



## Memorandum

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Company  
**Subject:** Item 6C – Plymouth Creek Restoration Feasibility Study  
BCWMC August 20, 2015, Meeting Agenda  
**Date:** August 12, 2015

## 6C. Order Feasibility Study for Plymouth Creek Restoration

### Recommendations:

1. Consider approving the scope of work and \$52,700 (or \$59,700 with Phase I study) budget presented in this memorandum and direct the Engineer to complete the feasibility study for the restoration of Plymouth Creek from Annapolis Lane to 2,500 feet upstream of Annapolis Lane (2017CR-P) to be constructed in 2017.
2. Direct the Engineer to consult with the U.S. Army Corps of Engineers (USACE) to determine whether the Resources Management Plan Pre-application Consultation Protocols may apply for this project.
3. Direct the Engineer to prepare a stream feasibility study that complies with the requirements of the USACE.

### Background

This project would address needed restoration between Annapolis Lane and approximately 2,500 feet upstream of Annapolis Lane in Plymouth. The project is in the Bassett Creek Watershed Management Commission's (BCWMC) current CIP (2017CR-P) and scheduled to be constructed in 2017. A portion of the project reach is included in the BCWMC's 2009 Resource Management Plan (RMP).

A feasibility study must be completed that includes a preliminary analysis and design for the project along with construction cost estimates; and the study must be completed prior to BCWMC holding a hearing as preface to ordering the project. Since a portion of the reach is included in the RMP, it is expected that the USACE will require this feasibility study to meet the pre-application protocols laid out for the RMP restoration projects. The protocols include review of cultural resources, wetland delineations, wetland functional assessment, and wetland impacts, which are beyond the typical scope of feasibility studies.

## Content and Scope for a Feasibility Study for Plymouth Creek Restoration Project

Through the BCWMC's RMP process, the US Army Corps of Engineers (USACE) and the BCWMC agreed on a series of steps, work items, deliverables (called "protocols") that must be accomplished and submitted to complete the RMP process and USACE review/approval process. Most of the protocols must be addressed as part of the feasibility study, in addition to the usual tasks that would be performed as part of a feasibility study. The feasibility study will also address criteria adopted by the BCWMC in October 2013, including:

- Analysis of multiple alternatives, including the following for each alternative:
  - Pros and cons analysis
  - Cost estimate for construction and a "30-year cost"
  - Analysis of life expectancy
  - Summarize each alternative for the Commission to judge its merits
  - Cost estimate for annualized cost per pound of pollutant removal.
- Evaluation of new and/or innovative approaches
- Identification of permitting requirements

In addition to the RMP protocols and specific criteria adopted by the BCMWC, it is important to gather public input early and often in the process. The Engineer will work with the BCWMC Administrator and City of Plymouth staff to identify the means that are likely to be most effective in gathering public input and begin the public involvement process. Prior to finishing a draft feasibility report, we will seek ways to communicate to impacted landowners and users of adjacent public lands what has been identified as a problem and discuss with them means that are being considered to address the issue.

Below is a summary of the required feasibility study content for of this project:

### ***Discuss project requirements with the USACE / MN DNR***

- Hold two meetings with USACE, MN DNR, City staff and BCWMC Administrator to discuss initial and refined concept alternatives and likely permit requirements for this project.
- Obtain written confirmation of discussion results.

### ***Discuss project impacts with public***

- Coordinate with BCWMC Administrator and City staff to determine best means to gather public input, such as mailings, newspaper articles, open houses, etc.
- Assist with public involvement process as necessary.

### ***Reach Evaluation and Concept Plans***

- Field work and site visits of the reach to evaluate the reach and identify potential project features
- Review available hydraulic modeling for this reach
- Estimate pollution reduction potential
- Analysis of multiple alternatives for addressing identified issues within the reach.
- Develop draft concept plans and cost estimates for stream restoration for this reach
- Refine concept plans and cost estimates based on input from City, USACE, MN DNR, and BCWMC

### ***Wetland Impacts Evaluation***

- Collect base data (GIS air photos, soil survey, NWI maps, etc.) for field wetland assessments that were not included in the areas covered by the RMP. If wetlands are found on site, full delineation and assessment will occur during design phase.

### ***Archeological Evaluation***

- Perform Phase 1A desktop cultural resource reconnaissance surveys for areas not covered by the RMP that will scope potential issues that may factor into the USACE permit conditions and cost estimate.

### ***Feasibility Report***

- Draft report for review by City and BCWMC
- Present draft feasibility study findings at BCWMC meeting
- Final report for project hearing

## **Optional Scope Item**

The stream restoration project will include excavation and grading activities which may have the potential to encounter legacy contamination issues associated with historical land uses at properties adjoining the creek. Environmental investigations should be conducted to further address that concern. The Engineer recommends completing a limited Phase I Environmental Site Assessment (Phase I) either during the feasibility study or early in the design to review available records for properties in the project area (regulatory databases, historical air photos, interviews with people knowledgeable about the historical land use, etc.).

If the potential for contamination is discovered during the Phase I process, then a Phase II investigation may be necessary and would include collection of environmental samples from the project area for

laboratory analysis to determine if contamination is present. If a Phase II investigation is necessary, then the cost and scope of a Phase II investigation would be guided by the results of the Phase I. In general, the Phase II would focus on areas where historical contamination is suspected and where data is not already available, with emphasis on locations where excavation is planned for the stream restoration project.

Based on current knowledge of the project area, it is assumed that a Phase II investigation will not be necessary, so it is not included in this scope of work. If the Phase I investigation finds areas of potential contamination, then the alternatives analysis will consider the impacts of disturbing areas where contamination may be present and whether a Phase II will be necessary to complete feasibility or if it should be completed during final design.

## Cost Estimate

We have prepared the following cost estimate for the scope of work outlined above.

<b>Task</b>	<b>Estimated Cost</b>
<b>Meetings with USACE, MN DNR, City, and BCMWC</b>	\$2,500
<b>Public involvement</b>	\$2,500
<b>Reach evaluation, alternatives analysis, pollution reduction estimates, and cost estimates</b>	\$19,600
<b>Wetland assessment</b>	\$4,600
<b>Archeological evaluation</b>	\$3,700
<b>Feasibility Report and presentation to BCWMC</b>	\$19,800
<b>Total</b>	<b>\$52,700</b>
<b>Optional: Phase I soil contamination investigation</b>	\$7,000
<b>Total with Optional Phase I soil investigation</b>	<b>\$59,700</b>

## Schedule

We will be able to complete the tasks and milestones outlined in the scope of work on the following schedule.

<b>Tasks and milestones</b>	<b>Estimated Completion Date</b>
<b>Kick-off meeting with City of Plymouth</b>	September 1, 2015
<b>Information review and initial reach evaluation</b>	September 7, 2015
<b>Complete wetland assessment</b>	September 25, 2015
<b>Complete archeological investigation</b>	September 25, 2015
<b>Phase I soil contamination investigation</b>	September 25, 2015

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<b>Develop initial concept alternatives; develop preliminary cost estimates</b>	October 9, 2015
<b>Hold initial meeting with USACE, MN DNR, City and BCWMC</b>	October 23, 2015
<b>Revise and refine concept alternatives and cost estimates</b>	November 6, 2015
<b>Draft Feasibility Report for City review</b>	December 11, 2015
<b>Draft Feasibility Report for BCWMC review</b>	January 13, 2016,
<b>Present draft feasibility report findings at January 2016 BCMWC meeting</b>	January 21, 2016
<b>Final Feasibility Report for March 17, 2016 BCWMC meeting</b>	March 9, 2016