Ponderosa Woods Stream Restoration Project

FINAL REPORT
April 2026

I. Project Overview

This project in the City of Plymouth restored a small stream that was actively eroding near Medicine Lake and which drains into Plymouth Creek and then into the West Medicine Lake Park Water Quality ponds. This project stabilized streambanks along a 1,000 foot section of stream, removed a significant amount of woody debris and fallen trees from within and adjacent to the stream, improved in-stream and riparian habitats, and improved upland habitat near the stream by removing more than two acres of buckthorn. The project will reduce sediment and nutrient pollution to Medicine Lake and will prevent future channel erosion along this stretch.

The project will annually reduce total phosphorus and total suspended solids entering Plymouth Creek and downstream Medicine Lake by an estimated 7.3 pounds and 14,690 pounds, respectively. The project included the removal of buckthorn, dead and dying ash trees, and box elder trees to improve habitats and allow more sunlight for vegetation establishment. In addition, some healthy desirable trees were removed to access the site, grade streambanks to a stabilized slope, and protect infrastructure. New trees were planted to replace lost trees.

II. Project Area

The project is located north of 18th Avenue North and west of West Medicine Lake Drive on the west side of Medicine Lake in the city of Plymouth. The project area was located on both private and public parcels.

III. Project Description and Outcomes

Through a cooperative agreement with the BCWMC, the City of Plymouth designed and constructed this project. The city hired Midwest Wetland Improvements LLC for design and engineering assistance and contracted with Sunram Construction, Inc. to construct the project.

This project incorporated stream stabilization with a combination of bioengineering and hard armoring; habitat improvement, including removal of dead and dying trees and buckthorn clearing along the riparian buffer and within a 2-acre floodplain area at the downstream end of the project; installation of a stormwater sump structure for trapping sediment; and significant woody debris removal from the stream channel.

Project outcomes included:

- Improved Water Quality:
    a. Reduce phosphorus by 7.3 lbs/year
    b. Reduce total suspended solids by 14,690 lbs/year
- Restored Upland/Floodplain Habitats: 3.5 acres
- Replanted Trees:
    a. Ten 10-gallon trees
    b. Ten 20-gallon trees

IV. Timeline and Key Documents

All documents can be found on the project website.

June 2023:	Feasibility study completed
September 2023:	Project officially ordered
September 2023:	Cooperative agreement with City of Plymouth for design, construction, long term maintenance approved
October 2024:	60% Designs approved
November 2024:	90% Designs approved
Winter 2024/2025:	Construction completed
Spring 2025:	Vegetation establishment & tree Planting
Ongoing:	Annual Vegetation Maintenance

V. Project Budget and Funding

The estimated cost for this project was $352,000, however upon completion, total cost for design and construction amounted to $407,238. The Commission approved an amendment to the project budget at their meeting in March 2026.

Activity	Actual	Notes
Commission Expenses	$72,656	Feasibility study: $43,789 Administrative costs: $8,800 (2.5% of total levy of $352,000)
Project Design and Engineering	$94,130	The contract between the City of Plymouth and Midwest Wetlands was originally $90,630. One change order ($4,127) was required after the U.S. Army Corps of Engineers required a wetland delineation during permitting.
Construction + Contingency	$236,490	The contract amount between the City of Plymouth and Sunram Construction was originally $238,685. One change order ($2,000) was issued for additional tree clearing identified once construction began. Contract Total with Change Order: $240,685 The City realized cost savings in several areas: • Street sweeping: Not required due to winter construction conditions and no material tracking off site. • Field stone: The contractor did not need the full bid quantity due to favorable on-site conditions. These savings resulted in the project finishing $4,195 under the revised construction contract amount.
City Project Administration	$3,962	Permit fees, mailings, and public notices
TOTAL	**$407,238**	

VI. Lessons Learned

Overall, the project was constructed without significant challenges. Vegetation and tree establishment was not difficult due to good growing conditions and adjacent resident input and ancillary maintenance of vegetation.

The project budget status, including a comparison of bids to feasibility study estimates, should have been reviewed early in the project. The BCWMC should have been alerted to over budget estimates and items prior to project completion.

VII. Maintenance

The City of Plymouth's maintenance schedule includes regular management of the entire project, including inspection and maintenance of the sump structure annually as required by the MS4 Permit. Other project components such as the vegetation in the streambank and upland area will be maintainined 3-4 times annually by a vegetation management contractor hired by the city as part of ongoing maintenance of all past caiptial projects.

VIII. Photos

Pre-construction

Pre-construction

Construction of sump manhole

Post construction

Post construction

Post construction after significant rain