

Permit Application Review

Permit No. 2018-105
Received complete: August 28, 2018

Applicant: John Ferrier.; CSM Corporation
Consultant: Charlie Butterworth; Alliant Engineering.
Project: Parking Lot Expansion for CSM Properties, Inc.
Location: 6810 Shady Oak Road: Edina
Rule(s): 4,5,11,12
Reviewer: BCO

General Background & Comments

The project proposes the construction of a 24 stall parking lot expansion and drive lane for CSM Properties located at 6810 Shady Oak Road in Eden Prairie. This parking expansion is to be located along the front side of the building, along Shady Oak Road.

There has been one other permit issued for an earlier parking expansion in the rear of the CSM building under the Nine Mile rules adopted in 2008 that triggered stormwater management requirements (Permit #2013-30). Under paragraph 4.2.5 of the NMCWD rules, “[a]ctivity subject to [the stormwater] rule on a parcel or adjacent parcels under common or related ownership will be considered in the aggregate, and the requirements applicable to the activity under this rule will be determined with respect to all development that has occurred on the site or on adjacent sites under common or related ownership.” The common scheme of development provision requires the changes to impervious surface and resulting runoff for the presently proposed work to be considered in the aggregate with the prior impervious increase and impervious disturbance on the site.

The project site information is:

- Total Site Area: 4.6 acres
- Site Impervious (Pre-2013): 3.0 acres (130,680 square feet)
- Site Impervious (including Permit #2013-30): 143,748 square feet
- Increase in Site Impervious Area (including Permit #2013-30): 10% - an increase of 13,068 square feet
- Permit #2013-30 Disturbed and Reconstructed Impervious Area: 0 square feet
- % Disturbed and Reconstructed Impervious Area: 0%

- Permit #2018-105 Proposed Increase in Impervious Area: 10,326 square feet
- Total Increase in Site Impervious Area: 23,394 square feet
- Aggregate % increase in Site Impervious Area: 17.9%
- 2018 Proposed Project Disturbed and Reconstructed Impervious Area: 2,081 square feet
- Total Disturbed and Reconstructed Impervious Area: 2,081 square feet
- Aggregate % Disturbed and Reconstructed Impervious Area: 1.6%

Since the aggregate existing site impervious area disturbed is 1.6% and the existing site impervious area is increased less than 50% (17.9%), in accordance with Rule 4.2.3, Redevelopment, the storm water requirements of Rule 4.3 apply to the 24,705 square feet of disturbed area (2018) including 12,407 square feet of new and reconstructed impervious area.

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 5000 square feet or more of surface area will be disturbed, Rule 5.2.1a and b.

Storm water management is to be provided within an underground stormwater management facility (UGSWMF – chamber system) that will provide volume retention, rate control and water quality management.

The soils information submitted indicates the underlying on site soil as lean clay (CL) and clayey sand (SC). These soils are typically not conducive for volume retention through infiltration and typically precludes retention to the standard in District Rule 4.3.1a. The engineer concurs that the site qualifies as a Restricted Site (Rule 4.3.2) under in the District's Revised Rules, approved April 10, 2018. Rule 4.3.2 requires retention of at least 0.55 inches of runoff from the regulated impervious surface, rate control and water quality management complying with the requirements of section 4.3.1b and c of the revised rules.

Silt fence is to be constructed at the limits of construction, inlet protection and a rock construction entrance will be provided for erosion control.

Exhibits

1. Permit Application dated August 8, 2018.
2. Plans dated August 28, 2018, prepared by Alliant Engineering.
3. Storm Water Management calculations dated August 2 and revised August 28, 2018, prepared by Alliant Engineering.
4. Soil boring information dated October 27, 2009 prepared by Braun Intertec.

4.0 Stormwater Management

Stormwater management, volume retention, rate control and water quality management will be provided within an UGSWMF to be constructed

The existing and proposed 2, 10 and 100 year frequency discharges from the site are:

Frequency	Existing Discharge c.f.s.	Proposed Discharge c.f.s.
2 year	1.4	<1.0
10 year	2.7	1.6
100 year	5.7	5.

There is one discharge point leaving the site from the area disturbed. The existing discharge from the other location(s) on the site will not be affected by the project and will not change from existing conditions. Rule 4.3.1b is met.

The applicant has submitted information in support of a finding that the site qualifies as restricted under subsection 4.3.2 of the NMCWD rules. Given the subsurface conditions, as summarized above, the NMCWD engineer concurs that the site qualifies as restricted. Under 4.3.2a, an infiltration volume of 569 cubic feet would be required from the 12,407 square feet of new and reconstructed site impervious area using a runoff of 0.55-inches from the impervious area (Rule 4.3.2a). The proposed UGSWMF will provide 584 cubic feet of retention volume. With the soils being a Type D (clay), a maximum inundation depth of 0.24 feet within the UGSWMF is allowable with a drawn down period of 48 hours, Rule 4.3.1a (ii). An area of 2,371 square feet is required to comply with this draw down requirement. The basin will provide an area of 3,218 square feet.

The District's water quality criterion requires a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. The results from a P8 model submitted show that the UGSWMF will provide an annual removal efficiency of 99.4% for total suspended solids (201.9 lbs.) and 94.2% annual removal efficiency for total phosphorous (0.6 lbs.). The stormwater management system proposed complies with Rule 4.3.1b, rate control, Rule 4.3.1c, water quality management, and provides retention of 0.55 inches of runoff from the impervious areas of the site for compliance with Rule 4.3.2a.

In accordance with Rule 4.3.1a (i), the pre-treatment of runoff prior to the UGSWMF will be provided by a sump manhole located immediately upstream of the UGSWMF.

The soil boring logs indicates that groundwater was encountered at elevation 868.2 +/- M.S.L. The bottom of the UGSWMF is shown to be 871.5 M.S.L., a separation of 3.3 feet. A 3 foot of separation is required between the bottom of an infiltration facility and groundwater.

Rule 4.3.3a states, all structures riparian to inundation areas or constructed or natural stormwater management facilities must be located and elevations must be set according to Appendix 4a, "Low-Floor Elevation Assessment." Referring to Plot 5, Appendix 4a of the District Rules with the building a distance of 20 feet from the UGSWMF, the minimum permissible depth to groundwater is 3 feet. With groundwater being encountered at elevation of 868.2 M.S.L., a separation of 9 feet is provided between the finished floor elevation of the existing building (877.2 M.S.L) and the elevation that groundwater was encountered (868.2 M.S.L.). Rule 4.3.3 is met.

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.

5.0 Erosion and Sediment Control

The submitted erosion and sediment control plan includes silt fence at the limits of construction, inlet control and a gravel construction entrance. The project contact is Charlie Butterworth, Alliant Engineering.

11.0 Fees

Fees for the project are:

Rules 2.0-6.0	\$1,500
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12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4.0 Volume Retention: 2,371 sq. ft. x \$12/sq. ft. = \$28,452	\$28,452
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Chloride Management:	\$5000
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Rule 5: Silt fence: 440 L.F. x \$2.50/L.F.= \$1,100	
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Inlet Protection: 5 x \$100/each = \$500	
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Site restoration: 0.6 acres x \$2500/ acre = \$1,500	\$3,100
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Contingency and Administration	\$13,648
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Findings

The proposed project includes the information necessary, plan sheets and erosion control plan, for review.

1. Rules 4 and 5 are met.

Recommendation

Approval, contingent upon:

1. General Conditions
2. Financial Assurance in the amount of \$50,200 - \$45,200 for stormwater management, erosion control and site restoration and \$5,000 for compliance with the chloride management requirements.
3. Submission of documentation that a drainage easement over the stormwater-management facility has been submitted to Eden Prairie (4.5.4i), if such easement is required by the city, and a receipt showing recordation of a maintenance declaration for the on-site storm water management facility. A draft of the declaration must be approved by the District prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

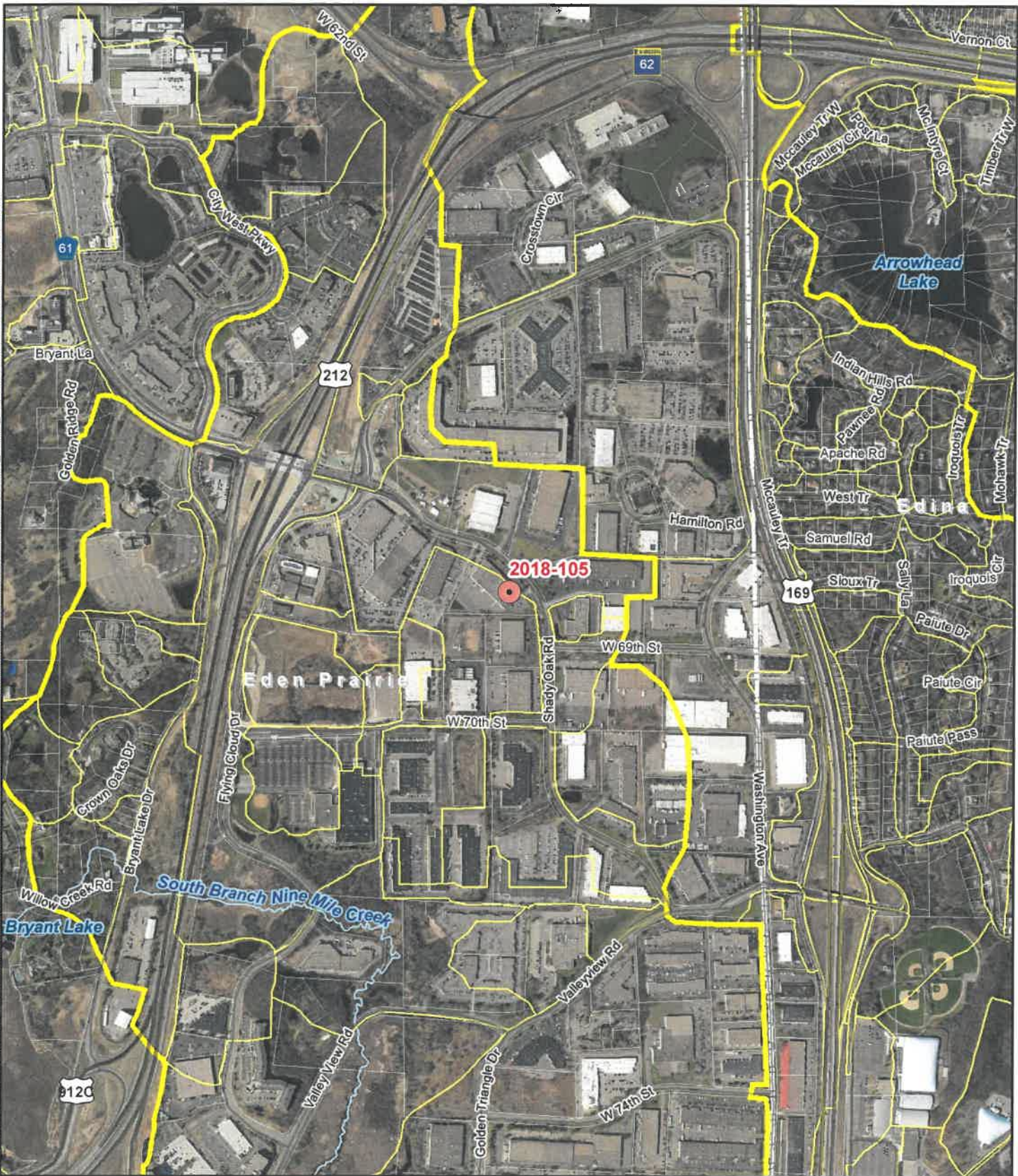
1. Per Rule 4.5.6, an as-built drawing of the storm water facilities conforming to the design specifications as approved by the District must be submitted.

2. 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.
3. For the release of the \$45,200 financial assurance required in Recommendation #2, Rule 12.4.1b requires demonstration and confirmation that the storm water management facilities have been constructed or installed and are functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the storm water facilities used for volume retention have drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.

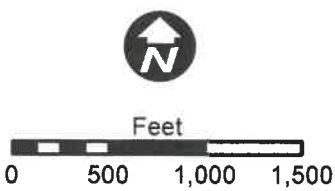
Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 2018-105 with the conditions recommended by staff.

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- Permit Location
- District Legal Boundary
- Nine Mile Creek Watershed
- Municipalities
- Major Watersheds
- Small Watersheds
- Parcels



PERMIT LOCATION MAP

PERMIT 2018-105

Nine Mile Creek Watershed District