



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, December 16, 2020

Agenda Item

Item 6. J. - Permits and Project Reviews

Prepared By

Linda Loomis, Administrator

Summary

i. **77th Street Underpass - LMRWD Permit No. 2020-132**

This project came before the Board at the November 18, 2020 meeting. The project did not meet LMRWD standards at that time. The Board did not take any action.

The proponent has revised the proposal, which now meets the LMRWD standards. Staff is recommending conditional approval pending receipt of the NPDES permit.

Attachments

Technical Memorandum re: 77th Street Underpass from Young Environmental dated December 10, 2020

Recommended Action

Motion to issue permit 2020-132 conditional upon receipt of NPDES Permit

ii. **Canterbury Crossing - LMRWD Permit No. 2020-135**

Canterbury Crossing is one component of a regional development plan in the City of Shakopee. This project is a senior living development. Staff has reviewed the project and is recommending conditional approval upon receipt of the following:

- A copy of the NPDES permit and the final SWPPP (Surface Water Pollution Prevention Plan)
- The final revised stormwater management plan incorporating the City of Shakopee's editorial comments
- A copy of the draft Utility Facility Agreement with the City of Shakopee

Attachments

Technical Memorandum re: Canterbury Crossing from Young Environmental dated December 11, 2020

Recommended Action

Motion to issue permit 2020-135 conditional upon receipt of the following:

- Copy of the NPDES permit and the final SWPPP (Surface Water Pollution Prevention Plan)
- The final revised stormwater management plan incorporating the City of Shakopee's editorial comments
- A copy of the draft Utility Facility Agreement with the City of Shakopee

iii. Carver County State Aid Highway 11 (CSAH 11)/Jonathan Carver Parkway - LMRWD Permit No. 2020-110

Carver County plans to improve County State Aid Highway 11 (CSAH 11) in the City of Carver. The LMRWD delegated its authority for portions of this project to the Carver County WMO, as its standards are stricter than the LMRWD. The LMRWD retained its authority regarding the steep slopes. LMRWD has reviewed the project and provided comments in July and November 2020. Staff is recommending conditional approval upon receipt of the following:

- A copy of the NPDES permit
- Documentation project approval from the Carver County WMO and compliance with rate control, water quality and volume control requirements

Attachments

Technical Memorandum re: CSAH 11 from Young Environmental dated December 10, 2020

Recommended Action

Motion to issue permit no. 2020-110 conditional upon receipt of the following:

- A copy of the NPDES permit
- Documentation project approval from the Carver County WMO and compliance with rate control, water quality and volume control requirements

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

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

Date: December 10, 2020

Re: 77th Street Underpass Permit Review (LMRWD No. 2020-132)

The City of Richfield (City) is proposing construction of the 77th Street Underpass connecting 77th Street underneath Cedar Avenue (TH 77) to Fort Snelling. The portion of the project east of Cedar Avenue falls within the Lower Minnesota River Watershed District (LMRWD or District), while the west segment falls within the Richfield–Bloomington Watershed Management Organization (RBWMO; [Figure 1](#)). The project was approved by LMRWD at the January 2019 board meeting but was put on hold because of a lack of funding.

The project was presented to the LMRWD managers at the November 18, 2020, board meeting because of changes to the original design, which included the removal of proposed stormwater BMPs. The City and its engineer, WSB & Associates, attended the meeting and stated their rationale for not meeting the District's stormwater rule:

1. Cost was the primary constraint because the cost to acquire the land from the Metropolitan Airport Commission was much more expensive than the \$1 handshake agreement assumed for the previous design.
2. The Minnesota Department of Transportation (MnDOT) does not allow stormwater features too close to bridge footings.
3. Groundwater is too high to allow for infiltration.
4. The MnDOT will provide additional storage to treat the excess runoff from the 77th Street Underpass project as part of its future Corridors of Commerce plans.

At the November board meeting, the managers tabled their decision to allow the applicant additional time to either get a commitment from MnDOT that their future Corridors of Commerce project will also provide treatment for the 77th Street Underpass project to provide justification for an out-of-sequence variance or reevaluate the stormwater management design.

On November 24, 2020, WSB submitted a new design, which includes a small infiltration BMP located in the northeast quadrant of the TH 77 and I-494 interchange (**Figure 1**). This new BMP provides stormwater treatment for an area of TH 77 roadway that does not receive any stormwater treatment. This area of roadway currently flows to the same outlet as the new impervious from the proposed 77th Street Underpass. The BMP has an unconventional design that will require the contractor to “punch through” the restrictive clay layer by excavating three 4- by 8-foot funnels, backfilled with coarse aggregate, which will allow stormwater to infiltrate into the underlying sand layer.

The project proposes an increase of 1.1 acres of impervious surface, triggering District Rules B—Erosion and Sediment Control, and D—Stormwater Management. The project is not located in any of the District’s special overlay districts (High Value Resources Area, Floodplain, or Steep Slopes Overlay District).

Additionally, the project will change the watershed boundaries by redirecting surface area from RBWMO to LMRWD (**Figure 1**).

Project Summary

<u>Project Name:</u>	77th Street Underpass
<u>Purpose:</u>	To connect 77th Street east and west of Cedar Avenue and improve traffic and transit problems along I-494
<u>Project Size:</u>	16.00-acre project area; 14.95 acres disturbed, 5.85 acres of existing impervious surface, and 7.12 acres of new impervious surface; net increase 1.1 acres of new impervious surface
<u>Location:</u>	Northeast quadrant of the TH 77 and I-494 quadrant in Bloomington, MN
<u>Applicable LMRWD Rules:</u>	Rule B—Erosion and Sediment Control Rule D—Stormwater Management
<u>Recommended Board Action:</u>	Conditional approval, see recommendations

Permit Application Review

The District has received the following documents for review:

Document Name	Author	Document Date	Date Received; Revised
LMRWD Individual Project Permit Application	WSB	10/21/2020	10/21/2020
77th Street Underpass Memorandum	WSB	10/21/2020	10/21/2020
77th Street Underpass Drainage Plans	WSB	10/19/2020	10/21/2020
Existing Conditions – LMRWD – 77th Street Underpass HydroCAD Model	WSB	10/20/2020	10/21/2020
77th Street Underpass – Drainage Overview Map – LMRWD Permit	WSB	10/20/2020; revised 11/11/2020 and 11/24/2020	10/21/2020; 11/11/2020; 11/24/2020
Proposed Conditions – LMRWD – 77th Street Underpass Richfield Underground System – 24” orifice outlet discharge HydroCAD Model	WSB	10/20/2020; revised 11/11/2020	10/21/2020; 11/11/2020
Stormwater Pollution Prevention Plan and Erosion Control Plan	WSB	10/19/2020	10/21/2020
77th Street Underpass DWSMA Overview Map	WSB	11/27/2018	10/21/2020
77th Street Underpass; Response to LMRWD Comments	WSB	11/10/2020	11/9/2020
77th Street Underpass Memorandum	WSB	11/24/2020	11/24/2020

Rule B—Erosion and Sediment Control

Under Rule B, the District regulates land-disturbing activities affecting one acre or more. The proposed project disturbs 14.95 acres, only a portion of which lies within the LMRWD. While the total new impervious surface within the LMRWD has not been provided, an estimate of the area confirms the proposed impervious surface will exceed one acre. The County has provided an erosion and sediment control plan and Stormwater Pollution Prevention Plan.

An NPDES permit will be required for a District permit.

Rule D—Stormwater Management

The District requires stormwater management for projects that would create one acre or more of new impervious surface. This project proposes a net increase of 1.1 acres, which, under Rule D, would require reducing the volume by 3,993 cubic feet, meeting existing discharge rates, and demonstrating no net increase in total phosphorus or total suspended solids would result from the project.

An underground storage chamber on the west side of TH 77 (currently within RBWMO

but proposed to be redirected to LMWRD) will provide flood storage and rate control. Runoff from the project will discharge into the existing NE Loop stormwater pond in the northeast quadrant of the TH 77–I-494 interchange, which overflows into the I-494 storm sewer (**Figure 1**). An underground infiltration system in Washington Park will reduce volume and improve water quality for the proposed impervious surface. However, stormwater treated by this system flows west, within the RBWMO boundary, and, thus, would not benefit the LMRWD. With the November 24, 2020, design revision, WSB has included a new infiltration BMP within the LMRWD boundary, which will provide volume reduction and water quality treatment.

The proposed underground storage vault would reduce discharge rates into the existing MnDOT stormwater pond (**Table 1**), and the new infiltration BMP will further reduce rates into the MnDOT stormwater pond, as shown in **Table 2**.

Table 1. 77th Street Underpass Peak Stormwater Discharge from HydroCAD Modeling

EVENT	EXISTING (CFS)	PROPOSED (CFS)	CHANGE (CFS)
2-YR / 24-HR	4.46	2.47	-1.99
10-YR / 24-HR	9.77	6.02	-3.75
100-YR / 24-HR	22.14	16.75	-5.39

Table 2. Peak Stormwater Discharge Rates—New Infiltration BMP

EVENT	EXISTING (CFS)	PROPOSED (CFS)	CHANGE (CFS)
2-YR / 24-HR	4.29	1.63	-2.66
10-YR / 24-HR	8.94	5.75	-3.19
100-YR / 24-HR	17.92	14.22	-3.70

Section 4.4.2 of Rule D requires reducing post-construction stormwater runoff volume for projects that create one acre or more of impervious surface to provide volume reduction equal to 1-inch of rainfall runoff from the new impervious surface. The project proposes 1.1 acres of new impervious surface, requiring 3,993 cubic feet of volume reduction.

The addition of the new infiltration BMP will provide volume reduction for 1.66 acres of existing impervious surface. WSB provided modeling for 1.1 inches of rainfall, demonstrating that the proposed BMP will infiltrate a total of 6,621 cubic feet, meeting the District’s requirement.

Section 4.4.3 of Rule D requires projects creating one acre or more of impervious surface to provide evidence that no net increase would result in total phosphorus or total suspended solids in the receiving waters. On November 24, 2020, WSB provided revised plans that included water quality modeling of the proposed infiltration BMP using

MIDS, which shows a 94% reduction in both total phosphorus and total suspended solids (**Table 3**).

Table 3. 77th Street Underpass Annual TP and TSS Reductions from MIDS.

	EXISTING (lb/yr)	PROPOSED (lb/yr)	% REDUCTION
TP (lb/yr)	2.014	1.896	94%
TSS (lb/yr)	365.98	344.44	94%

The District also requires applicants develop and adhere to a stormwater maintenance plan for the project, including acquisition of any necessary easements. In this case, while the City is the project proponent, the proposed BMPs are within MnDOT right-of-way, and the City will be transferring operations and maintenance responsibility to MnDOT as part of its MS4 program. An executed stormwater maintenance agreement is not required in this case, but this transfer of BMP responsibility will be a stipulation of the final LMRWD permit.

Recommendations

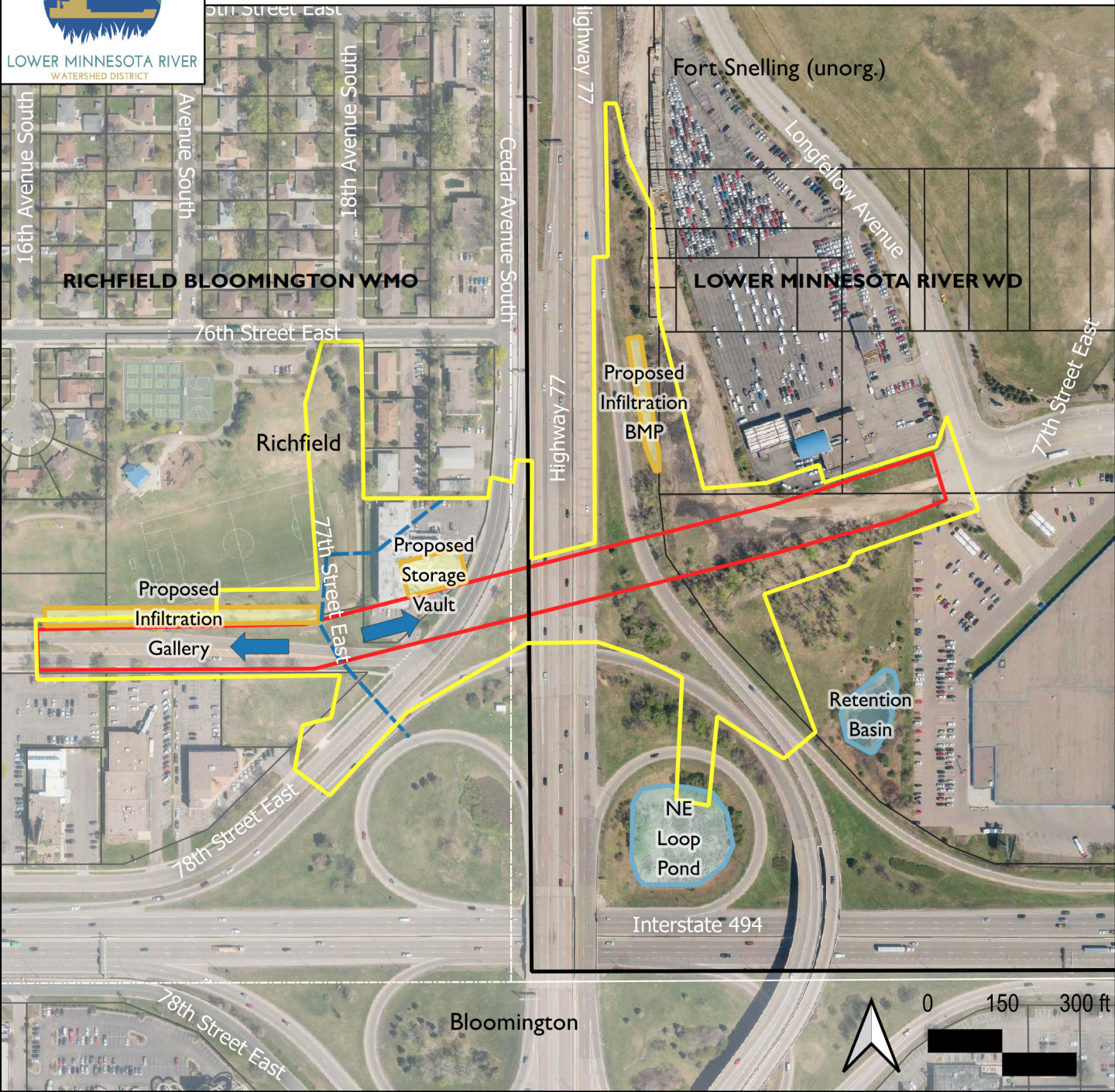
As presented, with the addition of the new infiltration BMP within the LMRWD boundary, the proposed 77th Street Underpass now meets the District rules. We recommend conditional approval, pending receipt of the final NDPEs permit.

Attachments:

- Figure 1. Proposed 77th Street Underpass Project Location Map



Figure 1: 77th Underpass Project Location



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- Approximate Construction Limits
- 77th Street Underpass
- Existing Stormwater Pond
- 2019 Dry Ponds
- 2020 Proposed BMPs
- Watershed Management Districts & Organizations
- LMRWD Boundary
- Hennepin Co. Parcel Data
- Proposed Watershed Divide
- Flow Direction



LMRWD Watershed Location Map

YOUNG ENVIRONMENTAL CONSULTING GROUP, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

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

Date: December 11, 2020

Re: Canterbury Crossings Permit Review (LMRWD No. 2020-135)

Alliant Engineering has applied for an Individual Project Permit from the Lower Minnesota River Watershed District (LMRWD or District). Alliant is proposing to construct a townhome and senior living development in Shakopee, Minnesota (**Figure 1**). The City of Shakopee does not have its LMRWD municipal LGU permit, so this project is subject to the District's rules and must obtain an individual project permit. As presented, the project triggers the following District rules: Rule B–Erosion and Sediment Control, and Rule D–Stormwater Management. The project is not located within the LRMWD special overlay districts or the FEMA floodplain.

This project is part of the regionally planned Canterbury Crossings development, which has previously been reviewed by the District. The project is required by the City to conform to the design standards of the regional stormwater management plan, which has been confirmed to meet District rules.

Project Summary

<u>Project Name:</u>	Canterbury Crossings
<u>Purpose:</u>	Residential townhomes and senior living, part of the regional development plan for Canterbury Park
<u>Project Size:</u>	14 acres, 13.4 acres disturbed, 0.2 acres of existing impervious, 7.3 acres of proposed impervious

<u>Location:</u>	Shenandoah Drive, Shakopee
<u>Applicable LMRWD Rules:</u>	Rule B–Erosion and Sediment Control Rule D–Stormwater Management
<u>Recommended Board Action:</u>	Conditional approval, see recommendations

Discussion

The District has received the following documents for review:

- LMRWD Individual Permit Application by Alliant Engineering, dated November 19, 2020
- LMRWD Individual Permit Fee of \$1,500, received December 3, 2020
- Canterbury Crossings Preliminary Plat, dated October 13, 2020
- Canterbury Crossings Final Plat–Phase 1, dated November 13, 2020
- Canterbury Crossings Stormwater Management Study by Alliant Engineering, dated October 26, 2020
- Revised Preliminary Plat, dated November 13, 2020

The documents provided include the information necessary for review.

Rule B–Erosion and Sediment Control

The District regulates land-disturbing activities that affect one or more acres under Rule B. The proposed project would disturb 13.4 acres within the LMRWD boundary, including the creation of over seven acres of new impervious surfaces. The applicant has provided an erosion and sediment control plan and Stormwater Pollution Prevention Plan (SWPPP).

An NPDES permit and a copy of the draft City of Shakopee’s Utility Facilities Agreement, or a separate maintenance agreement with the District, are required for a District permit.

Rule D–Stormwater Management

The District requires stormwater management for projects that propose to create one or more acres of new impervious area. The provided information demonstrates the project will create 7.3 acres of impervious surfaces.

Similar to other developments in this area, the regional Canterbury Park and Shenandoah Drive stormwater management plans provide design criteria for future developments. The City provided details about the development of these plans on

August 27, 2020, including describing how the regional plans were developed for the fully built conditions based on a maximum allowed percent impervious by subcatchment. Using the maximum allowable percent imperviousness, the plans were designed to meet the District’s peak discharge rate, water quality, and volume control requirements for the entire region. As each parcel or part is designed and constructed, the applicant simply has to provide the percent impervious and state whether the project is within the maximum allowable percent impervious for the area. If it meets the requirements, it is approved by the City. If the project exceeds the maximum allowable percent impervious, the applicant is then required to provide additional stormwater best management practices to meet the City and District’s requirements. The analysis and process administered by the City comply with the District’s requirements.

The Canterbury Crossings site was included in both plans, which assume the site’s north will be treated by the Shenandoah Drive regional pond while the southern half of the site will be treated on-site.

The Shenandoah Drive regional NURP pond provides rate control and water quality treatment for 6.4 acres for the site’s north half. The Shenandoah Drive stormwater management plan assumed a maximum impervious area of 65 percent, and 4.2 acres of total impervious area will be treated by the regional NURP pond. The Canterbury Crossings project proposes 2.9 acres of new impervious area will be treated by the regional pond, less than the original design criteria.

The south half of the site (also 6.4 acres) is proposed to be treated on-site, as the regional stormwater plans assumed. It is limited to the City’s 1/3 cfs per acre peak discharge limit because it is in the constrained Dean Lake subwatershed. Soil borings provided indicate bedrock is within 2 to 11 feet of the existing ground surface and will not allow for adequate separation from any infiltration practices. Because of the shallow bedrock and its proximity to the City of Shakopee’s well and Drinking Water Source Management Area, the Canterbury Crossings project proposes using two NURP ponds to provide rate control and water quality treatment. The applicant has provided calculations that demonstrate a reduction in total phosphorus and total suspended solids, per the requirement of Rule D, Section 4.4.3 (**Tables 1 and 2**).

Table 1. Existing and Proposed On-Site Rate Control Summary

EVENT	EXISTING (cfs)	PROPOSED (cfs)	CHANGE (cfs)
2-YR/24-HR	18.5	2.0	-16.5
10-YR/24-HR	30.2	2.6	-27.6
100-YR/24-HR	57.1	10.0	-47.1

Table 2. Canterbury Crossings On-Site Water Quality Treatment Summary

	Total Area (ac)	Impervious Area (ac)	TP Annual Load (lbs.)	TSS Annual Load (lbs.)
Existing	9.4	0.2	3.8	694
Proposed	8.6	4.5	3.6	159
		Change	-0.2	-535

In consultation with the City of Shakopee on December 10, 2020, the City was able to confirm that the proposed Canterbury Crossings design conforms with the Shenandoah regional stormwater management plan for the assumed impervious percentages and the discharge rates to the city storm sewer. The City will be requesting minor editorial revisions to the Canterbury Crossings stormwater management plan to provide a clear accounting of the regional treatment. As presented and after discussion with the City, the project meets the District’s Rule D.

Recommendations

After consultation with the City of Shakopee regarding the regional stormwater management design, the project as proposed meets the requirements laid out in the District rules, and we recommend conditional approval of the project by the Board. The following are required to satisfy the conditions:

- Copy of the NPDES permit and final SWPPP
- The final revised stormwater management plan that incorporates the City of Shakopee’s editorial comments
- A copy of the draft Utility Facility Agreement with the City of Shakopee

Attachments:

- Figure 1. Proposed Canterbury Crossings Project Location Map



Figure I: Canterbury Crossings Project Location



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- Project Location
- LMRWD Boundary
- Watershed Management Districts & Organizations
- Scott Co. Parcel Data

LMRWD Watershed
Location Map

CARVER HENNEPIN
SCOTT DAKOTA

Young Environmental Consulting
Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

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

Date: December 10, 2020

Re: CSAH 11 Reconstruction Permit Review (LMRWD No. 2020-110)

Carver County (the County) is proposing roadway improvements along County State Aid Highway (CSAH) 11, also known as Jonathan Carver Parkway, from 4th Street to the Trunk Highway 212 ramps in Carver County, Minnesota. The County is proposing to build a new four-lane divided roadway to provide additional traffic capacity for growth and to address safety concerns along the corridor. Stormwater management requirements area proposed to be met through a new stormwater pond located in the northwest corner of the project and a second pond in the south end of the project.

This County first applied for a Lower Minnesota River Watershed District (LMRWD or District) permit on September 28, 2020, but has been working with the Carver County Watershed Management Organization (CCWMO) and the District since June 2020. Most of the proposed work is located within the CCWMO boundaries, but the project proposes several new connections to the existing storm sewer that enters District as well as an alteration to a stormwater outfall within the Steep Slopes Overlay District (SSOD) that is proposed to discharge to the Spring Creek gully complex (**Figure 1**, Discharge Point 10 and **Figure 2**). Staff has reviewed the project and provided comments to the applicant in July and November 2020. In our previous reviews we recommended deferring authority to the CCWMO for Rules B—Erosion and Sediment Control, and D—Stormwater Management because the CCWMO is more stringent than the LMRWD, with the District retaining permit authority under Rule F—Steep Slopes.

The proposed project is located in the City of Carver (the City) and would normally be

subject to municipal review, but the City does not have an approved municipal permit with the District; as a result, the County must receive a District permit for Rule F—Steep Slopes prior to construction. The County must also receive a CCWMO permit for erosion and sediment control as well as for stormwater management.

Project Summary

<u>Project Name:</u>	CSAH 11 Reconstruction
<u>Purpose:</u>	Lane expansion and safety improvements for CSAH 11
<u>Project Size:</u>	34.30 acres disturbed; 15.31 acres of existing impervious and 4.15 acres of new impervious
<u>Location:</u>	CSAH 11 from Levi Griffin Road to CSAH 40 in Carver County
<u>Applicable LMRWD Rules:</u>	Rule E—Steep Slopes
<u>Recommended Board Action:</u>	Conditional approval, see recommendations

Response to District Comments

The County's engineer, WSB & Associates (WSB), has provided responses to the District's comments from September 28, 2020, and November 13, 2020. The following summarize the remaining outstanding comments. The original comments are provided below in **black**; WSB's responses are in **red**; and the District's responses are in **blue**.

Comment 2: Provide a copy of the NPDES permit.

Response: The permit will be provided to the LMRWD once finalized.

Comment: Noted—a permit will be issued when the District has received the final NPDES permit.

Comment 3: Provide documentation clarifying the use of existing BMPs in the Spring Creek subdivision. Provide documentation proving the applicant holds the legal rights necessary to discharge to any off-site stormwater facility used for compliance and showing that those facilities are subject to an executed maintenance agreement.

Response: The City currently has an easement over existing BMPs that allows for future maintenance activities to be performed.

Comment: Please provide documentation for our records of the easement or an email

from the City stating that the BMP is part of its MS4 system.

December 10, 2020 Response: Closed—WSB provided the Spring Creek Second Addition plat showing the existing BMPs are located within the area of Outlot A.

Comment 6: Provide additional information on how Discharge Point 10 would address existing erosion issues or prevent further gully erosion.

Response: See previous comment and attached figure.

Comment: While the provided figure (Figure 2) helps clarify the proposed design, and we recognize the project is reducing flows at Discharge Point 10 (Table 1), supporting data such as exit velocities, scour calculations, and/or riprap design calculations are needed to determine how the project will address existing erosion issues or prevent further gully erosion. Provide the revised plans for Discharge Point 10 as well as the supporting design calculations that confirm the proposed outlet design will be stable and will not adversely affect the gully or steep slopes.

December 10, 2020 Response: Closed—WSB provided additional information, including the full-flow design velocity of 9.81 feet per second (fps) supporting proposed outfall protection design.

Comment 7: Address comments from the attached plan sheets.

Response: Plan sheets comments were not included. Please resubmit as necessary based on updated plans. We apologize if we missed something on this.

Comment: The error was corrected when the redlined plan sheets were sent directly to WSB on October 5, 2020.

December 10, 2020 Response: Closed—WSB updated the proposed plan sheets.

Comment 8: Provide documentation of project approval from the Carver County Watershed Management Organization and of compliance with water quality and volume control requirements.

Response: This will be included once approval is granted. Resubmittal to the CCWMO was completed on September 25, 2020, and the LMRWD was included in the resubmittal.

Comment: The District received the September 25, 2020, resubmittal and the subsequent November 3, 2020, CCWMO response. The project has not yet been approved by CCWMO; please continue to keep LRMWD informed on the permit progress. LMRWD comments are provided directly on the attached September 25, 2020, plan sheets.

December 10, 2020 Response: The District received CCWMO comments on November 3, 2020. The CCWMO is continuing to work with WSB to permit the project for stormwater management and erosion and sediment control.

Recommendations

We recommend conditional approval because the applicant has demonstrated compliance with the requirements of District Rule F—Steep Slopes but is continuing to work with the CCWMO.

Below is a summary of what the District requires before a project permit can be issued:

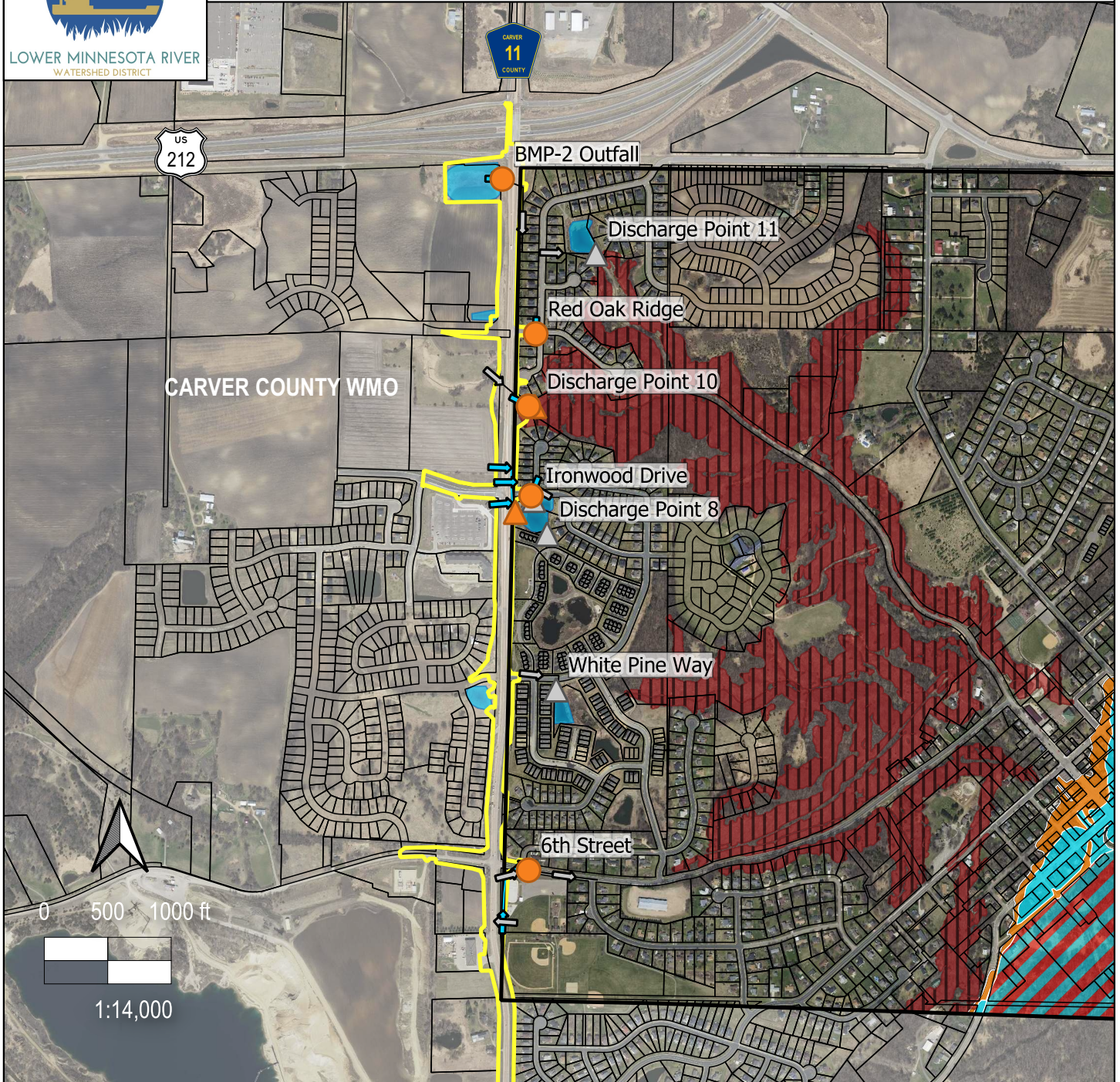
- A copy of the final NPDES permit
- Documentation of project approval from the CCWMO and compliance with rate control, water quality, and volume control requirements

Attachments:

- Figure 1. Proposed CSAH 11 Reconstruction Project Location Map



Figure 1: CSAH 11 Reconstruction Project Location



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- | | | |
|--------------------|--|-------------------------------|
| Project Area | Existing Storm Sewer Outfall | Steep Slopes Overlay District |
| Stormwater BMPs | New Outfall | Carver Co. Floodplain |
| LMRWD Boundary | New Connection to Existing Storm Sewer | 100-year Floodplain |
| Carver Co. Parcels | Existing Storm Sewer | Floodway |
| | New Storm Sewer | 500-year Floodplain |

