Permit Application Review

Applicant:	Zachary Mahlum; Xcel Energy
Consultant:	Bryan Miller; Larson Engineering, Inc.
Project:	Edina Xcel Energy Pavement Rehabilitation
Location:	5309 West 70 th Street, Edina, MN
Applicable Rule(s):	2, 3, 4, 5, 11 and 12
Reviewer(s):	Bob Obermeyer; Barr Engineering Co.

General Background & Comments

The applicant proposes the reconstruction of bituminous pavement parking areas, utility improvements, site improvements and construction of a stormwater management facility at the Edina Xcel Service Facility located at 5309 West 70th Street in Edina. The 12.9-acre site is occupied by several buildings with associated site elements and surface parking for Xcel Energy utility trucks. The proposed work will reconstruct (disturb and replace) 66,665 square feet (1.53 acres) of existing bituminous surface with 7,393 square feet of new impervious area created.

The site is located west North Fork of Nine Mile Creek (Creek) and the floodplain of the Creek, elevation 830 M.S.L., extends onto the site. The project proposes the construction of a storm water management facility for compliance with the NMCWD stormwater requirements within the floodplain of the Creek.

The project site information is:

- Total Site Area: 12.9 acres (562,626 square feet)
- Existing Site Impervious Area: 7.75 acres (337,796 square feet)
- Proposed Site Impervious Area: 7.92 acres (345,188 square feet)
- An increase of 7,392 square feet in site impervious area (2.2% increase)
- Disturbed and Reconstructed Impervious Area: 66,665 square feet
- 19.7% of the existing site impervious area is to be disturbed and reconstructed

Approximately 169,200 square feet of existing bituminous (in addition to the disturbed and reconstructed impervious area listed above) is to be milled and overlaid. In accordance with district rule 4.2.2c, the requirements of the district's storm water do not apply to rehabilitation, including mill and overlay, of paved surfaces.

The District's Wetland Management Rule 3.0 applies to the project because two onsite wetlands have been identified with one downgradient from the project's land-disturbing activities and a permit under District Rule 4.0 is required (Rule 3.4).

The district's requirements for both stormwater management and erosion and sediment control apply to both project sites because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b and 5.2.1a and b.

Exhibits

- 1. Permit Application dated December 22, 2021. Email correspondence dated January 3, 2022, outlining five items, including a determination of existing wetland areas on the site, during the growing season, required to complete the application.
- 2. Plans dated March 17, 2022, with the most recent revision dated June 7, 2022, prepared by Larson Engineering, Inc.
- 3. Stormwater Management Report/Narrative dated December 21, 2021, revised January 28, 2022, April 1, 2022, and June 7, 2022, prepared by Larson Engineering, Inc.
- 4. MIDS Calculator model files received December 21, 2021, and revised June 7, 2022, prepared by Larson Engineering, Inc.
- 5. HydroCAD model files received January 28, 2022, and revised June 7, 2022, prepared by Larson Engineering, Inc.
- 6. Geotechnical report dated July 20, 2021, prepared by American Engineering Testing, Inc.
- 7. Minnesota Routine Assessment Method (MnRAM) wetland data dated June 7, 2022, prepared by Bopray Environmental Services.
- 8. Wetland Report dated June 7, 2022, prepared by Bopray Environmental Services.
- 9. Wetland Conservation Act (WCA) Notice of Decision dated July 7, 2022.

The application with the submittal items above is complete.

2.0 Floodplain Management and Drainage Alterations

Proposed earth work and grading for the construction of the proposed on-site storm water management basin will take place below elevation 830 M.S.L., the 100-year frequency flood elevation of the North Fork of Nine Mile Creek. Because the project will involve land-altering activities below the 100-year frequency flood elevation of the Creek, the project must conform to the requirements of the District's Floodplain Management and Drainage Alterations Rule 2.0 in accordance with Rule 2.2.1.

The Creek is located approximately 820 feet east of the site with the limits of the floodplain extending onto the site.

Rule 2 criteria for floodplain and drainage alterations includes the following:

2.3.1: The low floor elevation of all new and reconstructed structures must be constructed in accordance with the NMCWD Stormwater Rule, subsection 4.3.3

The floodplain of the Creek inundates a portion of the site during the 100-year, 24-hour frequency storm event at elevation 830 M.S.L. Subsection 2.3.1 criteria requires at least two feet of separation between all new and reconstructed structures and the 100-year frequency flood elevation of any open stormwater conveyance system. The plans identify the low floor elevation and the low opening of the existing on-site buildings at elevation 834 M.S.L. The 100-year frequency flood elevation of the proposed stormwater basin is 828

M.S.L. A separation of 4.0 feet and 6.0 feet is provided between the low floor elevation/low opening elevation of the existing on-site buildings and the 100-year flood elevation of the Creek and the proposed on-site storm water management basin, respectively. No new structures are proposed on the site.

2.3.2: Placement of fill below the 100-year flood elevation is prohibited unless fully compensatory flood storage is provided within the floodplain and:

- a. at the same elevation +/- 1 foot for fill in the floodplain; or
- *b.* at or below the same elevation for fill in the floodplain of a water basin or constructed stormwater facility.

The HydroCAD model provided shows the project will result in an increase of approximately 190 cubic yards of floodplain volume elevation 830 M.S.L. The project is in conformance with subsection 2.3.2 criteria.

2.3.3. The District will issue a permit to alter surface flows only if it finds that the alteration is not reasonably likely to have a significant adverse impact on any upstream or downstream landowner and is not reasonably likely to have a significant adverse effect on flood risk, basin or channel stability, groundwater hydrology, stream base-flow, water quality or aquatic or riparian habitat.

The project will result in an increase in the on-site flood storage volume of the Creek, thereby not adversely affecting flood risk or transferring flood risk to upstream or downstream landowners, meeting subsection 4.3.3 criteria.

Ultimately, stormwater runoff from the site is and will continue to be conveyed via surface overland flow paths to the Creek. Channel stability, stream base-flow, water quality and aquatic or riparian habitat within the Creek will not be changed and/or altered because stream baseflow conditions will not be increased as a result of the project. Post-project discharge rates from the site will be less than the existing discharge rates for all collection points where stormwater leaves the site (see Rule 4.3.1b analysis in *Section 4.0* of this report), drainage patterns will not be altered on-site, and flood storage volumes on-site will be maintained, avoiding increased flood risk to downstream landowners. The applicant provided pre- and post-project water quality modeling to demonstrate no adverse impact to water quality. The water quality modeling results demonstrate that the post-project total suspended solids (TSS) and total phosphorus (TP) pollutant loads leaving the site will be less than the existing load leaving the site (see Rule 4.3.1c analysis in *Section 4.0* of this report). Groundwater hydrology will not be changed and/or altered as part of the project. The engineer finds that the project is not reasonably likely to have significant offsite adverse impacts in conformance with Rule 2.3.3 criteria.

2.3.4 No structure may be placed, constructed, or reconstructed and no surface may be paved within 50 feet of the centerline of any water course, except that this provision does not apply to:

a. Bridges, culverts, and other structures and associated impervious surface regulated under Rule 6.0;

b. Trails 10 feet wide or less, designed primarily for nonmotorized use.

No structure is to be placed within 50 feet from the centerline of the creek. The site and all project work are approximately 820 feet west of the creek.

3.0 Wetlands Management

The District's Wetland Management Rule 3.0 applies to the project because onsite wetland(s) are downgradient or disturbed by the project's land-disturbing activities and a permit under District Rule 4.0 is required (Rule 3.4). The district is the Local Governmental Unit (LGU) responsible for administering the requirements of WCA in Edina.

A wetland boundary and type determination completed by Bopray Environmental Services identified the two wetlands (Wetland A and Wetland X) on the site and within the project area. As identified by the Wetland Permit Application Report dated June 7, 2022, prepared by Bopray Environmental Services, the project is proposing permanent impacts to Wetland A (report identification). Documentation was submitted to the district, the LGU, requesting a noloss determination for Wetland X be determined since the wetland has been determined to be an incidental wetland. A WCA Notice of Decision approving the no-loss determination for the incidental wetland (Wetland X) was issued on July 7, 2022. Subsection 3.2.2a states that sections 3.4 and 3.5 do not apply to incidental wetlands therefore a wetland buffer riparian to Wetland X is not provided in accordance with Rule 3.2.2a criteria. The engineer agrees with the assessment.

A buffer is required for Wetland A because of wetland impacts from the construction of the proposed stormwater management basin. Bopray Environmental Services has submitted a MnRAM Assessment dated June 7, 2022, for Wetland A. The 450 square feet of proposed wetland impacts are determined to be de minimus, Mn 8420.0420 Subpart 8. Based on the comparison of the function and values presented in Appendix 3b of the district's Rules, the NMCWD wetland rating for the wetland has been classified as a medium value wetland.

The district agrees with the MnRAM results with the medium value determination for Wetland A. A medium value wetland requires a 20-foot minimum and 40-foot average buffer width. With an average 40-foot buffer, 35,517 square feet of buffer area is required - 35,524 square feet of buffer is shown to be provided. The required minimum and average buffer areas are shown to be met.

In accordance with Rule 3.4.5, buffer markers at the edges of the buffer area are required. Subsection 3.4.7 requires the maintenance of the wetland buffer by the applicant. A maintenance agreement is required.

4.0 Stormwater Management

The District's requirements for stormwater management apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b.

The NMCWD's Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on the site or will increase the imperviousness of the site by more than 50%, stormwater management will apply to the entire project site. Otherwise, the stormwater requirements will apply only to the disturbed and replaced and the net additional impervious surface on the project site (74,057 square feet). As previously stated, approximately 169,200 square feet of the existing bituminous parking is to

be milled and overlaid. In accordance with district rule 4.2.2c, the requirements of the district's storm water do not apply to rehabilitation, including mill and overlay, of paved surfaces.

Stormwater management for compliance with subsection 4.3.1 will be provided by a surface storm water basin to be constructed to provide rate control, volume retention and water quality management for the disturbed areas of the current project.

Rule 4.3.1b requires the 2-, 10-, and 100-year post development peak runoff rates be equal to or less than the existing discharge rates for all collection points where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates. The existing and proposed 2-, 10- and 100-year frequency discharge rates from the site are summarized in the tables below.

Existing Conditions			
Drainage Area	2- year (c.f.s.)	10- year (c.f.s.)	100- year (c.f.s.)
To the East	33.8	62.8	116.7
To the West	3.2	5.1	9.4

Proposed Conditions				
Drainage Area	2- year (c.f.s.)	10- year (c.f.s.)	100- year (c.f.s.)	
To the East	31.4.	58.2	110.8	
To the West	3.2	519	9.4	

The proposed stormwater management plan provides rate control in compliance with the NMCWD requirements for the 2-, 10-, and 100-year events. Rule 4.3.1b is met.

In accordance with Rule 4.3.2a criteria, a retention volume of 6,789 cubic feet is required from the proposed 74,057 square feet of regulated impervious surface. The American Testing and Engineering geotechnical report identify poorly graded sand with silt (SP-SM) approximately 9 1/2 feet below the surface elevation in the location of the proposed storm water basin. The submittal indicates the organic soils with low permeability in area of the storm water basin and above the poorly graded sand material will be excavated to the depth of the SP-SM soils, removed, and backfilled with material suitable for infiltration. An infiltration rate of 0.8 inches per hour has been used for design, using infiltration rates identified in the Minnesota Storm Water Manual.

The table below summarizes the volume retention required and volume retention achieved. The proposed project is in conformance with subsection 4.3.2a.

Required Volume Retention Depth (inches)	Required Volume (cubic feet)	Provided Volume Retention Depth (feet)	Provided Volume (cubic feet)
1.1	6,789	1.3	8,244

With an infiltration area of 7,301 square feet provided, the retention volume is drawn down within 25 hours complying with the required 48-hours, Rule 4.3.1a (ii).

Rule 4.5.4d (i) requires three feet of separation between the bottom of an infiltration facility and groundwater. The following table provides a comparison of the bottom elevation of the infiltration facility in relation to groundwater table identified near the location of the proposed Basin (as identified by Boring B-11).

Stormwater Management Facility	Bottom Elevation of the Basin M.S.L.	Groundwater Elevation (Boring B-11) M.S.L.	Separation Provided (feet)
Surface Basin	826	821.2	4.8

The required three (3) feet of separation is provided between the bottom of the infiltration area and groundwater.

The district's water quality criterion requires 60% annual removal efficiency for TP and 90% annual removal efficiency for TSS from site runoff. A MIDS model was used to evaluate the BMP's annual removal efficiencies. The results of this modeling are summarized in table below showing the annual TSS and TP removal requirements are achieved. We agree with the modeling results and the project is in conformance with Rule 4.3.1c criteria.

Annual TSS	and TP	Removal	Summary
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Pollutant of Interest	Regulated Site Loading (Ibs./year)	Required Load Removal (Ibs./year)	Provided Load Reduction (Ibs./year)
Total Suspended Solids (TSS)	972	875 (90%)	870 (90%)
Total Phosphorus (TP)	5.3	32 (60%)	4.8 (90%)

Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that the low floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a constructed facility. Additionally, Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that no opening where surface flow can enter the structure is less than two feet above the 100-year high-water elevation of an adjacent facility. Rule 4.3.3 also states, a stormwater management facility must be constructed at an elevation that ensures no adjacent habitable building will be brought into noncompliance with a standard in subsection 4.3.3. The low floor elevation of the existing habitable building in relation to the proposed stormwater management facilities' 100-year high-water elevations and the 100-year frequency flood elevation of the Creek is summarized in the table below. The proposed stormwater management facility is in conformance with Rule 4.3.3 criteria.

Stormwater Management Facility	100-year Frequency Flood Elevation (M.S.L.)	Low Floor/Low Opening Elevation of Habitable Building (M.S.L.)	Low Floor/Low Opening Separation (feet)
Stormwater Basin	828	834	6.0
North Fork of Nine Mile Creek	830	834	4.0

In accordance with Rule 4.3.1a (i), where infiltration or filtration facilities, practices or systems are proposed, pre-treatment of runoff must be provided. Runoff from the bituminous surfaces sheet flow towards the east to the proposed storm water basin. A pervious strip, a minimum width of 10-feet, is provided between the edge of the existing parking area and the storm water basin to provide the required pretreatment of runoff, complying with Rule 4.3.1a (i).

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site.

Subsection 4.3.5 requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The applicant must provide a receipt showing recordation of a maintenance declaration for the operation and maintenance of the stormwater management facilities.

5.0 Erosion and Sediment Control

The District's requirements for erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 5.2.1a and b.

The erosion control plan prepared by Larson Engineering, Inc. includes installation of perimeter control (silt fence), a stabilized rock construction entrance and storm sewer inlet protection.

The contractor for the project will need to designate a contact who will remain liable to the district for performance under the District's Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e. NMCWD must be notified if the responsible individual changes during the permit term.

11.0 Fees

Fees for the project are:	
Rules 2.0, 3.0, 4.0 and 5.0	\$4,500
12.0 Financial Assurances	
Financial Assurances for the project are:	
Rule 3: Wetlands Management:	\$5000
Rule 4: Stormwater Management Facilities: 3,772 S.F. X \$12/S.F.= \$45,264	\$45,264

Rules 5: Perimeter Control: 1,450 L.F. x \$2.50/L.F. = \$3,625	\$3,625
Inlet Protection: $4 \times 100 = 400$	\$400
Site Restoration: 1.7 acres x \$2,500/acre = \$4,250	\$4,250
Chloride Management Plan:	\$5,000
Contingency and Administration	\$25,161

Findings

- 1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
- 2. The proposed project will conform to Rules 2, 3, 4 and 5 with the fulfilment of the conditions identified below.
- 3. The proposed stormwater management facility will provide rate control and water quality management in accordance with subsections 4.3.1b and 4.3.1c criteria, and volume retention in accordance with subsection 4.3.2a criteria.
- 4. In accordance with NMCWD Rule 4.3.5, the applicant must provide a maintenance and inspection plan that identifies and protects the design, capacity, and functionality of the stormwater management facility, and record the plan in a declaration on the property title.
- 5. In accordance with NMCWD Rule 3.4.7, the wetland buffer must be documented by an agreement or other document approved by the district and recorded in a declaration on the property title.

Recommendation

Approval, contingent upon:

Continued compliance with the General Provisions (attached).

Financial Assurance in the amount of \$88,700, \$83,700 for stormwater management, erosion control, and site restoration, and \$5,000 for compliance with the chloride management requirements.

The applicant providing a name and contact information for the individual responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.

Per Rules 4.3.5 and 3.4.7, execute an agreement for the operation and maintenance of the stormwater management facility and wetland buffer is required. A draft of the agreement must be approved by the district prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations for closeout of the permit and release of the financial assurance after the project:

Per Rule 4.5.6, an as-built drawing of the floodplain mitigation areas conforming to the design specifications as approved by the district.

Per Rule 4.5.8, an as-built drawing of the stormwater management facility conforming to the design specifications is required to be provided, including stage volume relationships in tabular form.

Submission of a plan for post-project management of Chloride use on the site. The plan must include 1) the designation of an individual authorized to implement the chloride use plan and 2) the designation of a Minnesota Pollution Control Agency certified salt applicator engaged in the implementation of the chloride-use plan for the site. The release of the \$5,000 of the financial assurance required for the chloride-management plan requires that chloride-management plan has been provided and approved by the District's Administrator.

Installation of wetland buffer markers in accordance with 3.4.5.

Per Rule 12.4.1b, demonstration and confirmation that the underground stormwater management facility for volume retention has been constructed or installed and is functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the stormwater management facility used for volume retention has drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.

- at all times.
- demolition work at the site.
- absolute minimum. The contractor shall install temporary earth dikes,
- 50' into the construction zone.
- potential for site erosion. Sediment control practices must be disturbing activities begin.
- erosion but in no case later than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand
- and comply with MN DOT standard specifications, latest edition.
- concentrated flows.
- soon as field conditions allow access.
- minimize off-site impacts.
- sediment controls, and cannot be placed in surface waters, including





