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Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Jim Herbert, PE; Gabby Campagnola)
Subject: Item 4F: Plymouth Ice Center Parking Lot Improvements & 38th Avenue Culvert Extension – Plymouth, MN
BCWMC February 20, 2025 Meeting Agenda
Date: February 13, 2025
Project: 23270051.62 1020 2423

4F Plymouth Ice Center Parking Lot Improvements & 38th Avenue Culvert Extension – Plymouth, MN
BCWMC 2024-23

Summary:
Proposed Work: Parking lot rehabilitation, trail improvements, utility improvements, culvert extension
Project Proposer: City of Plymouth
Project Schedule: Construction May 2025 to October 2025
Basis for Review at Commission Meeting: Work in the floodplain
Impervious Surface Area: Increase 0.1 acres
Recommendations for Commission Action: Approval

General Project Information

The proposed project is located at the Plymouth Ice Center, along 38th Avenue, and a trail east of Plymouth Creek in Plymouth (see attached map for locations). The proposed project includes parking lot rehabilitation, trail improvements, utility improvements, and ADA improvements, resulting in 3.4 acres of grading (disturbance). The proposed project creates 0.8 acres of new and fully reconstructed impervious surfaces and an increase of 0.1 acres of impervious surfaces, from 2.5 acres (existing) to 2.6 acres (proposed).

The initial submittal was received on January 14, 2025. The BCWMC engineer reviewed the submittal and provided comments to the city on February 4, 2025. Revised plans were received on February 6, 2025.

Floodplain

The proposed project includes work in the BCWMC 100-year floodplain. The 1% annual-chance (base flood elevation, 100-year) floodplain elevation along Plymouth Creek at the project site is 954.9 feet NAVD88. The January 2023 BCWMC Requirements for Improvements and Development Proposals (Requirements Document) state that projects must meet the following criteria:

- Projects within the floodplain must maintain no net loss in floodplain storage
- Projects within the floodplain must maintain no increase in flood level at any point along the trunk system (managed to at least a precision of 0.00 feet).
- The lowest member of all crossings shall be at least 1 foot above the floodplain to prevent debris accumulation unless approved by the BCWMC.

Floodplain Storage

The proposed project will result in approximately 690 cubic yards of floodplain fill due to the trail realignment, culvert extension, and headwall construction. The proposed project will create 1,211 cubic yards of compensating storage southwest of the proposed trail and culvert extension, resulting in a net gain of approximately 521 cubic yards of floodplain storage as a result of the project.

Floodplain Elevation (No Rise)

The BCWMC XPSWMM model was used to assess the impact of the trail realignment. The applicant's consultant developed two models: an existing conditions model and a proposed conditions model. The existing conditions model was developed by using the BCWMC XPSWMM model as a base and updating the model to include survey data acquired as part of the project. The proposed conditions model was developed by revising the updated existing conditions BCWMC XPSWMM model to reflect the proposed trail realignment, culvert extension, headwall, and grading.

Table 1 shows the 100-year high water elevations modeled at seven locations immediately upstream and downstream of the proposed project, for existing and proposed conditions. The results demonstrate "no increase in flood level" when comparing conditions under the existing trail alignment and culverts to the proposed trail alignment and culvert extension.

Table 1: Comparison of Existing and Proposed 100-Year High Water Elevations

XPSWMM Node Name	Location	100-Year High Water Elevation (ft) – Existing Conditions	100-Year High Water Elevation (ft) – Proposed Conditions	Increase in Flood Level from Existing to Proposed Conditions (ft)
PCC-001A	County Road 9 Crossing	958.47	958.47	0.00
PCC-001AA	-[1]	957.88	957.88	0.00
PCC-003	-[1]	957.64	957.64	0.00
PCC-001B	37th Avenue Crossing	954.90	954.90	0.00
Node1162	-[1]	954.77	954.77	0.00
N-PCE-242	-[1]	954.74	954.74	0.00
PCE-040	Central Park Pond Outlet Structure (upstream)	954.74	954.74	0.00

[1.] XPSWMM Node is used to represent creek channel storage

Lowest Crossing Member

Not applicable for the proposed project.

Wetlands

The City of Plymouth is the local government unit (LGU) responsible for administering the Wetland Conservation Act; therefore, BCWMC wetland review is not required. The permit narrative states that the proposed project will include impacts to wetlands, which will be mitigated at a 2:1 ratio through a federal/state approved wetland bank. In addition, the proposed project will establish wetland buffers in accordance with the City of Plymouth buffer ordinance which meets requirements of the BCWMC.

Rate Control

The proposed project does not create one or more acres of new and/or fully reconstructed impervious surfaces; therefore, BCWMC rate control review is not required.

Water Quality

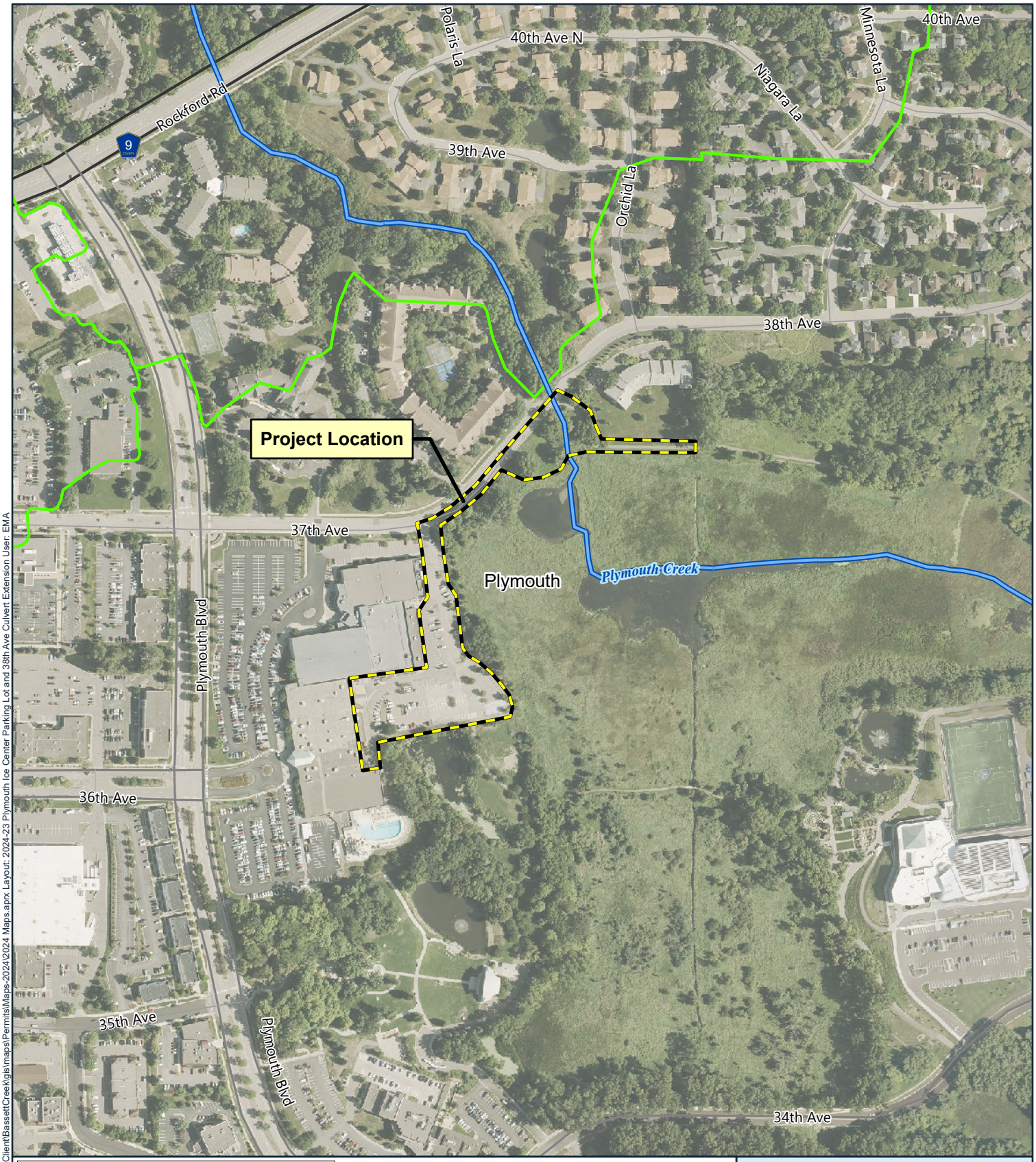
The proposed project does not create one or more acres of new and/or fully reconstructed impervious surfaces; therefore, BCWMC water quality review is not required.

Erosion and Sediment Control

The proposed project results in 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, sediment control logs, silt fence, floating silt curtain, and storm drain inlet protection. Permanent erosion and sediment control features include stabilization with seed and blanket or hydro-mulch and seed.

Recommendation for Commission Action

Approval



Project Location
Municipality
BCWMC Legal Boundary
BCWMC Hydrologic Boundary
Major Subwatershed

N

0 200 400
Feet

Bassett Creek Watershed Management Commission

BCWMC 2024-23
Plymouth Ice Center Parking Lot and 38th Avenue Culvert Extension
Plymouth, MN

LOCATION MAP

BARR

Barr Footer: ArcGISPro 3.3.2, 2025-02-10 09:37 File: I:\Client\BassettCreek\gis\maps\Permits\Maps-2024\2024 Maps.aprx Layout: 2024-23 Plymouth Ice Center Parking Lot and 38th Ave Culvert Extension User: EMA