



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, June 20, 2024

Agenda Item

Item 6. B. – TH 41 Organic Recycling Facility (ORF) Intersection Reconstruction (LMRWD No. 2023-027)

Prepared By

Linda Loomis, Administrator

Summary

The Shakopee Mdewakanton Sioux Community (SMSC) plans to upgrade the intersection of TH 41/Chestnut Boulevard just north of the railroad track crossing. The improvements are being made in anticipation for the relocation of the SMSC Organics Recycling Facility. Approval of a permit is recommended contingent upon the receipt of the name and contact information of the individual(s) liable to the LMRWD for performance under the LMRWD rules from the time permitted activities commence until the LMRWD has certified satisfaction with erosion and sediment control requirements, contact information for the contractor(s), and contact information for the person(s) responsible for inspection and maintenance of erosion and sediment control.

Attachments

Technical Memorandum - TH 41 Organic Recycling Facility (ORF) Intersection Reconstruction (LMRWD No. 2023-027) dated June 13, 2024

Recommended Action

Motion to approve a permit for TH 41 Organic Recycling Facility (ORF) Intersection Reconstruction (LMRWD No. 2023-027) contingent upon receipt of the following: the name and contact information of the individual(s) liable to the LMRWD for performance under the LMRWD rules from the time permitted activities commence until the LMRWD has certified satisfaction with erosion and sediment control requirements, contact information for the contractor(s), and contact information for the person(s) responsible for inspection and maintenance of erosion and sediment control

Technical Memorandum



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

From: Erica Bock, Water Resources Scientist
Hannah LeClaire, PE, Water Resources Engineer

Date: June 13, 2024

Re: TH 41 Organic Recycling Facility (ORF) Intersection Reconstruction (LMRWD No. 2023-027)

The Shakopee Mdewakanton Sioux Community (SMSC) has applied for an individual project permit from the Lower Minnesota River Watershed District (LMRWD) for a roadway reconstruction project located at 12362 Chestnut Boulevard, Shakopee, Minnesota (Figure 1). Chestnut Boulevard is also known as Trunk Highway 41 (TH 41). The applicant's engineer, Bolton & Menk, submitted the permit application, associated application exhibits, and site plans for the TH 41 Organic Recycling Facility (ORF) Intersection Reconstruction project. This project is part of a common plan of development and is Phase 2 of the relocation of the SMSC ORF, for which Phase 1 was permitted by the LMRWD in July 2023 (LMRWD Permit No. 2022-016).

The applicant proposes to install turn lanes on TH 41, improve the access road to both the ORF and the Shakopee Asphalt Plant, and construct filter berms within the roadside ditches for stormwater management. The project disturbs 5.1 acres, reconstructs 2.6 acres of roadway, and creates 0.6 acre new impervious surface.

The project is not located within a High Value Resource Area, Steep Slopes Overlay District, or the floodplain. The project triggers Rule B—Erosion and Sediment Control and Rule D—Stormwater Management. Although the project address is in Shakopee, the project is officially located in Louisville Township, and therefore requires a LMRWD individual permit.

SUMMARY

Project Name: TH 41 ORF Intersection Reconstruction

Purpose: Roadway reconstruction.

Project Size:

Area Disturbed	Existing Impervious Area	New and Reconstructed Impervious Area
5.1 acres	2.7 acres	3.2 acres

Location: 12362 Chestnut Boulevard
Shakopee, MN 55379

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

Recommended Board Action: Conditional approval

DISCUSSION

The LMRWD received the following documents for review:

- LMRWD online permit application, received December 12, 2023.
- TH 41 ORF Relocation Drainage Report by Bolton & Menk, revised April 17; received April 17, 2024.
- Construction Plans by Bolton & Menk, dated April 3, 2024; received May 1, 2024.
- Revised HydroCAD Model by Bolton & Menk; received May 2, 2024.
- Revised MIDS Model by Bolton & Menk; received May 2, 2024.
- TH 41 Minnesota Department of Transportation (MnDOT) Ponds Survey by Bolton & Menk; received April 17, 2024.
- National Pollutant Discharge Elimination System (NPDES) Permit; received April 17, 2024.
- Impervious Areas Map by Bolton & Menk; received April 17, 2024.
- MnDOT Pond Maintenance Letter, dated May 9, 2024; received May 13, 2024.

The application was deemed complete on May 13, 2024, and the documents received provide the minimum information necessary for permit review.

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 5.1 acres within the LMRWD boundary. The applicant has provided an erosion and sediment control plan and a Stormwater Pollution Prevention Plan (SWPPP).

Temporary erosion and sediment control measures include storm drain inlet protection, silt fence, sediment control log (woodchip), and erosion control blanket (Category 25). The project applicant has provided a copy of the NPDES permit. The project generally complies with Rule B; however, contact information for the contractor and the individual responsible for inspection and maintenance of erosion and sediment control measures are required before the LMRWD can issue a

permit.

Rule D – Stormwater Management

The LMRWD regulates land-disturbing activities that create new and/or reconstructed impervious surfaces greater than one acre. The project proposes a total of 3.2 acres of new and reconstructed impervious surfaces. Stormwater runoff from the new and reconstructed impervious areas will be treated on-site by an existing MnDOT dry pond and proposed filter berms along the north and south ditches of TH 41. The applicant submitted a HydroCAD model and associated exhibits for review of the project runoff rates and volume control. The project has multiple discharge points, including Gifford Lake, the railroad ditches, and the MnDOT dry pond.

Section 5.4.1 of Rule D requires applicants to demonstrate no increase in the proposed runoff rates compared to existing conditions. The project’s runoff rates are summarized in Table 1.

Table 1. TH 41 Intersection Reconstruction Runoff Rate Summary

Rainfall Event (24-hour depth)	Railroad Ditches		MnDOT Dry Pond		Gifford Lake	
	Existing (CFS)	Proposed (CFS)	Existing (CFS)	Proposed (CFS)	Existing (CFS)	Proposed (CFS)
2-year (2.86")	0	0	0.0	0.0	0.3	0.5
10-year (4.24")	0	0	0.0	0.0	3.0	2.5
100-year (7.30")	15.5	15.0	0.0	0.0	23.9	21.2

There is a slight increase in discharge to Gifford Lake for the 2-year storm event, however, because this is Phase 2 of a common plan of development, the runoff rates to Gifford Lake were evaluated in conjunction with the results from the ORF Relocation project (LMRWD No. 2022-016). Overall, there is a rate reduction for the project, shown in Table 2.

Table 2. Overall TH 41 ORF Relocation Runoff Rate Summary

Rainfall Event (24-hour depth)	Gifford Lake	
	Existing (CFS)	Proposed (CFS)
2-year (2.86")	25.6	15.6
10-year (4.24")	72.9	59.3
100-year (7.30")	233.5	139.1

Section 5.4.2 of Rule D requires projects to retain 1 inch of runoff from the new and fully reconstructed impervious areas. This equates to 11,616 cubic feet of volume retention to meet Rule D requirements based on the project’s 3.2 acres of new and reconstructed impervious surfaces. The project proposes to construct filter berms within the roadside ditches along TH 41 to provide volume control. The filter berms will slow stormwater flows and allow a portion of runoff from the project to infiltrate before draining to Gifford Lake. The filter berms provide 13,105 cubic feet of

volume control. The applicant also proposes to continue to use the on-site MnDOT dry pond to treat a portion of stormwater runoff from the project area. The applicant surveyed the existing MnDOT dry pond to verify the capacity of the pond. The as-built dry pond has a volume of 462,172 cubic feet, which is 3,920 cubic feet greater than the original pond design. For existing and proposed conditions, the HydroCAD model shows the 100-year storm event is contained within the dry pond and there is no overflow from the dry pond. The project’s volume control requirement has been achieved through the proposed stormwater management best management practices (BMPs), therefore the project complies with Rule D volume control requirements.

Section 5.4.3 of Rule D requires no net increase in total phosphorus (TP) or total suspended solids (TSS) to receiving waterbodies when compared to existing conditions. The applicant proposed using the project’s volume and rate control BMPs to meet the water quality requirements of the LMRWD. Water quality calculations were completed using a MIDS model and the supporting documentation was submitted. Water quality modeling results are summarized in Table 3.

Table 3. TH 41 Intersection Reconstruction Water Quality Summary

	TP (lb/yr)	TSS (lb/yr)
Existing	326.91	129,372.2
Proposed	315.33	124,788.6
Difference	11.58	4,583.6
% Reduction	4%	4%

As presented, the pollutant load would be reduced for both TP and TSS, meaning the project meets the water quality requirements established under Rule D.

Recommendations

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

- Designation of an individual who will remain liable to the LMRWD for performance under the LMRWD rules from the time permitted activities commence until the LMRWD has certificated satisfaction with erosion and sediment control requirements.
- Contact information for the contractor(s).
- Contact information for the person(s) responsible for inspection and maintenance of erosion and sediment control.

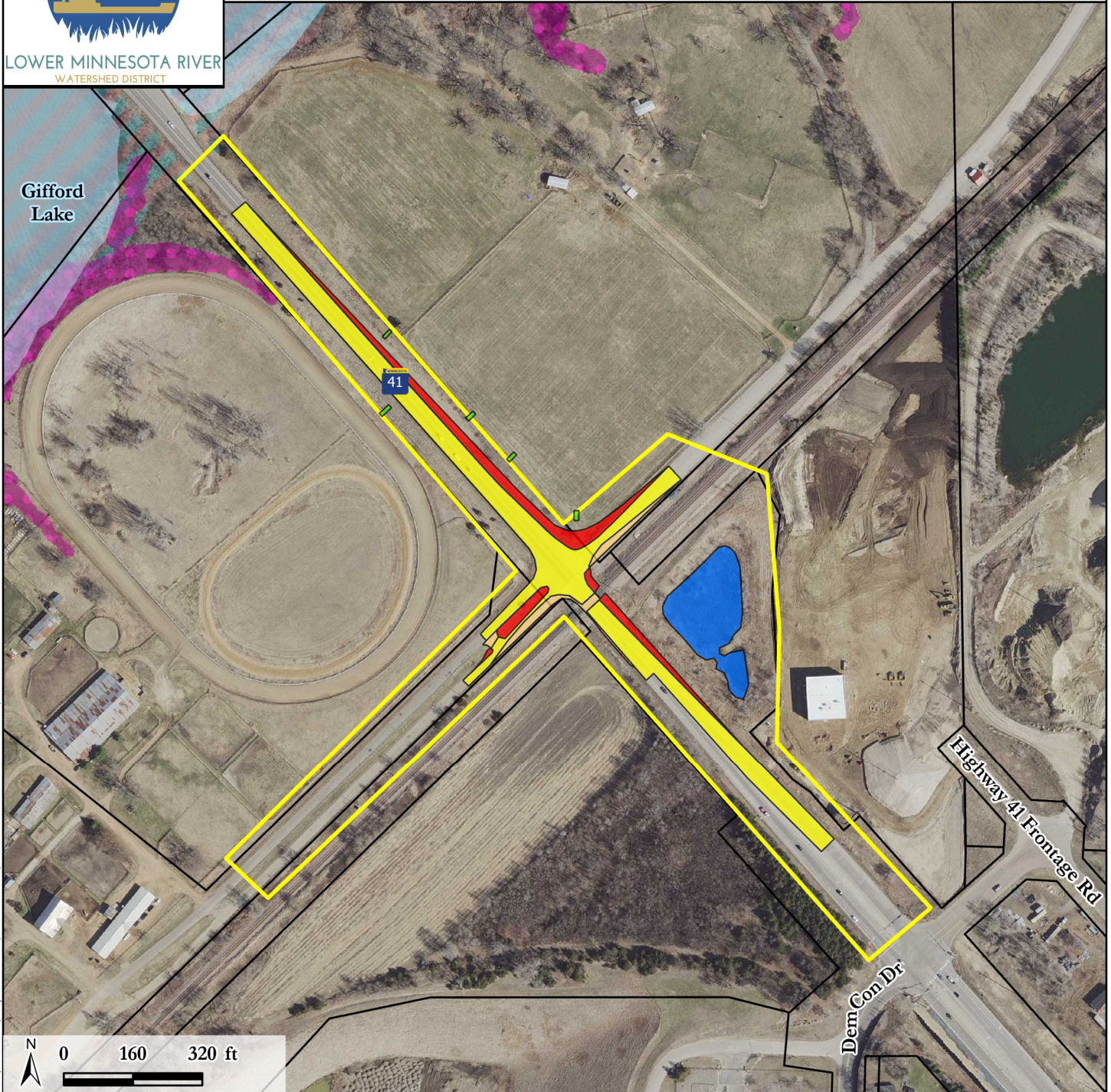
Attachments

- Figure 1—TH 41 ORF Intersection Reconstruction Project Location



LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Figure I: TH 41 ORF Intersection Reconstruction Project Location



Legend

- Project Location
- Proposed Impervious Removal (0.116 Acres)
- Proposed New Impervious (0.620 Acres)
- Proposed Reconstruction (2.563 Acres)
- Proposed Filter Berm
- Existing Dry Pond
- Parcels
- Public Waterbodies
- Steep Slope Overlay District
- Floodway

LMRWD Watershed Location Map

