



Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4J: Plymouth 2020 Street Reconstruction – Plymouth, MN
BCWMC February 20, 2020 Meeting Agenda
Date: February 12, 2020
Project: 23270051 2020 2205

4J Plymouth 2020 Street Reconstruction – Plymouth, MN BCWMC 2019-28

Summary:

Proposed Work: Street reconstruction, including water main, sanitary sewer, and storm sewer improvements

Basis for Review at Commission Meeting: Linear project with more than five acres of disturbance

Impervious Surface Area: Increase approximately 0.96 acres

Recommendation: Conditional Approval

General Project Information

The proposed linear project is in the City of Plymouth at various locations within the Medicine Lake Direct, Bassett Creek Main Stem (Upstream), Plymouth Creek, and Medicine Lake South subwatersheds. The proposed linear project includes reconstruction of City of Plymouth streets and utility improvements, including water main, sanitary sewer, and storm sewer, resulting in 20.7 acres of grading (disturbance). The proposed linear project creates 13.76 acres of fully reconstructed impervious surfaces and an increase of 0.96 acres of impervious surfaces, from 12.81 acres (existing) to 13.76 acres (proposed).

Floodplain

The proposed linear 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 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 23 manholes with four-foot sumps and SAFL baffles as listed below:

- East Medicine Lake Boulevard near 32nd Avenue North
- 32nd Avenue North near Sargatoga Lane
- Two locations along East Medicine Lake Boulevard between 32nd and 30th Avenue North
- Two locations along 17th Avenue North near East Medicine Lake Park
- 15th Avenue North near Pineview Lane
- 11 locations along Highway 55 Frontage Road
- Oakview Lane North between 11th and 12th Avenue North
- Kirkwood Lane North at the cul-de-sac
- Kirkwood Lane North near 12th Avenue North
- Two locations along 11th Avenue North near Oakview Lane North

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, ditch checks, rip rap and storm drain inlet protection. Permanent erosion and sediment control features include stabilization with mulch and sod.

Recommendation






Conditional approval based on the following comments:

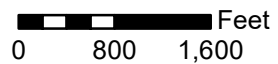
1. All disturbed areas must be properly stabilized with temporary and permanent erosion control measures. There are locations within construction limits that do not appear to be stabilized with vegetative cover, specifically around the following storm sewer outfalls. Temporary or permanent stabilization or restoration must be shown at these locations:
 - a. Outfalls 5220 and 5223 on Sheet 166
 - b. Outfalls 5074 and 5070 on Sheet 174
 - c. Outfalls 5080 and 5082 on Sheet 175
 - d. Outfall 5084 on Sheet 176
 - e. Outfalls 5095-1 and 5089 on Sheet 177
 - f. Outfall 5015 on Sheet 179
 - g. Outfall 5037 on Sheet 181
 - h. Outfalls 5052 and 5102 on Sheet 183
 - i. Outfall 5047 on Sheet 184

2. Sheet 140: the outlet velocity at storm sewer outfall 5047 appears to exceed 8 feet per second when the pipe is flowing full. Flatter slopes, drop structures, energy dissipaters, or stilling basins 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.
3. The erosion control plans, Sheets 166-186 show “Class III Rip Rap for RCP Outlet” in the legend, but does not designate riprap at each outfall and does not reference the stormwater tabulations that list various types of rip rap at outfalls. Plans must be revised to clarify energy dissipation/riprap requirements.
4. Sheet 174: storm sewer outfall 5074 has a callout to “Provide Energy Dissipation”, but no rip rap is included at this location in the stormwater tabulation on Sheet 12. The outlet velocity of storm sewer outfall 5074 appears to exceed 4 feet per second when the pipe is flowing full, therefore armoring, such as riprap must be provided.
5. The outlet velocity on the following storm sewer outfalls appear to exceed 4 feet per second when the pipe is flowing full, therefore armoring, such as riprap, must be provided and must be consistent between the stormwater tabulation and erosion control plans.
 - a. Outfall 5080 on Sheet 175
 - b. Outfall 5084 on Sheet 176
 - c. Outfall 5095-1 on Sheet 177
 - d. Outfall 5089 on Sheet 177
 - e. Outfall 5037 on Sheet 181
 - f. Outfall 5047 on Sheet 184
6. There are various locations that could be used to access the work that do not include a rock construction entrance. The applicant should evaluate and confirm whether the following locations should have construction entrances:
 - a. Sheet 166: East Medicine Lake Boulevard near Station 400+00
 - b. Sheet 170: Saratoga Lane North near Station 303+00
7. Inlet protection must be provided at the following locations and should remain in place until pavement surfaces have been installed and/or final turf establishment has been achieved:
 - a. Sheet 167: the existing catch basin on the north side of East Medicine Lake Boulevard near Station 409+00.
 - b. Sheet 169: the existing catch basin on the south side of 32nd Avenue North near Station 120+00.
 - c. Sheet 171: the existing catch basin on the west side of East Medicine Lake Boulevard near the intersection of 24th Avenue North.

- d. Sheet 171: two existing catch basins on the west side of Kilmer Lane North near the intersection of 24th Avenue North.
 - e. Sheet 171: two existing catch basins in the driveways on the south side of 17th Avenue North near Stations 703+20 and 705+40.
 - f. Sheet 171: the existing catch basin on the west side of Kilmer Lane North, on the north side of the intersection of 17th Avenue North.
 - g. Sheet 172: three existing catch basins at intersection of Nathan Lane North and 10th Avenue North.
 - h. Sheet 172: two existing catch basins at the south end of Nathan Lane North near Station 805+00.
 - i. Sheet 180: the existing catch basin on the east side of Oakview Lane North near Station 2217+40.
8. Sheet 179: extend perimeter controls to the north along the west side of Oakview Lane North wherever runoff from disturbed areas leaves the project area.
 9. Where storm sewer outfalls discharge to a water body, the outfalls should be extended to discharge at or below the normal water level of the receiving water body to limit potential erosion and channelization between the outfall and receiving water body.
 10. Revised plans (paper copy and final electronic files) must be provided to the BCWMC Engineer for final review and approval.



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



BCWMC #2019-28
 PLYMOUTH 2020 STREET
 RECONSTRUCTION
 Plymouth, MN

LOCATION MAP