

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

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

Date: April 30, 2021

Re: Burnsville Industrial Phase IV (LMRWD No. 2021-009)

At the Lower Minnesota River Watershed District (LMRWD) April 21, 2021, board meeting, the managers conditionally approved the Burnsville Industrial Phase IV (Project) permit application, pending receipt of a financial surety. Because of a misunderstanding of the District's rules and a miscommunication among the applicant, United Properties, and the City of Burnsville (City), the applicant was unaware of the need to obtain a permit from the LMRWD. To avoid project delays, the financial surety was required to allow the applicant to begin construction while the staff of Young Environmental, in consultation with the City's consultant, AE2S, reviewed the permit application and confirmed the regional pond had adequate capacity for the proposed project. A permit to construct the proposed 2.2-acre office building, truck docks, and associated parking was issued on April 23, 2021 (see Figure 1). Young Environmental's April 16, 2021, memo to the LMRWD contains further information.

The following memo outlines Young Environmental's review of the information provided for compliance with the LRMWD rules.

Summary

Project Name: Burnsville Industrial IV

Purpose: Industrial and trucking facility located within Burnsville's Minnesota River Quadrant Industrial Redevelopment area

<u>Project Size:</u>	7.48 acres disturbed, 0.83 acres of existing impervious, 5.25 acres of proposed impervious, and a net increase of 4.42 acres new impervious
<u>Location:</u>	12400 Dupont Avenue, Burnsville, MN 55377 (Parcel 037-028600101020)
<u>LMRWD Rules:</u>	Rule B—Erosion and Sediment Control Rule D—Stormwater Management
<u>Recommended Board Action:</u>	No action required; update and release surety

Discussion

This development is part of a larger regional development called the Minnesota River Quadrant (MRQ), which is generally bounded by the Minnesota River to the north, I-35W to the east, and Lynn Avenue to the west. The City identified the MRQ for future development and redevelopment in 2011 and created an overall master plan for stormwater management that would meet its standards for stormwater rate control and water quality. The MRQ is immediately upstream of the City's drinking water intake and partially within the Minnesota Department of Health's Drinking Water Supply Management Area, precluding on-site infiltration. Overall, the initial 2011 plan proposed to meet the City's stormwater standards by using lined wet ponds that would maintain existing discharge rates for the 2-, 10-, and 100-year storm events while removing 90 percent of the total suspended solids (TSS) and 60 percent of the total phosphorus (TP) from the new development and redevelopment areas contributing to these ponds. This plan is more stringent than the LMRWD rules, which requires only no net increase in TSS or TP.

In 2012, the City refined the MRQ plan to focus on Pond 2, also known as Yellow Freight Pond, to provide regional treatment for the 256-acre upstream watershed. Pond 2 was designed to treat a fully developed watershed, including 37 acres of new impervious surface (based on an assumption that all parcels would be limited to 75 percent maximum impervious area). With these assumptions, the pond was expected to provide a weighted average of approximately 75 percent and 37 percent removal efficiencies for TSS and TP, respectively, and to meet the City's stormwater treatment standards. The 2012 analysis also included the long-term impacts of the County Road (CR) 5 and Trunk Highway (TH) 13 interchange improvements.

Pond 2 Updated Analysis

On April 13, 2021, the City provided an email with updated rate control and water quality analyses for Pond 2. This email reviewed the 2012 memo design assumptions and repeated the rate control and water quality analyses with a higher maximum impervious assumption of 80 percent, which is more representative of the MRQ area, and

confirmed the design used NOAA Atlas 14 rainfall depths. The analysis showed that even with the 80 percent impervious assumption, which is equivalent to 43 acres of new impervious surface, Pond 2 has the capacity to provide the LMRWD-required no net increase in TSS and TP when compared to existing conditions. Although this analysis shows the pond has adequate treatment capacity to meet the LMRWD standards for up to 43 acres of new impervious surface, it may no longer meet the original 2012 removal efficiencies the City had assumed, and confirmation for future planned redevelopment will be required.

AE2S also developed a HydroCAD model to evaluate the rate control benefits provided by Pond 2 by using watershed inflows from the City's XPSWMM model. The XPSWMM model was developed using current (2021) conditions, so it is not a direct comparison to the 2012 design hydrology because it includes recent development in the watershed; however, it demonstrates that even with an assumed uniform 80 percent impervious watershed, the pond provides adequate rate control to protect the downstream ditch.

A discussion with the City revealed one redevelopment project has used the pond to meet its stormwater rate control and water quality requirements. The CR5/TH13 interchange project was completed in 2012 and included the construction of Pond 2. The CR5/TH13 project added 2.7 acres of new impervious surface to the contributing watershed, reducing the available treatment capacity of Pond 2 to 40.3 acres of new impervious surface.

Summary

The 2012 Pond 2 design assumed a maximum of 4.3 acres of impervious surface from the Project; however, the proposed development has 5.25 acres of new impervious surface and is 77 percent impervious. From the revised Pond 2 analysis, even considering the CR5/TH13 project, Pond 2 has adequate capacity to provide treatment for the Project with a remaining capacity of 35.05 acres of new impervious surface. The analysis provided by the City demonstrates Pond 2 can continue to provide water quality treatment and rate control benefits for the MRQ watershed that meet the LMRWD rules.

Recommendations

Based on the analysis provided, Pond 2 has sufficient capacity to provide stormwater treatment for the Project to meet the LMRWD requirements. As a result, the financial surety retained will be returned to the applicant.

Attachments







- Figure 1 – Burnsville Industrial IV Project Location Map










Figure I: Burnsville Industrial - Phase IV



LEGEND

-  Project Location
-  Burnsville Industrial Phase IV Project Extents
-  Existing Pond 2
-  Proposed Impervious
-  Proposed Building
-  Public Waterways

-  Public Waters
-  Dakota Co. FEMA Floodplain
-  100-yr Floodplain
-  Floodway
-  500-yr Floodplain
-  LMRWD Boundary
-  County Boundaries

LMRWD Watershed Location Map

