

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5C – Proposal for Study of Long Term Maintenance and Replacement Needs for Flood Control Project
BCWMC November 20, 2013 Meeting Agenda
Date: November 12, 2013
Project: 23270051.34 2013

5C. Proposal for Study of Long Term Maintenance and Replacement Needs for Flood Control Project

Recommendations:

1. Consider approving the scope of work and \$16,500 budget presented in this memorandum and direct the Engineer to complete the work.
2. If approved, fund the proposed work through the Commission's flood control project long-term maintenance fund.

Background

At their October 17, 2013 workshop, the Commission discussed the long term maintenance and eventual replacement of the flood control project components. During the discussion, the Commission expressed interest in developing a plan for the funding and scheduling of future maintenance and replacement of the flood control project, with the intent to incorporate this into the Watershed Management Plan update. The Commission directed the Engineer to bring a proposal to the Commission's November meeting for the development of such a plan to address the long-term maintenance, replacement, and emergency needs of the flood control project. The Commission also requested that the study include recommendations on restrictions/rules for use of the flood control project funds. The Commission indicated that the plan could be developed using existing long-term maintenance funds.

At the November 7 TAC meeting, the group also discussed the maintenance and replacement of the flood control project. The TAC's recommendations from that meeting (see memo under agenda item 5B) include finding and reviewing historic documents related to the flood control project. In particular, the TAC would like to see the agreement or other document that turned over the maintenance responsibility

for the flood control project features from the member cities to the Commission. The following proposed work scope and budget includes this additional task.

Proposed Work Scope and Budget

The remainder of this memorandum presents the Engineer's proposed work scope and budget to:

1. Prepare an estimate of cost to replace the Bassett Creek Flood Control Project.
2. Prepare a plan to fund the replacement of the flood control project.
3. Review the adequacy of the existing long-term maintenance and emergency repair funds for the flood control project.
4. Recommend any restrictions/rules for use of the flood control project funds.

The flood control project was built between 1981 and 1996 by the Corps of Engineers, the Minnesota Department of Transportation (MnDOT) and by the Commission, with financial assistance from the Federal Water Resources Development Act, the State of Minnesota's Flood Damage Reduction Act and through assessments on watershed property owners.

Task 1. Estimate of Cost to Replace the Bassett Creek Flood Control Project

In order to prepare the estimate of the cost of replacing the various features of the flood control project an estimate of the life expectancy and the replacement cost for feature need to be completed. The design life expectancy of the flood control project features is usually between 50 and 100 years from the completion of construction. The life expectancy of each feature of the flood control project will be determined based on a review of the design files for each feature and experience with similar flood control projects. However, two control structures—the Highway 55 and the Highway 100 structures—were constructed at the upstream end of older highway crossings and they will need to be replaced when the respective highway crossing structure is replaced. It is expected that consultation with MnDOT will be required to develop the life expectancy of these features.

The cost to replace each feature of the flood control project will be determined based on an update of the original construction cost using the Engineering News-Record (ENR) Construction Cost Index from the date of construction completion to present. Estimates will not be prepared for road crossings that were replaced as part of the flood control project since the current (2004) Watershed Management Plan requires that the city where the crossing is located is responsible for future maintenance and replacement.

The estimated budget to estimate the life and replacement cost of each feature of the flood control project and prepare a summary is \$4,000.

Task 2. Funding Options for Replacing Flood Control Project Features

The BCWMC joint powers agreement allows the Commission to establish an improvement fund that could be used to fund the replacement of features of the Flood Control Project. Contributions to the fund could come from an assessment by the Commission against each member, requiring each member to raise

the assessment. The replacement project could also be included in the capital improvement program that will be part of the revised plan and funds could be raised for the project in accordance with the provisions of Minnesota Statutes, Section 103B.251. Other potential sources of funds might include the Minnesota Flood Damage Reduction Fund. Funding options will be outlined and the advantages and disadvantages of each option will be discussed.

The estimated budget to identify funding options for the replacement of the flood control project is \$1,500.

Task 3. Estimated Maintenance and Repair Costs for Flood Control Project

An estimate of future repair costs for various project features will be completed for the period 2014 through 2064 based on the current condition of each feature and past experience with the repair and maintenance of similar flood control structures. Expected costs will be estimated for sediment removal, erosion control, riprap repair, culvert and tunnel joint repair, structural concrete patching, trash rack repair and handrail repair. A feasible emergency repair project will be outlined and a cost estimate for a temporary emergency repair of that project will be prepared. The availability of funds from the current emergency repair fund and the long-term maintenance fund will be evaluated, and the funding needs for the future repair will be reviewed.

The estimated budget to develop an estimate of future maintenance and repair costs and an estimate of an example emergency repair cost is \$5,000.

Task 4. Options for Funding Emergency Repairs and Long-Term Maintenance of Flood Control Project

Since 2003, the Commission has assessed the member cities \$25,000 annually to fund the maintenance of the flood control project. Currently there is \$559,800 in the long-term maintenance fund (based on the financial report included in the October 2013 Commission meeting packet). The advantages and disadvantages of the options for funding maintenance of the flood control project will be noted and the adequacy of the existing maintenance fund to meet future needs will be presented. Any recommended or required restrictions/rules for use of the flood control project funds will also be presented..

The estimated budget to review the options for funding emergency repairs and maintenance of the flood control project is \$1,500.

Task 5. Locate and Review Previous Agreements for the Flood Control Project

Per the TAC's recommendations from their November 7, 2013 meeting, this task includes working with the Commission Counsel, the Administrator and the Recording Administrator and the member cities to locate historic documents related to the flood control project. These documents will be reviewed in terms of the assignment of maintenance and other responsibilities (e.g., city or Commission responsibility) and a summary prepared.

The estimated cost to locate and review previous agreements for the flood control project, and prepare a summary is \$1,500. The cost does not include time for Counsel, Administrator or Recorder.

Task 6. Prepare Technical Memorandum

This task includes pulling together the information from the previous tasks into one document. Significant revisions, follow-up tasks, and attendance at meetings are not included in the estimated budget.

The estimated budget for this task is \$3,000.

Summary

The table below presents the tasks and their estimated budgets.

Task		Estimated Budget
1	Estimate of Cost to Replace the Bassett Creek Flood Control Project	\$4,000
2	Funding Options for Replacing Flood Control Project Features	\$1,500
3	Estimated Maintenance and Repair Costs for Flood Control Project	\$5,000
4	Options for Funding Emergency Repairs and Long-Term Maintenance of Flood Control Project	\$1,500
5	Locate and Review Previous Agreements for the Flood Control Project	\$1,500
6	Prepare a Plan to Fund the Replacement of the Flood Control Project	\$3,000
Total		\$16,500