



Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4E: Brookview Golf Course Streambank Stabilization – Golden Valley, MN
BCWMC October 20, 2022 Meeting Agenda
Date: October 13, 2022
Project: 23270051.53 2022 2292

4E Brookview Golf Course Streambank Stabilization – Golden Valley, MN BCWMC 2022-13

Summary:

Project Proposer: City of Golden Valley

Proposed Work: Stream stabilization

Basis for Review at Commission Meeting: Work involving Bassett Creek trunk system

Impervious Surface Area: No change

Project Schedule: November/December 2022 Construction

Recommendation for Commission Action: Approval

General Project Information

The proposed project is in the Bassett Creek Main Stem subwatershed in the Brookview Golf Course owned and operated by the City of Golden Valley. The proposed project includes stabilizing approximately 500 linear feet of Bassett Creek by streambank grading and installing hybrid restoration techniques (i.e., a combination of soft armoring like vegetation and hard armoring such as rock riprap).

The initial application and submittal was received August 8, 2022. The BCWMC engineer reviewed the submittal and provided comments to the city on August 30, 2022. The BCWMC engineer met with the city and its consultant on September 23, 2022 to discuss the comments for the proposed project. The comments were addressed and revised plans and supporting documentation were submitted on September 30, 2022.

Floodplain

The proposed project includes work in the BCWMC (Bassett Creek Main Stem) 100-year floodplain. The 1% annual-chance (base flood elevation, 100-year) floodplain elevation of Bassett Creek Main Stem near the proposed project site is 888.1 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

an increase of approximately 358 cubic yards of floodplain storage.. The applicant used the BCWMC XP-SWMM model to demonstrate no-rise for the 100-year floodplain elevation along the trunk system.

Lakes, Streams, and Wetlands

The proposed project includes work adjacent to wetlands. The City of Golden Valley is the local government unit (LGU) responsible for administering the Wetland Conservation Act; therefore, BCWMC wetland review is not required.

The purpose of the proposed project is to stabilize approximately 500 linear feet of Bassett Creek by grading a 3:1 slope and armoring the banks against erosion. The existing channel stretch has 1.5:1 side slopes, which were eroding. Figure 1 shows that the eastern bank erosion and undercutting has led to exposed roots and failed trees.



Figure 1: Channel erosion in the proposed project area

The BCWMC Stream Restoration and Protection Policies (policy 60) encourage the use of soft armoring techniques (rock vanes, geotextiles, plants, logs, etc.) as much as possible and wherever feasible as opposed to hard armoring techniques such as rock riprap. At a meeting with the city and its consultant, the hybrid stabilization approach and the Commission Engineers' recommendation to re-evaluate soft armoring solutions were discussed.

Given the shallow heights of the banks and site constraints, the applicant proposed a hybrid restoration technique that includes hard armoring practices (field stone) and soft armoring (partially buried field

stone with native seeding) as shown in Figure 2 and Figure 3. After the meeting, the city reviewed the plans along the outside bends and modified the design to remove over 100 cubic yards of rock by increasing soft armoring.

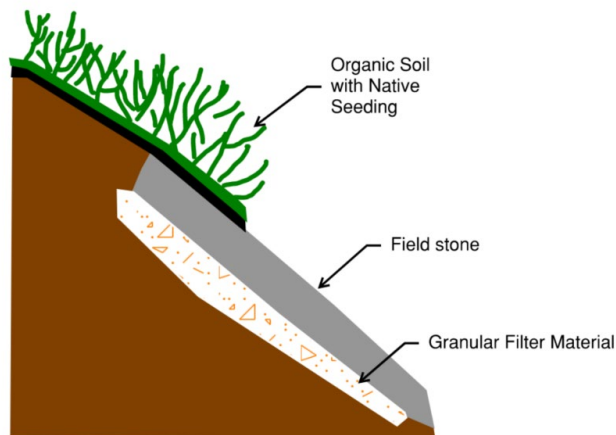


Figure 2: Graphic to demonstrate proposed hybrid armoring technique

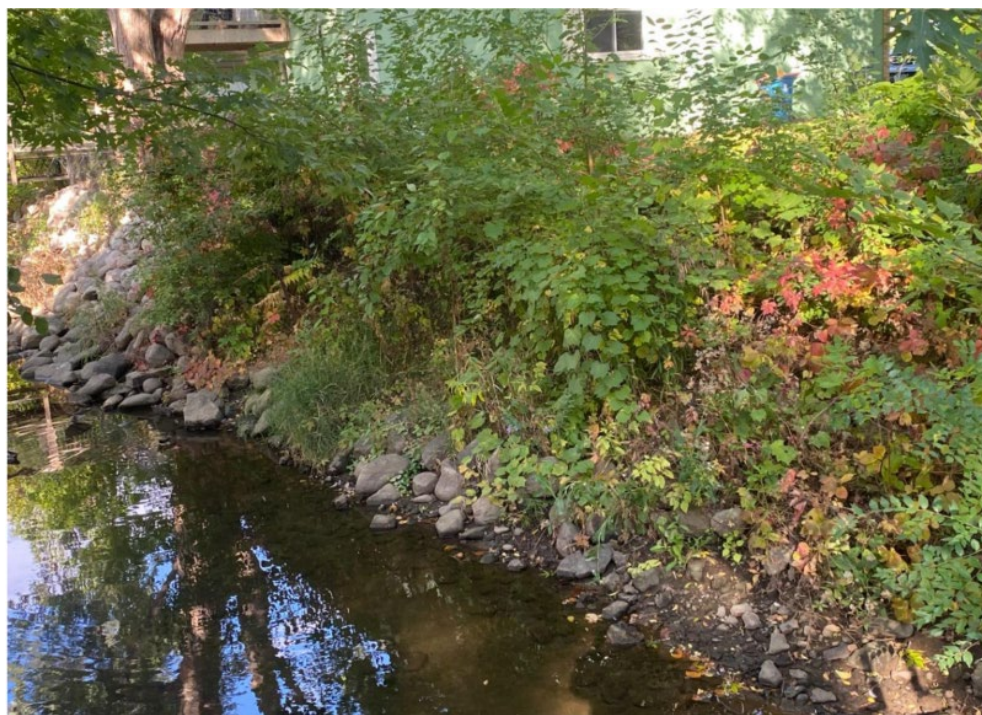


Figure 3: Proposed hybrid armoring technique, as installed in a stream on a previous project

Rate Control

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

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Water Quality

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

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, rock check dams, and rock construction entrances. Permanent erosion and sediment control features include field stone and stabilization with seed.

Recommendation

Approval



Project Location

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



0 250 500 Feet



BCWMC #2022-13
 BROOKVIEW GOLF COURSE
 STREAMBANK STABILIZATION
 Golden Valley, MN

LOCATION MAP