



Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Item 5B – Order Feasibility Study for Bassett Creek Main Stem Restoration, Cedar Lake Road to Dupont Avenue N/2nd Avenue N, plus Fruen Mill Site
BCWMC October 15, 2015, Meeting Agenda
Date: October 7, 2015 **Revised October 14, 2015**

Item 5B. Order Feasibility Study for Bassett Creek Main Stem Restoration, Cedar Lake Road to Dupont Avenue N/2nd Avenue N, plus Fruen Mill Site (2017 CR-M)

Recommendations:

1. Consider approving the scope of work and **\$95,300** budget presented in this memorandum and direct the Engineer to complete the feasibility study for the restoration of the Bassett Creek Main Stem from Cedar Lake Road to Dupont Avenue N (new Bassett Creek tunnel entrance) and 2nd Avenue N (old Bassett Creek tunnel entrance), plus the Fruen Mill site (2017CR-M), 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 and BCWMC criteria.

Background

The proposed Main Stem restoration project is in the Bassett Creek Watershed Management Commission's (BCWMC) current CIP (2017CR-M) and scheduled to be constructed in 2017. The project as described in the CIP would address needed stabilization and restoration along the Main Stem of Bassett Creek from Cedar Lake Road to Irving Avenue S, downstream of the current Main Stem project (BCWMC CIP 2012CR) nearing completion. The City of Minneapolis has requested that two additional reaches be included in the feasibility study. The first additional reach would extend the study reach from Irving Avenue S to Dupont Avenue N and to 2nd Avenue N. The second additional reach is adjacent to the Fruen Mill (Figure 1).

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As is required for BCWMC CIP Projects, a feasibility study must be completed prior to BCWMC holding a hearing and ordering the project. The feasibility study would examine methods to stabilize and restore areas of erosion within this corridor.

This project is consistent with the goals (Section 4.1) and policies (Section 4.2.5) for stream restoration and protection in the 2015 – 2025 BCWMC Watershed Management Plan. The City of Minneapolis requested the project be completed in 2017; the CIP project would address the issues identified in past erosion inventories completed by the Minneapolis Park and Recreation Board (MPRB), as well as any new sites discovered during the study.

The BCWMC completed a Resource Management Plan (RMP) in 2009 through which the 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. Although this reach of Bassett Creek was not included in the RMP, the USACE has allowed the RMP protocols to be applied to other projects not specifically included in the RMP. With the completion of the protocols, we expect the USACE application process to move more quickly than it would otherwise. 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 under the criteria adopted by the BCWMC in October 2013.

Due to the high risk of contamination along this reach, it is also important to identify soil contamination issues in this feasibility study to accurately estimate the total project costs. To address this, a Phase I (and possibly a Phase II) environmental study of contamination issues is included as part of the feasibility study scope. The Phase I work will review the existing soils contamination information available from previous studies completed in the lower Bassett Creek Valley over the last 26 years. The cost and scope of a Phase II investigation would be guided by the results of the Phase I; an estimated amount is included in the cost estimate.

Content and Scope of Feasibility Study

The feasibility study will address and include the feasibility study criteria adopted by the BCWMC in October 2013:

- 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
 - Summarize each alternative for the Commission to judge its merits
 - Cost estimate for annualized cost per pound of pollutant removal

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- Evaluation of new and/or innovative approaches
- Identification of permitting requirements

As noted earlier, most of the RMP protocols must be addressed as part of the feasibility study. In addition to the tasks above, the feasibility study will include the following items to meet the RMP pre-applications protocols:

- Review of cultural resources
- Identification of wetland impacts

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 BCWMC Engineer will work with the BCWMC Administrator, staff from the City of Minneapolis Public Works, and staff from the Minneapolis Park and Recreation Board (MPRB) to identify the most-effective means to gather public input. Prior to completing the draft feasibility report, we will seek input from impacted landowners and users of adjacent public lands by discussing identified problems and the means under consideration to address the issues.

This feasibility study will address up to three reaches (Figure 1):

- 1) Cedar Lake Road to Irving Avenue S – This is the reach currently included in the BCWMC’s CIP as 2017 CR-M.
- 2) Irving Avenue S to Dupont Avenue N/2nd Avenue N - A second reach would extend the CIP reach from Irving Avenue to the two points where the BCWMC jurisdiction ends. These two end points are a) Dupont Avenue N, the location where Bassett Creek enters the new Bassett Creek tunnel, and b) 2nd Avenue N, the point where the open (mostly dry) old creekbed enters the old Bassett Creek tunnel. Beyond these endpoints, conveyance is through the new and old tunnels, respectively, which are not in the BCWMC jurisdiction—they are within the jurisdiction of the Mississippi Watershed Management Organization. Although this reach was not originally identified in BCWMC CIP 2017CR-M, the addition of this reach would result in the completion of feasibility studies for all Bassett Creek reaches within Minneapolis*, a more cost-effective approach than conducting a separate feasibility study in the future for this short reach.

(* The exception to this statement is the historic creek channel that is proposed to be addressed in year 2020 by BCWMC CIP #BC-9. Because of the considerable changes in the area likely to stem from LRT construction in about 2018, the feasibility study for BC-9 should wait until LRT impacts on conditions are known.)

- 3) Fruen Mill Reach – The reach of Bassett Creek adjacent to the Fruen Mill was included in a 2011 feasibility study and the draft construction plans for CIP project 2012 CR. However, land ownership and other issues resulted in the dropping of this reach from the 2012 CR project, so

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stabilization has not yet occurred along this reach. We recommend adding this reach to the scope of work for this feasibility study because of the recent changes to land ownership and the changes to MPRB plans for trail alignments along this reach.

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. Hennepin County, the Minnesota Pollution Control Agency and the City of Minneapolis have already carried out considerable environmental investigation work in the area, however, due diligence will require at least some additional environmental investigation. The proposed work scope for the study includes a limited Phase I Environmental Site Assessment (Phase I) 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.). The Phase I review would focus on summarizing soil contamination data already compiled in the Hennepin County Bassett Creek Areawide Groundwater Study Environmental Data Access Tool, which covers the proposed stream restoration area. If potential concerns or data gaps regarding the extent of contamination are identified during the Phase I, then a Phase II field investigation would be completed.

The Phase II work 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. The Phase II investigation would include collection of environmental samples from the project area for laboratory analyses to determine if contamination is present. The cost and scope of the Phase II investigation would be guided by the results of the Phase I; an estimated amount is included in the cost estimate.

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

1) Project Meetings

- a) Project kick-off meeting with BCWMC and staff from Minneapolis Public Works and MPRB.
- b) Hold two meetings with BCWMC staff, City staff, MPRB staff, USACE and MN DNR; one to discuss initial concept alternatives and review permit requirements and a second meeting to discuss refined concept alternatives and review permit requirements for project.
- c) The BCMWC Engineer will obtain written confirmation of discussion results from the regulatory agencies.

2) Evaluation and Concept Plans

- a) Field work and site visits – review previously identified sites in 2011 feasibility study, 2005 MPRB erosion survey, additional new erosion/sedimentation sites, and potential sites for naturalization; including site visits to assess current conditions in relation to previous evaluations and document changes evident.

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- b) Review the MPRB's plans for the Fruen Mill reach; including site visit to assess current conditions in relation to previous designs, document any changes evident, and evaluate applicability of prior remedies to current conditions.
- c) Review available hydraulic modeling.
- d) Review and summarize background information.
- e) Develop concept plans and cost estimates for stream stabilization **and naturalization.**

3) Wetland Impacts Evaluation

- a) Collect base data (GIS air photos, soil survey, National Wetland Inventory maps, etc.) for field wetland assessments that will determine the presence or absence of wetlands at the identified stabilization sites and include potential wetland impacts feasibility analysis. Based on past work, it is assumed that no wetlands are present within this reach except for Bassett Creek itself.
- b) If wetlands are found on-site, full wetland delineations as per the USACE 1987 Manual and regional supplements will need to occur during the project design phase (outside the scope of this project).

4) Archeological Evaluation

- a) Document cultural resources through a desktop cultural reconnaissance survey using historical air photos to scope potential issues that may factor into the USACE permit conditions and cost estimate. This primarily post-industrial landscape has been severely altered over the last 150 years so few intact cultural resources are likely present.

5) Soil conditions survey

- a) Perform Phase I 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.)
- b) **Develop a Phase II Work plan for the following purposes:**
 - i) **Support for obtaining access agreements for Phase II field work and**
 - ii) **Obtain Minnesota Pollution Control Agency (MPCA) review and approval of project approach.**

We will prepare a draft of the work plan and provide the draft for review by the BCWMC Administrator, BCWMC Legal Counsel, BCWMC Minneapolis Commissioner and Alternate Commissioner, and City of Minneapolis staff. We will revise the draft and present the draft work plan for BCWMC review and approval at a regular Commission meeting. Upon BCWMC approval, we will submit the work plan to the MPCA's Brownfield program for technical review (and approval) and address MPCA comments, if needed.

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- c) Assist BCWMC Legal Counsel in their efforts to obtain access for Phase II field investigations, including providing figures showing proposed sample locations and a written scope of work and attending one meeting with property owners to discuss the intent of the Phase II investigation and MPCA program. We assume the BCWMC Legal Counsel will draft the access agreements and obtain the appropriate indemnification from the property owners for this work.
- d) Perform Phase II environmental study to identify soil contamination issues , limited to sites 1) where Phase I analysis has identified a high likelihood of contamination, 2) that are high priority for stabilization, naturalization or other improvements, 3) where earthwork would require mitigation, where 4) there are not reasonable alternatives that would not involve contaminated soils if present (need for and cost of Phase II dependent upon Phase I results), and (5) where access has been obtained by BCWMC.

6) Discuss project impacts with public

- a) Coordinate with BCWMC Administrator and City staff to determine best means to gather public input, such as mailings, newspaper articles, open houses, etc. Primary group for public discussions will be the Bassett Creek Valley Redevelopment Oversight Committee. This group of Bryn Mawr and Harrison neighborhood residents, along with City staff, meet once a month to shape development in the Bassett Creek Valley. Friends of Bassett Creek members will be invited to discussions as well. The budget for this task includes time to prepare for and attend two public meetings, and it is assumed that meeting coordination and set-up will be largely completed by the BCWMC Administrator with assistance from the City and MPRB.
- b) Assist with public involvement process as necessary.

7) Feasibility Report

- a) Draft report for review by City and BCWMC; 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 use at future project hearing.

Cost Estimates

Our cost estimate for the scope of work outlined above divides the cost into three parts:

- Reach #1) cost for the Cedar Lake Road to Irving Avenue CIP reach (base cost),
- Reach #2) additional cost for inclusion of the Irving Avenue to 2nd Avenue North/Dupont Avenue North, and
- Reach #3) additional cost to include bank stabilization measures at the Fruen Mill area.

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Work Scope Reach #1: Cedar Lake Road to Irving Avenue CIP Reach

Tasks	Estimated Cost
1. Initial meetings with USACE and MN DNR	\$2,500
2. Information review, reach evaluation and development of concept alternatives and cost estimates	\$16,200
3. Wetland assessment	\$2,600
4. Archeological evaluation	\$600
5a. Phase I soil contamination investigation	\$10,000
5b. Phase II Work Plan and submit for MPCA technical review	\$5,500
5c. Assist BCWMC Administrator and Legal Counsel in their efforts to obtain access for Phase II	\$3,000
5d. Phase II soil contamination investigation (scope dependent on Phase I results)	\$20,500
6. Public meetings	\$2,500
7. Feasibility Report	\$17,900
Total (base cost)	\$81,300

Work Scope Reach #2: Irving Avenue to Dupont Avenue N/2nd Avenue N Reach (if combined with Reach #1)

Tasks	Additional Cost for Reach 2	Estimated Total for Reaches 1 and 2 combined
1. Initial meetings with USACE and MN DNR	-0 ¹	\$2,500
2. Information review, reach evaluation and development of concept alternatives and cost estimates	\$4,500	\$20,700
3. Wetland assessment	\$1,500	\$4,100
4. Archeological evaluation	-0 ¹	\$600
5a. Phase I soil contamination investigation	-0 ¹	\$10,000
5b. Phase II Work Plan and submit for MPCA technical review	-0 ¹	\$5,500
5c. Assist BCWMC Administrator and Legal Counsel in their efforts to obtain access for Phase II	-0 ¹	\$3,000
5d. Phase II soil contamination investigation (scope dependent on Phase I results)	-0 ¹	\$20,500
6. Public meetings	-0 ¹	\$2,500
7. Feasibility Report	\$3,500	\$21,400
Total	\$9,500	\$90,800

¹ Costs included in Reach 1 base cost

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Work Scope Reach #3: Fruen Mill Reach (if combined with Reaches #1 and #2)

Tasks	Additional Cost for Reach 3	Estimated Total for All Three Reaches
1. Initial meetings with USACE and MN DNR	-0 ⁻¹	\$2,500
2. Information review, reach evaluation and development of concept alternatives and cost estimates	\$2,500	\$23,200
3. Wetland assessment	-0 ⁻²	\$4,100
4. Archeological evaluation	-0 ⁻¹	\$1,000
5a. Phase I soil contamination investigation	-0 ⁻¹	\$10,000
5b. Phase II Work Plan and submit for MPCA technical review	-0 ⁻¹	\$5,500
5c. Assist BCWMC Administrator and Legal Counsel in their efforts to obtain access for Phase II	-0 ⁻¹	\$3,000
5d. Phase II soil contamination investigation (scope dependent on Phase I results)	-0 ⁻¹	\$20,500
6. Public meetings	-0 ⁻¹	\$2,500
7. Feasibility Report	\$2,000	\$23,400
Total	\$4,500	\$95,300

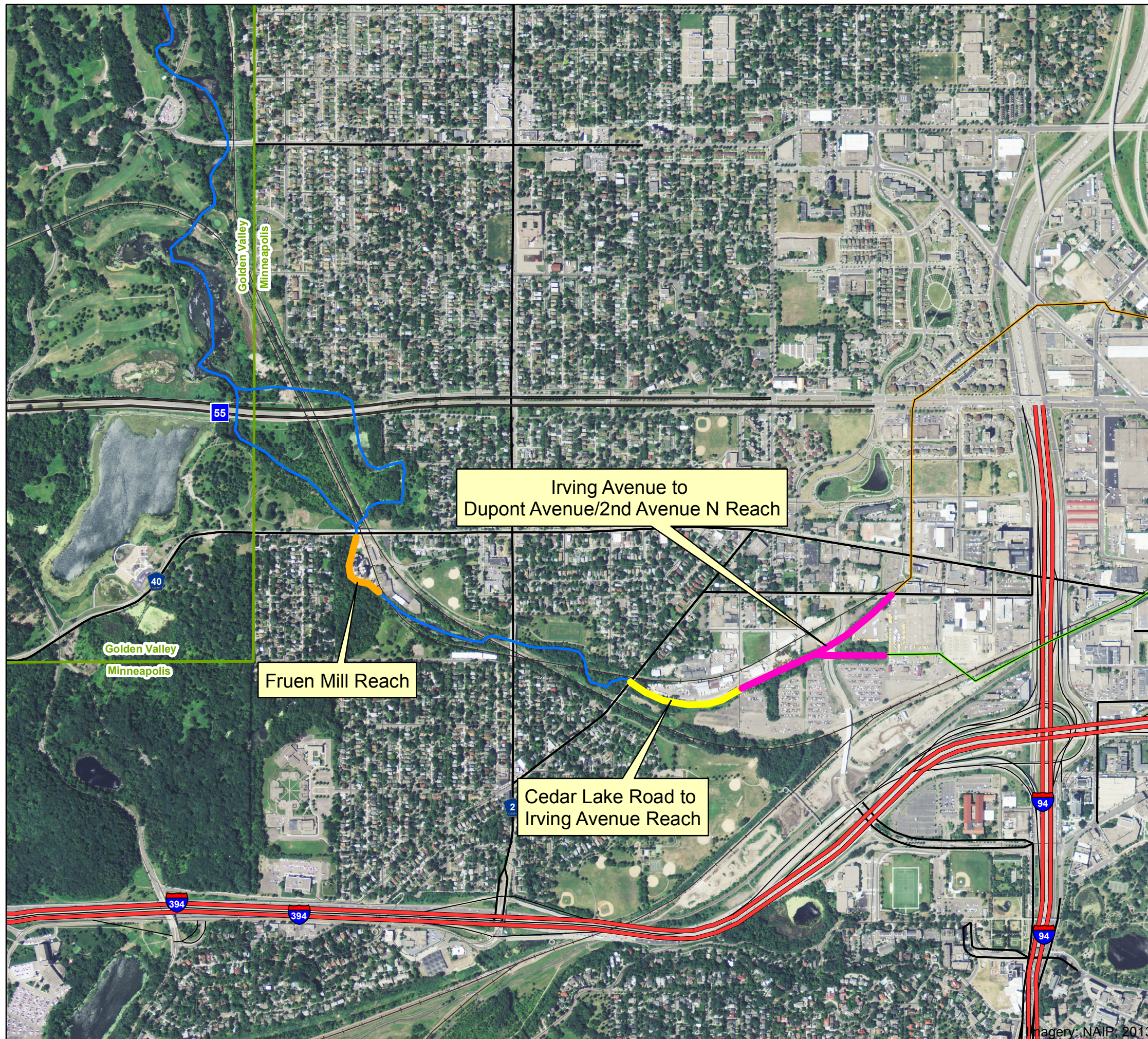
¹ Costs included in Reach 1 base cost

² Wetland assessment performed as part of 2011 main stem feasibility study

Schedule

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

Tasks and milestones	Estimated Completion Date
Kick-off meeting with BCWMC, City of Minneapolis and MPRB	October 30, 2015
Information review and reach evaluation	November 12, 2015
Complete wetland assessment	November 12, 2015
Complete archeological investigation	November 12, 2015
Phase I soil contamination investigation,	November 20, 2015
Hold initial meeting with City, MPRB, USACE, and MN DNR	November 20, 2015
Public meeting #1	November 25, 2015
Develop initial concept alternatives; develop preliminary cost estimates	November 25, 2015
Phase II work plan approved by BCWMC at Commission meeting for submittal to MPCA	December 17, 2015
Hold second meeting with City, MPRB, USACE, and MN DNR	January 15, 2016
Public meeting #2 (if needed)	January 20, 2016
Access obtained by BCWMC for Phase II field investigation	January 22, 2016
Phase II soil contamination investigation (scope dependent on Phase I results, and schedule dependent on MPCA review/approval)	March 1, 2016
Revise and refine concept alternatives and cost estimates	March 4, 2016
Submit draft feasibility report for City and MPRB review	March 11, 2016
City and MPRB complete review	March 25, 2016
Submit draft feasibility report for BCWMC review at Commission meeting	April 13, 2016
BCWMC completes review at Commission meeting	April 21, 2016
Submit final feasibility report for BCWMC review at Commission meeting	May 11, 2016
Final Feasibility Report – BCWMC approval at Commission meeting	May 19, 2016



- █ Cedar Lake Rd to Irving Ave Reach
- █ Irving Ave to Dupont/2nd Ave Reach
- █ Fruen Mill Reach
- █ Stream
- █ Old Tunnel
- █ New Tunnel

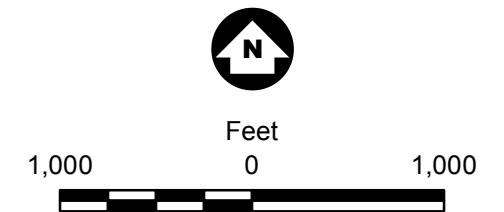


FIGURE 1

BASSETT CREEK STUDY REACHES
 Bassett Creek Feasibility Study
 Bassett Creek Watershed
 Management Commission