Plymouth Creek Restoration Project

Annapolis Lane Upstream through Plymouth Creek Park

2017 CR-P

FINAL REPORT

January 2020

I. Project Overview

This BCWMC Capital Improvement Project in the City of Plymouth restored 2,800 linear feet of streambanks along Plymouth Creek from Annapolis Lane upstream through Plymouth Creek Park (Figure 1). The project stabilized the streambanks within three distinct reaches in a total of 21 specific areas with various structural and vegetative techniques. The project improved habitat, significantly reduced erosion, and reduced total phosphorus loads and total suspended solids loads by 52.2 and 90,800 lbs per year, respectively. The restoration work was completed in 2018, with design and construction being implemented through an agreement with the City of Plymouth. In 2019, additional vegetation was established along the banks and some minor repairs to a few areas was completed.

This project was funded, in part, by grants from Hennepin County and Minnesota Board of Water and Soil Resources.

II. Project Description and Outcomes

The Plymouth Creek Restoration Project stabilized and restored streambanks along both sides of Plymouth Creek for a total of 2,800 feet including 1,700 feet within Plymouth Creek Park (including through an active disc golf course) and 1,100 feet between Fernbrook Lane and Annapolis Lane in the City of Plymouth.

The project reduced total phosphorus and suspended sediment loading to the creek by an estimated 52.2 and 90,800 lbs per year, respectively. These pollutant reductions also improved the water quality of downstream resources including Medicine Lake and the Mississippi River. The project also improved the in-stream and near stream habitat along the creek.

Twenty-one areas within three reaches were stabilized and restored. Techniques included clearing and thinning some trees to open the canopy and allow more sunlight to reach the streambanks, restoring the vegetative buffer along the stream; re-connecting the stream with its floodplain; removing large woody debris; and installing a variety of stream stabilization measures, including riprap, root wads, toe wood, vegetated reinforced soil stabilization (VRSS), rock or log vanes, and stone toe protection.

Through an agreement with the BCWMC, the City of Plymouth implemented this project. The city hired Wenck Associates, Inc. to design the project and provide construction oversight and contracted with Standard Contracting to construct the project.

III. Timeline and Key Documents

Many of these documents and this final report can be found at:
http://www.bassettcreekwmo.org/projects/all-projects/plymouth-creek-channel-restoration-project-annapolis-lane-up

- August 2015: Feasibility study proposal by BWCMC Engineers approved
- October 2015: Public open house held to gather input during feasibility study
- March 2016: Feasibility report by BCWMC Engineers approved
- September 2016: Public hearing on the project
- September 2016: Project officially ordered
- September 2016: Agreement with City of Plymouth to implement project approved
- April 2017: Clean Water Fund grant from MN Board of Water & Soil Resources (BWSR) awarded

- April 2017: Hennepin County Opportunity grant awarded
- April 2017: 60% design plans by Wenck Associates approved
- June 2017: Second public open house held to relay project plans and answer questions
- August 2017: 90% design plans by Wenck Associates approved
- May 2018: Project construction completed
- December 2019: Vegetation management and small repairs completed; project closed
- January 2020: Final grant reports submitted to Hennepin County and BWSR

IV. Project Budget and Funding

This project ended up coming in well under budget due to less than expected design and construction costs. The project was funded through a combination of BCWMC CIP funds levied in 2017 and 2018, a $385,500 Clean Water Fund Grant from the Minnesota Board of Water and Soil Resources, and a $50,000 Hennepin County Opportunity Grant.

Total project budget: $863,573
Total spent: $627,330

Commission costs (feasibility study, administration, plan reviews): $100,423
Design and construction costs (reimbursed to City of Plymouth): $526,907

- January 2018 City Reimbursement #1
- June 2018 City Reimbursement #2
- July 2018 City Reimbursement #3
- November 2019 City Reimbursement #4
- December 2019 City Reimbursement #5

V. Lessons Learned

During this project, one landowner became very concerned about the amount of tree removal planned on an adjacent property within the stream corridor. Although the landowner was engaged during the feasibility study phase of the project, his serious concerns were misunderstood or not relayed by the landowner to be extremely concerning until much later in the process. Although the project proceeded through this stream reach, there were many meetings, negotiations, and some changes to the project plans due to his concerns and objections to the project. Staff learned that the early and earnest engagement with the public, and in particular with adjacent landowners, is important to the overall project.

We also learned to be vigilant about the timing of project activities in relation to the timing grant execution. The BCWMC was originally awarded $400,000 in Clean Water Grant Funds, but much of the design work was completed before grant agreements were executed meaning the work wasn't eligible for grant reimbursement or to be used as match for the grant. The BCWMC forfeited about $14,500 in grant funding due to this timing discrepancy.

VI. Maintenance

Each spring, the City solicits quotes and contracts with vegetation management firm(s) to maintain previously installed capital improvement projects, rain gardens, wetland restorations and lakeshore restorations.

The scope of the maintenance work for the Plymouth Creek Stream Restoration Project includes:

- Invasive Species Management: The City will control Noxious Weeds that are identified by the Minnesota Department of Agriculture 2020 Noxious Weed List
- Plant Replacement: May consist of plugs or seed depending on the location
- Trash and Debris Removal

The City or its contractor will inspect the project area at least 3 times annually during routine maintenance activities. All Best Management Practices (BMPs) installed with the project will be inspected and maintenance items that are outside of the routine vegetation management scope of work, such as erosion or BMP repair, will be addressed as it is identified.

The City will inspect the storm sewer system and adjacent water bodies as required by the Minnesota Pollution Control Agency NPDES/SDS Permit (Permit No: MNR040000) and subsequent revisions. Any maintenance items identified during these inspections will be conducted per the City's Standard Operating Procedures.

VII. Photos

Before construction: September 2015

During construction: May 2018

After construction: August 2018 and October 2019

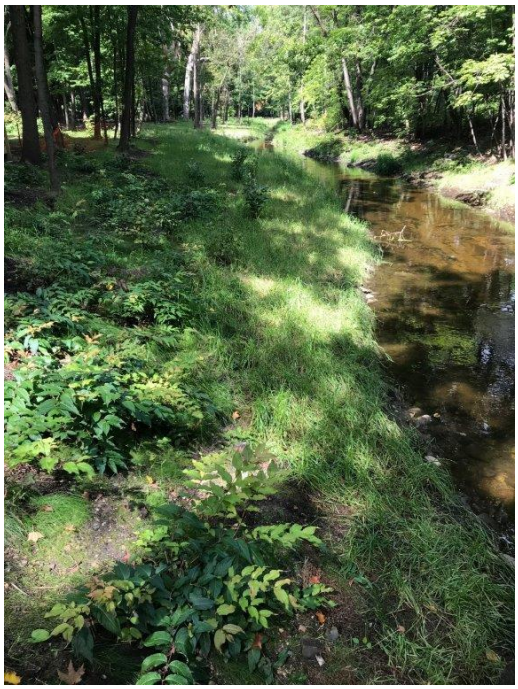

FIGURE 1

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Feet
100 0 100 200

Meters
30 0 30 60

PLYMOUTH CREEK STUDY REACHES
Plymouth Creek Feasibility Study
Bassett Creek Watershed
Management Commission

Barr Footer: ArcGIS 10.3.1, 2015-10-09 08:20 File: I:\Client\BassettCreek\Work_Orders\2015\Plymouth Creek Feasibility Study\Maps\Figure1_Reach1.mxd User: CRR