



Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr) (Jim Herbert, PE; Gabby Campagnola)
Subject: Item 4F: Plymouth Boulevard Rehabilitation Project – Golden Valley, MN
BCWMC April 18, 2024 Meeting Agenda
Date: April 11, 2024
Project: 23270051 1020 2403

4F Plymouth Boulevard Rehabilitation Project – Plymouth, MN BCWMC 2024-03

Summary:

Proposed Work: Converting a four-lane divided roadway with stop control intersections to a two-lane divided roadway with roundabouts

Project Proposer: City of Plymouth

Project Schedule: 2024 construction

Basis for Review at Commission Meeting: Linear project with more than five acres of disturbance; work in the floodplain

Impervious Surface Area: Decrease approximately 2.29 acres

Recommendation for Commission Action: Conditional approval

General Project Information

The proposed linear project is along Plymouth Boulevard from Highway 55 to Rockford Road within the Plymouth Creek subwatershed. The proposed linear project includes construction of roundabouts to control traffic, and accompanying drainage, surfacing, lighting, and ADA improvements, resulting in 20.89 acres of grading (disturbance). The proposed linear project creates 9.49 acres of new fully reconstructed impervious surfaces and a decrease of 2.29 acres of impervious surfaces.

The initial submittal was received on March 12, 2024. The BCWMC engineer reviewed the submittal and provided comments to the City on March 20, 2024. Revised plans were submitted on April 9, 2024.

Floodplain

The proposed project includes work in the BCWMC (Plymouth Creek) 100-year floodplain. The BCWMC 1% annual-chance (100-year) floodplain elevation of Plymouth Creek east of the pond near the Plymouth Ice Center is 954.8 feet NAVD88. The January 2023 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 include installation of 5 cubic yards of riprap fill in the floodplain, and excavation of 5 cubic yards of material in the floodplain, resulting in no change in floodplain storage.

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. A wetland delineation was conducted by the City in October 2023 and no wetlands were identified within the project area. According to the City's consultant, one stormwater outlet (FES 7016) is proposed to discharge into a wetland area, and another stormwater outlet (FES 7015) is proposed to discharge into Plymouth Creek, but are not impacting any wetlands.

Rate Control

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

Water Quality

The proposed linear project does not create one or more acres of net new impervious surfaces; therefore, BCWMC water quality review is not required. However, the proposed linear project includes two filtration basins (not reviewed by BCWMC engineer) and a reduction of impervious surfaces.

Erosion and Sediment Control

The proposed linear project results in one or more acres 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, and storm drain inlet protection. Permanent erosion and sediment control features include stabilization with seeding.

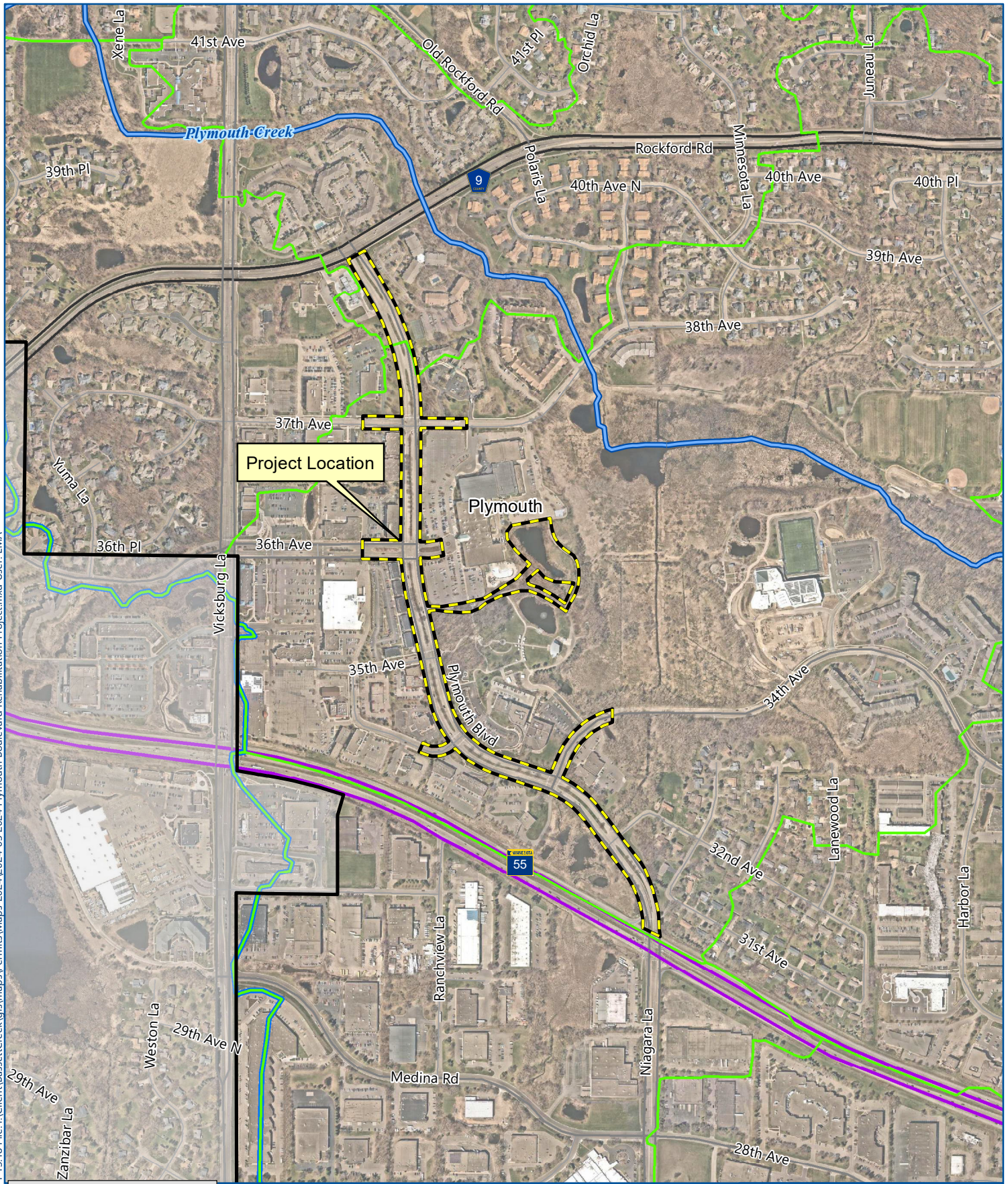
Recommendation for Commission Action


Conditional approval based on the following comments:

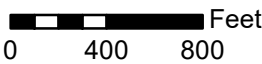
1. According to the applicant's April 9, 2024 memo, the contractor will remove 5 cubic yards of material from the floodplain during the flared end installation to mitigate the 5 cubic yards of riprap placed in the floodplain. A note must be added to Sheet 281 to clarify removal of an equal amount of material between the normal water level of the wetland (948.0 feet NAVD88) and the 100-year floodplain of Plymouth Creek (954.8 feet NAVD88).
2. The following outlets discharge above the normal water level (NWL) of the receiving water body: 7021 (Sheet 267), 5101 (Sheet 268), and 7016 (Sheet 281). As feasible, the pipes should be extended such that invert elevation of the outfalls discharge at or below the NWL of the receiving water body to provide energy dissipation. As an alternative, adequate armoring must be provided to prevent erosion and channelization between the outfall and receiving water body. The NWL of the receiving water body must be labeled on the plans. Below are specific comments related to the outfalls.
 - a. The applicant notes outfalls 7021 and 5101 will maintain existing downstream elevation conditions. The applicant must demonstrate that erosion and scour is not occurring under existing conditions if implementing the above recommendations is not feasible.
 - b. Outfall 7016 has a note that the riprap at the flared end will be extended to the normal water level (NWL) of the receiving waterbody. Although it is recommended the City

consider extending the pipe, the plans must be modified to show the proposed riprap extension since the distance to the NWL is unclear and the drop between the outfall and NWL exceeds 5 ft. The proposed riprap channel extension occurs in the floodplain, therefore floodplain cut and fill impacts must be analyzed, reported, and noted on the drawings, as necessary (similar to the description in comment 1).

3. The following outlets appear to have velocities that exceed 8 feet-per-second when the pipe is flowing full. Flatter slopes, drop structures, or other energy dissipation methods must be used to provide an average outlet velocity of no more than 4 feet -per-second, or 8 feet-per-second if riprap is used, to limit potential erosion.
 - a. 5101 has an outlet velocity (full flow) exceeding 9 feet-per-second.
 - b. 5069 has an outlet velocity (full flow) exceeding 14 feet-per-second.
4. Sheet 281: Skimming should be incorporated into the outlet of the pond (7019) to prevent floatables from passing downstream. One option includes extending the pipe and lowering the invert of outfall 7019 to 953 ft. to create at least 1 foot of freeboard above the top of the pipe to minimize the chance of vortexing.



-  Project Location
-  Municipality
-  BCWMC Legal Boundary
-  Major Subwatershed
-  BCWMC Hydrologic Boundary



BCWMC 2024-03
 2024 PLYMOUTH
 BOULEVARD
 REHABILITATION PROJECT
 Plymouth, MN

LOCATION MAP