administrator

**From:** Della Schall Young, CPESC, PMP

**Date:** May 12, 2022

**Re:** Lower Minnesota River Watershed District – Watershed Management Plan Draft Implementation Program Table

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In 2018, the watershed management plan (Plan) was amended to incorporate the strategic resource evaluations and standards for high value resource areas (fens, trout streams, and trout lakes) and natural steep slopes mainly along the Minnesota River bluff. Additionally, the Implementation Program section of the Plan, which includes programs, projects, and studies, was updated to emphasize activities associated with the first five years (2018–2022). The update incorporated the acknowledgment that in 2022 the Implementation Program section would have to be updated using the 2018–2022 data for the remaining five years. It is time to amend the Plan to update the Lower Minnesota River Watershed District (LMRWD) Implementation Program for 2023–2027.

The attached draft Implementation Program Table incorporates the findings and recommendations of the following projects:

- Trout Streams Geomorphic Assessments
- Gully Inventory and Conditions Assessment
- Floodplain Lakes Paleolimnology Study
- Trout Lakes Sustainable Lake Management Plans
- Steep Slopes Vegetation Management Plan
- Assumption Creek Hydrology Restoration Project
- Dredge Site Restoration Project
- Trout Stream Gaps Analysis and Long-term Management Plan1
- East Chaska Creek Bank Stabilization Project
- Minnesota River Floodplain Model Feasibility Study1
- Minnesota River Study Area 3—Bluff Stabilization Study
- Spring Creek Project

The draft Implementation Program Table is intended to form the foundation of the Plan amendment. To move forward with the amendment, the staff asks managers to authorize moving forward with the attached draft, recognizing it will be modified with input from the technical advisory committee members, granting agencies, and other LMRWD partners.

Lower Minnesota River Watershed District—DRAFT Implementation Program (2023–2027)



Activity	Strategy	Description	Coordination Partner	2023	2024	2025	2026	2027	
<b>Administrative / Managerial</b>									
1	General Administrative Services	All strategies	General administrative services, conferences, coordination with LGUs, stakeholders and other project partners, LGU program reviews, 9-Foot Channel, and advisory committees (technical and citizen).	All District LGUs, BWSR	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
2	Perform Periodic Assessments and Program Reviews	1.3.1, 2.3.3, 5.1.2	The District will regularly assess and review its programs through use of the following: annual reports to BWSR; annual financial audits; annual water quality monitoring reports; annual reports or meetings with the LGUs to track and document local water plan implementation; periodic reviews of development plans targeting 10 percent of permits issued and the program’s equivalence with this Plan, and biannual program reviews that benchmark accomplishments against the strategies and outcome articulated in the Plan.						
<b>Administrative/Managerial Budget Sub-Total</b>				<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	
<b>Studies and Programs</b>									
1	Cost-Share Incentive and Water Quality Restoration Program	All strategies	The District values and supports efforts made by residents to help achieve the goals of the District. Through the Cost Share Incentive and Water Quality Restoration Program, the District hopes to engage citizens in community actions that protect local lakes, rivers, streams, wetlands, and fens. Applicants must meet eligibility criteria and submit an application to and be approved by the Board of Managers. The cost share and incentives will be reviewed annually. Program effectiveness will be measured in two ways: (1) by comparing water quality trends before and after projects are implemented, and (2) by how many projects are funded through the program.	All District LGUs	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
2	Education and Outreach Program	1.2.1, 4.2.3, 8.1.1, 9.1.1–4 and 9.2.1–3, 10.1.1–3	As part of the District’s public education and outreach program, support is provided for the Citizen Advisory Committee, which includes preparing monthly meeting agendas and minutes, securing educational presentations, increasing management through outreach, and developing handouts. The District’s social media accounts are managed, and quarterly content calendars are developed. Interpretive signage has been created for sites in the District with plans for additional signs at project and high resources value sites. Outreach to schools, partners, and nongovernmental organizations focusing on educational support is conducted annually. Editing and updating the District’s website is ongoing.	All District LGUs, BWSR, MPCA, Metropolitan Council, SWCDs, and neighboring WDs and WMO	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
3	Fen Stewardship Program	1.1.1, 2.3.3	The District, in partnership with the MNDNR and Metropolitan Council, will develop a fen stewardship program for the District’s fens. The effort will review historical data, assess current conditions, and develop a road map for restoration, preservation, and protection of the District’s fens. Management plans or sustainability reports will be developed for all fens (starting with Seminary Fen and Savage Fen) to effectively manage and protect these groundwater-dependent resources.	MNDNR, Metropolitan Council	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
4	Geomorphic Assessments	4.2.1	The geomorphic assessments will consider changes in trout stream alignment, baseflow, geometry, and selected stream reaches. Stream width-to-depth ratios, stream bed slopes, meander patterns, and other bed features shall be modeled according to a stable reference reach. Reference reaches are nearby, hydrologically, and geomorphically stable stream segments. A reference reach could be upstream or downstream or in a nearby watershed. This assessment is generally considered twice during the Plan cycle.	All District LGUs, MNDNR		\$100,000	\$50,000		
5	Monitoring Program and Detailed Data Assessments	2.3.1–2, 3.3.1	The District will continue to perform water quantity and quality monitoring of resources within the boundaries of the District. The District’s Monitoring Plan will be updated to include the geochemistry recommendations from the Fens Sustainability Gaps Analysis report and the monitoring parameter recommendations from the Quarry Lake Sustainable Lake Management Plan report.  Over the past few years, the District has collected a large quantity of water-quality data. The Plan includes a preliminary assessment of lake water-quality data. However, the last comprehensive data evaluation was completed in 2000. Periodic data evaluations are necessary to convert data into information that decision makers can use. Data collected for each water resource will be evaluated on a three-year or five-year cycle. As part of Strategy 1.3.1, all water resources within the watershed will	All District LGUs, MPCA, Metropolitan Council, SWCDs, and neighboring WDs and WMO	\$75,000	\$75,000	\$75,000	\$100,000	\$100,000

**Lower Minnesota River Watershed District—DRAFT Implementation Program (2023–2027)**

	Activity	Strategy	Description	Coordination Partner	2023	2024	2025	2026	2027
			be evaluated. An outcome of Strategy 1.3.1 will be groupings of water resources into high, medium, and low categories for detailed data assessments and timetables formulated for each category.						
6	Implementation of the Sustainable Lake Management Plans	3.2.1–2, 3.3.1	Sustainable lake management plans (SLMPs) were developed for trout lakes in the District in 2019. The District will implement the recommended management strategies from the SLMPs, including the following: routine vegetation surveys every five years to monitor changes in Eurasian Watermilfoil and to determine whether control is needed, and temperature profiling to determine suitability for trout habitat and the bathymetric survey of Quarry Lake.	All District LGUs		\$50,000	\$50,000		\$50,000
7	Vegetation Management Plans	7.2.1	This strategy consists of the District undertaking an effort in partnership with the DNR, USFWS, BWSR, NRCS, and NGOs (e.g., Great River Greening) to develop a vegetation management standard and plan for unique natural resources within the District. This plan would be functional for all who live, work, and invest in the District.	MNDNR, USFWS, BWSR, NRCS, NGOs				\$65,000	
8	Water Resources Restoration Fund	1.1.1, 3.2.1–2, 3.3.1	This program will fund projects sponsored by LGUs that reduce urban nonpoint source pollution, improve and protect groundwater quality, and promote surveys and studies of wetlands' (fens') health and management. Program effectiveness will be measured in two ways: (1) by comparing water quality trends before and after projects are implemented, and (2) by how many projects are funded through the program.	All District LGUs	\$125,000	\$100,000	\$100,000	\$160,000	\$150,000
9	Ike's Creek Habitat and Vegetation Study	4.2.1–2	Ike's Creek is preservable trout water; however, further investigation is needed to understand the substantial instream vegetation within the creek and the quality of the habitat within the system. The District will complete further investigation to determine whether the vegetation is beneficial or harmful to trout populations within the stream. Stream habitat quality will be assessed at each site using the modified FSHA forms, and IBIs for fish and invertebrates will be conducted the first year.	MNDNR, City of Bloomington	\$25,000	\$5,000	\$5,000	\$5,000	\$5,000
10	Trout Stream Cross Section Surveys	4.2.1	Ongoing analysis of each stream is required to document changes in stream cross sections to provide insight into how the geomorphology of the streams is changing over time. The District will prioritize specific subreaches to survey more intensively, and stream cross sections will be resurveyed once every three years.	All District LGUs, MNDNR	\$10,000	\$10,000		\$10,000	
11	Fen Private Land Acquisition Study	4.3.1	To preserve and protect fens in the District in perpetuity, the District will map and assess the values of adjacent private properties to each fen and work with corresponding municipalities to consider opportunities to purchase private fen land for conservation. If land acquisition is not feasible, the District will consider opportunities to develop agreements with private property owners to ensure management of each fen is consistent and comprehensive.	City of Savage, City of Chaska, City of Eagan, City of Burnsville, City of Mendota Heights, MNDNR		\$50,000	\$25,000		
12	Fen Qualitative Vegetation Surveys	4.1.1, 4.2.1	Quality vegetation is critical to fen viability. Qualitative vegetation surveys will be conducted to document the presence or absence of fen indicator species every two to three years, and a qualitative relevé will be conducted every five to seven years to verify whether fens are thriving or degrading. Bryophytes (mosses and liverworts) will be added as indicator species to be reviewed during the surveys. Survey results will provide an indication of the variability of the fen community structure and extent of invasive species populations.	MNDNR	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
13	Fen Geochemistry Study	3.3.1	Understanding the geochemistry of the fens is important to determine whether changes are the result of water chemistry. At least one representative well in the aquifer beneath each viable fen will be sampled for dissolved major ions and nutrients annually. In addition, the District will include a stable-isotopic ratio of oxygen and hydrogen analysis in the groundwater to determine sources of recharge water. Sampling of stable-isotopic ratios from upland surface waters in the perceived recharge areas will also be conducted to further describe the flow of recharge waters to groundwater discharging into the fens.	MNDNR, Metropolitan Council	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000

**Lower Minnesota River Watershed District—DRAFT Implementation Program (2023–2027)**

	Activity	Strategy	Description	Coordination Partner	2023	2024	2025	2026	2027
14	Brickyard Clayhole Lake Groundwater Budget Study	3.3.1	Brickyard Clayhole Lake has been considered for management as a trout lake. Much of the surface runoff that might add warm water to the lake has been diverted elsewhere, and groundwater may help sustain a cold-water fishery in the lake. Initial observations suggest that groundwater has the potential to interact with the lake. The District will determine the relationship between groundwater and Brickyard Clayhole Lake, the daily outflow and develop a water budget for the lake. This will allow the District to quantify the influence of groundwater more accurately on the lake and the effect of diverting runoff away from the lake.	City of Chaska, MNDNR		\$25,000			
15	Quarry Lake Shoreline Assessment	7.4.1	Quarry Lake is landlocked, and the water levels vary for extended periods, which has created shoreline erosion issues. The severity of the shoreline erosion will be verified by conducting a field visit and shoreline assessment.	City of Shakopee, MNDNR	\$15,000				
16	Gun Club Fen Site Reconnaissance Study	4.2.1	This study consists of a site visit to collect necessary survey data and to complete a site reconnaissance that will inform restoration techniques and design. The extent and type of information that needs to be gathered will depend on the restoration option that is pursued. For example, bankfull indicators are required for stream restoration, but not for storage options.	City of Mendota Heights, MNDNR	\$10,000				
17	Seminary Fen Animal Population Study	4.1.1	Fens are known to sustain unique and rare plant species, but they also may support other plants that are poorly understood or not studied. The District will complete a plan and monitoring techniques to better understand these populations.	City of Chaska, MNDNR		\$10,000	\$5,000	\$5,000	\$5,000
18	Gully Inventory Drone Survey	7.3.1	The 2020 and 2021 Gully Inventory and Condition Assessments identified areas that were inaccessible to personnel because of safety concerns, so it is unknown whether gullies were present. As part of future gully inventory and condition assessments, drone surveys will be needed to document these inaccessible areas and conditions to determine whether restoration activities may be necessary.	All District LGUs	\$100,000				
<b>Studies and Programs Budget Sub-total</b>					<b>\$502,000</b>	<b>\$567,000</b>	<b>\$452,000</b>	<b>\$487,000</b>	<b>\$452,000</b>
<b>Capital Improvements</b>									
1	Minnesota River Study Area 3—Bluff Stabilization Project	4.2.1–2, 7.5.1	Located on the north bank of the Minnesota River, this area has been prone to erosion for some time. The 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 the Area 3 bank erosion. The District will set aside 5 percent of construction costs to support the project.	Army Corps of Engineers, City of Eden Prairie		\$100,000	\$100,000		
2	Seminary Fen Restoration Site B	4.1.1, 4.2.2	A partially drained 17-acre wetland from Falls Curve Road to Old Highway 12, which is predominantly growing reed canary grass, will be restored. The restoration involves disabling the drainage system and restoring vegetation.	City of Chaska, MNDNR		\$50,000	\$25,000		
3	Seminary Fen Restoration Site C-2 Study	4.1.1, 4.2.2	Seminary Fen Ravine Site C-2 is actively discharging sediment into the Seminary Fen Wetland Complex. This project will conduct a ravine study to estimate sediment contributions to the Seminary Fen from the C-2 site and provide methods and cost estimates for correcting the erosion problems.	City of Chaska, MNDNR		\$20,000	\$40,000		
4	Seminary Fen Restoration Site C-2 and C-3 Design and Construction	4.1.1, 4.2.2	The final design and construction will be done for the Ravine Sites C-2 and C-3, which are discharging sediment into the Seminary Fen Wetland Complex.	City of Chaska, MNDNR			\$55,000	\$50,000	\$65,000
5	Eagle Creek Bank Restoration at Town and Country RV Park Feasibility Study	4.2.1, 7.4.1	Signs of hillslope failure have been observed near the campground on the Main Branch of Eagle Creek, which is an added environmental stressor on the stream. The District will assess the eroding banks at the campground and determine the urgency for stabilization of Eagle Creek.	MNDNR, City of Savage		\$30,000			
6	Eagle Creek Bank Restoration at Town and Country RV Park Project	7.4.1	The District will develop a design and stabilize the hillslope failure near the campground on the Main Branch of Eagle Creek to reduce sedimentation to the creek.	MNDNR, City of Savage			\$150,000		

**Lower Minnesota River Watershed District—DRAFT Implementation Program (2023–2027)**

	Activity	Strategy	Description	Coordination Partner	2023	2024	2025	2026	2027
7	Gully Feasibility Studies	1.1.1, 7.3.1	The 2020 and 2021 Gully Inventory and Condition Assessments identified high priority regions (HPRs) that should be further studied to determine whether there are opportunities to stabilize or restore the gullies to prevent further erosion and sedimentation downstream. These regions were identified based on their current advanced state of degradation and proximity to the LMRWD high value resource areas. Annually the LMRWD will coordinate with partner municipalities to determine which HPRs have local support and develop a feasibility study to identify project extents, potential restoration needs, and probable costs for grant applications and future construction.	All District LGUs	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
8	Minnesota River Floodplain Modeling	4.2.1	The Lower Minnesota River Floodplain Model Feasibility Study determined that the hydrologic and hydraulic modeling commonly used to regulate development in the floodplain and evaluate Rule C permits are out of date. The hydrologic statistical analysis, based on the USGS streamgage at Jordan, has not been updated in 20 years, missing four of the top ten recorded floods on the Minnesota River, and must be reevaluated to determine the flood flows within the LMRWD reach. Following the hydrologic update, the hydraulic model of the Lower Minnesota River should be comprehensively updated to incorporate recent developments in the floodplain, the revised flow data, and better data to evaluate the flood risk within the Lower Minnesota River floodplain. The initial capital investment of updating the hydrologic analysis and hydraulic model will be followed by annual updates to maintain the hydraulic model and incorporate the most recent data from municipalities and LMRWD permits.	Army Corps of Engineers	\$75,000	\$20,000	\$20,000	\$20,000	\$20,000
9	Fen Recharge Area Feasibility Study	3.1.1	Each fen has unique flow characteristics, and recharge areas are unknown. To better protect the fens from long-term adverse influences and changing land use in upland areas, recharge areas will be identified for each fen complex.	MNDNR, Metropolitan Council	\$20,000				
10	Brickyard Clayhole Lake Shoreline Feasibility Study	7.4.1	The shoreline condition inventory revealed some shoreline features that may be detrimental to the lake. In particular, turbid inflow and a sediment delta have been observed at the north end of the lake, and it is unknown whether an upland ravine is contributing to this discharge. Further examination is required to identify the sources and potential solutions to protect the lake from degradation.	City of Chaska, MNDNR		\$15,000			
11	Spring Creek Site 3 Design Feasibility Study	7.4.1	Site 3 is prioritized as a top at-risk site for erosion; however, a stabilization design has not been developed. The District will work with the landowner and Carver SWCD to conduct a feasibility study to determine the best approach to stabilize the area.	Carver SWCD	\$15,000	\$15,000			
12	Spring Creek Site 2 Stabilization Project	7.4.1	Site 2 is one of the most at-risk sites for erosion, and the site will be stabilized using the SWCD's design (increased riprap size and standard gradation recommended).	Carver SWCD		\$75,000	\$75,000		
13	Spring Creek Vegetation Management Project	7.4.1	The creek will be prone to further erosion without the added protection of adequate vegetation. Vegetation management (e.g., removal of invasives, native plantings, etc.), particularly in the floodplain and channel banks, will be explored with the property owners.	Carver SWCD			\$40,000		
14	Spring Creek Site 1 Stabilization Feasibility Study	7.4.1	The structures at Site 1 do not appear to be under immediate threat from Spring Creek. The District will reevaluate the need for stabilization pending the results of the monitoring and vegetation management efforts.	Carver SWCD				\$120,000	
15	Seminary Fen Drain Tile Demolition Project	4.2.3, 9.1.3	Remnant drain tiles may be affecting the hydrology of the Seminary Fen. Removing the tiles could seriously damage the fen. It has been proposed instead that people walk the suspected tile lines and physically break the tiles with a heavy handheld device like a mallet or ice chisel so they no longer convey water. The District will engage volunteers or interns to perform the drain tile demolition.	City of Chaska, MNDNR	\$5,000	\$5,000	\$5,000		
16	Dredge Site Culvert Replacement	8.3.1	A culvert near the site entrance needs to be removed and replaced. The District will work with the Army Corps of Engineers to perform the culvert replacement.	Army Corps of Engineers				\$51,500	
17	Vernon Avenue Upgrade at the Dredge Site	8.3.1	Approximately two-thirds of a mile of Vernon Avenue (from Hwy 13 to the site entrance) requires upgrading to allow for increased truck traffic. The District will coordinate with the Army Corps of Engineers to upgrade Vernon Avenue.	Army Corps of Engineers				\$62,500	
18	Eagle Creek Brown Trout Habitat Improvements Project	4.4.1	Background research indicates that the East Branch historically has been able to support a more reliable brown trout population while also having some of the worst habitat conditions in the watershed. The District will complete habitat improvements in the East Branch to support brown trout populations.	MNDNR, USFWS			\$10,000	\$20,000	\$40,000

**Lower Minnesota River Watershed District—DRAFT Implementation Program (2023–2027)**

	Activity	Strategy	Description	Coordination Partner	2023	2024	2025	2026	2027
19	Eagle Creek Beaver and Vegetation Management	4.1.1, 4.4.1	Beaver activity and dam construction can limit access to spawning sites and create fish barriers to more suitable habitats. Continued beaver management practices and management of invasive species, especially on the restored reaches, will be critical to the long-term success of the fishery.	MNDNR, USFWS					\$20,000
20	Kelly Farm Tributaries Stabilization Project	4.4.3, 7.3.1	Sediment inflows from gully formation along the Kelly Farm tributaries and the steep banks of the lower reaches are of concern for the viability of the brook trout population. The District will complete restoration of the gullies along the Kelly Farm tributaries to reduce sediment inflows to Ike's Creek.	City of Bloomington, MNDNR			\$10,000	\$20,000	\$40,000
<b>Capital Improvements Budget Sub-total</b>					<b>\$145,000</b>	<b>\$360,000</b>	<b>\$560,000</b>	<b>\$374,000</b>	<b>\$215,000</b>
<b>Total</b>					<b>\$897,000</b>	<b>\$1,177,000</b>	<b>\$1,262,000</b>	<b>\$1,111,000</b>	<b>\$917,000</b>
<b>Potential Projects—Unfunded</b>									
1	Minnesota River Assessment of Ecological and Economic Impacts of Sedimentation	2.3.1, 4.2.1	This project will examine sedimentation in the Lower Minnesota River Watershed District, including monitoring, modeling, and analyzing sediment sources, sinks, and pathways in the watershed; summarizing how sources, sinks, and pathways may have changed; and estimating the economic and ecological effects of sedimentation. The project team will look at how sedimentation (1) changes the stage-discharge relationships that may cause flooding, (2) generates costs for maintaining a commercial navigation channel on the Minnesota River, and (3) affects the watershed with its ecological conditions. Through these analyses, a new baseline can be established, and an understanding attained of how changes in land use will alter the watershed baseline and create a new condition.  In addition, the District will pursue upstream flow management that is consistent with recommendations of the NCED group using the Management Option Simulation Tool in the Le Sueur watershed and similar approaches in other watersheds to mitigate this issue.	Army Corps of Engineers		\$37,500	\$30,000	\$45,000	\$50,000
2	Minnesota River Assessment of Water Storage Benefits and Opportunities	4.2.1	Using the Agricultural Conservation Planning Framework (ACPF) and the Prioritize, Target, and Measure Application, we will determine whether a flow reduction would benefit from the placement of storage measures in key locations throughout the basin. This analysis will help us understand whether the threshold for meaningful change can be realized to recommend specific levels of storage in the basin. The analysis is needed to accomplish the desired actions: (1) hydrocorrect DEMs for the lower watershed where storage impacts are desired, (2) run the ACPF on priority subbasins to determine where storage opportunities exist, (3) develop a detailed hydrologic model if one does not exist, (4) run existing and storage scenarios to determine whether the amount of the discharges could be lowered for hypothetical rainfall events ranging from 10-year to 100-year events, and (5) summarize the saturation of storage and the maximum change anticipated in the specific agro-ecoregion.	Army Corps of Engineers		\$30,000	\$25,000	\$45,000	\$50,000
3	Lower Minnesota River Sediment Analysis	4.2.1	Previous analysis of how sedimentation has changed in the floodplain of the Lower Minnesota River has involved using pollen assemblages to date horizons. However, further analysis is required to confirm that the interpreted horizons are correct. The District will use dating of the stored core material to date the sediment to provide a more accurate understanding of sedimentation in the floodplain.	Freshwater Society, U of M		\$12,500			
<b>Potential Projects—Unfunded Budget Total</b>					<b>\$ -</b>	<b>\$80,000</b>	<b>\$55,000</b>	<b>\$90,000</b>	<b>\$100,000</b>



# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, May 18, 2022

### Agenda Item

#### Item 6. G. – Education and Outreach

#### Prepared By

Linda Loomis, Administrator

#### Summary

Jen Dullum, LMRWD Education & Outreach Coordinator, has put together a map of all the school District that students living in the LMRWD might attend. She also researched which schools are being served by other Watershed Districts or Water Management Organizations. We have discussed organizing a meeting of all the Education Coordinators from other WDs and WMOs to compare activities and determine if there are ways to coordinate and partner with each other.

The LMRWD had planned to table at Eden Prairie's Green Fair and Arbor Day Walk on April 30<sup>th</sup>. The event was cancelled due to weather. In preparing to table at that event, there is some gear that would be good for the LMRWD to purchase to use when tabling. A list follows of items Jen and I recommend the District purchase:

- A 6-foot table cover with the District logo on it
- Pop-up signage with a clean water message on it (vs. a pop-up sign with just the District name and logo - since that would be on the table cover)
- Swag (pencils, pens, pet waste bag dispenser, reusable straws...)
- Some sort of interactive display

We have discussed purchasing a 'root puller' jointly with Carver WMO and Riley/Purgatory/Bluff Creek Watershed District. If you have not seen this interactive display, it shows pictures of prairie plants, native grasses and more and then has a handle that can be pulled. It is pulled out the length of roots that the pictured plant has predominantly. It also has a handle for a typical lawn grass. The idea is to show how the native plants will hold soil and better prevent erosion.

We have not priced any of these items, but custom table covers can be found for less than \$150 and portable retractable signage can be purchased for around \$200 depending on the size ordered. Staff recommends the Board authorize staff to spend up to \$500 for equipment to use when tabling.

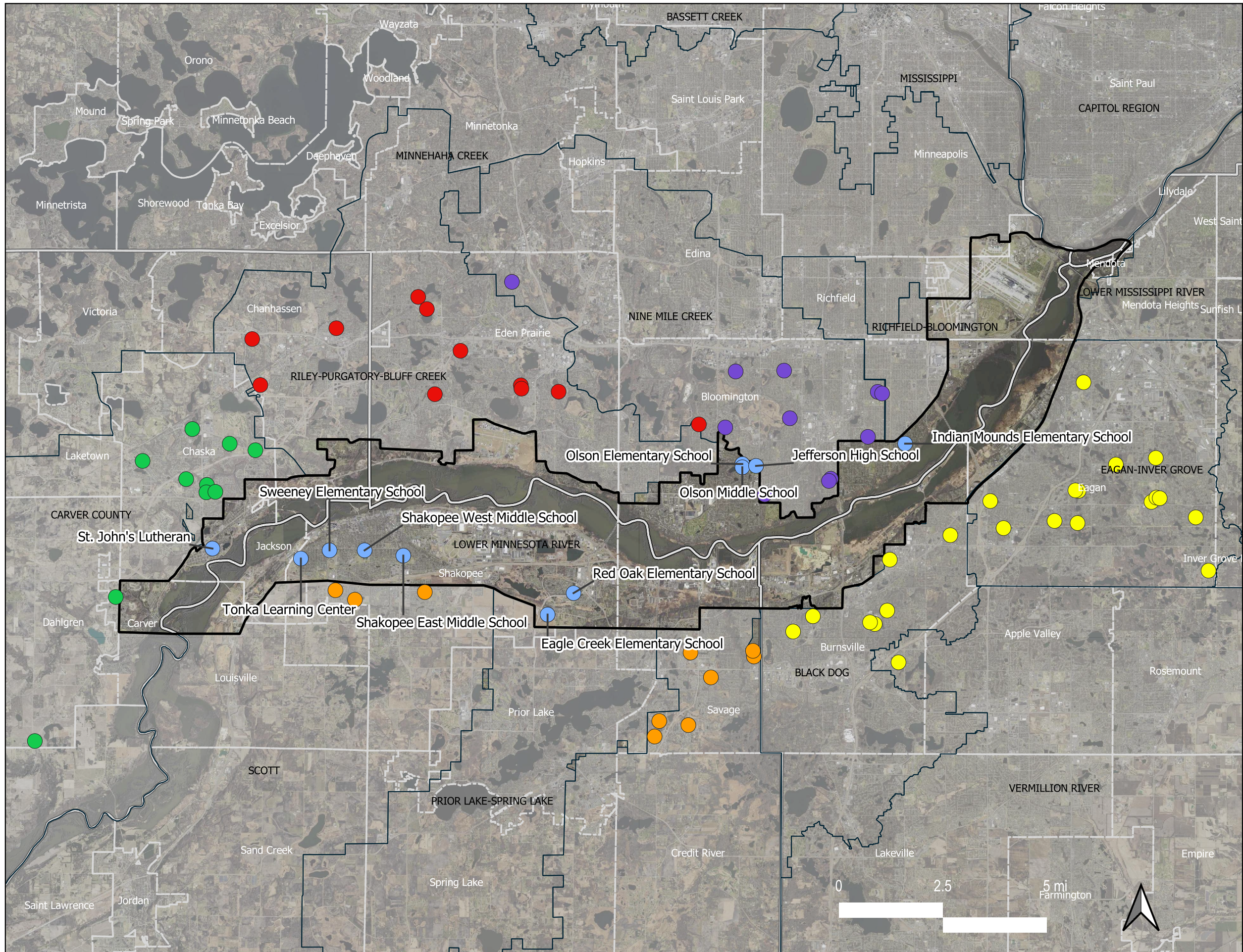
#### Attachments

No attachments

#### Recommended Action

Motion to authorize LMRWD staff to spend up to \$500 on equipment to be used when tabling



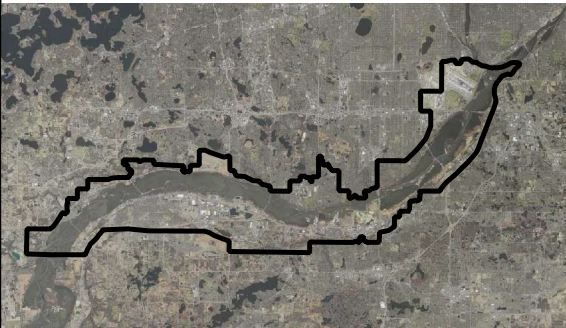


# School Outreach Programming

## LEGEND

- No Existing School Outreach Programming ●
- Carver County WMO ●
- Lower Minnesota River WD ●
- Nine Mile Creek WD ●
- Riley Purgatory Bluff Creek WD ●
- Scott County SWCD ●
- LMRWD Boundary
- Municipal Boundary
- County Boundary
- Watershed Management Organization Boundary

LMRWD Watershed Location Map





# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### Agenda Item

#### Item 6. H. – LMRWD Projects

#### Prepared By

Linda Loomis, Administrator

#### Summary

**i. Trout Streams Gaps Analysis and Management Plan**

Managers have received report for this project as certain milestones were reached. This is the final report. The report is lengthy and therefore, a link has been included rather than attaching the report in its entirety.

**ii. Lower Minnesota River Floodplain Model Feasibility Study**

In 20024, the Minnesota River flood plain model was developed by the US Army Corps of Engineers, the MN Department of Natural Resources and the LMRWD. There has been lots of development that has occurred since the Model was developed and the LMRWD was concerned that flood elevations may have increased. Young Environmental Consulting Group, on behalf of the LMRWD, reviewed the model taking into consideration all the developments that has occurred since the model was developed. The attached report is the result of that review

#### Attachments

[Trout Streams Gaps Analysis and Management Plan](#)

Lower Minnesota River Floodplain Model Feasibility Study

#### Recommended Action

Receive and file Trout Streams Gaps Analysis and Management Plan and Lower Minnesota River Floodplain Model Feasibility Study

# LOWER MINNESOTA RIVER FLOODPLAIN MODEL FEASIBILITY STUDY

May 12, 2022

FINAL

## PREPARED FOR:

Lower Minnesota River Watershed District  
112 E. 5th Street, #102  
Chaska, MN 55318

## PREPARED BY:

Young Environmental Consulting Group, LLC  
6040 Earle Brown Drive, Suite 306  
Brooklyn Center, MN 55430



LOWER MINNESOTA RIVER  
WATERSHED DISTRICT



Young Environmental Consulting  
Group, LLC

## EXECUTIVE SUMMARY

The Lower Minnesota River Watershed District (LMRWD) requested Young Environmental Consulting Group, LLC (Young Environmental), to investigate the effectiveness of LMRWD Rule C—Floodplain and Drainage Alteration, adopted in February 2020. The LMRWD is interested in determining if Rule C is functioning as intended to prevent floodplain encroachment from industrial, commercial, transportation, or residential development activities from adversely affecting flood elevations on the Minnesota River. The LMRWD is also interested in determining if the accumulated effects of multiple no-rise certified developments would have a more significant impact on the river, and if not, if Rule C is too stringent without benefit.

This study relied on permit information provided by municipal partners, previous LMRWD project reviews, and the U.S. Army Corps of Engineers (USACE) St. Paul District hydraulic model of the Lower Minnesota River. The Minnesota Department of Natural Resources (MnDNR) and municipal partners were consulted in the development of this study.

Young Environmental compiled available hydraulic modeling and floodplain permit documentation to analyze the impacts of these developments on the flood elevations of the Minnesota River. During the data review process, it became apparent that there was a gap in floodplain permit documentation due to the overlapping regulatory authorities and lack of data sharing. This is reflected by the number of floodplain revisions (Letter of Map Amendments or Letter of Map Revisions) that were not reviewed by the LMRWD nor were incorporated into the effective Minnesota River hydraulic model developed in 2004 by the USACE and the United States Geological Survey (USGS). In addition, even with the Federal Emergency Management Agency's (FEMA's) recent Flood Insurance Study (FIS) updates in Carver, Dakota, Hennepin, and Scott counties, there are discrepancies and differences in elevations on the north and south sides of the river.

With the few hydraulic models we were able to obtain for this project, the 2004 USACE model was updated to incorporate new cross-sections and development that had previously been approved with a no-rise certificate. The updated model was run for both the 100-year and floodway conditions to evaluate the effects of the no-rise developments. The modeled results did show increases in flood elevations of 0.28 feet and provided conclusive evidence that no-rise developments can affect the flood elevations on the Minnesota River.

In discussions with the MnDNR, staff noted that the LMRWD Rule C is more stringent than the state's requirements because Rule C prohibits floodplain fill in the flood fringe. The state allows this to occur so long as the flood elevation does not increase by more than 0.5 feet. Because the no-rise permits increased the flood elevations by more than half of the allowable increase, we recommend enforcing Rule C as it currently stands, along with the following recommendations:

- Develop a district-wide hydrologic model to allow for better predictions of discharge rates, velocities, and flood elevations within LMRWD, as well as aid in evaluating the effects of full build-out and climate change on the river's hydrology.
- Update the 2004 USACE hydraulic model of the Minnesota River to incorporate all identified floodplain projects; complete a data request through FEMA if necessary to obtain this information.
- Coordinate with neighboring watershed districts, Minnesota Department of Transportation (MnDOT), and the MnDNR, and share any revised modeling with partner communities for their use.
- Develop an accounting and data-sharing system for floodplain development to aid local municipalities in tracking floodplain development for future map updates. Utilize the annual meetings to share this information and ask for feedback.

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## I INTRODUCTION

As one of its management policies and rules, the Lower Minnesota River Watershed District (LMRWD) regulates land development and activities in the floodplain within its boundaries. Floodplains are an important part of the natural environment because they provide flood protection for natural resources, permanent structures, and private lands by allowing floodwaters to safely move downstream. In this report, floodplain development refers to the human development that has the potential to alter the floodplain and dynamics of flooding, such as bridge or culvert crossings, as well as the conversion of land from its presettlement state to the present land uses, not the creation or production of a new floodplain.

Floodplains are regulated by multiple agencies, including the Federal Emergency Management Agency (FEMA), the U.S. Army Corps of Engineers (USACE), the Minnesota Department of Natural Resources (MnDNR), watershed districts, counties, and municipalities. These entities share a similar goal: to maintain the hydraulic capacity of the waterway system and prevent flooding caused by human activities in the floodplain.

In 2018, Young Environmental produced a white paper on the LMRWD floodplain and drainage alteration standard, defining the standard, recommending revisions, and explaining how it affected floodplain development. The previous standard required only a no net loss of natural floodplain storage, demonstrated by providing an equal volume of excavation as floodplain fill (i.e., compensatory storage). The paper recommended the floodplain standard be revised to include an additional requirement that no grading or filling be allowed in the floodplain if it reduces the flood-carrying capacity of the watercourse. This was added to better align with FEMA and state regulations and included an additional safety requirement that basements and lowest floors of new residential and commercial structures must be at least two feet above the flood elevation.

### I.1 Purpose

The purpose of this study is to evaluate the effectiveness of LMRWD Rule C—Floodplain and Drainage Alterations mitigating the impacts of floodplain development. The intent of Rule C is to regulate alterations within the floodplain, preserve existing water storage capacity below the 100-year flood elevation to minimize the frequency and severity of high water, and allow development in the floodplain, in accordance with local regulations, that will not have an adverse impact on flood elevations.

### I.2 Floodplain Terminology

The natural functions of river and stream floodplains are to carry or hold excess water during times of flooding, provide natural habitat, and protect water quality. The placement of fill or other obstructions within the floodplain can create channel restrictions and floodplain encroachments that impair its natural functions and amplify the tendency of the river to flood and cause damage. Figure 1 presents a simple representation of a floodplain system.

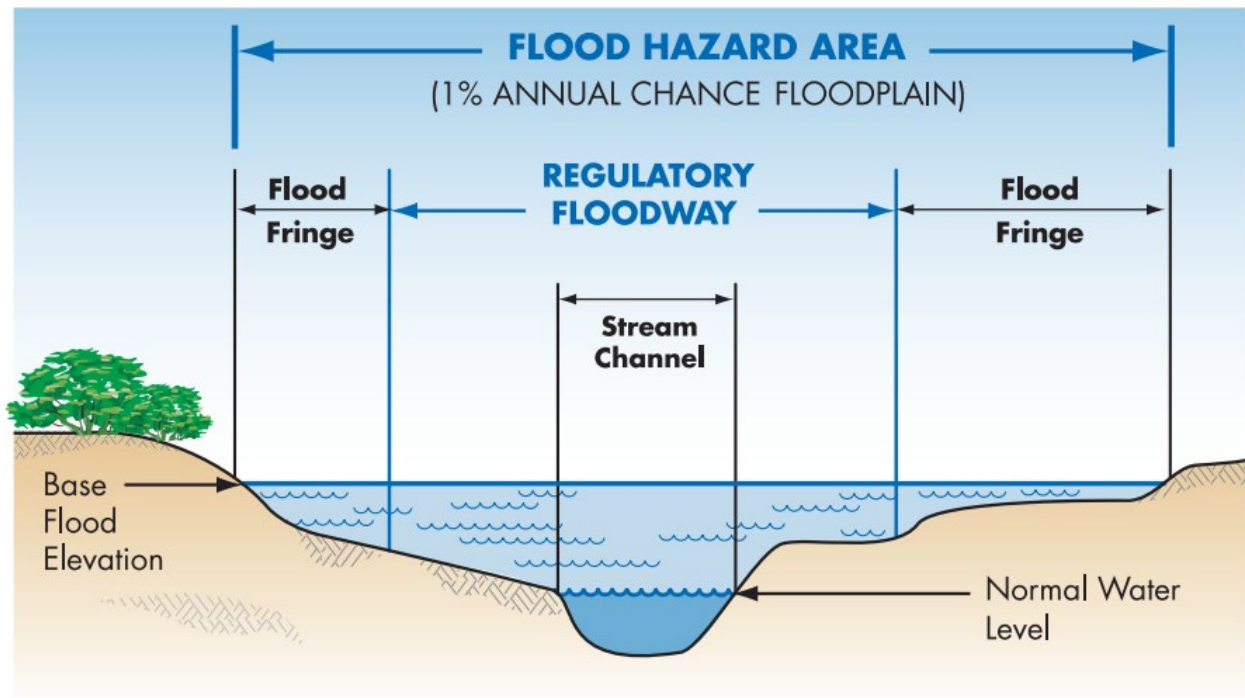


Figure 1. Riverine Floodplain Terminology (Minnesota Department of Natural Resources 2020).

**100-Year Flood:** The flood event having a probability of 1 in 100 (or a 1 percent chance) of being equaled or exceeded in a given year. Because of confusion over the term leading many to believe a flood of this magnitude only occurs once every 100 years, FEMA has started using “1 percent annual chance flood” or “base flood event” terminology.

**Base Flood Elevation (BFE):** The water surface elevation of the 100-year event flood. This elevation is determined by detailed flood studies and is commonly known as the 100-year flood level.

**Flood Insurance Rate Map (FIRM):** County or community-specific maps that delineate the flood risk developed as part of FEMA’s Flood Insurance Studies.

**Special Flood Hazard Area (SFHA):** The portion of the floodplain subject to flooding from the base flood event and/or flood-related erosion hazards. On the FIRMs and in Minnesota, these are commonly identified as Zones A, AE, and AH.

**Zone A:** The approximate 1 percent annual chance flood hazard area when a detailed flood study has not been conducted and the BFEs have not yet been determined. Despite the lack of BFE information, these areas are considered high risk.

**Zone AE:** The areas subject to flooding by the 1 percent annual chance floodplain with BFEs. Like a Zone A, these are considered high-risk areas.

**Zone AH:** The areas subject to inundation by the 1 percent annual chance shallow flooding (usually areas of ponding), where average depths are between one and three feet.

**Regulatory Floodway:** The channel of a river or watercourse and the adjacent land areas that must be reserved in order to pass the 100-year flood without cumulatively increasing flood elevations by more than a designated height. The floodway is intended to be a tool to assist local communities with floodplain management.

**Flood Fringe:** The remainder of the SFHA after the floodway has been determined. This area is generally associated with slow-moving or standing water rather than flowing water. Under FEMA and Minnesota floodplain standards, when defined, these areas may be developed provided structures are elevated above the base flood elevation.

**Floodplain:** The extents of both the regulatory floodway and the flood fringe, which when combined, encompass the entirety of the areas inundated by the 100-year flood. In Figure 1, it is represented by the Flood Hazard Area.

**Floodplain Development:** In this document, floodplain development refers to the human development that has the potential to alter the floodplain and dynamics of flooding, such as bridge or culvert crossings, as well as the conversion of land from its presettlement state to the present land uses, not the creation of new floodplain. This is consistent with the federal definition of “development” under 44 CFR 59.1, which “means any man-made change to improved or unimproved real estate, including buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.”

### 1.3 Floodplain Development in the LMRWD

Historically, the Minnesota River floodplain was home to at least six permanent Dakota villages and settlements (Shakopee Mdewakanton Sioux Community 2002) that were farmed in the summer months (Minnesota Humanities Center 2010). With the construction of Fort Snelling and European settlement in the region, railroads were constructed in the floodplain in the 1860s as the Minnesota Territory worked toward statehood (Gale Family Library 2021). In 1892, Congress passed the River and Harbor Act, which authorized the maintenance of a four-foot navigation channel in the river from the confluence with the Mississippi to river mile 25.6, which was then increased to 9 feet in depth and 100 feet wide by 1968 (US Army Corps of Engineers, St. Paul District 2007).

The construction of railroads and the dredged channel on the river paved the way for more intensive agricultural practices centered around cash crops, such as onions, and the extraction of raw natural materials, such as sand and gravel, in the floodplain. These activities supported the growth of the towns in the river valley (Dakota County Historical Society 1989). By the 1950s, traditional suburban developments were common, and new highways and bridges were constructed over the river, further changing the landscape.

Figures 2 through 7 show the change in the landscape and the development within the Minnesota River floodplain.





Figure 2. Painting of Fort Snelling and Pike Island from Mendota in the late 1800s (Minnesota Humanities Center 2010)



Figure 3. Present-day Minnesota River confluence with the Mississippi River at Fort Snelling (Minnesota Historical Society n.d.)



Figure 4. Watercolor of Pilot Knob from below Fort Snelling (Eastman 1846)



Figure 5. Present-day view of Pilot Knob from Fort Snelling. The knob was removed in 1925 as part of the Acacia Park Cemetery development (Adler 2020).



Figure 6. Newly constructed Mendota Bridge in 1926 by the Koss Construction Company from Pilot Knob (Holth 2013)



Figure 7. Present-day view of Fort Snelling from Pilot Knob (Crouser 2022)

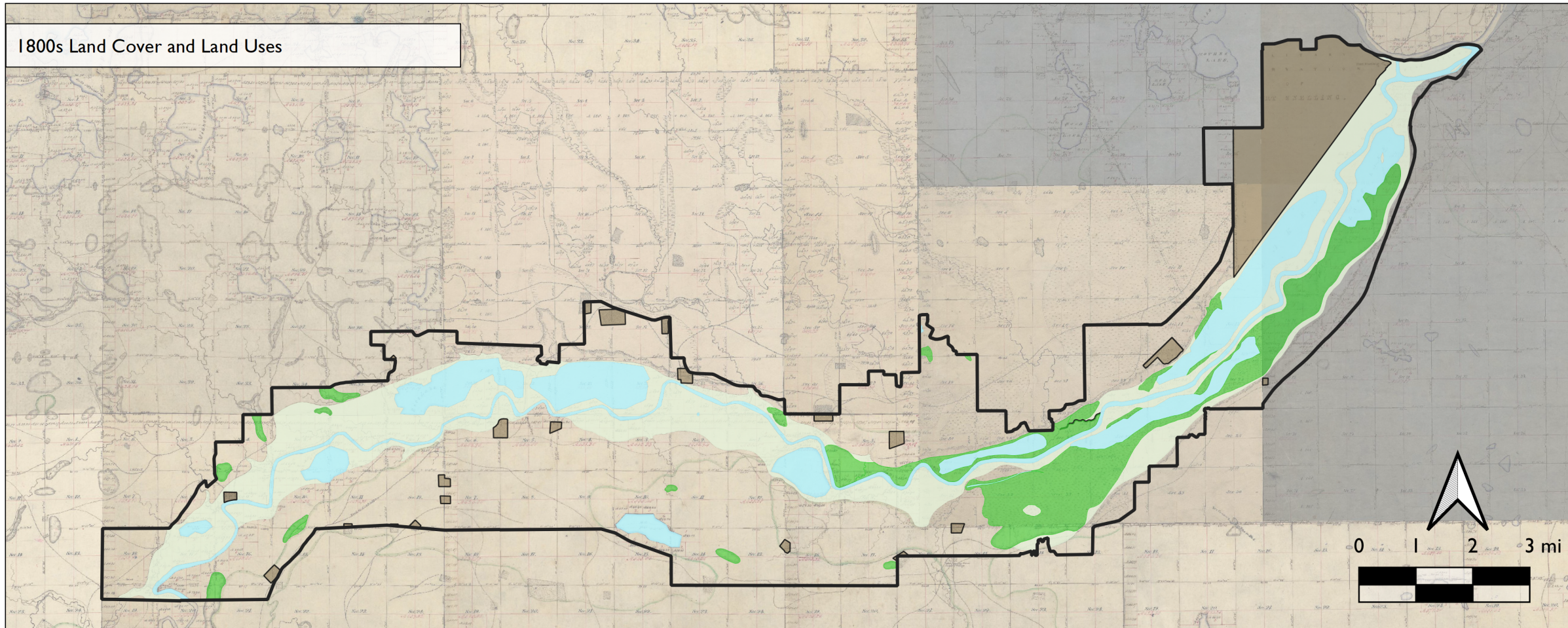
Per the Minnesota Department of Transportation (MnDOT) records, since the Mendota Bridge, 10 other active bridge crossings have been constructed across the Minnesota River channel and 11 other crossings in the Minnesota River floodplain. In addition to the crossings impeding river flows, the land within the floodplain has undergone drastic changes from the relatively undeveloped conditions in the 1880s to today (Figure 8).

Today, approximately 49 percent of the LMRWD watershed has been developed, compared to approximately 8 percent in the 1880s. However, much of the development has occurred outside of the floodplain. A summary of the land uses within the Minnesota River 100-year floodplain is provided in Table 1. It should be noted that for 2020, “Undeveloped” includes parks, recreation areas, and preserved areas. Despite this inclusion, undeveloped areas in the floodplain decreased by 7 percent, while agricultural and urbanized land uses exploded. Within the floodplain, the majority of urban land uses include industrial, extractive, transportation, and some commercial uses.

Table 1. Summary of Land Use Change within the Minnesota River Floodplain from the 1880s to 2020

Land Use	1880s Area (ac)	2020 Area (ac)	Percent Change
Undeveloped	12,675	11,779	-7%
Agricultural	2	747	40,755%
Urbanization	114	1,326	1,064%
Open Water	6,227	5,166	-17%

1800s Land Cover and Land Uses



2020 Land Cover and Land Uses

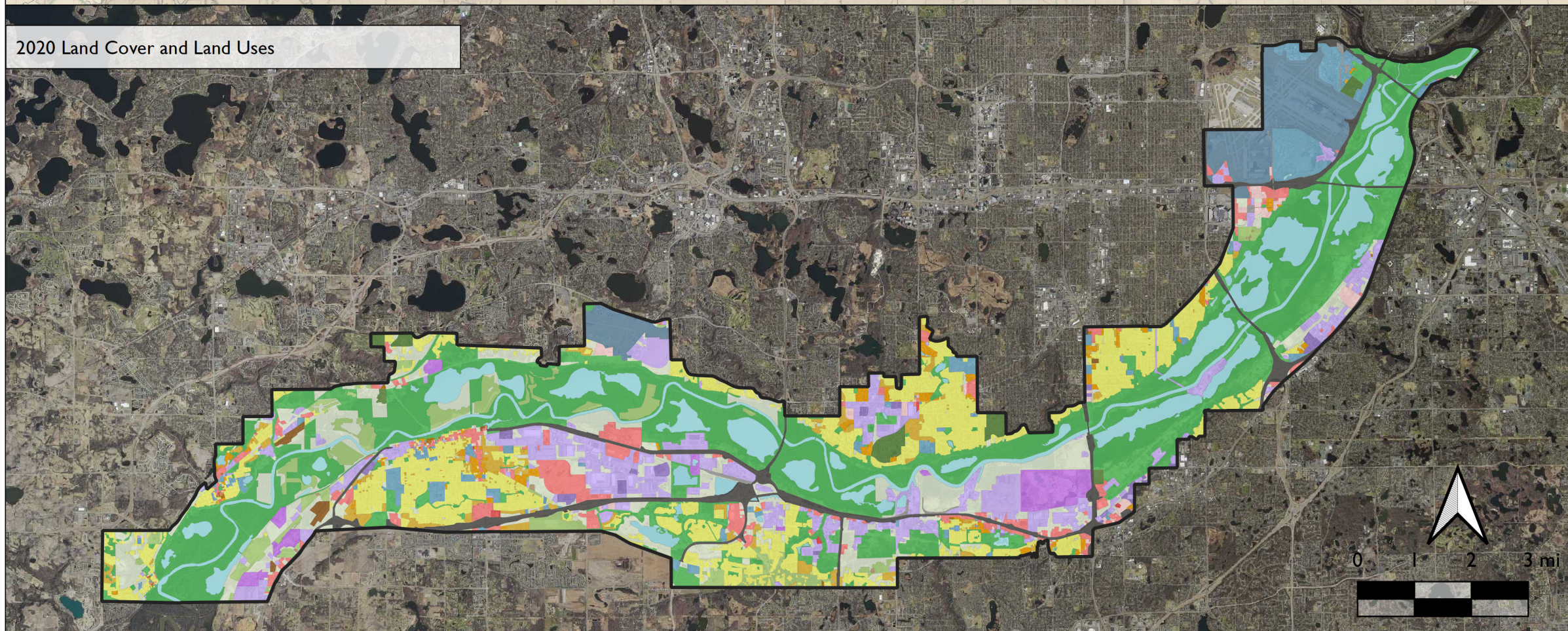


Figure 8: Land Cover and Development in the LMRWD

**LEGEND**

- Survey Plat Land Uses (1847-1855)
- Military, Towns, and Farmsteads
  - Wetland
  - Undeveloped River Bottom
  - Open Water

Metropolitan Council Generalized Land Use (2020)

- Farmstead
- Single Family Detached
- Manufactured Housing Park
- Single Family Attached
- Multifamily
- Retail and Other Commercial
- Office
- Mixed Use Residential
- Mixed Use Industrial
- Mixed Use Commercial
- Industrial or Utility
- Extractive
- Institutional
- Park, Recreational, or Preserve
- Golf Course
- Major Highway
- Major Railway
- Airport or Airstrip
- Agricultural
- Undeveloped
- Open Water



## I.4 Flood History

The Minnesota River is known for its floods. Deep winter snowpack in the western part of the state can lead to substantial spring flooding, and heavy summertime downpours can create flash floods. The United States Geological Survey (USGS) has maintained a streamgage at Jordan since 1935, which is used to predict when the river will crest in the LMRWD (Figure 9).

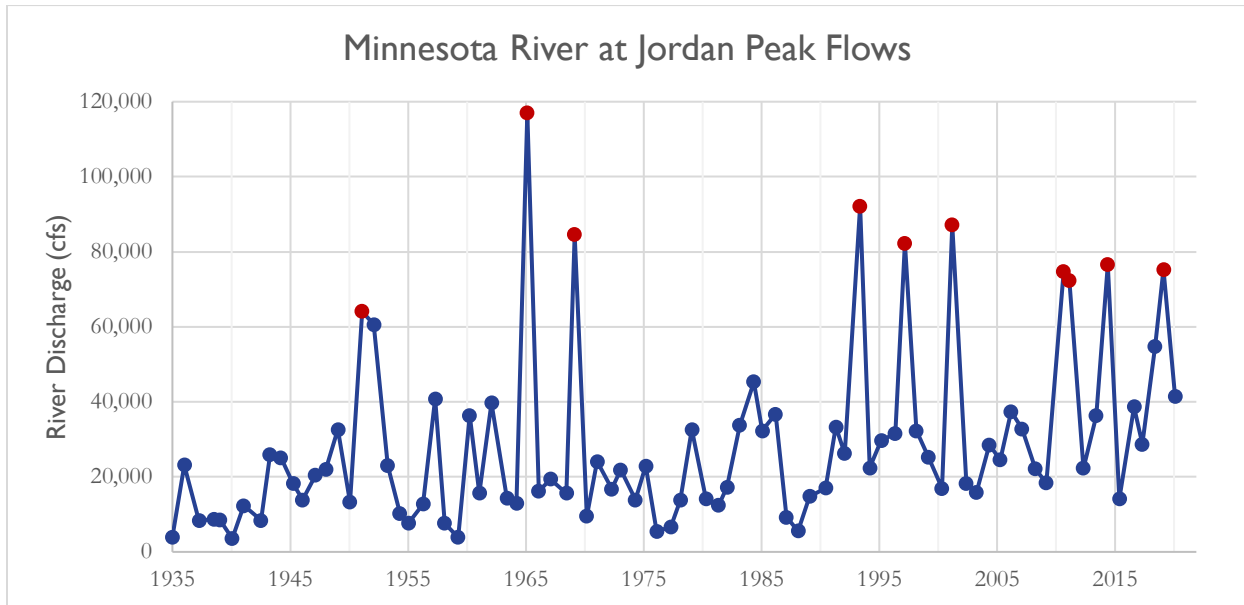


Figure 9. Minnesota River at Jordan, MN, peak flows (red indicates a top 10 flood of record)

The largest flood on record was in 1965, but five of the top 10 floods at Jordan have occurred in the past 20 years, indicating that the river is experiencing more frequent flooding. Given the size of the Minnesota River watershed, several factors are likely at play. However, the trend in more frequent and intense flooding follows similar patterns across the state caused by climate change.

Finally, the timing of the Minnesota River flooding appears to be shifting to later in the season, with peak annual floods now regularly occurring in September. Figure 10 shows the seasonal patterns of flooding on the Minnesota River at Jordan for two decades, from 1935 to the present. Prior to the 1980s, the most frequent month for flooding on the Minnesota River was April; however, this appears to have shifted to June in recent decades.

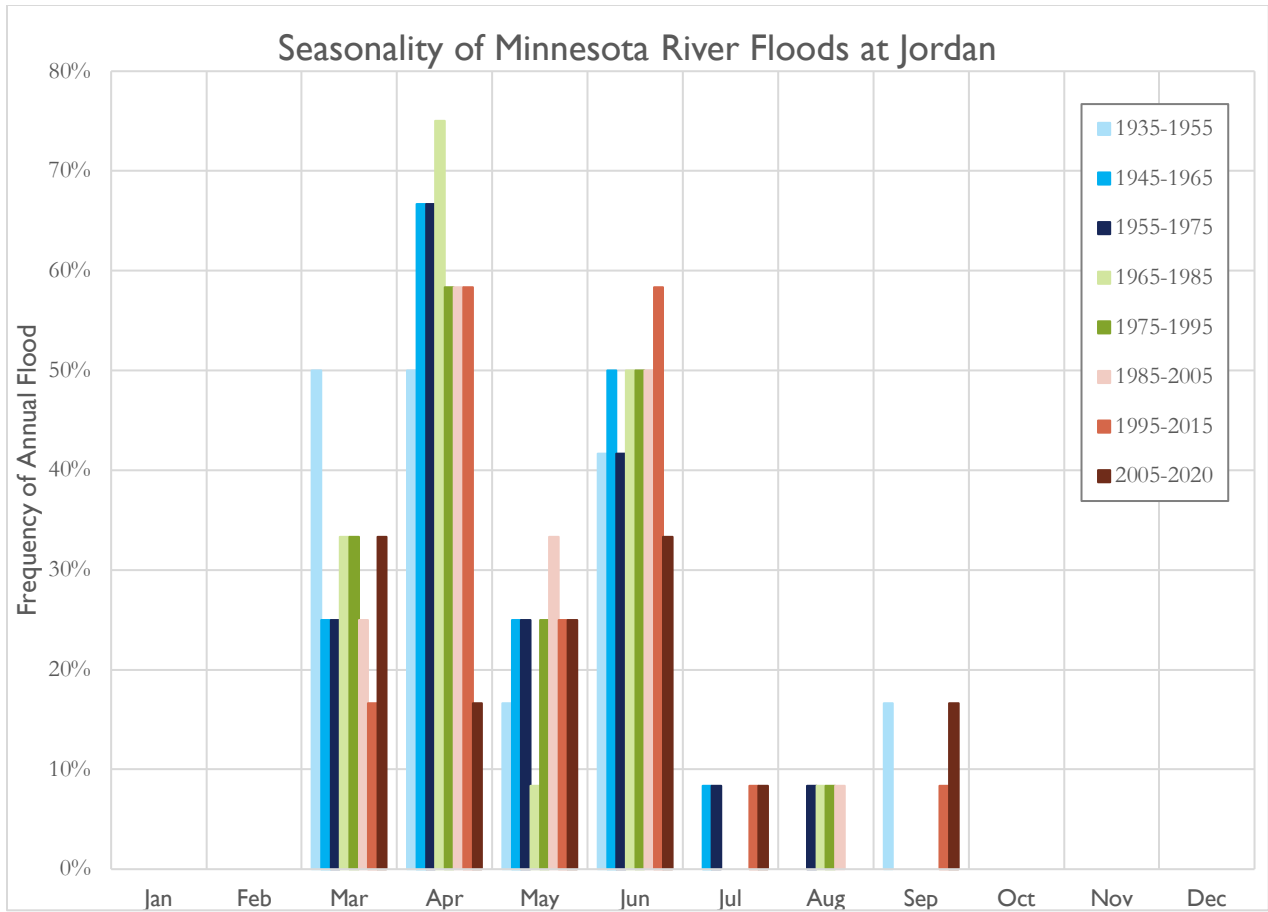


Figure 10. Frequency of annual floods per month

## 1.5 Flooding Impacts

With a more developed watershed experiencing more frequent flooding, the impacts of flooding will be more widespread. The following sections discuss the impacts of flooding on residents of the district, critical infrastructure, vulnerable populations, and regulated sites.

### 1.5.1 Residential Impacts

The growing population has increased the need for residential housing and pressure to develop marginal areas such as the floodplain. In the five counties within LMRWD, there are nearly 1,600 parcels within the floodplain. Of these parcels, about 9 percent are homesteads (Table 2). Homeowners on these parcels have a one-in-four chance of experiencing flooding during a 30-year mortgage.

Table 2. Summary of Parcels and Homesteads in LMRWD Floodplain

County	Number of Parcels in the Floodplain	Number of Homesteads in Floodplain
Carver	330	73
Dakota	496	0
Hennepin	250	59
Ramsey	1	0
Scott	522	19

### 1.5.2 Critical and Vulnerable Facilities

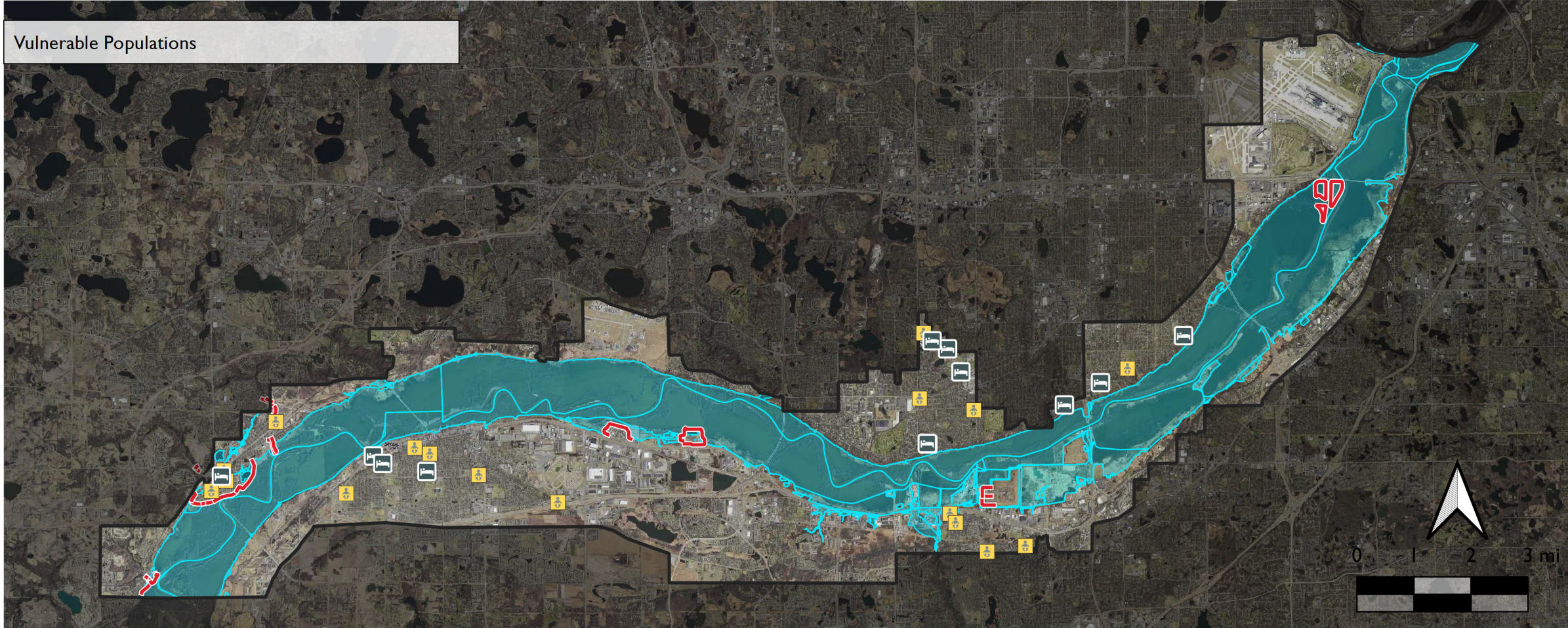
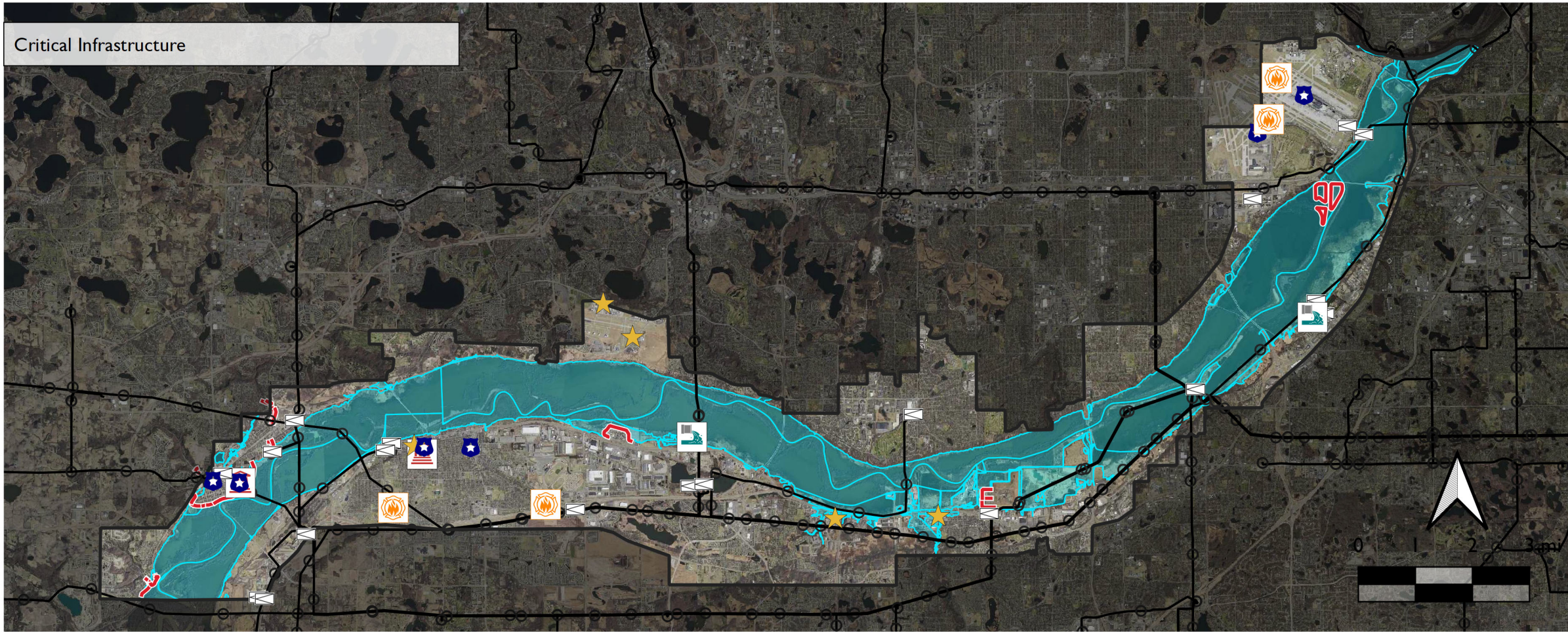
As discussed in the previous sections, the increased development and urbanization of the LMRWD has led to extensive public infrastructure in the floodplain to support the development, including electrical transmission lines, gas and petroleum lines, and sanitary sewer and wastewater treatment plants (WWTPs). To protect the infrastructure from catastrophic floods, flood protection systems, such as levees, have been constructed in the cities of Carver and Chaska and around critical infrastructure, such as the Blue Lake WWTP.


Figure 11 shows data from the Homeland Infrastructure Foundation-Level Data database, showing critical infrastructure and facilities with vulnerable populations, such as eldercare. Critical infrastructures are the pieces of government and public works that need to continue functioning in the event of a disaster to provide emergency response services and basic needs to residents. Vulnerable populations are those who cannot quickly evacuate in a disaster, such as eldercare, day-care centers, and schools.

### 1.5.3 Environmental Contamination



Finally, another concern with floodplain development is the potential for hazardous materials to become dispersed during flood events. The Minnesota Pollution Control Agency (MPCA) maintains a database of environmentally permitted facilities and potentially contaminated sites in the state called What's In My Neighborhood. In addition, the MPCA also maintains a database of the Permanent List of Priorities (PLP), also known as the Minnesota Superfund Sites. There are three Superfund sites in the LRMWD: Pollution Controls Inc. (PCI), Riverland Ag/Minnesota Valley Landfill in Savage, and Old Freeway Dump in Burnsville. Both the Minnesota Valley Landfill and Old Freeway Dump are in the Minnesota River floodplain.












 **Figure 11: Critical Infrastructure & Vulnerable Populations within LMRWD**

**LEGEND**

- FEMA-Certified Levees 
- FEMA Floodplain in LMRWD 

**Critical Infrastructure**

- Courthouses 
- Law Enforcement 
- Fire Stations 
- EMS Stations 
- Substations 
- Electric Transmission Lines 
- Wastewater Treatment Plants 

**Vulnerable Populations**



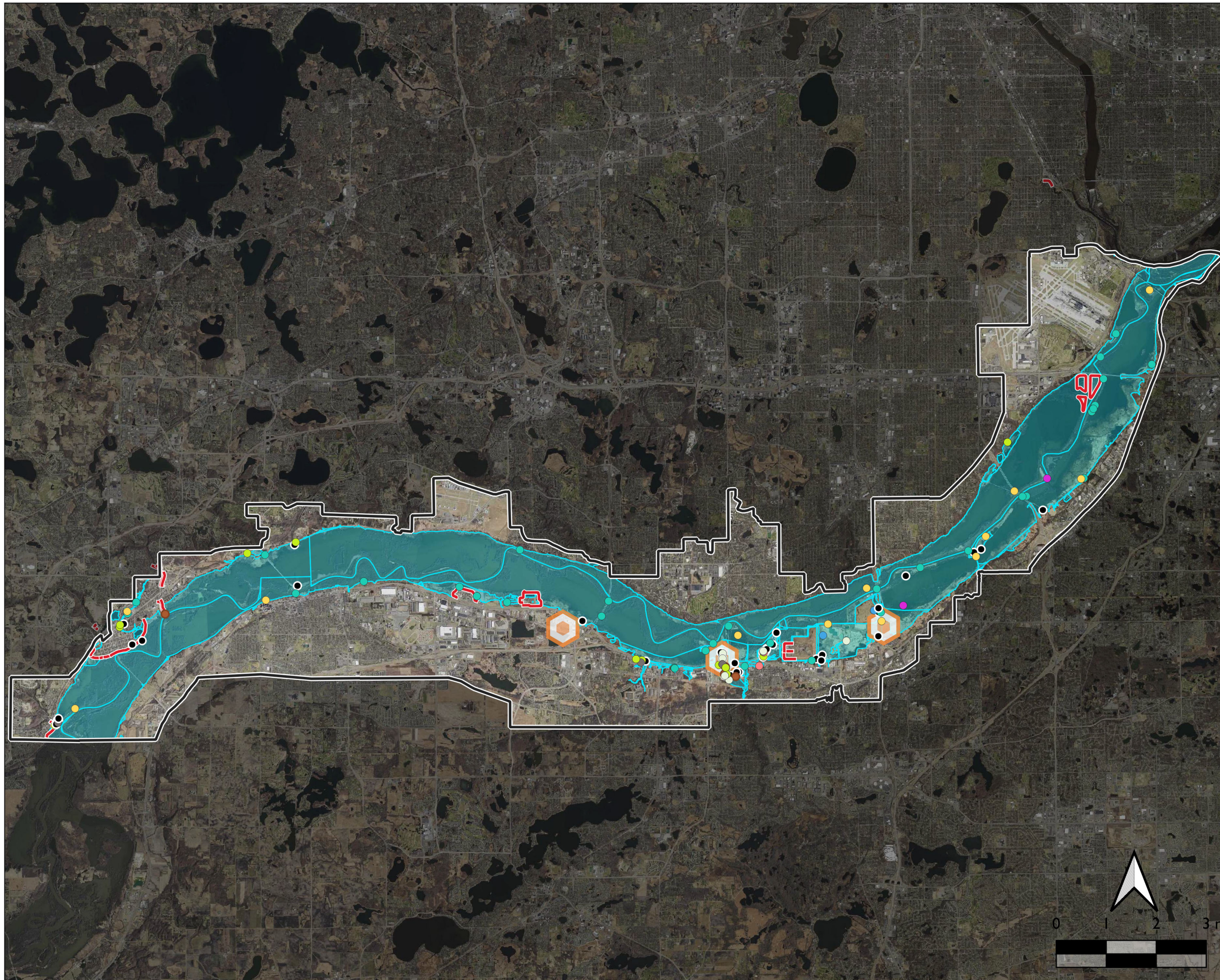
- Eldercare 
- Child Care Facilities 



Figure 12:  
MPCA-Regulated Sites  
in the LMRWD

**LEGEND**

- FEMA-Certified Levees —
- FEMA Floodplain in LMRWD ■
- MPCA What's In My Neighborhood Active Sites**
- Aboveground Tanks ○
- Brownfields ●
- Construction Stormwater ●
- Hazardous Waste ●
- Industrial Stormwater ●
- Multiple Activities ●
- Petroleum Remediation, Leak Site ●
- Site Assessment ●
- Underground Tanks ●
- Wastewater ●
- MPCA Superfund Sites ⬡
- LMRWD Boundary □



The What's in My Neighborhood dataset lists 108 currently active sites within the 100-year floodplain in the LMRWD. Of these sites, 36 are listed as "Multiple Activities," meaning they have more than one category. Each of their categories is included in the summary shown in Table 3.

Table 3. MPCA What's In My Neighborhood Summary for LMRWD Floodplain

MPCA-Regulated Activity	Number of Active Sites per Activity <sup>1</sup>
Aboveground Tanks	22
Brownfields	12
Construction Stormwater	30
Hazardous Waste	41
Industrial Stormwater	17
Petroleum Remediation Sites	9
Site Assessment	15
Underground Tanks	10
Wastewater Discharges	7

<sup>1</sup> Because the multiple activity sites are included in this summary, the total number of sites may appear to be greater than the total in the What's in My Neighborhood dataset.

## 2 FLOODPLAIN REGULATION

Floodplain development is regulated by many layers of government, from federal to local entities, complicated by the type of floodplain affected, as discussed in Section 1. The following section outlines these agencies and their roles in regulating development in the floodplain.

### 2.1 FEMA

FEMA is responsible for coordinating the federal government's role in preparing for, preventing, and mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or human caused. FEMA also oversees the National Flood Insurance Program (NFIP), which allows residents in participating communities to purchase flood insurance and be eligible for disaster relief.

The NFIP was established in 1968 by the United States Congress in response to 1965 Hurricane Betsy, which hit Louisiana and caused \$1.42 billion in damages and 81 deaths. Prior to the National Flood Insurance Act of 1968, flood insurance was nearly nonexistent, and like today, a standard homeowners insurance policy did not cover flood damages. Private insurers found offering flood insurance policies unattractive because of the potential for high concentrations of catastrophic losses.

The NFIP was designed as a voluntary partnership between the federal government and local communities. The overall goal of the NFIP was to make flood insurance more widely available (Michel-Kerjan 2010). Table 4 provides the most recent NFIP data for the top five and upper Midwest states.

Table 4. NFIP Policies, Losses, and Claims of Selected States (FEMA 2022)

State	Number of Policies	Policy Rank	Number of Losses	Loss Rank	Total Claims Paid (\$)	Claim Rank
Florida	1,642,846	1	306,625	3	\$5,803,957,825	4
Texas	756,000	2	385,270	2	\$17,021,393,803	2
Louisiana	493,287	3	480,707	1	\$20,707,441,815	1
New Jersey	205,945	4	200,116	4	\$6,380,577,975	3
South Carolina	197,526	5	46,828	13	\$945,208,964	10
New York	162,490	7	172,569	5	\$5,583,809,518	5
Illinois	34,418	17	51,872	9	\$578,747,135	14
Michigan	19,353	25	14,211	28	\$134,630,126	31
Wisconsin	11,330	32	8,765	33	\$116,846,586	34
Iowa	11,107	33	14,381	27	\$339,359,157	22
North Dakota	7,708	40	13,261	29	\$258,901,813	26
<b>Minnesota</b>	<b>7,672</b>	<b>41</b>	<b>12,180</b>	<b>31</b>	<b>\$148,443,123</b>	<b>30</b>
South Dakota	2,875	49	3,920	44	\$56,054,991	43

The other major component of the NFIP is the floodplain mapping FEMA provides to local communities. FEMA develops Flood Insurance Studies (FIS) and flood maps, called Flood Insurance Rate Maps (FIRMs), for participating communities to delineate the risk of different flood zones. The first flood hazard maps of the Minnesota River were created in the early 1970s for Eden Prairie and Bloomington (FEMA 2022). Since then, all communities within the LMRWD have been mapped by FEMA and have joined the NFIP.

Additionally, the Minnesota River is now clearly mapped for the entirety of its reach within LMRWD, complete with a delineated floodway and 100-year flood elevations.

Under the NFIP, development is allowed within the flood fringe so long as flood heights are not increased by more than one foot and do not increase the flood hazard on other properties. The floodway delineated on the FIRMs designated the areas where flood flows are most sensitive to change and that must remain free and open to floodwaters to avoid an increase in excess of one foot (Figure 13).

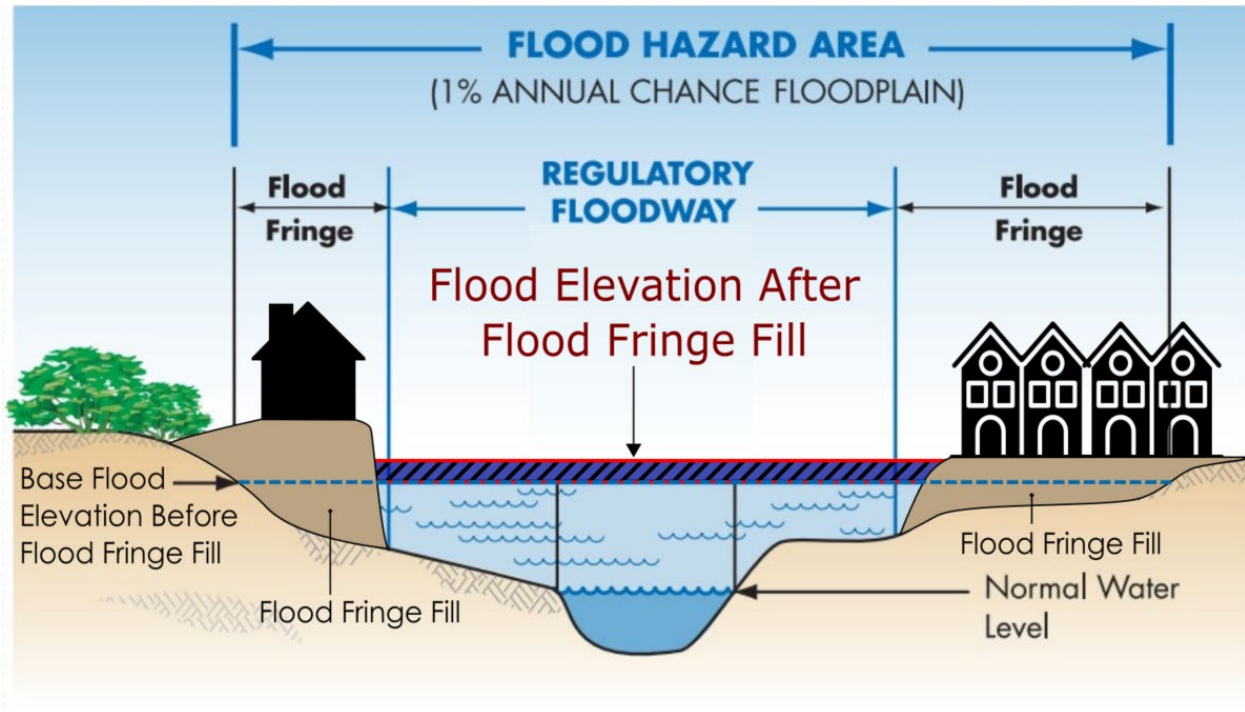


Figure 13. Conceptual example of flood fringe development and impact on flood elevations

To demonstrate that a proposed development will not affect flood elevations, the industry standard promoted by FEMA has been to develop a hydraulic model of the system and compare the before and after project high water elevations. If the proposed development can demonstrate to the 0.00 foot that there is no change in flood elevations, a professional engineer can sign a No-Rise Certificate, which is to be submitted to FEMA by the local floodplain authority within six months of project completion.

## 2.2 MnDNR

Major floods in 1965 and 1969 and the passage of the National Flood Insurance Act led to the passing of the state Floodplain Management Act of 1969, which established a framework for the MnDNR to enforce floodplain regulations. Even prior to 1969, Minnesota had more stringent regulatory standards for the protection of local communities. Floodplain management in Minnesota focuses on several tenets:

- Preserving flood-prone areas as public open spaces
- Adopting more protective regulatory standards
- Implementing flood risk reduction projects

The MnDNR is the liaison between FEMA and local communities. It oversees floodplain management programs, approves floodplain ordinances, and provides technical assistance and training for local officials (Minnesota Department of Natural Resources 2022). In this capacity, the MnDNR is responsible for

establishing minimum state NFIP standards; ensuring participating communities have the legal authority to adopt and enforce floodplain management regulations; and providing hydraulic reviews, modeling assistance, and recommendations to local officials (FEMA 2005).

The MnDNR has adopted and enforces more stringent regulatory standards than FEMA and limits the type of floodplain development and encroachment that is allowed under the NFIP. In Minnesota, floodplain development projects are allowed to increase flood elevations by up to 0.5 feet through the MnDNR's standard review process. With the approval of the MnDNR commissioner, projects that have a large flood reduction benefit are sometimes allowed to locally increase flood elevations in excess of 0.5 feet.

Furthermore, on rivers like the Minnesota River where communities exercise control on only one bank of the river, the allowable increase in flood elevations should be limited to 0.25 feet, reserving the other 0.25 feet for their neighboring community across the river.

## 2.3 LMRWD

The LMRWD has had a floodplain alteration standard since 2011, which requires that no filling be allowed in the floodplain that causes a rise in the base flood elevation without providing compensatory floodplain storage. The current Rule C—Floodplain and Drainage Alteration goes further and requires that any grading or placement of fill within the floodplain, inclusive of both the floodway and flood fringe, be certified by a professional engineer that it will not cause an increase in water surface elevations. This certification is commonly referred to as a No-Rise Certificate, which states that the proposed development, if constructed as proposed, will not increase the flood elevations by more than 0.00 feet.

## 2.4 Local Governments

To be eligible to participate in the NFIP, communities must adopt minimum floodplain standards, including ordinances regulating development in the floodplain and issuing or denying floodplain development and building permits; maintain records of floodplain development; and participate in floodplain map updates (FEMA 2005).

All of the LMRWD local government units (LGUs) have adopted both the state and federal minimum requirements of the NFIP. By doing so, their residents can purchase government-backed flood insurance and are eligible for federal disaster assistance, and the community is eligible for flood mitigation grants. Communities may adopt even more stringent floodplain development and risk management procedures as part of FEMA's Community Rating System (CRS) program, which offers residents a reduction of up to 45 percent on flood insurance premiums. Within LMRWD, the City of Carver is a CRS city with a rating of 6, which affords its residents in the floodplain a 20 percent reduction on their premiums.

## 2.5 Other Entities

The USACE works closely with FEMA to develop and implement flood risk reduction projects and provides assistance with flood risk mapping efforts. In 2004, USACE partnered with USGS and LMRWD to develop a hydraulic model of the Lower Minnesota River from its confluence with the Mississippi River to 36 miles upstream. This model has been used as the best available data for floodplain development in the region.

In addition to the sources discussed previously, several private entities provide flood risk information to real estate companies to aid potential home buyers in determining their flood risk. Unfortunately, many of these models are often proprietary, rely on generalized data, and are not affiliated with the NFIP. As a result, these sources may serve to cause more fear than provide accurate information on individual flood risk.

### 3 METHODOLOGY

This study reviewed the 2004 modeling, reached out to the LMRWD partner municipalities, reviewed district project reviews, and reviewed FEMA map change information to determine the areas of floodplain development within LMRWD and determine where no-rise developments were constructed.

#### 3.1 2004 Flood Study

In 2004, the USACE and USGS partnered to develop a flood study of the Minnesota River until FEMA was able to produce new FIS maps for the affected communities. This study was built on a 1973 USGS hydraulic report of the Lower Minnesota River and used a 2001 USACE hydrologic analysis of the USGS streamgage near Jordan, Minnesota (USGS Gage 0533000), for inflows into the hydraulic model.

Because the MnDNR is the FEMA liaison, the 2004 hydraulic model files were provided by the MnDNR for use in this study. The USACE was also contacted to confirm if updates had been made to the model; however, this request is still pending.

#### 3.2 Municipal Data Requests

All communities within the district have floodplain ordinances that are approved by the MnDNR. Adoption of those ordinances regulates floodplain activities unless the LGUs have given the authority to the district. At this time, the cities of Bloomington, Carver, Eden Prairie, and Shakopee have given authority for Rule C to the district.

During our annual coordination meetings with the LMRWD partner municipalities in 2021, the LMRWD requested floodplain development records from 2004 to the present. The results of this outreach are provided in Table 5.

Table 5. Municipal Development in Minnesota River Floodplain

City	Floodplain Development
Bloomington	Old Cedar Avenue bridge parking lot, Stump Road
Burnsville	Xcel Energy and MnDOT projects
Carver	No floodplain development information because much of downtown is protected by the levee system
Chanhassen	Not aware of any no-rise development
Chaska	No floodplain development information because downtown is protected by the levee system
Eagan	No floodplain development permits issued by city because most of the lands are state park
Eden Prairie	City was unaware of any floodplain development applications on the Minnesota River
Mendota Heights	No floodplain development permits issued by city because most of the lands are state park
Savage	LMRWD Dredge Site, Valley Oil Development, Port Cargill/Mosaic Savage Facility Levee
Shakopee	US Game and Fish wetland work, Memorial Park Bridge, Valley Fair Expansion, Memorial Park Mill Pond

In general, the developments identified by the community aligned with the LMRWD permit records discussed below.

### 3.3 LMRWD Project Reviews

Prior to the adoption of rules in 2020, the LMRWD was not a regulatory entity and relied on its partner communities to enforce its standards to protect the natural resources within the district. Since 2014, the LMRWD has reviewed or permitted at least 38 projects within the floodplain, as shown in Figure 14.

Unfortunately, for most of these projects, no floodplain modeling was available to evaluate the cumulative effects of these developments. Hydraulic model files available for six of the projects shown in Figure 14 were incorporated into the 2004 model.

### 3.4 FEMA Data Review

FEMA maintains an online data library of floodplain maps and changes through its Flood Map Service Center. This data includes records of map changes that individual property owners or land developers submit to FEMA to change the designation of the floodplain on their parcel or remove the floodplain encumbrance entirely. These changes are documented by FEMA in a short letter, sometimes called a Letter of Map Change (LOMC), which encompasses all revisions (LOMRs) and amendments (LOMAs) to the FIS and FIRMs. Data for each of the LMRWD counties were downloaded and reviewed for comparison against the municipal data received. The following table presents the floodplain development records FEMA has on file within the LMRWD.

Table 6. FEMA Floodplain Development History within the LMRWD

City	Year	Type
Burnsville	2018	Port Cargill East LOMR
Carver	2014	LOMA to remove a structure from floodplain
Carver	2018	LOMA to remove a structure from floodplain
Chanhassen	2020	LOMA at 850 Flying Cloud Drive
Eden Prairie	2001	LOMA at 11451 Landing Road
Savage	2002	12461 Rhode Island Avenue Letter of Map Revision Based on Fill (LOMR-F)
Savage	2005	Steiner Industrial Development LOMR-F
Savage	2006	12520 Quentin Avenue LOMA
Savage	2011	8012 West 124th Street LOMA
Savage	2013	12493 Pennsylvania Avenue LOMA
Savage	2015	12051 Yosemite Avenue LOMA
Savage	2017	8550 126th Street LOMA
Savage	2019	12520 Nevada Avenue South LOMA
Savage	2020	7369 Highway 13 West LOMR-F
Shakopee	2005	721 Brook Lane LOMR-F
Shakopee	2018	1001 Bluff Avenue East LOMA








The sixteen FEMA LOMCs were not included in the data provided by the LGUs and represent a data gap between the communities, LMRWD, MnDNR, and FEMA.

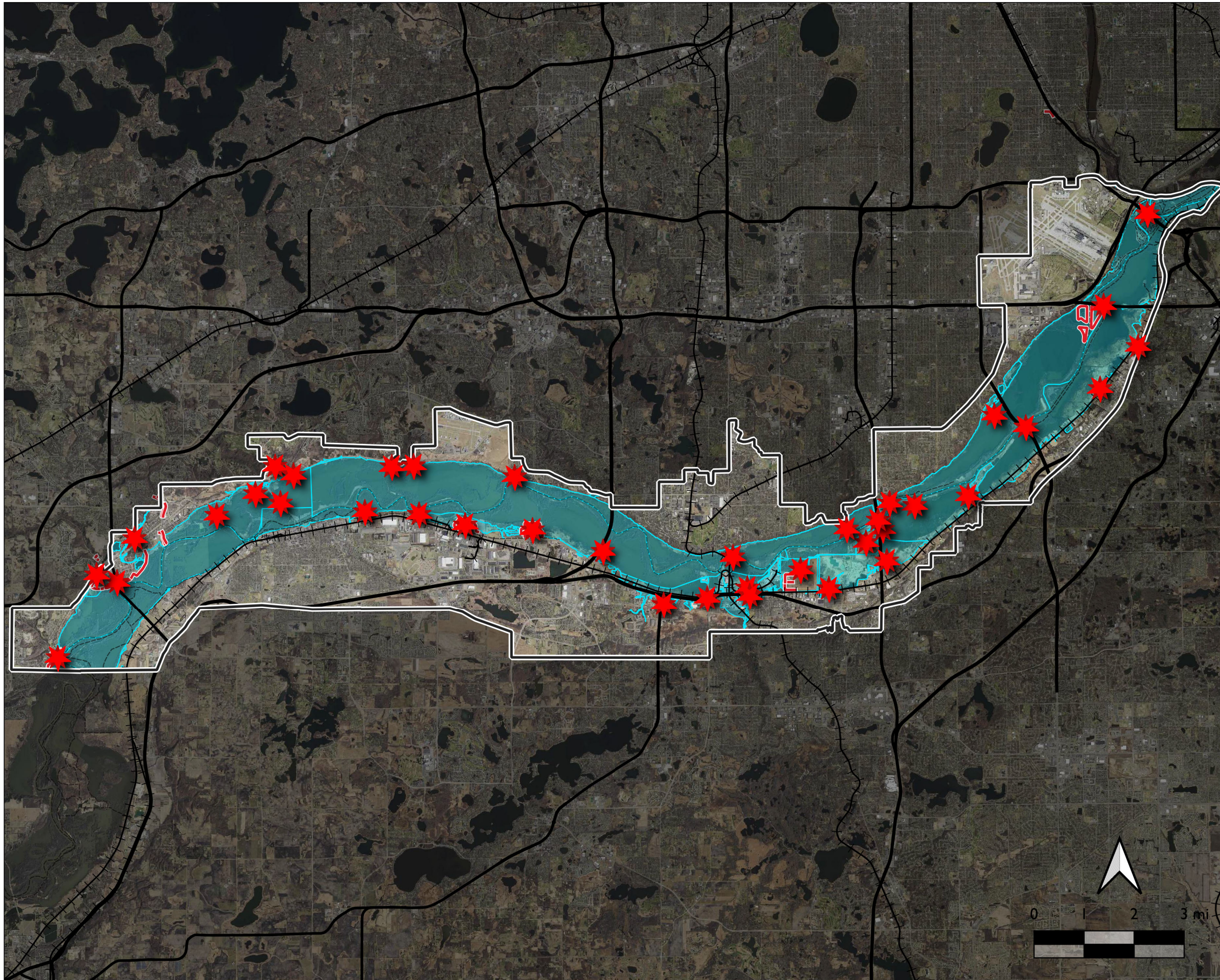




Figure 14: LMRWD  
Project Reviews in the  
Floodplain (2014-2022)

**LEGEND**

-  LMRWD Floodplain Reviews
-  LMRWD Boundary
-  FEMA Floodplain in LMRWD
-  FEMA-Certified Levees
-  MnDOT Trunk Highways
-  Railroad
-  State Park Trails



Young Environmental Consulting  
Group, LLC

In addition to reviewing floodplain development records, Young Environmental reviewed the FIS for Carver, Dakota, Hennepin, and Scott counties. The FIS also documents the methodology used to develop the FIRM panels used in the NFIP.

Table 7. FEMA Flood Insurance Studies for LMRWD

County	Initial FIS (for LGUs in LMRWD)	Effective FIS
Carver	1979 (Chanhassen)	2018
Dakota	1977 (Burnsville)	2011
Hennepin	1980 (Bloomington)	2016
Scott	1974 (Savage and Shakopee)	2021

In reviewing the effective FIS reports, inconsistencies were discovered in the Minnesota River hydrology used in the various studies, despite using the same dataset from the USGS gage at Jordan (USGS 05330000). The Minnesota River flows from these analyses are summarized in Table 8.

Table 8. Base Flood Discharges for the Minnesota River at Jordan

Agency	Source Document	Year	100-Year Discharge (cfs)
USGS	Flood-plain Areas of the Lower Minnesota River	1973	115,000
USACE	Section 22 Study: Minnesota River Main Stem Hydrologic Analysis	2001	103,000
FEMA	Carver County FIS	2018	101,000
FEMA	Dakota County FIS	2011	103,000
FEMA	Hennepin County FIS	2016	103,000
FEMA	Scott County FIS	2021	115,000

While the differences in 100-year flows may be relatively minor for a river of this magnitude, they do speak to the need for a consistent methodology to be used and updated as new data is available. It was not readily apparent from the more recent FIS reports whether or not the hydrology has been updated or whether the 1973 and 2001 values continue to be used. This should be further investigated by completing a statistical analysis of the USGS gage at Jordan with the most recent flow data and calibrated with more recent floods of record, such as 2010 and 2016.

Another discrepancy noted during the FIS review was that the flood elevations from one study did not appear to translate to other studies. For example, Hennepin and Scott counties are neighbors and share cross-sections in the 2004 model, but those same cross-sections have slightly different elevations in the effective FIS, despite coming from the same data source (Figure 15).

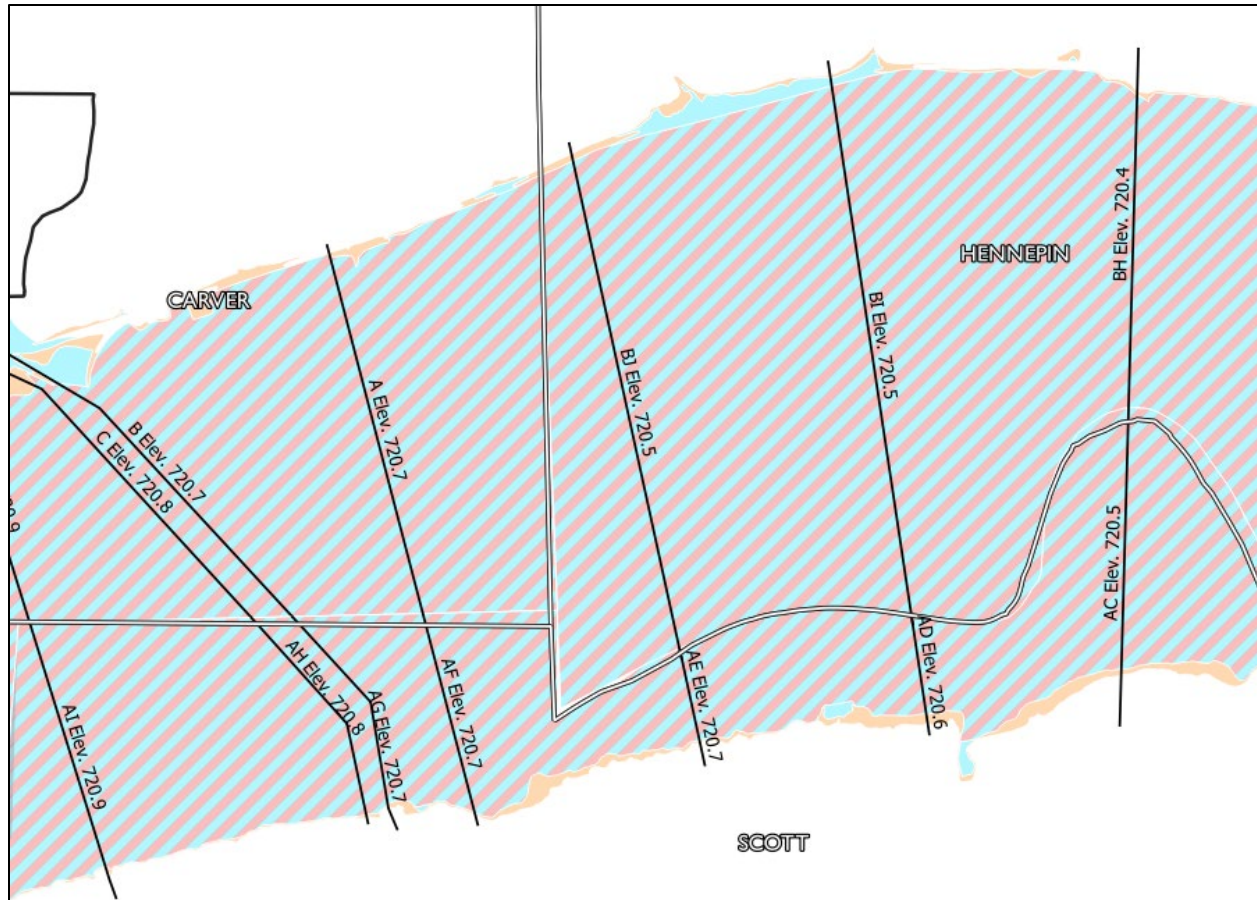


Figure 15. FEMA FIS base flood elevation discrepancies

Similar issues occur at the boundaries between Dakota, Hennepin, and Scott counties.

### 3.5 MnDNR Discussions

Because the MnDNR administers the floodplain program for FEMA in the state, Young Environmental contacted the Floodplain Unit to discuss if it had records of no-rise permits and how it requests communities track this information. Two items became apparent from these discussions:

1. The MnDNR does not generally keep track of no-rise permits because it believes that under the NFIP requirements, it is the responsibility of the community to maintain these records and provide them to FEMA for map updates.
2. The LMRWD Rule C is more stringent than the state's higher standards because it does not allow any fill in the flood fringe, whereas the MnDNR standard ordinance allows fill in the flood fringe because the 2004 study had completed an encroachment analysis.

The MnDNR was able to provide documentation for three projects within the LRMWD floodplain:

1. 2018 Minnesota Valley State Trail in Bloomington, which caused a 0.01-foot rise at two locations
2. 2019 Cedar Avenue Water Access Site in Burnsville, which caused a 0.01-foot rise at two locations
3. Merriam Junction Trail, a project that is not yet constructed

In conversation with MnDNR staff (S. Jiwani, personal conversation, July 21, 2020), they noted that tracking floodplain development permits is a problem across the state, especially when no-rise certificates are involved

because these are often not submitted to FEMA as new and better information. Staff mentioned they would be interested in working together on a pilot project to better track floodplain development permits and noise projects (C. Strauss, personal communication, April 20, 2022).

### **3.6 MnDOT Discussions**

Given the 29 bridge crossings in the Minnesota River floodplain for major highways, the MnDOT was contacted to request hydraulic data used in the bridge design to confirm the 2004 model had the best information available. Unfortunately, this request is still pending; however, the MnDOT confirmed that it does not have hydraulic design information for locally owned bridges. Information on these bridges will have to be coordinated at a private, local, or county level.

## 4 RESULTS

Using the data collected from the various municipalities and agencies discussed in Section 3, the 2004 model was updated to review the changes in the no-rise developments that we were able to confirm:

- 2017 Port Cargill LOMR
- 2018 Valley Oil in Savage
- 2018 Cargill East River Dredge Material Site in Savage
- 2020 Memorial Park Bridge in Shakopee

Comparing the updated model results to the 2004 results showed a maximum of a 0.28-foot rise in 100-year flood elevations near Port Cargill and the Dredge Site. This makes sense because the majority of the changes to the model were located in this area.

With only one exception, every location in the model showed an increase in flood elevations of at least 0.02 feet. The one exception is the Soo Line Railroad bridge upstream of the Dredge Site, which has a decrease of 0.33 feet. The complete hydraulic results are provided in Appendix A.

## 5 DISCUSSION

Using the data collected, Young Environmental reviewed the completeness of the floodplain development records and the impacts they may have on water surface elevations in the Minnesota River.

The 2004 model has not been comprehensively updated since its creation, and floodplain development within the Minnesota River does not seem to have been incorporated into the most recent 2021 Scott County FIS. All of the FIS appears to reference the 2004 study; however, there are slight differences in flows and BFEs reported for each study.

The results of the no-rise model update indicate that even though projects are certified as no rise, the cumulative impact is causing increases in water surface elevations. Additional effort should be put into obtaining the hydraulic models for the previous permit and project reviews and incorporating these and the outstanding data requested into an updated HEC-RAS model.

Given the discrepancies in BFEs across county boundaries, further discussion should be held with the MnDNR to determine the correct elevations to use when enforcing Rule C. Consideration should also be made to the hydrologic inputs for the HEC-RAS model; because nearly 20 years have passed since it was last updated, a review of the gage data may be warranted.

It was difficult to find information for development projects in the floodplain because of the overlapping regulations and to determine how neighboring communities are using the same data. A standard model for floodplain elevations and a structure for sharing this information are needed to avoid confusion and potential overdevelopment in floodplains. As a regional authority, the LMRWD should regulate the floodplain fairly and effectively. An updated HEC-RAS model must be developed that includes the most recent data available and documents where the available surcharge has already been exceeded (such as near the Dredge Site in Scott County).

The annual municipal meetings provide an opportunity to discuss floodplain development and encroachment and facilitate open communication. In 2021 several communities noted it is difficult to predict local flood crests with the only gage so far upstream in Jordan. A hydrologic model of the LMRWD may be beneficial in evaluating and predicting flash floods from heavy rain events in the summer and fall, rather than the traditional snowmelt floods in the spring.

Finally, while no-rise certificates are supposed to be submitted to FEMA within six months of completion, in our review and discussions, it is clear that these are often not filed with FEMA nor shared with the LMRWD or the MnDNR. This is not a problem unique to LMRWD; the MnDNR indicated that this disconnect is a statewide problem and that it would be interested in developing a pilot program to track no-rise and floodplain development permits.

Having both a comprehensive hydraulic model and tracking system would fill this gap in floodplain development enforcement and would also provide a useful product to communities and the MnDNR for use in future map updates.

## 6 RECOMMENDATIONS

Based on our review of the 2004 model and recent land development within the watershed, we can make the following recommendations:

- Review the USGS Jordan gage and complete a statistical analysis to include the most recent peak flow data from 2001 to the present and confirm if the flows assumed for the 2004 model are still valid.
- Develop a district-wide hydrologic model to supplement the data from the USGS Jordan gage and allow for better predictions of flood stages within LMRWD and better input to evaluate the effects of full build-out and climate change on the river's hydrology.
- Update the 2004 hydraulic model of the Minnesota River to incorporate recent developments and survey data.
- Coordinate with neighboring watershed districts, MnDOT, MnDNR, and USACE to share any revised mapping with partner communities.
- Develop an accounting system for floodplain development to aid local municipalities in tracking floodplain developments for future map updates and share this information with the LMRWD, the MnDNR, and FEMA.

Given the number of communities and regulatory agencies reviewing floodplain development but not fully sharing the information, Rule C appears to be fulfilling its intended purpose of reducing flood elevation increases caused by floodplain development. While the Rule is more stringent than local and state requirements, it ensures that despite the lack of communication and consistent floodplain information, the floodplain development that has occurred has only caused increases in flood elevations.

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# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting  
Wednesday, May 18, 2022

### Agenda Item

#### Item 6. I. – Permits & Project Reviews

#### Prepared By

Linda Loomis, Administrator

#### Summary.

##### i. LMRWD Permit Renewals

LMRWD Permits expire after one year. Young Environmental, on behalf of the LMRWD, has notified applicants whose permits are approaching the one-year limit to check on the status of the projects. Young Environmental checked to make sure the projects have not changed since permits were granted and extension is recommended for the following:

- CSAH 61 Drainage Improvements

#### Attachments

Technical Memorandum May 2022 Permit Renewal Requests

#### Recommended Action

Motion to renew permits as provided in Table 1 attached to the Technical Memorandum Individual Project Permit Renewal Requests

##### ii. Minnesota MASH and 130<sup>th</sup> Street Extension (LMRWD No. 2021-033)

This project proposes to build a baseball/softball sports facility in the City of Savage. After several meetings with the City of Savage and the applicant, it has been decided to approve this project in phases. The first phase will allow the applicant to move ahead with grading for the project. More detail is provided in the Technical Memorandum prepared by Young Environmental Consulting Group for the LMRWD.

#### Attachments

Technical Memorandum Minnesota MASH and 130<sup>th</sup> Street (LMRWD Permit No. 2021-033) dated May 11, 2022

#### Recommended Action

Motion to approve site preparation and grading.

##### iii. Chaska TH 41/CSAH 61 Improvements (LMRWD No. 2022-014)

This is a transportation improvement project in downtown Chaska. The City of Chaska has opted to not seek a Municipal Permit from the LMRWD and this is a MnDOT project that is being managed by the City of Chaska

Young Environmental Consulting Group reviewed the application and supporting documentation, on behalf of the LMRWD, and has provided a summary of the project with recommendations.

**Attachments**

Technical Memorandum Chaska TH41/CSAH 61 Improvements (LMRWD Permit No. 2022-014) dated May 11, 2022

**Recommended Action**

Motion to conditionally approve Chaska TH41/CSAH 61 Improvements (LMRWD Permit No. 2022-014) contingent upon receipt of a copy of the NPDES permit and contact information for the contractor and the person(s) responsible for inspection and maintenance of all erosion and sediment control features.

**iv. Prior Lake Outlet Channel 2022 Bank Stabilization (LMRWD No. 2022-017)**

This is a project of the Prior Lake/Spring Lake Watershed District (PLSLWD). It plans to stabilize two reaches of the Prior Lake Outlet Channel (PLOC). PLSLWD has applied for a public waters work permit from the DNR and the LMRWD was notified and given an opportunity to comment. This work is within the City of Shakopee and within the PLOC floodplain. Young Environmental has reviewed the documentation provided to the DNR on behalf of the LMRWD. No action is required of the Board at this time, however the DNR and PLSLWD will be advised of the recommendation.

**Attachments**

Technical Memorandum Prior Lake Outlet Channel 2022 Bank Stabilization (LMRWD No. 2022-017) dated May 10, 2022

**Recommended Action**

No action recommended at this time

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

This item is a follow-up to the report by the City of Chanhassen that the LMRWD received that work had been done without a permit. The LMRWD met with City officials to discuss how to proceed. We have remained in contact with the City. You will see that work was done without city permits either.

Young Environmental Consulting Group inspected the property on behalf of the LMRWD. Their findings are attached.

**Attachments**

Technical Memorandum 535 Lakota Lane Inspection (LMRWD Permit No. 2022-018) dated May 12, 2022

**Recommended Action**

Motion to authorize to continue working with the City and the property owner, send a letter to the property owner as detailed in the Technical Memorandum and proceed with a violation order in consultation with legal counsel, should the owner not comply.

# Technical Memorandum

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

**From:** Katy Thompson, PE, CFM  
Hannah LeClaire, PE

**Date:** May 11, 2022

**Re:** May 2022 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 May 2022 LMRWD permit renewal requests.*

LMRWD No.	Project Name	City	Previous Expiration Date	Recommended Expiration Date
2021-002	CSAH 61 Drainage Improvements	Chaska	10/20/22	10/20/23
	<u>Reason for Extension:</u> The project was delayed internally and the preferred construction window is during winter months when creek and river would be at low flows; the County is requesting to extend permit expiration through March 2023.			

## Recommendation

Staff recommends renewing the permits provided in Table 1.

# Technical Memorandum

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

**From:** Hannah LeClaire, PE  
Katy Thompson, PE, CFM

**Date:** May 11, 2022

**Re:** Minnesota MASH and 130th Street (LMRWD No. 2021-033)

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Minnesota MASH (the applicant) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD) to develop a baseball complex in the City of Savage (City). As part of the project, 130th Street will be extended to provide access to the facility and future development, as shown in Figure 1. The applicant's engineer, ISG, Inc., has provided site plans for the Minnesota MASH project and street extension (Project) along with the permit application. Because the City does not have its LMRWD municipal LGU permit, this Project requires an LMRWD individual permit.

The Project consists of constructing an indoor sports facility, two outdoor baseball fields, associated parking, and four filtration basins. The project will be constructed in two phases. Phase I work includes the extension of 130th Street and the construction of the indoor sporting facility, parking lots, and filtration basins. Phase II will consist of the construction of the outdoor baseball fields. The proposed activities would disturb approximately 13.56 acres and create 8.97 acres of new impervious surface. The site is partially located within the High Value Resource Area ([HVRA] near Savage Fen) and is adjacent to the Steep Slopes Overlay District, but it is not within the 100-year floodplain.

A majority of the proposed impervious area (8.21 acres) will be treated on-site by three filtration basins and one temporary filtration basin. The remaining proposed impervious area from the 130th Street extension will be directed to a City NURP pond, Fire Station Pond, that was constructed as part of a previous City project. The City has agreed to modify the Fire Station Pond outlet and basin to accommodate the increased impervious area from Minnesota MASH's extension of 130th Street. Unfortunately, as of May 10, 2022, the City's modifications to Fire Station Pond still do not meet LMRWD

requirements.

Timing is a concern to the applicant because materials have been ordered for delivery in July 2022. Grading is scheduled to begin in June and must be completed before the building materials arrive. The City has requested the LMRWD permit be approved for the initial grading of the site to prepare for the delivery of materials while the Fire Station Pond design is reworked to meet LMRWD Rule D.

In previous permit applications with similar time constraints, permits have been issued in phases, allowing the applicant to begin mass grading ahead of the stormwater approvals under Rule D. In these cases, the initial permits explicitly forbid the construction of impervious surfaces until LMRWD staff members were able to confirm the project met all the requirements under Rule D. This approach would provide the City with additional time to revise its stormwater management plans for the drainage directed to the Fire Station Pond while also allowing construction to stay on schedule.

## Summary

<u>Project Name:</u>	Minnesota MASH
<u>Purpose:</u>	Development of baseball complex and street extension
<u>Project Size:</u>	13.56 acres disturbed; 8.97 acres new impervious
<u>Location:</u>	13050 Dakota Avenue South, Savage, MN 55378
<u>LMRWD Rules:</u>	Rule B—Erosion and Sediment Control Rule D—Stormwater Management
<u>Recommended Board Action:</u>	Approval of initial grading only

## Discussion

The LMRWD received the following documents for review:

- LMRWD permit application; received September 17, 2021
- LMRWD permit review fee of \$1,500; received December 8, 2021
- Authorization of agent form; received December 6, 2021
- Preliminary development plans by ISG; dated August 27, 2021; revised October 1, 2021; received November 12, 2021
- Draft stormwater report by ISG; dated August 27, 2021; received September 17, 2021
- Stormwater report by ISG; dated November 12, 2021; revised April 29, 2022;

- received May 2, 2022
- Draft maintenance agreement between LMRWD and MN Mash; received September 17, 2021
  - Preliminary structural plans by ISG; dated November 12, 2021; received November 12, 2021
  - LMRWD response letter by ISG; received November 12, 2021
  - LMRWD response letter by ISG; dated November 24, 2021; received November 24, 2021
  - Stormwater Management Report by ISG; dated January 6, 2022; received January 19, 2022
  - WCA Notice of Decision by City of Savage; dated November 1, 2021; received January 31, 2022
  - Construction site plans by ISG; dated February 9, 2022; revised April 4, 2022; received April 29, 2022
  - Maintenance Agreement between LMRWD and MN MASH, no date; received April 14, 2022
  - Stormwater Management Plan by the City of Savage, dated April 6, 2022; revised May 6; received May 6, 2022
  - Wetland Reestablishment and Pond Grading by the City of Savage, no date; received April 29, 2022
  - Savage Fire Station No. 60 Pond Outlet and East Storm Sewer Details by the City of Savage, no date; received April 29, 2022
  - MN MASH/City of Savage 130th Street Extension Construction Plans by ISG, dated December 8, 2021; revised April 4, 2022; received May 4, 2022

The application was originally deemed complete on December 8, 2021, and the documents received provided the minimum information necessary for permit review. However, during discussions with the applicant, it became apparent that the 130th Street extension was not accounted for in the stormwater design, and the application was deemed incomplete, pending updated modeling and calculations. Revised plans were provided in April, and the project application, including 130th Street, was deemed complete on May 9, 2022.

## **Rules Review**

Because of the timing concerns of the applicant, we have segregated our permit review to just the initial site preparation work and mass grading activities. The applicant will be required to provide updated stormwater treatment calculations to obtain a permit amendment to include the construction of impervious surfaces.

### **Rule B—Erosion and Sediment Control**

The LMRWD regulates land-disturbing activities that affect one acre or more under Rule

B as well as land-disturbing activities that involve the displacement or removal of 5,000 square feet or more of surface area or vegetation or the excavation of 50 cubic yards or more of earth within the HVRA Overlay District. The proposed project would disturb approximately 13.56 acres within the LMRWD boundary, of which 5.7 acres are within the HVRA. The applicant has provided an erosion and sediment control plan, a Stormwater Pollution Prevention Plan, a copy of the NPDES permit, and the contact information for the contractor and person(s) responsible for the inspection and maintenance of erosion and sediment control features. The Project complies with Rule B.

### **Recommendations**

The applicant has made it clear that time is of the essence for the project. Therefore, the staff recommends approval of the Project for initial site preparation and grading only.

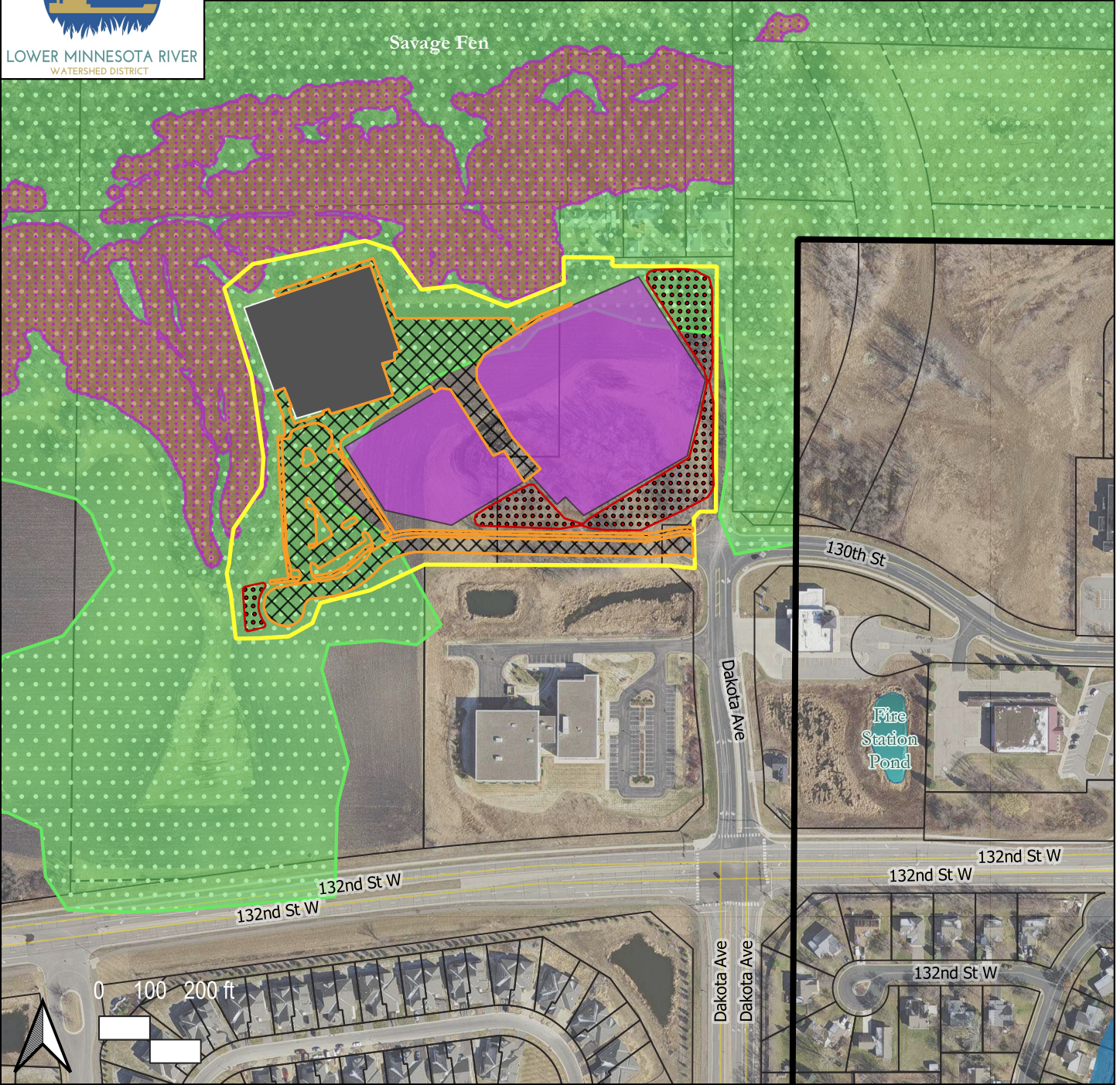
As discussed above, this permit allows the applicant to begin work on the site preparation, including mass grading, but does not allow for the construction of any new impervious surface. Staff recommends the applicant and the City of Savage continue to work together with the LMRWD to ensure the stormwater management system complies with LMRWD rules. A permit amendment will be required to construct impervious surface and stormwater BMPs.

### **Attachments**

- Figure 1 – Minnesota MASH Project Location Map



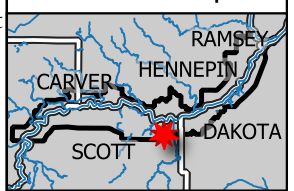
Figure I: MN MASH Project Location



**LEGEND**

- |                    |                          |                               |
|--------------------|--------------------------|-------------------------------|
| Project Location   | Filtration Basin         | Steep Slopes Overlay District |
| MN MASH            | Fire Station Pond        | LMRWD Boundary                |
| Baseball field     | Public Watercourse       | Scott Co. Parcels             |
| Building           | Public Waterbody         | County Boundaries             |
| Impervious Surface | High Value Resource Area |                               |

**LMRWD Watershed Location Map**





# Technical Memorandum

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

**From:** Hannah LeClaire, PE  
Della Schall Young, CPESC, PMP

**Cc:** Taylor Huinker  
Minnesota Department of Natural Resources

**Date:** May 11, 2022

**Re:** Chaska TH 41 / CSAH 61 Improvements (LMRWD No. 2022-014)

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The City of Chaska (the applicant) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD). The applicant is proposing roadway improvements along Trunk Highway (TH) 41 (Chestnut Street), beginning at the Minnesota River Bridge and continuing north to Walnut Street, and County State Aid Highway (CSAH) 61 (Chaska Boulevard), beginning at TH 41 and continuing east to Yellow Brick Road as shown in Figure 1. The project involves converting TH 41 from a four-lane divided roadway to a two-lane divided roadway with turn lanes and converting CSAH 61 from a four-lane undivided roadway to a four-lane divided roadway with raised median and turn lanes along with water quality treatment features. The applicant's engineer, Stantec, has provided site plans for the Chaska TH 41 / CSAH 61 improvements (Project) along with the permit application.

The Project is not located within the High Value Resource Area or Steep Slopes Overlay District. However, a small portion of the Project is within the floodplain of East Chaska Creek near the eastern end of improvements on CSAH 61. The applicant proposes to commence construction in July 2022.

The Project is located within the Minnesota Department of Transportation (MnDOT) right of way and therefore requires an LMRWD individual permit. A majority of the Project is within the LMRWD boundary; however, the northwestern corner is in the legal boundary of the Carver County Watershed Management Organization (CCWMO). The

CCWMO deferred its permitting authority to the LMRWD because the stormwater drains to resources within the LMRWD, and the proposed Best Management Practices (BMPs) are also located within the LMRWD. Therefore, the entire Project area was reviewed to meet the requirements of the LMRWD rules.

In addition to our review of the LMRWD individual project permit application, the Minnesota Department of Natural Resources (MnDNR) has requested a review of the Project through the MnDNR Permitting and Reporting System (MPARS) on or before May 12, 2022. This memo addresses both reviews.

## Summary

<u>Project Name:</u>	Chaska TH 41 / CSAH 61 Improvements
<u>Purpose:</u>	TH 41 and CSAH 61 Roadway Improvements and Reconstruction
<u>Project Size:</u>	12.76 acres disturbed (0.99 within CCWMO); 10.12 acres existing impervious (0.72 within CCWMO); 10.28 acres proposed impervious (0.86 within CCWMO); net increase of 0.16 acres new impervious (0.14 within CCWMO)
<u>Location:</u>	TH 41 between the Minnesota River Bridge and Walnut St and CSAH 61 between TH 41 and Yellow Brick Road
<u>LMRWD Rules:</u>	Rule B—Erosion and Sediment Control Rule C—Floodplain and Drainage Alteration
<u>Recommended Board Action:</u>	Conditional approval

## Discussion

The LMRWD received the following documents for review:

- LMRWD permit application, received March 22, 2022
- Stormwater Management Report for TH41/CSAH61 Improvements by Stantec, dated March 22, 2022; received March 22, 2022
- TH 41 & CSAH 61 Improvements Construction Plans by Stantec, dated March 4, 2022; received March 22, 2022
- Additional TH 41 & CSAH 61 Improvements SWPPP Plan Sheets by Stantec, dated March 4, 2022; received April 20, 2022
- Public Waters Work Permit Application by Stantec, dated March 22, 2022;

received April 12, 2022

- CSAH 61 Creek Photo, by Stantec, no date, received April 12, 2022
- Project Location Public Water Impacts and Plans by Stantec, dated June 10, 2021, and March 15, 2022; received April 12, 2022
- Erosion Control Plans by Stantec, dated March 2, 2022; received April 12, 2022

The application was deemed complete on May 11, 2022, and the documents received provide the minimum information necessary for permit review.

### Background

#### 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 11.77 acres within the LMRWD boundary and approximately 0.99 acres within the CCWMO boundary. The applicant has provided an Erosion and Sediment Control Plan and a Stormwater Pollution Prevention Plan. The Project generally complies with Rule B, but a copy of the National Pollutant Discharge Elimination system (NPDES) permit and contact information for the contractor and person(s) responsible for the inspection and maintenance of the erosion and sediment control features are needed before the LMRWD can issue a permit.

#### Rule C—Floodplain and Drainage Alteration

The outlet of the CSAH 61 BMP, as shown in Figure 1, extends into the East Chaska Creek floodplain. The 100-year floodplain elevation at this location is 724.60, according to the Federal Emergency Management Agency's Flood Insurance Study (FIS) for Carver County, Minnesota, effective December 21, 2018 (FIS Number 27019CV000A). The BMP outlet consists of an emergency overflow (EOF) and riprap protection at the culvert outlets. A cut-and-fill summary provided by Stantec shows that there is a net cut for the proposed EOF and riprap within the 100-y floodplain, and no compensatory storage is required. The project meets the minimum requirements of Rule C.

#### Additional Considerations

The proposed reconstruction project will create 0.16 acres of new impervious surface, which does not trigger LMRWD Rule D; however, the Project has proposed a stormwater management system that meets the stormwater requirements of the City of Chaska. The proposed project discharges to East Chaska Creek near CSAH 61 and to the Minnesota River near TH 41. Stormwater management facilities include a bioretention basin located south of CSAH 61 at East Chaska Creek and permeable pavement in a proposed parking lot in the southeast quadrant of TH 41 and East 3rd Street. Additionally, two existing swirl chambers are located on East 1st Street and will be left in place (Figure 1). Although the LMRWD is not reviewing the stormwater

management system for this project, it is noted that current runoff from the roadway enters East Chaska Creek untreated. The proposed bioretention basin will treat water from a portion of CSAH 61 and is intended to reduce erosion potential and improve the water quality of discharge entering the creek. The City will acquire right of way for the public improvements occurring at the parking lots, as well as a permit to construct the bioretention basin on the Carver County Rail Authority property.

On July 29, 2021, the LMRWD received a Minnesota Wetland Conservation Act Notice of Application and TH 41 & CSAH 61 Improvements Joint Application: Type and Boundary/No Loss for review. The LMRWD staff submitted their review memo to MnDOT as part of the Wetland Conservation Act application comment period and recommended a Technical Evaluation Panel (TEP) field review to confirm no wetlands exist along East Chaska Creek within the Project area. A TEP field review was completed in August of 2021 and confirmed there are no wetlands present within the project site.

### **Recommendations**

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

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

We will submit this memo to the MnDNR as part of the MPARS comment period.

### **Attachments**















- Figure 1 – Chaska TH 41 / CSAH 61 Improvements Project Location Map



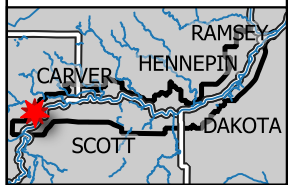
Figure 1: TH 41 / CSAH 61 Project Location



**Legend**

-  Project Location
-  TH 41 / CSAH 61 Project Site
-  Bioretention Basin
-  Permeable Pavers
-  Swirl Chamber
-  Steep Slopes Overlay District
-  Public Waterways
-  Public Waters
-  LMRWD Boundary
-  Floodway
-  100-yr Floodplain
-  Carver Co. Parcels
-  Steep Slopes Overlay District
-  County Boundaries

**LMRWd Watershed Location Map**



# Technical Memorandum

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

**From:** Hannah LeClaire, PE  
Della Schall Young, CPESC, PMP

**CC:** Taylor Huinker  
Minnesota Department of Natural Resources

**Date:** May 10, 2022

**Re:** Prior Lake Outlet Channel 2022 Bank Stabilization (LMRWD No. 2022-0017)

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Prior Lake Spring Lake Watershed District (the applicant or PLSLWD) has applied for a Public Waters Work Permit from the Minnesota Department of Natural Resources (MnDNR) through the MnDNR Permitting and Reporting System (MPARS) to stabilize banks and address erosion issues in the Prior Lake Outlet Channel (PLOC). The Prior Lake Outlet Channel 2022 Bank Stabilization project (Project) is located within the City of Shakopee, and the MnDNR has requested comments on the Project through MPARS.

The applicant proposes to stabilize three locations along the PLOC; however, only two locations are within the Lower Minnesota River Watershed District's (LMRWD's) boundary, as shown in Figure 1. To the locations within the LMRWD, the applicant proposes bank shaping with a boulder toe at Segment 4 – RB 58 (Figure 2) and rock cross vanes at Segment 5A (Figure 3).

The City of Shakopee has obtained a Municipal Permit from the LMRWD and therefore is considered the primary permitting authority for this project. The Project is not located within the LMRWD's High Value Resource Area or the Steep Slopes Overlay District; however, it is located within the floodplain of the PLOC. Because the LMRWD is the permitting authority for impacts to the floodplain within the City of Shakopee, this Project would be subject to a permit review by the LMRWD.

Young Environmental, a LMRWD staff member, has reviewed the MPARS Public Waters Work Permit application. A project summary and comments on the permit application are provided below.

## Summary

<u>Project Name:</u>	Prior Lake Outlet Channel 2022 Bank Stabilization
<u>Purpose:</u>	Stabilize the banks of the PLOC
<u>Project Size:</u>	<1 acre of disturbance; floodplain fill not provided at this time
<u>Location:</u>	PLOC Segment 4 – RB 58 south of Eagle Creek Blvd and east of Pike Lake Rd PLOC Segment 5A between Oak Ridge Trail and Eagle Creek Blvd
<u>LMRWD Rules:</u>	Rule C—Floodplain and Drainage Alteration
<u>Recommended Board Action:</u>	Informational only

## Discussion

The LMRWD received the following documents for review:

- Public Waters Work Permit Application, dated November 24, 2014; received April 19, 2022
- Prior Lake Outlet Channel 2022 Bank Stabilization Draft Construction Plans by Emmons & Oliver Resources, Inc., dated April 12, 2022; received April 19, 2022

### Rule C—Floodplain and Drainage Alteration

As discussed, the Project is located within the floodplain of the PLOC. The Project proposes to fill within the floodplain to stabilize the channel with a boulder toe and rock cross vanes. The quantity of fill has not been provided by the applicant. However, a profile view at Segment 5A shows an increase in the 100-year water surface elevation due to the construction of the rock cross vanes. The maximum rise is approximately 0.3 feet between Eagle Creek Blvd and Oak Ridge Trail. Typically, rock cross vanes are most effective for lower discharges and have little effect on the 100-year water surface elevation because they are submerged. The applicant will be required to submit the following to comply with Rule C:

- The normal and high water levels for the adjacent stormwater ponds and wetlands

- The proposed quantity of cut and fill within the PLOC floodplain for all bank stabilization sites within the LMRWD as well as the change in water storage capacity resulting from the proposed activity
- A no-rise certificate signed by a professional engineer to ensure that the proposed fill within the PLOC floodplain will not affect the 100-year water surface elevations at either location
- Hydraulic modeling that supports the required no-rise certificate

### Additional Considerations

The LMRWD staff has the following additional concerns and questions regarding the proposed project:

1. An existing seepage area is identified in the plans at Segment 5A. How is this seepage area being addressed, and how will the applicant ensure that the seepage will not undermine the proposed rock cross vanes?
2. Plan sheet *Segment 5A – Site Plan* shows riprap Class III is proposed for the base of the rock cross vane; however, the *Details – 1* sheet shows riprap Class II. Which riprap class is being proposed, and what hydraulic and riprap sizing calculations were used to determine the appropriate riprap size?
3. What is the purpose of regrading the Wetland outlet near Segment 5A, and how will this affect the proposed project?
4. Water at the outlet of the rock cross vanes appears to be directed toward the east bank of the PLOC. Will this cause unintended bank erosion?
5. The proposed 100-year water surface elevation is approximately 761 feet at the rock cross vanes; however, the riprap does not extend beyond this elevation. How will the applicant ensure that the water does not cut around the riprap and destabilize the structure during high flows?
6. The applicant proposes to use excess channel material to fill the voids in the rock cross vanes and riprap chute. If the voids are not completely filled, water will flow through the rocks instead of over them and potentially destabilize the structure. Ideally, the voids in the structure would be filled with a gradation of rock that will not wash away with the flow of the stream. Additional material should be considered to fill the voids in the field if the channel material is not sufficient.
7. Consider extending the boulder toe through the toe of the slope and into the channel bottom to prevent erosion from undermining the toe of the riprap.

### **Recommendations**

We appreciate the opportunity to comment on the proposed Project. Although no Board action is required at this time, we offer the following summarized comments to the applicant, which will be uploaded to MPARS as part of the Public Waters Work Permit commend period:



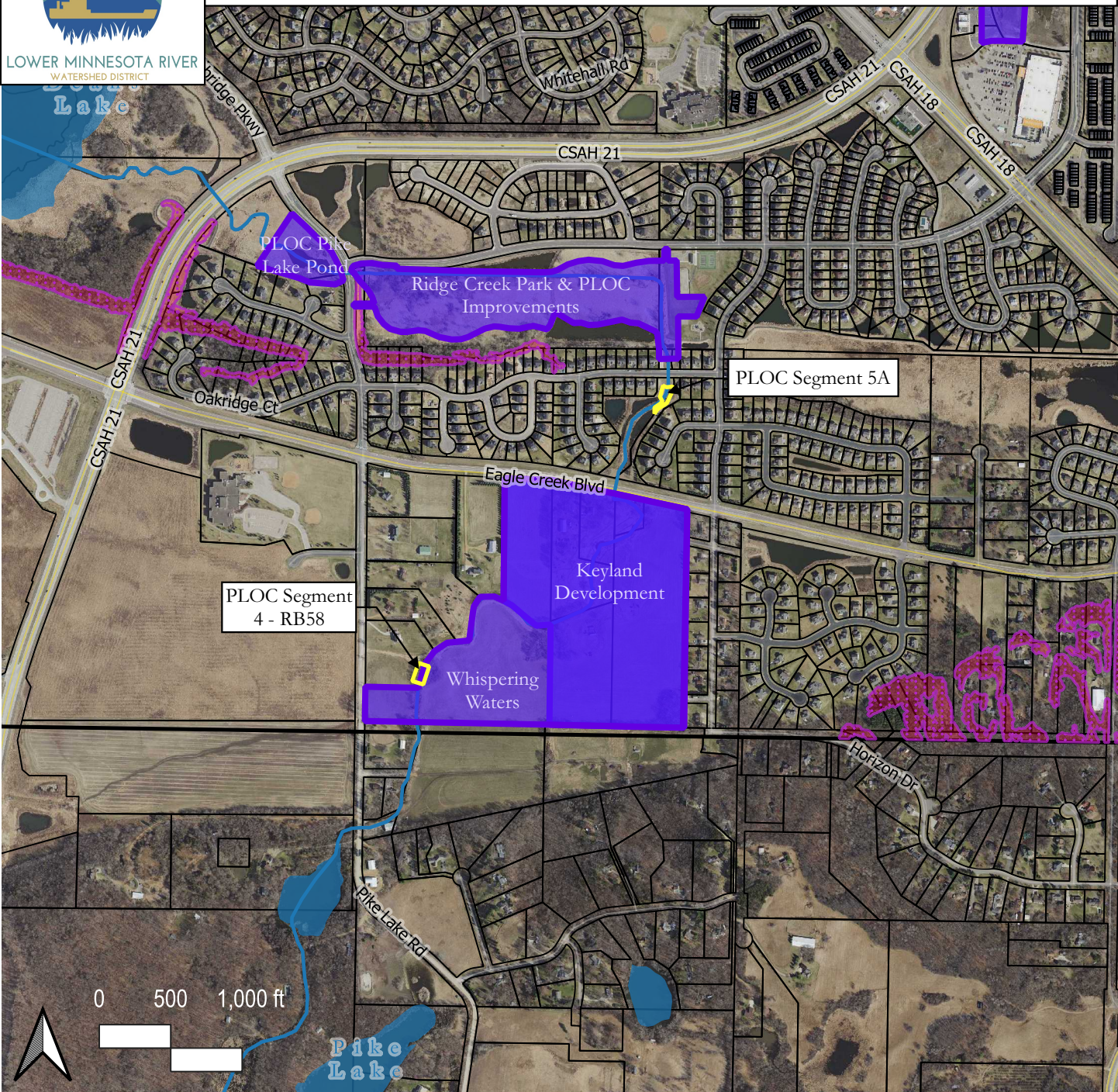
- The applicant should apply for and receive a LMRWD Individual Project Permit before construction begins. As presented, the Project appears to trigger Rule C.
- The Project is located within the 100-year floodplain; the applicant should provide documentation that no loss of floodplain storage or increases to the 100-year water surface elevation would result from the Project.
- The applicant should apply for and receive a Municipal Permit from the City of Shakopee before construction begins.

### **Attachments**

- Figure 1: Project Location Map
- Figure 2: PLOC Segment 4 – RB 58 Site Map
- Figure 3: PLOC Segment 5A – Site Map



Figure I: PLOC Bank Stabilization Project Location



- ★ Project Location
- PLOC Bank Stabilization Sites
- Other LMRWD Permits
- Public Waterbodies
- Public Watercourses
- Steep Slopes Overlay District
- LMRWD Boundary
- Scott Co. Parcels
- County Boundaries

LMRWD Watershed Location Map

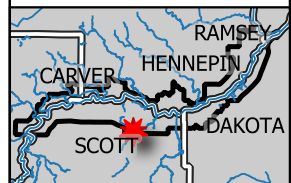
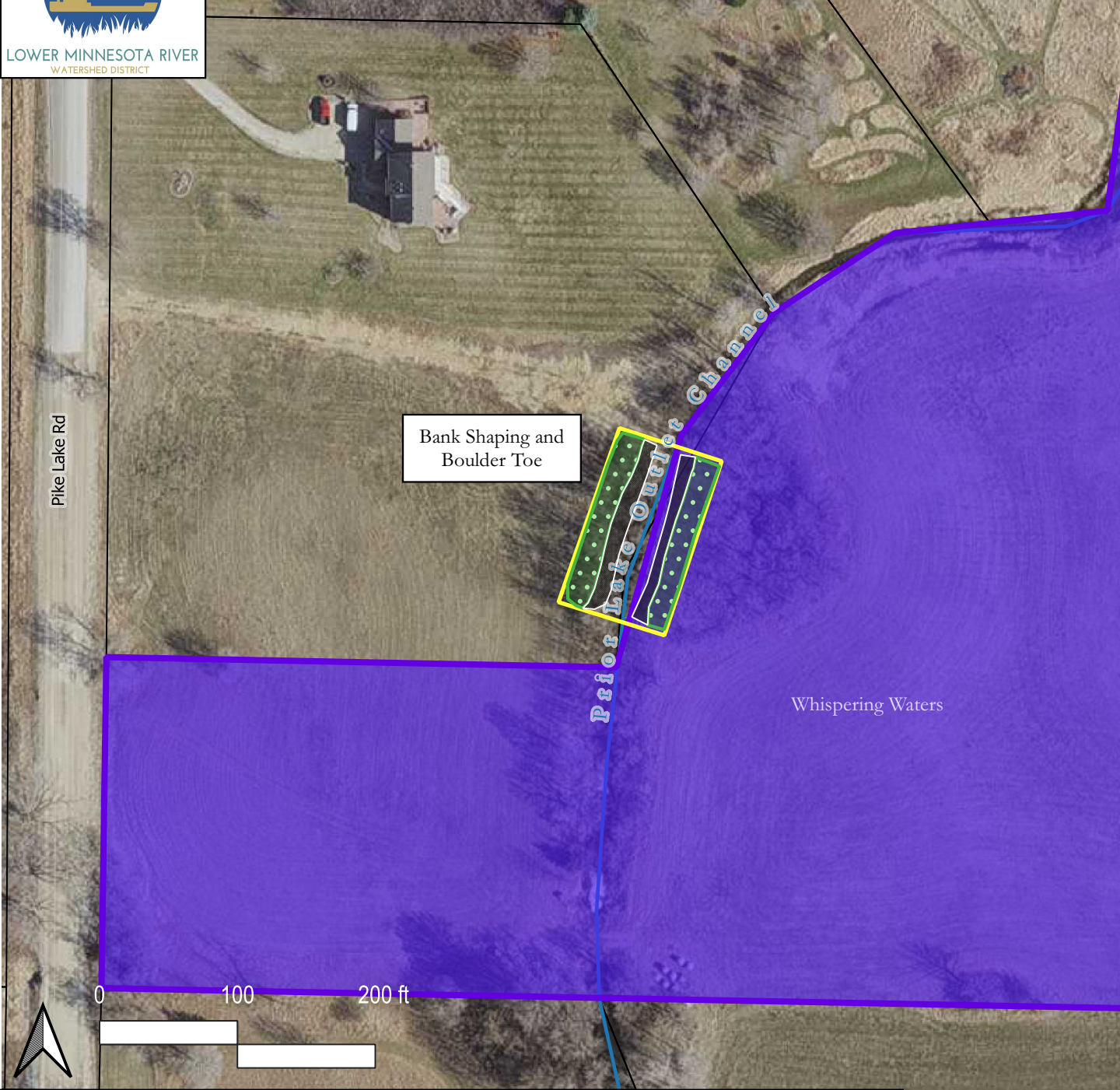













Figure 2: PLOC Segment 4 -RB58



- |   |   |
|---|---|
|  PLOC Bank Stabilization Sites |  Project Location    |
|  Other LMRWD Permits           |  LMRWD Boundary      |
|  Bank Shaping                  |  County Boundaries   |
|  Boulder Toe                   |  Public Watercourses |
|  Scott Co. Parcels             |   |

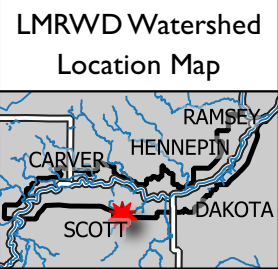
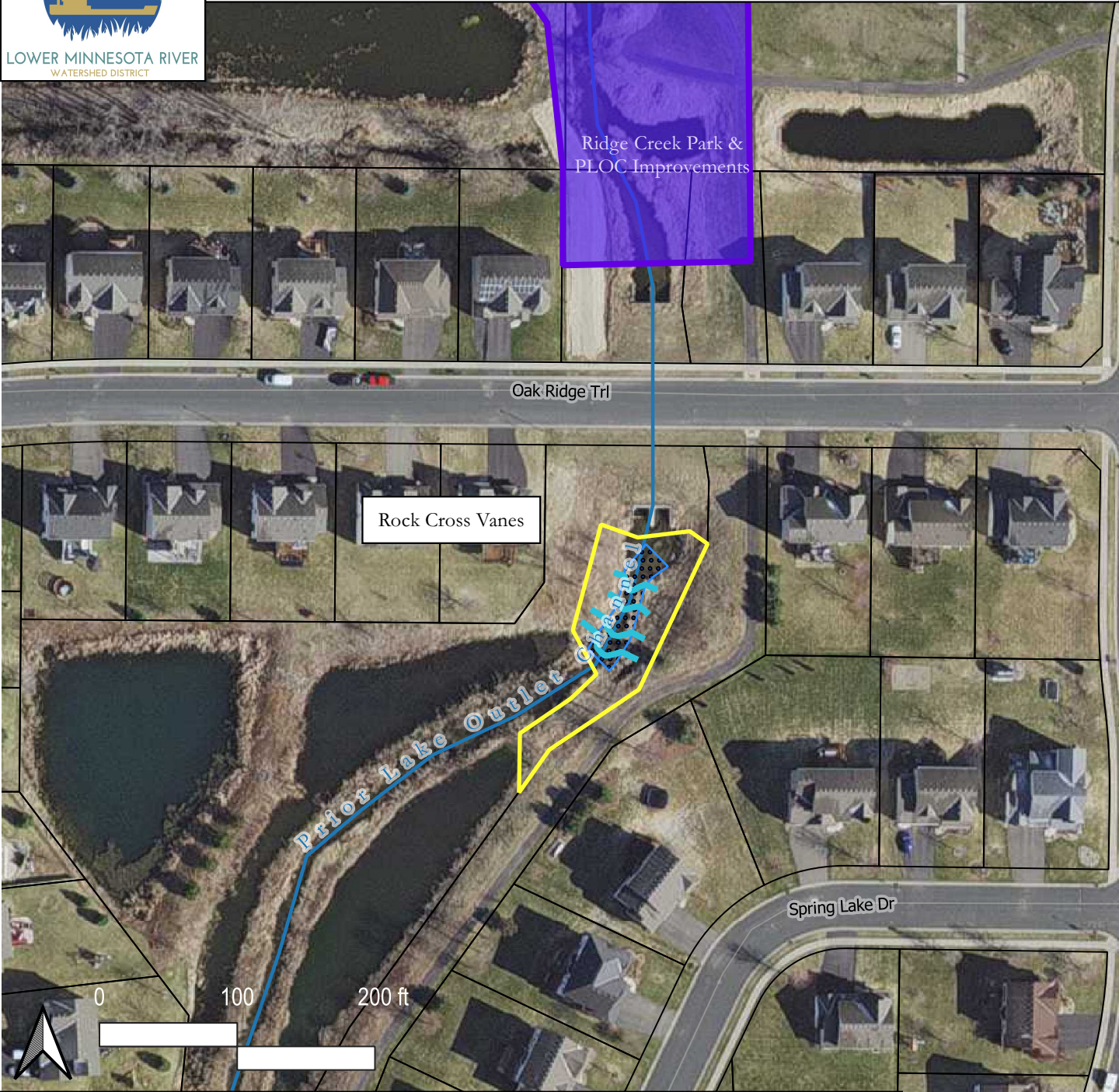




Figure 3: PLOC Segment 5A



**Legend**

- |                               |                   |
|-------------------------------|-------------------|
| PLOC Bank Stabilization Sites | Project Location  |
| Other LMRWD Permits           | LMRWD Boundary    |
| Riprap Chute                  | County Boundaries |
| Rock Cross Vanes              | Public Waters     |
| Scott Co. Parcels             |                   |

**LMRWD Watershed Location Map**



# Technical Memorandum

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

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

**Date:** May 12, 2022

**Re:** 535 Lakota Lane Inspection (LMRWD No. 2022-018)

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During the April 16, 2022, board meeting, the administrator and legal counsel informed the managers that the owner of 535 Lakota Lane had made improvements to the property potentially within the Lower Minnesota River Watershed District (LMRWD) within the Steep Slopes Overlay District (SSOD) without a permit. Based on the information, the managers authorized staff to inspect the property to assess whether the owner had violated LMRWD rules. Young Environmental, as LMRWD staff, completed the property inspection because the city of Chanhassen does not have its municipal LGU permit, and our findings are as follows.

## Background

The City of Chanhassen (City) contacted the LMRWD on April 13, 2022, regarding a resident, Mr. Andy Polski, who had recently done work to their property at 535 Lakota Lane without a permit (Figure 1). The City was concerned that the work may have been in the LMRWD SSOD and included grading, construction of a retaining wall and drain tile, and tree removals. The City became aware of the violation when Mr. Polski listed the property for sale, and the information included a list of improvements that required City permits; however, no permits had been pulled. City staff investigated the violations and are now working with the property owner to either retroactively issue the permits for the 50 improvements identified or restore the site to previous conditions because the improvements have already been constructed (Attachment 1). The concerns related to the LMRWD SSOD include the following:

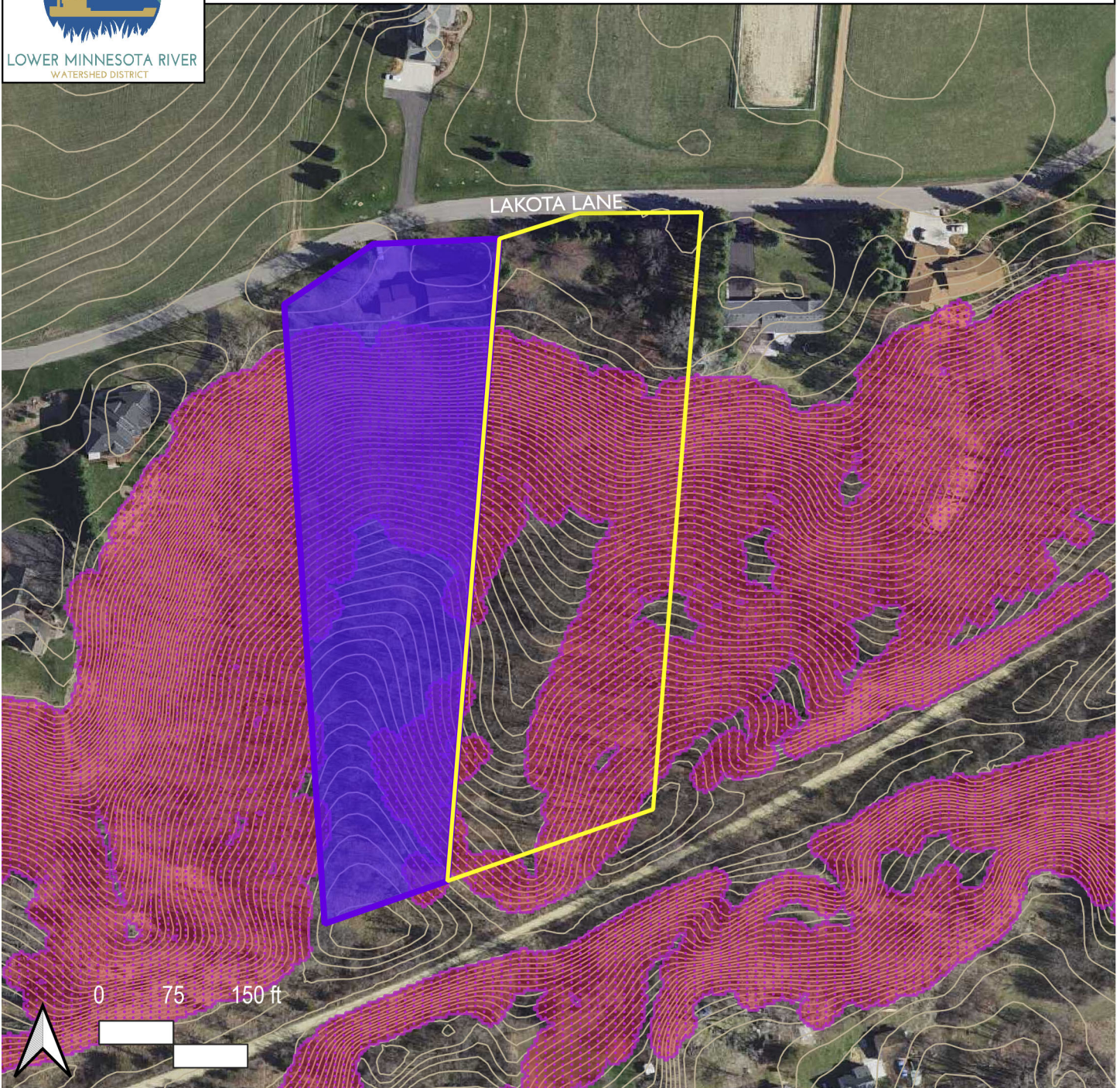
- Encroachments into the bluff setback and impact zone from the deck addition,

- retaining wall, pool pad, and grading and vegetation removal
- Tree removal on the bluff
  - Drain tile and sump pump installation
  - Permanent site stabilization to prevent erosion







The approximate extent of the improvements are shown in Figure 2.



Figure 1: 535 Lakota Lane



**LEGEND**

-  535 Lakota Ln
-  Previous LMRWD Permit Reviews
-  Steep Slopes Overlay District
-  Carver Co. Parcels
-  Carver Co. 2-ft Contours
-  LMRWD Boundary

**LMRWD Watershed  
Location Map**

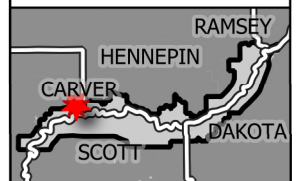
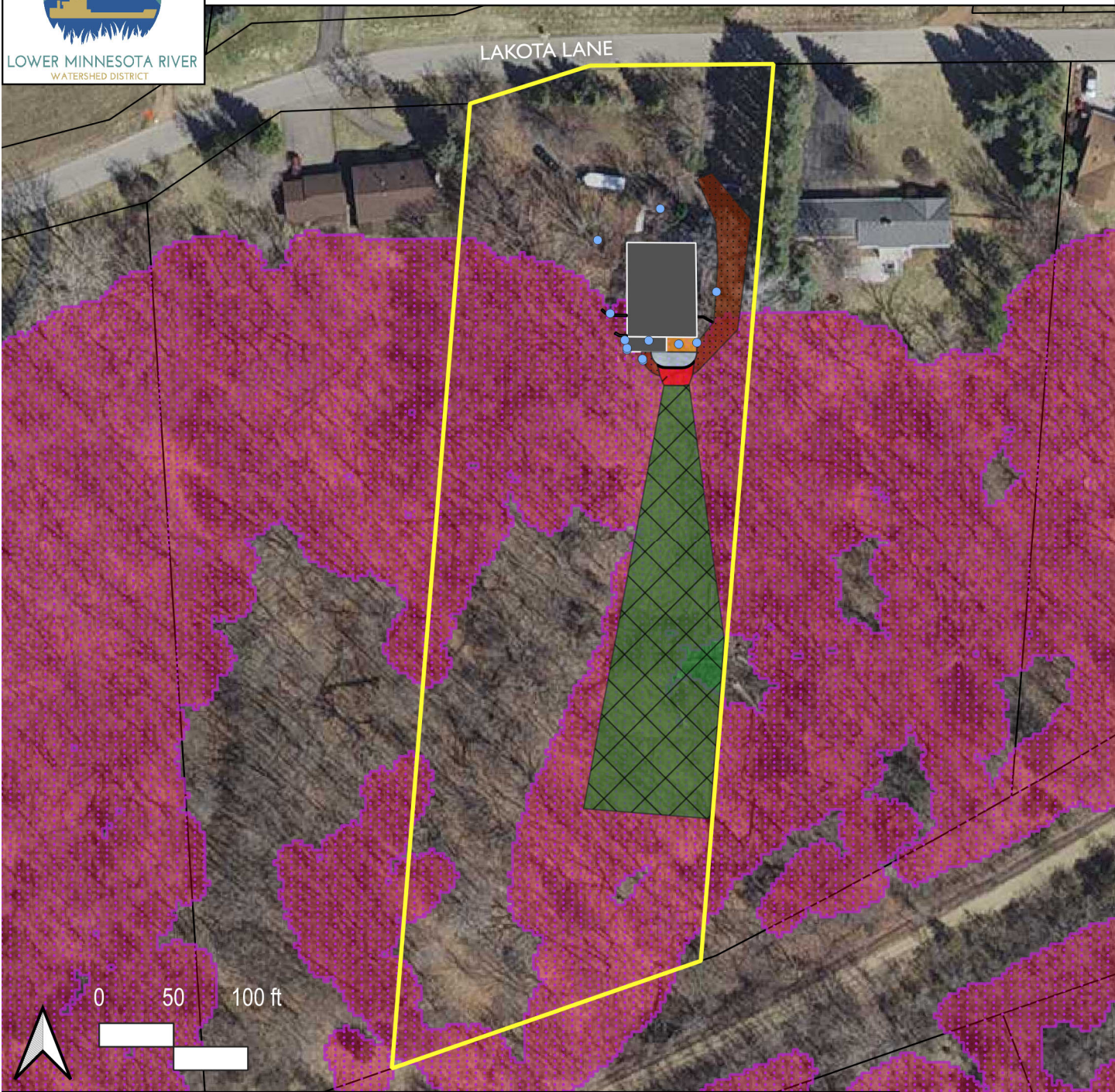




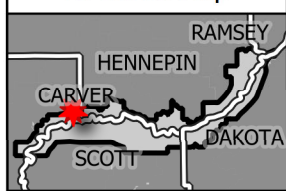
Figure 2: 535 Lakota Lane Site Inspection



**LEGEND**

- |                         |                               |
|-------------------------|-------------------------------|
| 535 Lakota Ln           | Riprap                        |
| Runoff/Discharge Points | Retaining Wall                |
| Existing Deck           | Tree Clearing                 |
| Deck Addition           | Steep Slopes Overlay District |
| Pool Pad                | Carver Co. Parcels            |
| Gravel                  | LMRWD Boundary                |

**LMRWD Watershed Location Map**





## Summary

<u>Project Name:</u>	Polski Residence—Work Without Permit
<u>Purpose:</u>	Unpermitted residential improvements and grading in the SSOD
<u>Project Size:</u>	Unknown, estimated 1,400 square feet in SSOD and approximately 3,700 square feet of new impervious surfaces.
<u>Location:</u>	535 Lakota Lane, Chanhassen (Parcel ID No. 251300020)
<u>LMRWD Rules:</u>	Rule F—Steep Slopes
<u>Recommended Board Action:</u>	None, information only

The property is located in the Bluffview Addition, platted in 1958 and constructed in 1978. It is currently listed by the Carver County tax assessor as having one story and four bedrooms in 2,318 square feet. The current listing states that the property is five bedrooms, three bathrooms, and 4,864 square feet—significantly larger than the County information provided.

A review of County aerial photography clearly shows the construction of the new aboveground pool pad, deck addition, and retaining wall and riprap noted in the field (Figures 3 and 4).



Figure 3. Carver County aerial images of 535 Lakota Lane (left taken April 15, 2015, and right taken November 21, 2020.).



Figure 4. Western view of 535 Lakota Lane (top image taken on April 24, 2018; bottom image taken on April 8, 2020.).

## Site Inspection

On May 5, 2022, Young Environmental staff visited 535 Lakota Lane to document site conditions. Prior to inspecting the property, staff noted that it appeared the occupant was home. Staff knocked on the door to talk to the homeowner, but no one answered the door. Staff then walked around the property and took photos to document the site conditions (Attachment 2). Staff observed the following:

1. Twelve roof, sump pump, or drain tile discharge points were identified coming from the house and discharging onto the property. Ten of these were discharged into the SSOD.
2. Extensive tree-clearing activities occurred downslope from the property.
3. Gravel and riprap were placed to create a level surface for the aboveground pool and held in place with a retaining wall.
4. Gravel was placed on the east hillside and side yard for RV parking.

## Rules Review

The District regulates land-disturbing activities that affect one acre or more under Rule B and create more than one acre of new impervious surfaces. The improvements appear to have disturbed less than one acre within the LMRWD boundary and resulted in approximately 3,700 square feet of new impervious surfaces, indicating that neither Rule B nor D apply. However, the total amount of disturbance will be confirmed by the City when an on-site survey is completed.

### Rule F—Steep Slopes Rule

The District regulates land-disturbing activities within the SSOD and requires a permit for activities that involve the excavation of 50 cubic yards or more of earth or the displacement or removal of 5,000 square feet or more of surface area or vegetation within the overlay area. The improvements appear to have been subject to this rule, given the amount of tree clearing and grading within the SSOD. Exemptions to Rule F exist for native plantings and removal of noxious, exotic, or invasive vegetation as well as for pruning of diseased or dead trees within the SSOD; however, the applicant must provide a rationale for the tree and vegetation clearing as well as the total area affected by their activities.

For work within the SSOD, the applicant must provide documentation that a qualified professional or professional engineer registered in the state of Minnesota has certified this area as suitable for the proposed activities, structures, or uses resulting from the construction. Because the homeowner appears to have completed most of the improvements, a professional must evaluate them to determine if the retaining walls, deck, pool pad, gravel, and riprap placement will be stable and not cause further erosion of the slope because no documentation has been provided.

Finally, staff identified 12 discharge points around the property during the site inspection, including 10 within the SSOD, which can create unstable slope conditions. Rule F explicitly states that land-disturbing activities may not result in any new water discharge points on the steep slopes or along the bluff. The homeowner must redirect these discharge points away from the SSOD.

### **Summary of Findings and Recommendations**

As per the inspection of the property conducted on May 5, 2022, the improvements do violate the LMRWD Rule F—Steep Slopes Rule and must be corrected with an after-the-fact permit. To address the permit violation, the staff recommends continued work with the City and the property owner to address the identified concerns and issue an after-the-fact permit.

We recommend drafting a letter to the property owner outlining the Rule F violation and required restoration or corrective actions. The letter will include a timeline for addressing the violation and required submittals, including the following:

1. Apply for an LMRWD Individual Permit, and pay the permit fee of \$750.
2. Provide documentation of the tree- and vegetation-clearing activities within the SSOD.
3. Provide an evaluation by a professional engineer that the slope can withstand the constructed improvements as is.
4. Redirect stormwater runoff from the house (roof and gutter as well as sump pump discharges) away from the SSOD.

If the property owner does not comply, then as the LMRWD's legal counsel recommends, the violation order would be served on the owner and recorded with the property title.

### **Attachments**

- Attachment 1 – City Review Memo
- Attachment 2 – Photos from May 5, 2022, site visit

**Attachment 1—City Review Memo**



# CITY OF CHANHASSEN

Chanhassen is a Community for Life - Providing for Today and Planning for Tomorrow

May 2, 2022

**2<sup>ND</sup> NOTICE**

ECO Real Estate Holdings LLC  
P.O. Box 1199  
Clark, CO 80428

Re: 535 Lakota Lane – Work Without Permit

Dear ECO Real Estate Holdings LLC:

On April 18, 2022 the City sent you a letter making you aware of several violations of City Code on your property and requesting that you work with staff to address these issues. To date, staff has not received a response this letter. Please provide staff with a timeline for submitting a survey of the property and addressing the other issues raised in the initial letter by **May 20, 2022**.

As a reminder, based on the information available and staffs' observations during a site visit on April 12, 2022, staff believes the following items will need to be addressed:

**Planning Department:**

- Probable encroachment into required bluff setback and impact zone
  - Deck addition
  - Retaining wall
  - Pool pad and above-ground pool
  - Grading and vegetation removal associated with limestone around pool pad
- As-built/updated survey needed to accurately depict current conditions on property and determine exact extent and nature of encroachment into the bluff setback and impact zone
- If survey shows alterations made within bluff setback and bluff impact zone, one of the following must be done:
  - Remove alterations and restore bluff area to pre-existing conditions
  - Request an after-the-fact variance
    - The City may not grant all or part of the requested variance
    - If elements of the variance request are not granted, they would need to be removed
    - If elements of the variance are granted, the City would impose conditions to mitigate the impact of the various elements

Questions about these requirements can be addressed to the City's Associate Planner, MacKenzie Young-Walters at 952-227-1132 or [mwalters@ci.chanhassen.mn.us](mailto:mwalters@ci.chanhassen.mn.us).

**Environmental Resources:**

- Tree removal within bluff. A survey of trees removed from bluff, including diameter and species will be needed.
  - Based on extent of removals, native trees will be required to be planted to restore the bluff to pre-removal conditions.

Questions about this requirement can be addressed to the City's Environmental Resource Specialist, Jill Sinclair at 952-227-1133 or [jsinclair@ci.chanhassen.mn.us](mailto:jsinclair@ci.chanhassen.mn.us).

**Water Resources Department:**

- A survey of the stormwater-related improvements including but not limited to the concrete apron and drain tile installation will be needed to understand the extent of the work completed. Additional stipulations may be required from the findings of the survey.
- The site must be permanently stabilized to prevent erosion and sediment transport. After completion of any work related to this letter the homeowner shall schedule an erosion control inspection with the City and address any issues from that inspection.

Questions about this requirement can be addressed to the City's Water Resources Engineer, Joe Seidl at 952-227-1168 or [jseidl@ci.chanhassen.mn.us](mailto:jseidl@ci.chanhassen.mn.us).

**Building Department:**

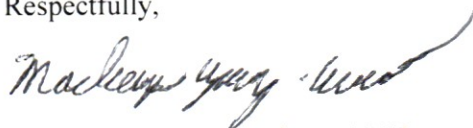
- Permits for the following exterior improvements need to be obtained:
  - Deck addition
  - New footings and railings on existing deck
  - Windows, exterior doors, garage overhead door
  - Porch converted into master bedroom

In addition to the permits needed for exterior improvements, permits are required for interior improvements that have been completed. We have several photos showing interior improvements and have received a list of 50 improvements that have been made to the property within the last three years. The list is included with this letter. Items on the list highlighted in green have been permitted and items in red were completed without permits. Please contact the Building Department to schedule an interior walkthrough of your property. Staff would ask that you or your representative accompany us for this process. Once staff walks through the property, we can begin to provide you with a path towards compliance with the Building Code.

To schedule a walkthrough of the property or if you have any questions about Building Code/permit requirements, please contact the City's Building Official, Eric Tessman at 952-227-1199 or [etessman@ci.chanhassen.mn.us](mailto:etessman@ci.chanhassen.mn.us).

Your cooperation in correcting these issues is appreciated.

Respectfully,



MacKenzie Young-Walters, AICP  
Associate Planner

cc: Eric Tessman, Building Official  
Jill Sinclair, Environmental Resources Specialist  
Joe Seidl, Water Resources Engineer

## List of Improvements in past 3 years

Building permit obtained

Building permit needed

Zoning permit needed

- New Roof, ice & water, roof vents, etc.
- All new windows (17) LoE high efficiency windows
- All new moldings, casing, baseboard, etc.
- All new subfloor on main level
- Main level ceiling removed; raised 6" and all new drywall
- All new blown in cellulose insulation in attic space
- All walls that were opened – closed cell spray foam insulated
- All new solid pine interior doors – 100% of the house
- New overhead garage door w. windows
- New fire door to garage
- New double glass French door at entry
- New footings on deck
- New laminate beams and posts added to support master suite over deck
- Screened in porch converted to massive master suite
- Added WC to master bath, completely gutted and added huge his/her shower, all heated ceramic tile, everything new.
- Added large master closet w. barn doors, custom – California style shelving and hangers
- Roughed in 220V for baseboard heat if needed in owner's suite addition, but has not been needed. Very efficient as it was all spray foamed.
- All 3 bathrooms completely renovated with new plumbing, custom tile work, vanities, flooring, etc.
- All new engineered hardwood and carpet on main level.
- All new cabinets, vanities, moldings, crown, custom wood wraps on HVAC duct work, beams, etc.
- Added walls to create 3<sup>rd</sup> bedroom on main level and closet.
- Added built in cabinets and butcher block top/entertainment center w. data conduit center in main level living room
- All new countertops (white granite in main kitchen, quartz in bathrooms, and butcher block in lower level kitchen).
- Wall removed separating dining area from kitchen; and custom island installed w. prep sink.
- All new plumbing w. pex supply lines, drain pipes, frost proof silcocks
- All new HVAC duct work, air supplies, and cold air returns (house was previously on electric baseboard heat)
- New high efficiency furnace
- Added New A.C. Condensing Unit and hook ups/plumbing
- New Water Heater



- New Washer & Dryer
- All new appliances in (2) kitchens
- Commercial style finish in laundry/hobby room with butcher block counter tops, custom sink, built in cabinets, etc.
- Added drain tile and sump pump in the basement (French drain style to sump basket).
- All new drywall in lower level ceiling.
- All new recessed lights and light fixtures throughout house
- All new paint throughout the interior and exterior
- Created mudroom off garage with custom bench and bead board coat hooks.
- Patching and skim coat of garage concrete floor, painted garage
- Added concrete apron w. drain for rainwater runoff
- Seal coated entire driveway
- Replaced roof, siding, door, and painted shed
- Graded, seeded, and repaired over 1/2 of front/side yard
- Installed underground electric dog fence around the entire perimeter of house and back yard, trenched in driveway.
- Added custom mulch and pruned all trees, extensive cleanup of over grown shrubs, etc. in yard
- Added a great RV parking space on east side of house w. limestone driveway and electric hookup
- Added custom concrete landscaping curbing around the entire house.
- New mulch
- \$52,000 retaining wall and deck addition to create a pad for pool/swim spa with an infinity feel overlooking the MN River Bluffs view. Completely drain tiled, compacted, 25 tons of limestone 8-12' rock on slope to prevent any erosion. 12" of compacted limestone class-5 rock on the actual pad pool pad.
- Added above ground pool w. filtration system and pump (in garage during the off season, but comes with the house)
- \$26,120 Completely new gravity fed Septic System fall of 2021 w. directional bore for drain field at lower elevation approximately 65' SW of house down the hill to leave room for an outbuilding just west of the house. All new tanks, drain field, etc.

**Attachment 2—Photos from May 5, 2022, site visit**

535 Lakota Lane – front of house (discharge points circled in yellow)



535 Lakota Lane – front of house (discharge points circled in yellow)



535 Lakota Lane – west side of house (discharge points circled in yellow)



535 Lakota Lane – west side of house (discharge points circled in yellow)



535 Lakota Lane – west side of house (discharge points circled in yellow)



535 Lakota Lane – south side of house, under existing deck





535 Lakota Lane – south side of house, under new deck



535 Lakota Lane – south side of house



535 Lakota Lane – south side of house



New Deck

#10

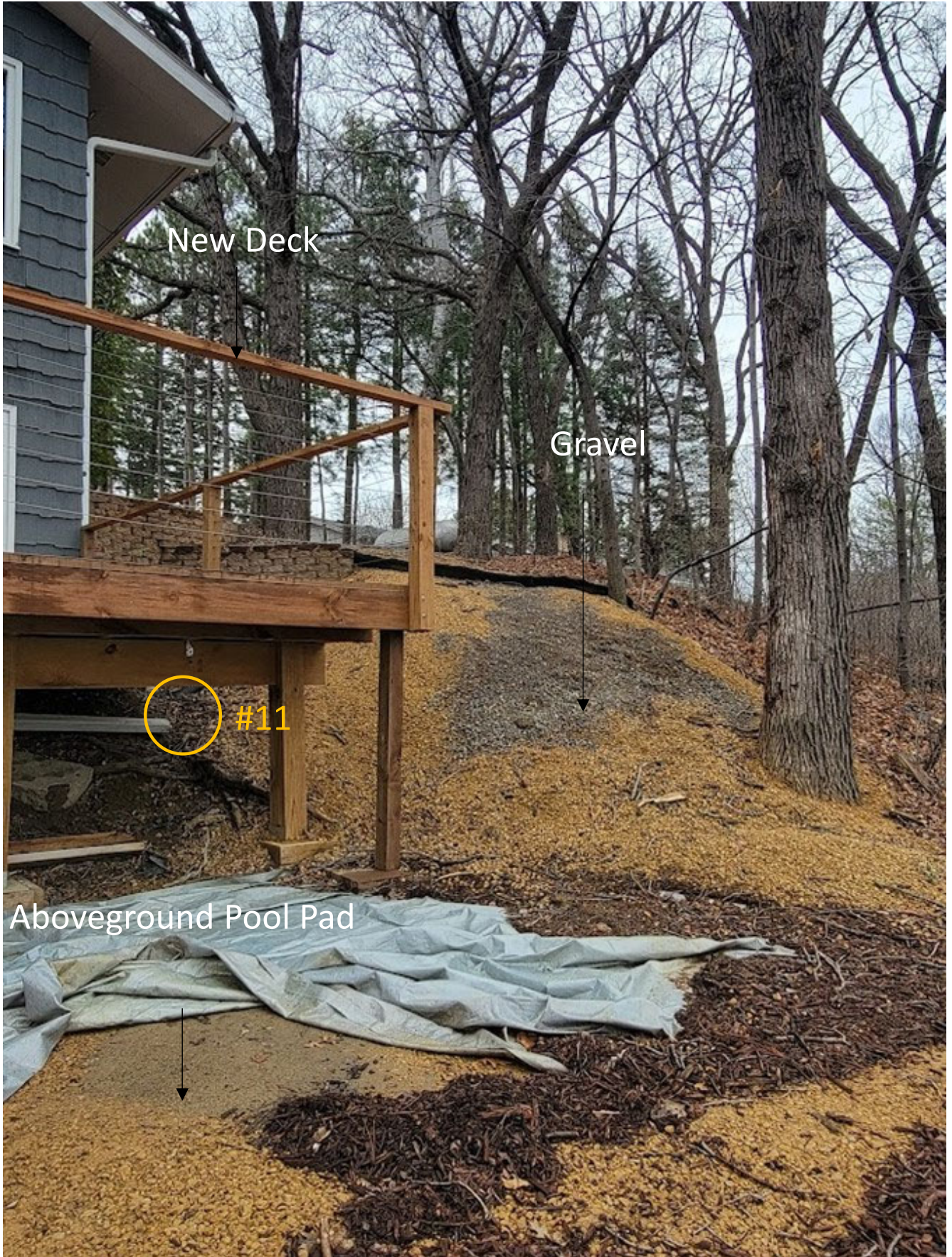
#11

Aboveground Pool Pad

535 Lakota Lane – Close up of Point #11



535 Lakota Lane – south side of house



535 Lakota Lane – east side of house



535 Lakota Lane – east retaining walls

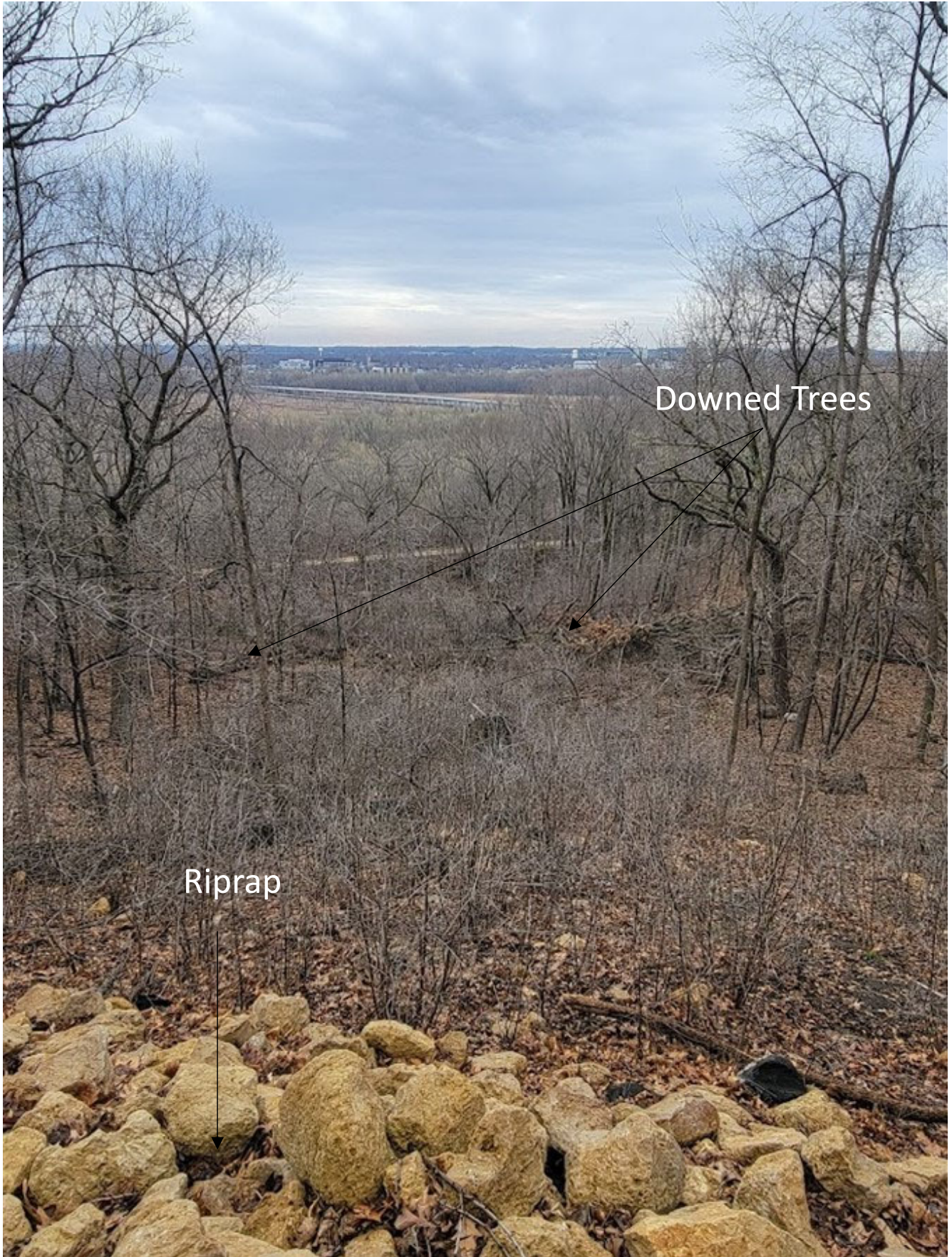


535 Lakota Lane – east side of house (discharge points circled in yellow)





535 Lakota Lane – south view from aboveground pool pad





# LOWER MINNESOTA RIVER WATERSHED DISTRICT

## Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, May 18, 2022

### Agenda Item

#### Item 6. J. – MPCA Soil Reference Values (SRVs)

#### Prepared By

Linda Loomis, Administrator

#### Summary.

The MPCA has been working for several years to revise allowances for chemicals found in soil. SRVs are a screening tool used to evaluate potential human health risks from exposure to contaminated soil. This concerns the LMRWD management of dredge material.

The MPCA released new guidance for SRVs April, 22, 2022. The SRV spreadsheet contains generic SRVs for the Residential/Recreational and Commercial/Industrial land use categories. 2022 changes are summarized below:

- 42 new chemicals added to the SRV table.
- Updates to some existing SRVs based on new toxicity values or other chemical information. Changes of note:
  - **Lead:** residential SRV dropped to 200 parts per million (ppm; from 300); industrial SRV dropped to 460 ppm (from 700). This change is based on EPA software that models the SRV to be protective to a certain level of lead in blood. EPA adopted a new blood lead reference value last year (5 micrograms per deciliter), so the SRV changed accordingly.
  - **Hexavalent chromium:** residential SRV dropped to 2.3 ppm (from 11); no change to industrial SRV (62). This change is most relevant for sites where hexavalent chromium is suspected to be present, based on past or present property use.
  - **Mercury:** residential SRV dropped to 2.7 ppm (from 3.1); no change to industrial SRV (3.1).
  - **Manganese:** residential SRV dropped to 730 ppm (from 2,100); industrial SRV dropped to 10,000 ppm (from 26,000). The updated residential SRV may be below background concentrations in some (but not all) areas of Minnesota. If manganese is a soil contaminant of concern at a site, coordinate with MPCA project staff to determine if an appropriate site-specific background level is needed.
- Adjusted number rounding of two exposure assumptions (body weight and surface area), which resulted in a small increase for a number of SRVs.

The MPCA plans to update the SRVs annually. The LMRWD will be evaluating the impact this may have to the LMRWD management of dredge material. Links to the MPCA guidance document and spreadsheet are provided below.

#### Attachments

[Soil Reference Value Technical Support Document](#)

[SRV Spreadsheet](#)

#### Recommended Action

No action recommended – For information only