Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Jim Herbert, PE; Gabby Campagnola)
Subject: Item 4G: Station 73 Transit and Regional Improvement Program – Plymouth, MN
BCWMC February 20, 2025 Meeting Agenda
Date: February 13, 2025
Project: 23270051.62 1020 2420

4G Station 73 Transit and Regional Improvement Program – Plymouth, MN BCWMC 2024-20

Summary:
Proposed Work: Road reconstruction, trail improvements, storm sewer improvements
Project Proposer: City of Plymouth
Project Schedule: Construction May 2025 through 2026
Basis for Review at Commission Meeting: Linear project with more than five acres of disturbance
Impervious Surface Area: Increase 4.43 acres
Recommendations for Commission Action: Conditional approval

General Project Information

The proposed linear project is located near the intersection of County Road 73 and Highway 55 within the Medicine Lake and Bassett Creek Main Stem subwatersheds in Plymouth. The proposed project involves realignment of County Road 73, and includes road reconstruction, mill and overlay, trail and sidewalk improvements, storm sewer network improvements, and stormwater management, resulting in 29.23 acres of proposed site grading (i.e., disturbance). The proposed project creates 16.82 acres of new and fully reconstructed impervious surfaces, and results in an increase of 4.43 acres of new impervious surfaces from 13.22 acres (existing) to 17.65 acres (proposed).

The initial submittal was received on December 31, 2024. The BCWMC engineer reviewed the submittal and provided comments to the city on January 17, 2025. Revised plans were received on February 4, 2025.

Floodplain

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

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.

Rate Control

The January 2023 *BCWMC Requirements for Improvements and Development Proposals* (Requirements Document) states that linear projects that create one or more acres of net new impervious *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 existing and proposed conditions, the stormwater runoff from the site eventually discharges to Bassett Creek or Medicine Lake. In proposed conditions, the best management practices reduce peak discharge rates compared to existing conditions. Table 1 summarizes the existing and proposed peak discharge rates for the proposed project as provided by the applicant. Results show the BCWMC rate control requirements are met.

Table 1: Existing and Proposed Peak Discharge Rates

Discharge Location	2-Year Peak (cfs)	10-Year Peak (cfs)	100-Year Peak (cfs)
Existing to Bassett Creek	26.3	46.8	97.7
Proposed to Bassett Creek	25.9	23.0	83.8
Existing to Medicine Lake	27.9	50.9	112.4
Proposed to Medicine Lake	19.5	32.1	71.7

Water Quality

The Requirements Document states that linear projects on sites without restrictions that create one or more acres of net new impervious surfaces *shall capture and retain onsite 1.1 inches of runoff from the net new 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.

According to the Requirements Document, trails, sidewalks, and miscellaneous disconnected impervious surfaces are exempt from BCWMC water quality performance standards. Therefore, the project results in a net increase of 1.78 acres of regulated impervious surfaces.

The proposed site is constrained due to contaminated soils, high groundwater, limited right of way for best management practices (surface or underground), and proximity of wetlands near the roadway. 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. 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. The applicant proposes an infiltration basin, two filtration basins, and ditches with check dams. The annual TP removal provided by the proposed best management practices will remove more than 60% of annual TP from the regulated impervious surfaces, meeting FTO #2.

Erosion and Sediment Control

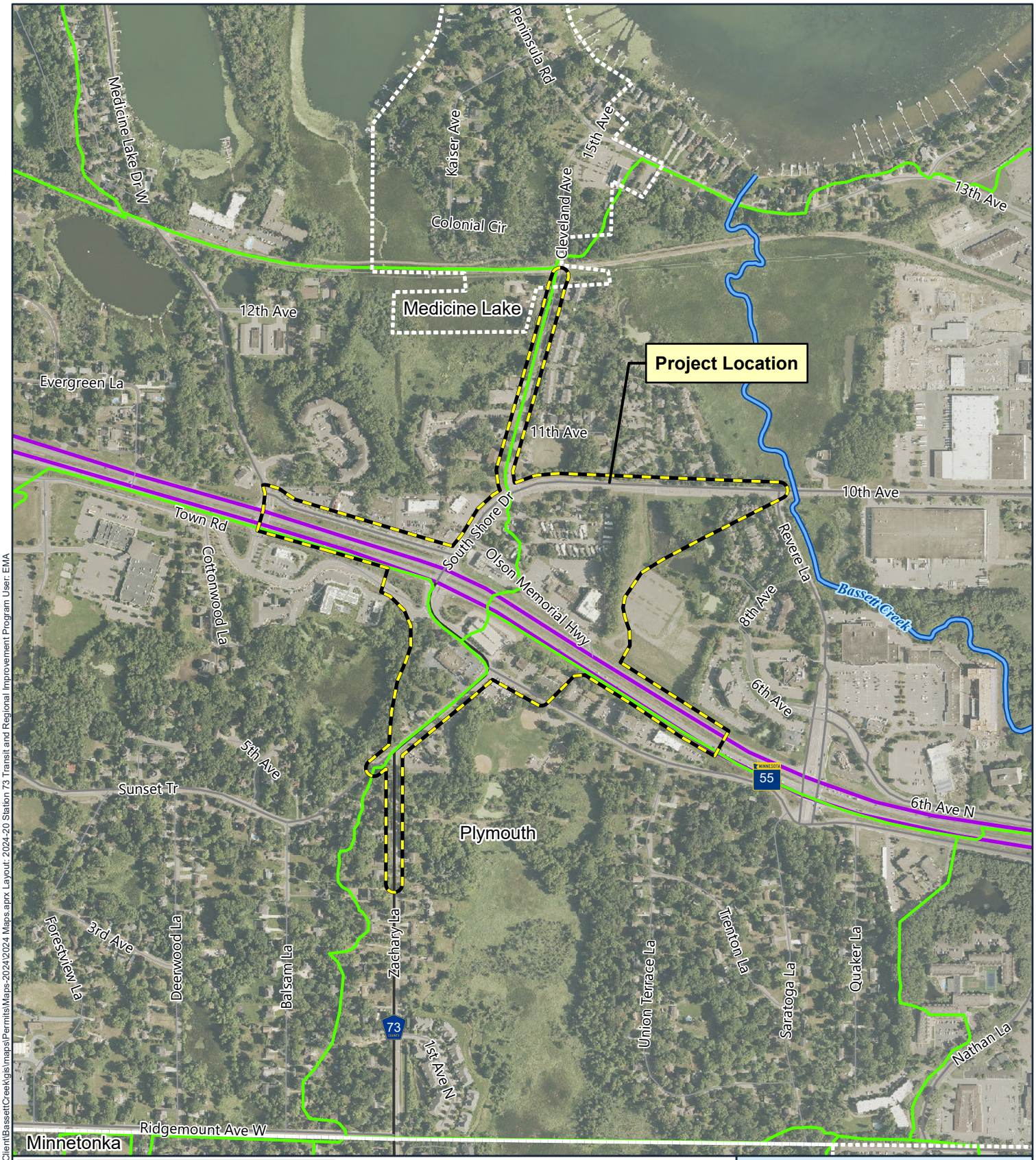
The proposed linear project results in one or more acres of land disturbance; therefore, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include rock construction entrances, sediment control logs, silt fence, and

storm drain inlet protection. Permanent erosion and sediment control features include stabilization with seed and blanket or hydromulch and seed.

Recommendation for Commission Action

Conditional approval based on the following comments:

1. The MIDS model must be revised as follows to demonstrate that the proposed project meets BCWMC Flexible Treatment Option #2:
    - Pretreatment devices, such as SAFL baffles and sump manholes, are required for stormwater infiltration systems, but not credited with removals in addition to the removals provided by the stormwater infiltration system. The sumps/SAFL baffles must be removed from the MIDS model.
    - The drainage areas for the BMPs in the MIDS model do not match the HydroCAD model. Applicant must clarify the drainage areas used in the MIDS model or update the MIDS model to match the HydroCAD model.
2. The applicant must review the HydroCAD model, MIDS model, and plans for consistency and revise as necessary:
    - The bottom elevation for BMP 3
    - The overflow depth for BMP 3
    - The overflow area for BMP 3
3. Outfall STR-299 has a pipe full-flow velocity of approximately 14.8 feet per second. The applicant must review the outfall and determine if the velocity can be reduced (i.e. flatter slopes and drop structures).



Project Location
Municipality
BCWMC Legal Boundary
BCWMC Hydrologic Boundary
Major Subwatershed

0 400 800
Feet

Bassett Creek Watershed Management Commission

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LOCATION MAP

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