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Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4D: Highway 55 and Highway 169 Apartments – Plymouth, MN
BCWMC June 16, 2022 Meeting Agenda
Date: June 8, 2022
Project: 23270051.53 2022 2286

4D Highway 55 and Highway 169 Apartments – Plymouth, MN BCWMC 2022-07

Summary:

Project Proposer: Doran Companies
Proposed Work: 176-unit Apartment Building
Basis for Review at Commission Meeting: Fill in the floodplain
Impervious Surface Area: Increase approximately 0.2 acres
Project Schedule: August 2022 Construction
Recommendation for Commission Action: Approval

General Project Information

The proposed project is in the Bassett Creek Main Stem subwatershed at 10000 State Highway 55 in Plymouth. The existing parcel includes a vacant commercial parking lot and building. The proposed project includes the redevelopment of only the parking lot to build an apartment building, parking lot, sidewalks, and stormwater management features resulting in 3.04 acres of disturbance. The proposed project creates 1.70 acres of new and fully reconstructed impervious surfaces, including 1.50 acres of fully reconstructed impervious surfaces and an increase of 0.20 acres of impervious surfaces from 1.50 acres (existing) to 1.70 (proposed).

The initial submittal was received April 6, 2022. The BCWMC engineer reviewed the submittal and provided comments to the City and applicant on April 28, 2022 and June 2, 2022. The applicant addressed the comments and submitted revised plans and supporting documentation on May 25, 2022 and June 6, 2022.

Floodplain

The proposed project includes work in the BCWMC (Basset Creek Main Stem) 100-year floodplain. The 1% annual-chance (base flood elevation, 100-year) floodplain elevation of Basset Creek Main Stem near the proposed project site is 888.6 feet NAVD88 (approximately 888.8 feet NAVD88 based on the draft 2021 model update). The February 2021 BCWMC Requirements for Improvements and Development Proposals (Requirements) document states that projects within the floodplain must maintain no net loss in floodplain storage and no increase in flood level at any point along the trunk system (managed to at least

a precision of 0.00 feet). The proposed project will result in approximately 1,070 cubic yards of floodplain fill and approximately 1,080 cubic yards of compensating storage, resulting in a net gain of approximately 10 cubic yards of floodplain storage. The BCWMC also requires that minimum building elevations be at least two feet above the 100-year floodplain elevation. For the proposed building, the minimum building elevation is 893.50, which is 4.7 feet above the 100-year floodplain elevation, meeting the two-foot minimum requirement.

Wetlands

According to the applicant, the proposed project does involve work within wetland buffers adjacent to wetlands and will result in temporary impacts from construction. The City of Plymouth is the local government unit (LGU) responsible for administering the Wetland Conservation Act; therefore, BCWMC wetland review is not required.

Rate Control

The Requirements document states that projects that create more than one (1) acre of new or 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*.

In both existing and proposed conditions, all stormwater runoff from the site eventually discharges to Bassett Creek. In proposed conditions, the best management practices reduced peak discharge rates. Table 1 summarizes the existing and proposed peak discharge rates for the proposed project as provided by the applicant and shows that the proposed stormwater management system meets the BCWMC rate control requirements.

Table 1: Existing and Proposed Peak Discharge Rates

	2-Year Peak (cfs)	10-Year Peak (cfs)	100-Year Peak (cfs)
Existing Direct to Bassett Creek	1.9	3.9	8.7
Proposed Direct to Basset Creek	1.0	2.8	8.5
Existing to Stormwater Pond	6.0	9.9	18.5
Proposed to Stormwater Pond	3.0	5.0	7.7

Water Quality

The Requirements document states that projects on sites without restrictions *that create one or more acres of new and/or fully reconstructed impervious surfaces shall capture and retain on-site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces*. If the applicant is unable to achieve the performance goals due to site restrictions, the BCWMC Flexible Treatment Options approach shall be used, following the BCWMC Design Sequence Flow Chart.

As noted, the proposed project creates 1.7 acres of new and fully reconstructed impervious area. The proposed site is constrained due to the presence of high groundwater and predominantly clay and organic soils. Due to these site constraints, the applicant is unable to meet the BCWMC performance goal or Flexible Treatment Option (FTO) #1. FTO #1 requires a volume reduction of 0.55 inches and removing 75% of the annual total phosphorus (TP) load from new and/or fully reconstructed impervious surfaces. The applicant followed the BCWMC Design Sequence Flow Chart and determined that the proposed project must meet FTO #2. FTO #2 requires that the proposed project remove 60% of the annual TP load

from the new and/or fully reconstructed impervious surfaces. The applicant proposed a new stormwater pond, vegetated swale with check dams, and a rain garden (filtration basin). The annual TP removal provided by the proposed BMPs will remove more than 60% of annual TP, meeting FTO #2.

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 silt fence, inlet protection, and rock construction entrance. Permanent erosion and sediment control features include erosion control blanket and stabilization with sod or seed and mulch.

Recommendation

Approval

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

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N

0 250 500 Feet

Bassett Creek Watershed Management Commission

BCWMC #2022-07
HIGHWAY 55 &
HIGHWAY 169
APARTMENTS
Plymouth, MN

LOCATION MAP

Barr Footer: ArcGIS 10.8.1, 2022-04-30 14:21 File: I:\Client\BassettCreek\gis\maps\Permits\Maps-2022\2022-07 Highway 55 and Highway 169 Apartments.mxd User: EMA