Item 4I.
BCWMC 4-21-22

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Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4I: Bryn Mawr Meadows Park Improvements – Minneapolis, MN
BCWMC April 21, 2022 Meeting Agenda
Date: April 14, 2022
Project: 23270051.53 2022 2283

4I Bryn Mawr Meadows Park Improvements – Minneapolis, MN BCWMC 2022-04

Summary:

Project Proposer: Minneapolis Park and Recreation Board

Proposed Work: Park improvements

Basis for Review at Commission Meeting: Fill in the floodplain

Impervious Surface Area: Decrease approximately 0.4 acres

Project Schedule: June 2022 Construction

Recommendation for Commission Action: Approval

General Project Information

The proposed project is in the Bassett Creek Main Stem subwatershed east of Morgan Avenue South in Minneapolis. The proposed project includes reconstruction of a parking lot, entrance road, trails, and the installation of best management practices resulting in 19 acres of land disturbance. The proposed project creates 4.6 acres of fully reconstructed impervious surfaces and a decrease of 0.4 acres of impervious surfaces from 5.0 acres (existing) to 4.6 acres (proposed).

The project will be constructed in conjunction with the BCWMC Bryn Mawr Meadows Water Quality Improvement Project (2021 CIP Project BC-5). However, the water quality improvement structures constructed as part of the BCWMC CIP project are separate from the stormwater management features described below. BCWMC CIP project components will not be used to satisfy BCWMC requirements.

The initial submittal was received March 25, 2022. The BCWMC engineer reviewed the submittal and provided comments to the City and applicant on March 31, 2022. The applicant addressed the comments and submitted revised plans and supporting documentation on April 8, 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 812.2 feet NAVD88. 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 3,700 cubic yards of floodplain fill and approximately 8,000 cubic yards of compensating storage, resulting in a net gain of approximately 4,300 cubic yards of floodplain storage.

Wetlands

The proposed project does not involve work in or adjacent to wetlands. City of Minneapolis 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 one (1) acre or more 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, stormwater runoff is not collected by a storm sewer system, instead runoff is in the form of overland flow to Bassett Creek.

In proposed conditions, the site contains three filtration basins and one filtration swale. The combination of the best management practices and the reduction in impervious surfaces results in reduced overall 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 best management practices meet 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	60.6	119.2	266.5
Proposed	49.6	96.5	226.1

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 4.6 acres of fully reconstructed impervious area. However, only 1.68 acres are regulated for water quality; the remaining 2.92 acres qualify as trails or miscellaneous disconnected impervious surfaces which are exempt from BCWMC water quality standards. The proposed site is constrained due to the presence of high groundwater, predominantly clay soils, and potentially contaminated 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 total phosphorus (TP) load from the new and/or fully reconstructed impervious surfaces. The

applicant proposed three filtration basins and one filtration swale to provide treatment for the regulated impervious area. Table 2 summarizes the annual TP loading, annual TP removal, and overall percent TP removal for the proposed project and shows that the proposed stormwater treatment system meets the BCWMC water quality requirements.

Table 2: Summary of TP Loading and TP Removals

	Impervious Area (acres)[1]	Required Total Phosphorus Removal (lbs/year)[2]	Provided Total Phosphorus Removal (lbs/year)
Bryn Mawr Meadows Park Improvements	1.7	1.8	4.2

[1] Area of fully reconstructed impervious surface, not including disconnected impervious surfaces.
[2] Per BCWMC guidelines for FTO #2, 60% annual TP removal

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 #2022-04
BRYN MAWR MEADOWS
PARK IMPROVMENTS
Minneapolis, MN

LOCATION MAP

Barr Footer: ArcGIS 10.8.1, 2022-04-05 15:29 File: I:\Client\BassettCreek\gis\maps\Permits\Maps-2022\2022-04 Bryn Mawr Meadows Park Improvements.mxd User: EMA