Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co. (Barr) (Stephanie Johnson, PhD, PE; Patrick Brockamp, PE)
Subject: Item 6E—Consider Approval of Scope and Budget for Feasibility Study for CIP Project: Toledo Ave/Minnaqua Pond Stormwater Improvements & Flood Reduction (CIP Project BC-13/#14)
BCWMC September 17, 2026 Meeting Agenda
Date: September 10, 2026

6E. Consider Approval of Scope and Budget for Feasibility Study for CIP Project: Toledo Ave/Minnaqua Pond Stormwater Improvements & Flood Reduction (CIP Project BC-13/#14)

Recommendations:

1. Consider approving the scope of work and $114,500 budget presented in this memorandum and directing the Engineer to complete the feasibility study for the Toledo Ave/Minnaqua Pond Stormwater Improvements & Flood Reduction project (CIP Project BC-13/#14), scheduled for construction in 2028.
2. Direct the Engineer to prepare a feasibility study that complies with the BCWMC's CIP policies and criteria.

Background

The proposed Toledo Ave/Minnaqua Pond Stormwater Improvements & Flood Reduction project is included in the Bassett Creek Watershed Management Commission's (BCWMC) current CIP for the years 2028-2029 as project #14 (formerly BC-13). The proposed project is located within the City of Golden Valley and was prioritized to address frequent flooding within the project area and to provide water quality improvements to Haha Wakpadan/Bassett Creek. Area streets, driveways, and a regional trail near Minnaqua Pond experience frequent flooding making them impassable for residents and emergency response vehicles. In addition, Haha Wakpadan/Bassett Creek flows through Minnaqua Pond depositing sediment and phosphorus at a rate that requires more frequent maintenance and creates a nuisance condition.

The Toledo Ave/Minnaqua Pond Stormwater Improvements & Flood Reduction project was conceptualized to include the creation of additional flood storage, relocating of infrastructure, and modifications to the pond / stream interface to lower flood risk, in addition to improvements to water quality within Haha Wakpadan/Bassett Creek, and enhancements to vegetation and wildlife habitat. The proposed feasibility study will evaluate concepts to achieve the identified project goals. Figure 1 shows the project area covered by the feasibility study.

The regional trail and nature area to the south of Minnaqua Pond is owned and operated by the Three Rivers Park District. The project area includes a wetland restoration and banking site, which is under a conservation easement between the Bureau of Water and Soil Resources (BWSR) and City of Golden Valley. Agreements related to the conservation easement and operation of the regional trail will be considered as part of the feasibility study and may create some limitations for future improvements. Should it be determined, by the city, prior to the proposed field investigations that project improvements

are not feasible within the conservation easement area, the proposed field investigations will not be conducted in that location.

As is required for BCWMC CIP projects, a feasibility study must be completed prior to BCWMC holding a hearing and ordering the project. This feasibility study will include developing conceptual designs of alternatives for the flood mitigation and water quality improvement project, reviewing permitting requirements, completing field investigations, and developing concept plans, cost estimates, and estimated benefits for each alternative.

This project is consistent with the goals (Section 3.1, 3.6, 3.8, 3.11) and policies (Sections 4.1.8) of the 2026 – 2035 BCWMC Watershed Management Plan.

Content and Scope of Feasibility Study

The feasibility study will address and include the feasibility study criteria adopted by the BCWMC in their 2026 – 2035 Watershed Management Plan:

- Analysis of multiple alternatives with the context of Commission objectives, including the following for each alternative:
    - Pros and cons analysis
    - Cost estimate for construction and a “30-year cost”
    - Analysis of life expectancy
    - Summary of each alternative for the Commission to judge its merits
    - Evaluation of water quality and flood reduction benefits
    - Cost estimate for annualized cost per pound of pollutant removal or cost per acre-foot additional flood storage
- Evaluation of new and/or innovative approaches
- Identification of environmental review and permitting requirements
- Consideration for incorporating educational signage and/or public art

The feasibility study will also include the identification of wetland impacts and review of the Clean Water Act and the Minnesota Wetland Conservation Act permit requirements.

In addition to identifying permitting requirements and assessing the options based on specific criteria adopted by the BCMWC, it is important to gather public input early and often in the process. The BCWMC Engineer will work with BCWMC and City of Golden Valley staff to identify the most-effective means to gather input from the public for the project.

Below is a summary of the work scope components for this project:

1) Project Meetings

a) One (1) project kick-off meeting (virtual) with BCWMC Administrator, City of Golden Valley staff, Three Rivers Park District (TRPD) staff, and BCWMC commissioners representing Golden Valley.

b) One (1) meeting (virtual) with BCWMC Administrator, City of Golden Valley staff, TRPD staff, USACE, MnDNR, and MPCA to discuss concept alternatives and review environmental review

and permit requirements for project; and prepare meeting minutes to confirm regulatory agencies' comments or concerns. BWSR staff will also be included within this meeting, as needed, as related to requirements for the conservation easement area.

c) Up to three (3) project check-in meetings at major project milestones with the City of Golden Valley project manager.

d) Biweekly project email updates to the BCWMC Administrator.

2) Desktop and Field Studies

a) Bathymetric survey – Barr will complete a bathymetric survey of Minnaqua Pond and the three wetland areas (shown in Figure 1), including areas along the creek between Minnaqua wetland and Minnaqua Pond. Due to the anticipated variable nature of conditions within the ponds and wetland areas (open water, water levels, creek channel, cattails and other vegetation) survey staff may utilize a range of methods and equipment to survey the waterbodies and estimate an accurate volume of potential material to be removed. Note that root mass of cattails or other dense vegetation will be represented in any estimated dredge volumes, since that material will need to be excavated and disposed of along with the sediment.

b) Topographic and utility location survey – Barr will complete a topographic and utility location survey for the project area, including survey of any existing storm sewer. As part of the topographic survey, we will also take elevation measurements on the top and bottom of the banks of Minnaqua Pond and three wetland areas. Underground utilities will be located based on the location of manhole structures in the field, as-built/construction plan drawings from the City, and utilization of a Gopher State One Call utility locate. We assume that low entry for up to 10 homes in the area will be included in the survey information collected, and that Golden Valley staff will assist with property owner notification and access, as needed.

A Topcon GR5 VRS, base/receiver will be used to gather topographic and utility information within the project extents. Topographic information will be collected in Hennepin County NAD83 horizontal datum and NAVD88 vertical datum and collected based on available City of Golden Valley benchmarks. The utility survey will include a detailed survey of the storm sewer entering and exiting the creek, pond, and wetland areas. Topographic survey information will be imported into AutoCAD Civil 3D to create an existing conditions base map for this feasibility study.

c) Tree location, diameter, species, and condition survey – As part of the topographic survey, we will also survey all trees within the proposed project extents with a diameter of 4 inches or greater, recording the diameter, species, and condition (e.g. dead/live, shaggy/peeling/deeply furrowed bark), working closely with the City of Golden Valley foresters. In addition to helping with estimated project costs, the tree survey will help determine if the trees in the project area could provide habitat for the northern long eared bat (endangered), are invasive, or are threatened by pests (e.g., green ash trees). Consideration will be given to replace trees along portions of the project area where feasible.

d) Wetland delineations – Barr will perform a field wetland delineation in the project area, including Minnaqua Pond and three nearby wetland areas. Barr will perform a field wetland delineation in

accordance with the Routine Level 2 procedures specified in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual ("1987 Manual", USACE, 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE, 2010), and the 2013 Guidance for Submittal of Wetland Delineation Reports to the USACE and Wetland Conservation Act (WCA) Local Government Unit (LGU). We will delineate the wetland boundaries using a GPS unit with sub-meter accuracy. We will prepare a wetland delineation report that includes the wetland type classifications and descriptions of the delineated wetlands, a brief description of the proposed project, general environmental information, and a discussion of regulations and the administering authorities. The report will also include wetland data forms, precipitation analysis, and site photographs. Barr will also obtain a Wetland Type and Boundary Approval from the LGU. Our cost estimate includes a wetland functions and values assessment (i.e., a Minnesota Rapid Assessment Method, or MNRAM, analysis) for all delineated wetlands.

e) Desktop study to assess for potential contamination – Barr will conduct a review of the Minnesota Pollution Control Agency's (MPCA) "What's in my Neighborhood?" database to assess the potential for prior contamination within the project area. We will include a summary of this data review in the feasibility study. Considering historic land use in the project area is primarily residential and park, we assume we will not need to complete a Phase I environmental site assessment (ESA) for this project; however, should the desktop assessment suggest there is concern for contamination, a Phase I ESA could be completed as part of project design.

f) Sediment sampling – Barr will perform sediment sampling for Minnaqua Pond and the three nearby wetlands to determine if the sediment is contaminated, thus restricting the use of any potentially dredged material and to select proper disposal methods for any dredged materials.

The sediment sampling will follow the Minnesota Pollution Control Agency's (MPCA) "Managing Stormwater Sediment Best Management Practices" guidance (December 2024). For ponds up to 4 acres, the MPCA guidance requires collection of one sediment core and sample for each acre of planned dredge area, with a minimum of 2 samples per pond. Therefore, the following number of samples will be collected and analyzed:

- Minnaqua Pond – 2 sediment samples collected from 2 coring locations, based on its approximate size of 0.9 acres.
- Minnaqua Wetland – 2 sediment samples collected from 2 coring locations, based on its approximate size of 0.8 acres.
- Un-named wetlands – 2 sediment samples collected from 2 coring locations, based on their approximate sizes of 0.5 and 0.4 acres and treating these adjoined features as one wetland area.

At a minimum, sediment samples will be analyzed for the baseline parameters described in the MPCA guidance document: polycyclic aromatic hydrocarbons, arsenic, and copper. In addition, we recommend analyzing each sediment sample for RCRA metals, volatile organic compounds, and diesel range organics with silica gel cleanup. Based on the results of the environmental desktop study, the parameter list may be modified to include additional parameters.

We will develop a memo summarizing the sediment sampling results and compare contaminant levels to MPCA Soil Reference Values (SRVs) to determine if the material could be used on another property as Unregulated Fill, or if the material will require landfill disposal.

g) Threatened and endangered species desktop review – Barr will perform a desktop review of available databases to determine the potential for adverse impacts to state and federally listed species.

h) Cultural resources desktop review – Barr will submit a data request to the State Historic Preservation Office (SHPO) to acquire information related to known historic and archaeological resources in the project vicinity. Relevant information will be summarized in the feasibility report. Based on the findings of the data request, additional cultural resources inventory may be required as the project progresses. This work does not include a Phase I cultural resources review; if one is needed, it would be performed during project design.

i) Stream assessment – Barr will perform a field inspection of the creek and assess the project area. Barr will complete a site walk of the creek within / immediately bordering Minnaqua Pond and immediately bordering the northern wetland area to evaluate the existing conditions of the reach, make note of any active erosion or stream stability and/or health concerns.

j) Project easements – The proposed project area is located on three public parcels owned by the City of Golden Valley. It is anticipated that the future CIP project will be located entirely on these publicly-owned parcels and therefore no easement acquisition is anticipated. However, if easement acquisition is ultimately required for the selected concept, we assume this would be done during final design and prior to construction.

3) Evaluation and Concept Plans

This task includes fully assessing the flood risk reduction and water quality options and their impacts.

a) Develop concepts for the project, considering input from project partners and feedback from public engagement. This includes developing up to three concepts for the expansion of flood mitigation volume, modifications to the pond / stream interface to lower flood risk or improve stream health, improvements to water quality within Haha Wakpadan/Bassett Creek, and enhancements to vegetation and wildlife habitat. Barr will develop draft concept plans for each alternative and then refine those plans based on input from City staff and BCWMC.

b) Identify environmental review and permitting requirements for the concepts, based on wetland delineations and other compiled data, and one (1) meeting with USACE, MnDNR, BWSR, and MPCA staff (see task 1b).

c) Estimate the pollutant removals (pounds of pollutants removed per year) resulting from the project concepts, using P8 or engineering analyses (similar to Lagoon Dredge project).

d) Evaluate flood reduction benefits of the project, including acre-feet of additional flood storage provided, lowering of 2-, 10-, 50-, and 100-year flood elevations at key locations, and the quantification of impacts on homes, other structures and nearby infrastructure impacted (e.g. are any homes removed from the floodplain, is inundation depth reduced at adjacent roadways, etc.).

The BCWMC's current XP-SWMM model will be refined for the project area for use in the feasibility study by further refining catchment areas based on the most recently available LiDAR data and adding additional storm sewer data provided by the City of Golden Valley.

- As part of considering options for flood reduction within the project area, Barr will also perform a high-level desktop screening of public lands upstream of the project area and east of Highway 100 to consider opportunities for incorporating additional storage within the upstream floodplain. Opportunities for meaningful additional storage will be modeled in the revised XP-SWMM model to evaluate the potential for flood reduction benefits under the 50- and 100-year events. No field work nor water quality analyses are included for this planning-level analysis within the proposed scope of work.

e) Develop cost estimates for the project concepts, including a "30-year cost," analysis of life expectancy, annualized cost per pound of pollutant removal for the water quality treatment portion of the project, and cost per acre-foot of additional flood storage.

f) Develop tree removal estimates for each concept, including removals needed to gain access to implement the concept as well as any estimated tree replacement.

g) Consider the potential for incorporating educational signage and/or public art into the project.

4) Public Engagement

The BCWMC Engineer will coordinate with the BCWMC Administrator, BCWMC Communications & Outreach Coordinator, and staff from the City of Golden Valley to identify the most effective means to gather public input. Public engagement could include mailings, newspaper articles, open houses, signage (QR codes), etc. The primary groups for public discussions will be the nearby residents, property owners, and nature area users. The budget for this task includes time to prepare for and attend one public meeting early in the process, after the development of concept plans. This task also includes assisting with the public involvement process – including preparing handouts or boards, and/or a presentation, and recording and compiling comments. We assume that meeting coordination, expenses, and set-up will be largely completed by the BCWMC Administrator with assistance from the City.

5) Feasibility Report and Presentations

a) Prepare draft report for review by City staff, BCWMC Administrator, and interested commissioners representing Golden Valley; revise report based upon review comments.

b) Present draft feasibility study findings at BCWMC meeting.

c) Prepare final report for approval at BCWMC meeting and for use at future project public hearing.

d) Present final feasibility study findings at BCWMC meeting.

Cost Estimate

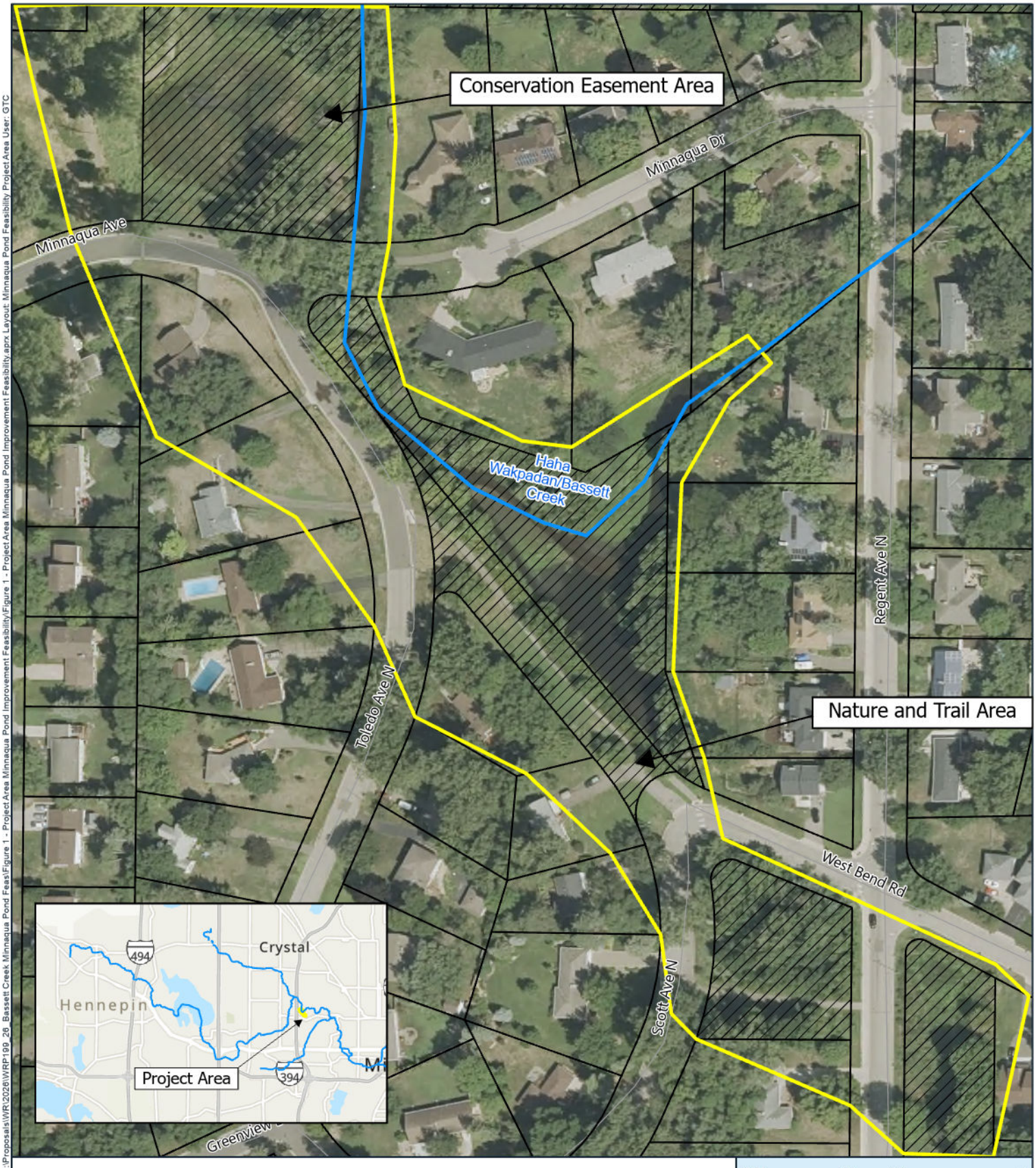
The table below summarizes our cost estimate for the scope of work outlined above.

Tasks	Estimated Total
1) Project Meetings	$9,200
2) Desktop and Field Studies	$34,800
3) Evaluation and Concept Plans	$42,000
4) Public Engagement	$6,600
5) Feasibility Report and Presentations	$21,900
Total	**$114,500**

Schedule

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

Tasks and milestones	Estimated Schedule
Kick-off meeting with BCWMC, Golden Valley and TRPD staff	October 2026
Bathymetric survey	October 2026
Sediment sampling	October 2026
Topographic and utility survey	October 2026
Field wetland delineation	October 2026
Combined agency field review/TEP review	October 2026
Meeting with BCWMC, Golden Valley, TRPD, and federal/state agency staff	November 2026
Develop concept alternatives and cost estimates	October 2026 – January 2027
Public meeting	January/February 2027
Submit draft feasibility report for Golden Valley and BCWMC staff review	April 16, 2027
Golden Valley and BCWMC staff complete review	April 30, 2027
Submit draft feasibility report for BCWMC review at Commission meeting	May 12, 2027
BCWMC completes review at Commission meeting	May 20, 2027
Submit final feasibility report for BCWMC review at Commission meeting	June 9, 2027
Final feasibility report – BCWMC approval at Commission meeting	June 17, 2027



Creeks
Project Area
Parcels
Field Investigation Area

0 100 200
Feet

Minnaqua Pond Improvement Feasibility Study
Project Area
Bassett Creek Watershed Management Commission

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.7.1, 2026-08-25 07:29 File: I:\Proposals\WR\2026\WRP199_26_Bassett Creek Minnaqua Pond Feas\Figure 1 - Project Area Minnaqua Pond Improvement Feasibility\Figure 1 - Project Area Minnaqua Pond Improvement Feasibility aprx Layout: Minnaqua Pond Feasibility Project Area User: GTC