

Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4I – Marsh Run Apartments – Minnetonka, MN
BCWMC April 18, 2019 Meeting Agenda
Date: April 10, 2019
Project: 23270051 2019 2183

4I Marsh Run Apartments – Minnetonka, MN BCWMC 2019-06

Summary:

Proposed Work: 175-unit multifamily housing facility and associated site work

Basis for Review at Commission Meeting: Use of alternative BMP

Impervious Surface Area: Increase 0.53

Recommendation: Conditional Approval

General Background & Comments

The proposed project is located on the border of the Bassett Creek Main Stem and Medicine Lake South subwatersheds in the northeast quadrant of the intersection of Wayzata Boulevard and Fairfield Road in Minnetonka. The proposed project includes redevelopment of the parcel from a commercial office park to a 175-unit multifamily residential housing facility resulting in 2.47 acres of grading (disturbance). The proposed project creates 1.87 acres of new and fully reconstructed impervious surfaces, including 1.34 acres of fully reconstructed impervious surfaces and an increase of 0.53 acres of impervious surfaces, from 1.34 acres (existing) to 1.87 acres (proposed). The proposed project will result in a change of land use and zoning from commercial to multifamily residential.

Floodplain

The proposed project does not involve work in the BCWMC 100-year floodplain; therefore, BCWMC floodplain review is not required.

Stormwater Management

The August 2017 BCWMC Requirements for Improvements and Development Proposals (Requirements) document states that projects that contain more than one acre of new and fully reconstructed impervious area must manage stormwater such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events, based on Atlas 14 precipitation amounts and using a nested 24-hour rainfall distribution. As discussed below, the proposed peak flows meet the BCWMC requirement.

In existing conditions and proposed conditions, stormwater runoff generally leaves the site in three directions, including to the west to Fairfield Road, to the south to Wayzata Boulevard, or to the northeast

to an existing swale. An underground storage system will be constructed in the northwest corner of the parcel to provide rate control for most of the site. **Table 1** summarizes the existing and proposed peak discharges in each direction.

Table 1: Summary of Existing and Proposed Peak Discharge Rates

Storm Event	Existing Peak Discharge (cfs)			Proposed Peak Discharge (cfs)		
	Fairfield Road	Wayzata Boulevard	Northeast (Swale)	Fairfield Road	Wayzata Boulevard	Northeast (Swale)
2-year	3.81	3.87	0.15	2.34	2.30	0.15
10-year	6.35	6.30	0.30	4.39	3.65	0.30
100-year	11.97	11.73	0.65	9.95	6.64	0.65

Water Quality Management

The BCWMC Requirements document states that projects that contain more than one acre of new or fully reconstructed impervious area must treat stormwater in accordance with the BCWMC water quality performance goals. If the BCWMC water quality performance goal is not feasible and/or is not allowed for a proposed project, then the project proposer must implement BCWMC flexible treatment options. As shown below, the proposed stormwater management system meets BCWMC water quality requirements.

The proposed project creates 1.87 acres of new and fully reconstructed impervious surfaces. Flexible Treatment Option (FTO) #2 was selected for the proposed project due to the presence of tight clay soils that are not conducive to infiltration. FTO #2 requires that the project provide 60% removal of total phosphorus (TP). The applicant has designed a stormwater management system that includes stormwater reuse as irrigation and stormwater filtration using a proprietary device (Jellyfish Filter). The applicant used the minimal impact design standards (MIDS) calculator to quantify the overall TP removals for the proposed project and used the "other" BMP for the two Jellyfish Filters. The applicant manually input the expected pollutant removal efficiencies, provided by the manufacturer, into the MIDS calculator to evaluate the BMPs. Barr reviewed available third party testing for the proprietary BMP. **Table 2** summarizes the annual TP loading and TP removals for the proposed BMPs. Modifications required by the comments may reduce the anticipated TP removals for the BMPs, but it is expected that the overall project will continue to meet the BCWMC water quality requirements.

Table 2: Summary of TP Removal and TP Removal Efficiency for Proposed BMPs

BMP	TP Loading (lbs/year)	TP Removal (lbs/year)	Percent Removal (%)
Stormwater Reuse for Irrigation	2.45	0.70	29
Jellyfish Filter 0408	1.75	0.99	57
Jellyfish Filter 0806	1.04	0.59	57
Total ¹	3.53	2.28	65

¹ The Jellyfish Filter 0408 receives overflows from the stormwater reuse, therefore the totals are not a direct summation of each BMP.

Wetlands

The City of Minnetonka is the local government unit (LGU) responsible for administering the Wetland Conservation Act; therefore, BCWMC wetland review is not required.

Erosion and Sediment Control

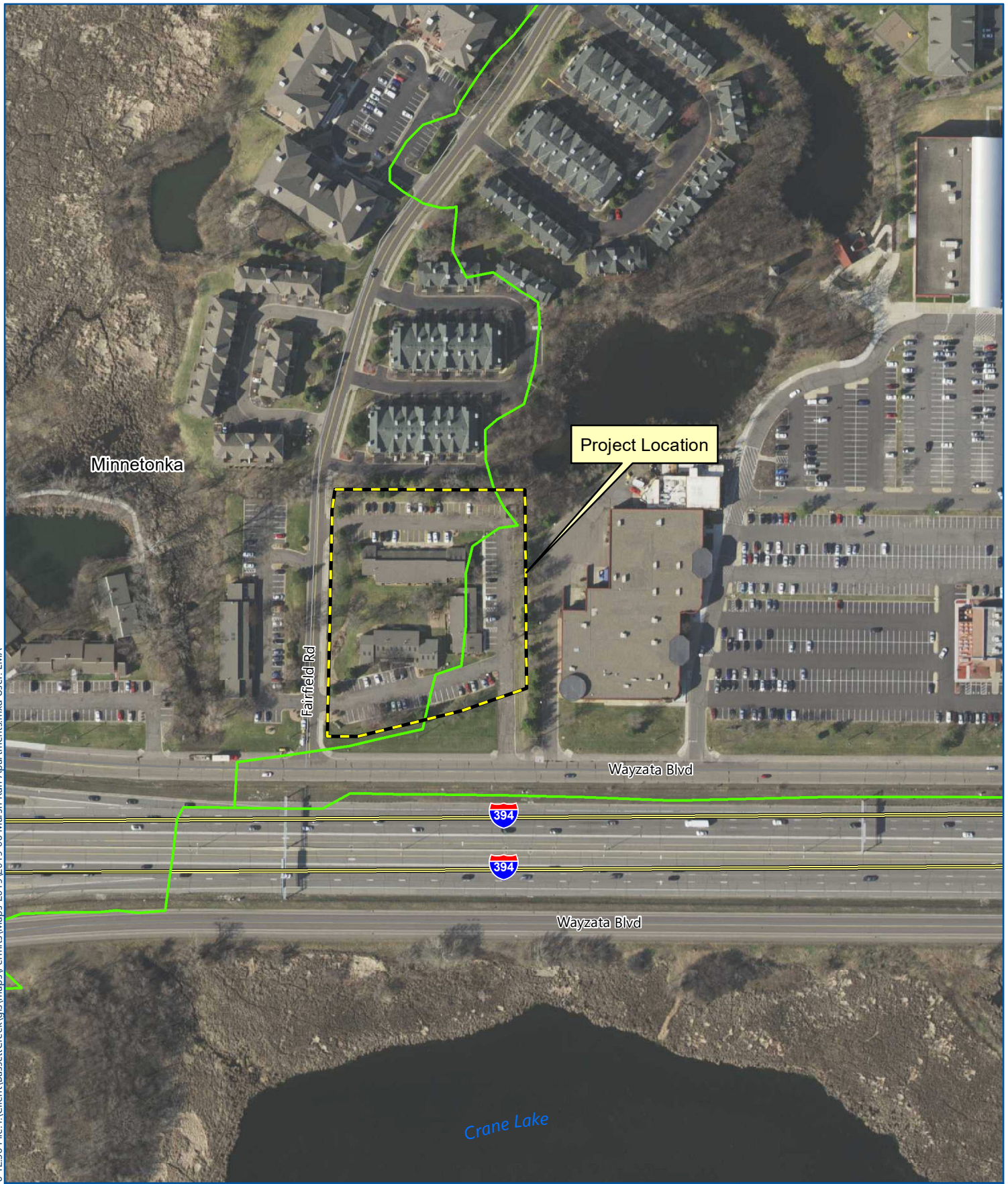
The proposed project results in more than 10,000 square feet of land disturbance; therefore, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include rock construction entrances, silt fence, silt dike, and storm drain inlet protection. Permanent erosion and sediment control features include stabilization with seed and mulch and/or landscaping features.

Recommendation

Conditional approval based on the following comments:

1. The HydroCAD models must be revised as follows to demonstrate that the proposed project meets BCWMC rate control requirements:
 - a. The impervious area in the proposed conditions HydroCAD model (1.643 acres) does not match the proposed impervious area on the plans (1.87 acres). The HydroCAD model must be revised to match the plans or the discrepancy between the HydroCAD model and plans must be clarified.
2. The MIDS calculator must be revised as follows to demonstrate that the proposed project meets BCWMC water quality goals (or flexible treatment options).
 - a. The "other" BMPs, used to represent the Jellyfish Filters, indicate that the BMPs will provide 17% removal of dissolved phosphorus. The Jellyfish Filters appear to only provide physical filtration, therefore the percent removal of dissolved phosphorus must be removed, or documentation must be provided to clarify how the BMP will treat dissolved phosphorus.
3. The flow rate through the Jellyfish Filters appears to exceed the recommended water quality flow rate through the devices. Documentation and/or clarification must be provided as to whether the Jellyfish Filters will provide the indicated pollutant removal rates if the water quality flow rate is exceeded.
4. Projects involving review of alternative BMPs require an add-on fee of \$1,000 per the BCWMC Application Form for Development Proposals fee schedule. The additional \$1,000 fee must be provided prior to approval.
5. A maintenance agreement must be established between the property owner and the City of Minnetonka for the stormwater management BMPs.
6. Revised plans (paper copy and final electronic files) must be provided to the BCWMC Engineer for final review and approval.

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- Project Location
- Municipality
- BCWMC Legal Boundary
- Major Subwatershed
- Bassett Creek



0 100 200 Feet



BCWMC #2019-06
MARSH RUN APARTMENTS
11650 Wayzata Blvd
Minnetonka, MN
LOCATION MAP