



Bassett Creek Watershed Management Commission

A g e n d a

11:30 a.m., Thursday, March 18, 2010

Golden Valley City Hall – 7800 Golden Valley Road, Golden Valley 55427

1. **CALL TO ORDER**
2. **APPROVAL OF AGENDA AND CONSENT AGENDA** - Items marked with an asterisk (*) will be acted on by one motion. There will be no discussion of these items unless a BCWMC commissioner so requests in which event the item will be removed from the consent agenda and considered in its normal sequence on the agenda.
3. **CITIZEN INPUT ON NON-AGENDA ITEMS**
4. **ADMINISTRATION**
 - A. Presentation of February 18, 2010, Meeting Minutes *
 - B. Presentation of Financial Statements *
 - C. Presentation of Invoices for Payment Approval
 - i. Kennedy & Graven – Legal Services through January 31, 2010
 - ii. Barr Engineering – Engineering Services through February 26, 2010
 - iii. Amy Herbert – February Administrative Services
 - iv. D'amico Catering - March 2010 meeting catering
 - D. City of Plymouth Reimbursement Request - West Medicine Lake Park Pond Project (ML-11)
 - E. Review format of BCWMC's annual report (*see 2009 excerpts and see list of reporting requirements*)
 - F. Commission – TAC Liaisons for Upcoming TAC Meetings
5. **NEW BUSINESS**

No New Business
6. **OLD BUSINESS**
 - A. Meet with Geoffrey Nash (*see BCWMC's Request for Proposals regarding possible contractor responsibilities*)
 - B. TAC Recommendations (*see memo*)
 - i. Scheduling more Frequent TAC Meetings
 - ii. Accelerating CIP Projects
 - iii. Adding Hidden Lake and Medicine Lake to 2010 CAMP Program
 - iv. Maintenance of BCWMC Projects
 - v. TMDLs
 - C. Joint and Cooperative Agreement for Stream Bank Restoration on the Main Stem of Bassett Creek (*see agreement*)
 - D. Draft Minor Plan Amendment (*see draft amendment*)
 - E. TMDL Updates
 - i. Wirth (*verbal*)
 - ii. Sweeney (*verbal*)
 - iii. Medicine Lake (*verbal*)
 - iv. Bassett Creek Main Stem – E. Coli (*see memo*)
 - F. Update on Cultural Resource Review Process for RMP (*verbal*)
 - G. 2009 Flood Control Features Inspection (*see memo*)
 - H. Review Robbinsdale comments on BCWMC review of Local Surface Water Management Plan and Resolution 10-04 Approving the Plan (*see memo and Resolution 10-04*)
 - I. Education Committee
 - i. Education Grant Contract Extension - Meadowbrook Elementary
 - ii. Education Grant Reimbursement Request – Birchview Elementary (*see report*)
 - iii. Seed Packets (*see memo*)
7. **COMMUNICATIONS**
 - A. Chair
 - B. Commissioners

(Continued)

- C. Committees**
- D. Counsel ***
- E. Engineer**

8. INFORMATION ONLY

- A. Administrative Reviews (*none*)**

9. ADJOURNMENT

Bassett Creek Watershed Management Commission

Minutes of the Meeting of February 18, 2010

1. Call to Order

The Bassett Creek Watershed Management Commission (BCWMC) was called to order at 11:38 a.m., Thursday, February 18, 2010, at Golden Valley City Hall by Chair Welch. Ms. Herbert conducted roll call.

Roll Call

<i>Crystal</i>	Alternate Commissioner Stu Stockhaus	<i>Counsel</i>	Charlie LeFevere
<i>Golden Valley</i>	Commissioner Linda Loomis, Treasurer & incoming Chair	<i>Engineer</i>	Karen Chandler
<i>Medicine Lake</i>	Alternate Commissioner Ted Hoshal	<i>Recorder</i>	Amy Herbert
<i>Minneapolis</i>	Commissioner Michael Welch, Chair & incoming Treasurer		
<i>Minnetonka</i>	Commissioner Kris Sundberg		
<i>New Hope</i>	Commissioner John Elder		
<i>Plymouth</i>	Alternate Commissioner Liz Thornton		
<i>Robbinsdale</i>	<i>Not represented</i>		
<i>St. Louis Park</i>	Commissioner Jim deLambert		

Also present:

- Laura Adler, BCWMC Technical Advisory Committee, City of St. Louis Park
- Caroline Amplatz, Caroline's Kids Foundation
- Derek Asche, BCWMC Technical Advisory Committee, City of Plymouth
- Jeannine Clancy, BCWMC Technical Advisory Committee, City of Golden Valley
- Jack Frost, Metropolitan Council
- Dave Hanson, Alternate Commissioner, City of Golden Valley
- Bonnie Harper-Lore, Incoming Commissioner, City of Minnetonka
- Kathi Hemken, Alternate Commissioner, City of New Hope
- Ron Leaf, SEH, Inc.
- Tom Mathisen, BCWMC Technical Advisory Committee, City of Crystal
- Richard McCoy, BCWMC Technical Advisory Committee, City of Robbinsdale
- Jeff Oliver, BCWMC Technical Advisory Committee, City of Golden Valley
- Jim Renneberg, City of Plymouth
- Justin Riss, Alternate Commissioner, City of St. Louis Park
- Al Sarvi, Friends of Northwood Lake Association
- Liz Stout, BCWMC Technical Advisory Committee, City of Minnetonka

2. Approval of Agenda and Consent Agenda

Chair Welch requested the addition of item 5C – Theodore Wirth Golf Course Bridge Replacement in Golden Valley – and item 6G – Education Grant Reimbursement Request from Meadowbrook Elementary School. Commissioner Sundberg moved to approve the Agenda as amended. Acting Commissioner Thornton seconded the motion. The motion carried unanimously [City of Robbinsdale absent from the vote]. Chair Welch removed the financial statement from the Consent Agenda. Commissioner Loomis removed the minutes and Mr. LeFevere removed the counsel communications from the Consent Agenda. Chair Welch announced there is no Consent Agenda for the meeting.

3. Citizen Input on Non-Agenda Items

No citizen input on non-agenda items.

4. Administration

- A. Presentation of the January 21, 2010, BCWMC meeting minutes. Commissioner Loomis requested that the minutes be amended on page 3 under item 5B to state that “the City of Golden Valley has already mitigated for the loss of storage on the site...” Commissioner Loomis asked for clarification on page 4 item 6B on who seconded the motion since the minutes reflect that Commissioner Langsdorf moved and seconded. The minutes were amended to reflect that Commissioner Loomis seconded the motion. Chair Welch requested that the minutes be amended on page 3 in item 4C to indicate the correct number of votes in favor and number of votes absent on the vote. The minutes were amended to reflect that eight votes were in favor of the motion and that the City of Minnetonka was absent from the vote. Commissioner Loomis moved to approve the minutes as amended. Commissioner Elder seconded the motion. The motion carried unanimously [City of Robbinsdale absent from the vote].
- B. Presentation of the Financial Statement. Chair Welch announced that an updated financial report had been handed out at the meeting. He said he pulled the financial report because the Commission is at the end of its fiscal year, which ended January 31, 2010. Chair Welch said some of today’s invoices will be paid from the 2009 budget. He said he wanted to point out the overall budget numbers. Commissioner Loomis said the updated report handed out today corrected two dates on the report. Ms. Herbert added that the updated report also shows check number 2228 for \$60 to the City of Plymouth for the Yard and Garden Expo participation, which was approved by the Commission in January.

The general and construction account balances reported in the February 2010 Financial Report are as follows:

Checking Account Balance	733,221.10
<i>TOTAL GENERAL FUND BALANCE</i>	<i>733,221.10</i>
Construction Account Cash Balance	2,573,051.99
Investment due 10/18/2010	533,957.50
Investment due 1/21/2015	500,000.00
<i>TOTAL CONSTRUCTION ACCOUNT BALANCE</i>	<i>3,607,009.49</i>
-Less: Reserved for CIP projects	3,291,191.22
<i>Construction cash/ investments available for projects</i>	<i>315,818.27</i>

- C. Presentation of Invoices for Payment Approval.

Invoices:

- i. Kennedy & Graven – Legal Services through December 31, 2010 - invoice for the amount of \$2,456.45.
- ii. Barr Engineering Company – January Engineering Services - invoice for the amount of \$42,565.38.
- iii. Amy Herbert – January Administrator Services - invoice for the amount of \$2,744.38.
- iv. Liz Thornton – Education/ Public Outreach – teacher focus group catering – invoice for the amount of \$120.16.
- v. Pauline Langsdorf – Education/ Public Outreach – teacher focus group supplies- invoice for the amount of \$41.88.

- vi. Springsted, Inc. – Professional Services for Administrator Contractor– invoice for the amount of \$1,500.
- vii. D’amico Catering – January 2010 meeting catering – invoice for the amount of \$379.75.
- viii. D’amico Catering – February 2010 meeting catering – invoice for the amount of \$370.74.
- ix. Margie Vigoren – BWSR Education Workshop Meal – invoice for the amount of \$14.22.
- x. Metropolitan Council – 2009 CAMP Participation – invoice for the amount of \$1,390.00.

Commissioner Loomis had questions about the Barr Engineering Company invoice and the Metropolitan Council Invoice. Chair Welch pulled those two invoices from the roll call vote. Commissioner Loomis moved to approve invoices i and iii – ix. Acting Commissioner Thornton seconded the motion. By call of roll, the motion carried unanimously [City of Robbinsdale absent from vote].

Commissioner Loomis asked for clarification on page 3 of Barr Engineering Company’s invoice under Commission Meetings regarding which meeting Len Kremer attended since he was not at the January 21st BCWMC meeting. Ms. Chandler responded that the meeting charge would either be for Mr. Kremer attending the January 2010 TAC meeting and/ or charges for Barr’s preparation for the TAC and Commission meetings in January. Commissioner Loomis moved to approve the invoice on the condition that Barr clarify the charge and that it was for attending the January TAC meeting or meeting preparation and that Barr respond back to Commissioner Loomis by tomorrow. Commissioner Elder seconded the motion. By call of roll, the motion carried unanimously [City of Robbinsdale absent from vote].

Commissioner Loomis asked about the past due charge on the invoice from the Metropolitan Council. Ms. Herbert responded that the charge has been removed by the Metropolitan Council and the amount due is the amount listed on the invoice for the 2009 participation in the CAMP program. Commissioner Loomis moved to approve the invoice. Commissioner Elder seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].

- D. Review 2010 Engineering Budget. Chair Welch reminded the Commission that the 2010 budget was previously approved and that the memo on the 2010 engineering budget serves as a reminder of the anticipated expenditures. Ms. Chandler asked that the Commission direct Barr and Ms. Herbert to begin working on the BCWMC’s 2009 annual report and also to direct Barr to complete the WOMP work. Chair Welch moved to authorize the Commission Engineer and the Recorder to begin preparation of the annual report, for Ms. Herbert to add to the March meeting agenda a review of the annual report format, for Barr to prepare a memo for the March meeting packet reminding the Commission that the annual report is posted on the BCWMC’s Web site, and for Barr to perform the WOMP support tasks. Commissioner Sundberg seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].
- E. Participation in 2010 CAMP. Acting Commissioner Thornton moved to approve participating in the 2010 CAMP Program for the four lakes monitored in 2009 including: Northwood, Parkers, Sweeney (South), and Westwood. Commissioner Loomis seconded the motion. Acting Commissioner Hoshal moved to amend the motion to include the monitoring of Hidden Lake in

the 2010 CAMP program. Commissioner Loomis seconded the amendment. The amendment failed to carry with one vote in favor of the amendment [City of Medicine Lake] and seven votes against. Mr. Oliver commented that he didn't think additional lakes should be added to the CAMP program at the additional expense without discussion of the merits of the additional monitoring from the overall watershed perspective. He recommended that the idea of adding additional lakes to the 2010 CAMP program be forwarded to the TAC for its discussion and recommendation to the Commission. Chair Welch called a vote on the original motion. The motion carried unanimously [City of Robbinsdale absent from vote]. The Commission directed the TAC to discuss the idea of adding Hidden Lake and/or Medicine Lake to the BCWMC's participation in the CAMP program.

- F. **Review BCWMC's CIP Reserve Account Policy.** Chair Welch summarized that this policy caps the CIP reserve amount at \$250,000 and that the BCWMC has directed itself to review the policy each year. No commissioner recommended changes.

G. **Organizational Meeting**

- i. **Appointment of Chair:** Kris Sundberg nominated Linda Loomis as Chair. By call of roll, the motion to elect Linda Loomis as Chair carried with seven votes in favor [City of Golden Valley abstained from the vote and City of Robbinsdale absent].
- ii. **Appointment of Vice Chair:** Commissioner Welch nominated Ginny Black as Vice Chair. By call of roll, the motion to elect Ginny Black as Vice Chair carried with eight votes in favor [City of Robbinsdale absent from the vote].
- iii. **Appointment of Treasurer and Secretary:** Acting Commissioner Thornton nominated Michael Welch as Treasurer and Commissioner Elder nominated Pauline Langsdorf as Secretary. By call of roll, the motion to elect Michael Welch as Treasurer and Pauline Langsdorf as Secretary carried with eight votes in favor [City of Robbinsdale absent from the vote].
- iv. **Appointment of the Budget Committee:** The Commission agreed that the Budget Committee would be the four officers of the BCWMC and Commissioner deLambert and Commissioner Elder.

5. New Business

- A. **South Shore Drive Bridge (DNR Permit Application).** Ms. Chandler explained that the bridge is located just downstream of Medicine Lake and is a deteriorating wooden structure that needs replacing. She said it will be part of a larger project for South Shore Drive but the bridge replacement is in front of the Commission because the bridge is within the Bassett Creek floodplain and because the City of Plymouth has applied for a public waters work permit from the Department of Natural Resources. She stated that there is a comment period currently underway and the DNR has asked for the Commission's comments.

Ms. Chandler said the Commission Engineer's comments pertain to the floodplain. She said the design needs to show a bridge at a little higher elevation than the preliminary design indicated and the design needs to be based on the higher flood level at the upstream side. Ms. Chandler said there may be some issues with getting the elevation as high as the Commission Engineer would like, which is one foot above the 100-year flood level. She said if the lowest member of the bridge can be raised to be one foot above the 100-year flood elevation then the project would not need to come back in front of the Commission. Ms. Chandler said if the design comes back and the lowest member of the bridge is not one foot above the 100-year flood elevation or if there is a proposal for fill, then the project will come back in front of the Commission.

Ms. Chandler said the Commission Engineer recommends conditional approval of the permit with

the conditions A – G in the memo and with a minor correction to item C so that item C reads “...fill in the floodplain including rip rap and filter.”

Chair Welch asked for clarification on the one-foot freeboard and asked if it is a requirement of the Commission meaning that if it is not met it would require a variance. Ms. Chandler said she is trying to contact Jim Herbert of Barr for that clarification but has not yet reached him. She noted that the memo for agenda item 5C for the Theodore Wirth Golf Course Bridge, which has the same technical issue for the flood elevation, is written in a manner that implies the one-foot specification is a recommendation as opposed to a requirement.

Chair Loomis asked Derek Asche if the City could wait for a decision until the Commission receives more information about its requirements. Ms. Chandler said the Commission does need to submit comments to the DNR at this time. Commissioner Welch moved approval of the permit with the conditions listed in the Engineer’s Memo and condition C amended as described by Ms. Chandler and the removal of the second sentence in condition A. Commissioner Elder seconded the motion. Ms. Loomis added that she assumes the motion also directs staff to submit the comments to the DNR. The motion carried unanimously [City of Robbinsdale absent from vote].

- B. 2010 Golden Valley Pavement Management Plan. Ms. Chandler said the project is in front of the Commission because it is a street reconstruction project larger than five acres. She said there are over 14 acres that will be disturbed and the project comprises street repaving, curb and gutter, and the construction of one rain garden. Ms. Chandler reported that the project will result in a 1.3 acre reduction in impervious surface. She said the city is constructing six sump manholes to trap sediment and one rain garden. Ms. Chandler said the Commission Engineer recommends approval based on comments A – D in the Engineer’s Memo with a revision to item C worded as follows, “The City should review downstream water quality ponds for the potential to improve phosphorus removal capabilities.” Chair Welch asked for a change in the wording from pond to treatment facility. Acting Commissioner Thornton seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].
- C. Theodore Wirth Golf Course Bridge Replacement: Golden Valley. Ms. Chandler said that the bridge is located on the golf course in Wirth Park. She said the applicant is the Metropolitan Council and that as part of a project it is conducting on sanitary sewers in the area, the Met Council is replacing this bridge. Ms. Chandler said the project is in front of the Commission because it is within the Bassett Creek floodplain, which is 400 feet wide at this location. She said the bridge is currently one-foot below the 100-year floodplain elevation and the original proposal was to replace the bridge at a higher elevation. However, she said, that upon further investigation it was discovered that in order to raise the bridge to the elevation of one-foot above the 100-year flood plain level a lot of fill would need to be added to the floodplain. Ms. Chandler said in this case the Commission Engineer believes it would be better for the bridge to be replaced at its existing elevation because there would be less blockage of the flow than if the additional fill were added. She reported that the Commission Engineer's recommendation is to approve replacing the bridge at its current elevation, based on the conditions A-F listed on page two of the Engineer’s memo and paying special attention to condition B that the trail coming up to the bridge does not get raised.

Commissioner Welch wanted to know the status of the DNR permit. He also wondered if the other bridge next to this one is at the same height. Ms. Chandler responded if the replacement bridge is kept at the same elevation as current elevation, there would be no impact on the downstream bridge. Commissioner Welch said there could be either Commission or DNR issues if the other bridge is not at the elevation that is Commission or DNR standards/ policy. He asked if the one foot freeboard is a requirement and commented that it makes sense to have it to give more clearance under the bridge to prevent possible jams under the bridge that cause more flooding.

Commissioner Welch commented that this is a complicated project to come to the Commission only a couple of days prior to the meeting. Ms. Chandler responded that this project was originally intended by the Commission Engineer to come in front of the Commission at its March meeting but because of the timing and status of the project design the Commission Engineer felt the Commission should have the opportunity to provide input now.

Mr. Oliver said the City of Golden Valley has been working with MCES for five months on this project. He said the city's greatest concern is flood elevation impacts and there are homes upstream that are above the flood plain only marginally and the city's opinion is that replacing the bridge at current elevation is the best possible solution. Mr. Oliver added that it is an altered natural watercourse so the DNR is not involved and the area is not under DNR protection. Mr. Oliver asked for a Commission decision today.

Ms. Sundberg moved approval of the project with the conditions listed by Barr Engineering in the memo. Mr. Stockhaus seconded the motion. Commissioner Welch said he is not going to support this motion because it is still unclear to him whether the Commission is varying from Commission requirements and he thinks the Commission should not do that without an understanding of what the Commission's requirements are and the procedures for the Commission to vary from them because it sets a bad precedent.

Commissioner deLambert asked for clarification on what precedent the Commission is concerned about setting. Commissioner Welch said it is unclear whether the one foot elevation above the 100-year flood elevation is actually a requirement, meaning the Commission would need to go through a variance process. Chair Loomis asked if Commissioner Welch wanted to add a condition. Chair Welch moved to amend the motion that the approval be contingent on confirming that the one foot elevation above the 100-year flood elevation is not a required condition of the Commission. Commissioners Sundberg and Stockhaus approved the friendly amendment. The motion carried unanimously [City of Robbinsdale absent from the vote].

6. Old Business

A. 2009 Water Quality Monitoring Activities

- i. **2009 Lake Water Quality Study: Sweeney Lake, Twin Lake, Northwood Lake, North Rice Pond and South Rice Pond.** Ms. Chandler said she wanted to focus on the results for Twin Lake because the Commission Engineer does have some recommendations for the Commission. She reminded the Commission that the water quality data from Twin Lake in 2008 showed degradation and so the Commission authorized additional monitoring of Twin Lake for 2009. Ms. Chandler said the 2009 data showed even more degradation of the water quality. She said the Commission Engineer recommends taking some more measurements, two water quality samples, in February and March before ice out and collecting sediment samples in the summer of 2010. She said the sediment samples will help determine the potential amount of phosphorus that can be released from the bottom sediments of the lake and will provide information to help determine the cost to minimize or to treat the sediments. Commissioner Welch moved to accept the report and post it on the Web site and to approve the additional measurements with the cost not to exceed \$4,000 and a report to the Commission as soon as possible and the sediment sampling with the cost not to exceed \$4,500. Commissioner Sundberg seconded the motion. The motion carried unanimously [City of Robbinsdale absent from the vote]. The Commission decided in the interest of time to move on to the next agenda item. Ms. Chandler said if anyone has questions on the data for the other lakes monitored to contact her.

- ii. **2008-2009 Biotic Index Evaluation of Bassett Creek and Plymouth Creek.** Ms.

Chandler stated that in 2009 the Minnesota Pollution Control Agency (MPCA) was supposed to monitor the Main Stem of Bassett Creek and Barr Engineering staff was assigned to conduct the biological monitoring of Plymouth Creek and the North and Sweeney Branches. She said that Barr Engineering found out in the fall of 2009 that the MPCA did not conduct the biological monitoring of the Main Stem for some unknown reason. Ms. Chandler reported that the North Branch data showed a significant decline in water quality as indicated by the biotic index. She said the Commission Engineer thinks the decline is due to the low oxygen and low flow due to climatic conditions. Ms. Chandler said the Commission Engineer recommends conducting the monitoring again on the regular schedule, which would be in three to five years. Commissioner Welch moved to accept the report and authorize Ms. Herbert to post it on the Web site. Ms. Thornton seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].

- B. **Review of Robbinsdale Local Surface Water Management Plan.** Ms. Chandler reminded the Commission that it received the draft plan from the City of Robbinsdale and that the Commission authorized Barr Engineering to conduct the review. She said Barr reviewed the plan and the review memorandum was in the meeting packet. Ms. Chandler summarized that overall the City of Robbinsdale is meeting the majority of the Commission's requirements and pointed out a few issues that the City needs to address. She said the Commission Engineer recommends that the Commission forward the comments on to the City of Robbinsdale and then when the Commission receives comments back from the City that the Commission at that time would consider approving the plan. Commissioner Sundberg moved to forward the comments on to the City of Robbinsdale. Acting Commissioner Hoshal seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].
- C. **Update on Cultural Resources Review Process for Resource Management Plan (RMP).** Ms. Chandler reminded the Commission that it directed Barr Engineering to draft protocols for cultural resources reviews of RMP projects. She said the protocols were sent out with the meeting packet for Commission review. Ms. Chandler said the Commission Engineer recommends sending the draft protocols to Tamara Cameron and Joe Yanta of the U.S. Army Corps for their feedback and if they respond positively then to incorporate the protocols into the RMP. Commissioner Welch agreed that getting informal feedback first should be the next step and then if the feedback is not positive then the Commission Engineer should bring the issue back to the Commission. Commissioner Welch questioned the protocol that there will be a 100-foot wide area of review around the project site. He said he thinks the Commission needs the focus of the review to be on the project area instead of expanding the area of analysis. Chair Loomis directed staff to cross off the references to the 100-foot wide area around the project. Commissioner Welch moved to authorize staff to forward the protocols, amended as discussed, for informal feedback to the Corps and if the feedback is positive then to incorporate the protocols into the RMP and to submit to the Corps for approval. Commissioner deLambert seconded the motion. The motion carried unanimously [City of Robbinsdale absent from vote].
- D. **TMDL Updates**
 - i. **Wirth Lake TMDL.** Ms. Chandler reported that the public meeting will be set up after the TMDL goes out, which should be in approximately two weeks.
 - ii. **Sweeney Lake TMDL.** Chair Loomis commented that she was disturbed when the state agency held a meeting and did not want any of the MS4s at the meeting. Ron Leaf of SEH, Inc. reported that he met with the MPCA on February 9th to discuss the Sweeney Lake TMDL and did ask the MPCA to invite the MS4s but the MPCA said it wanted at that meeting to focus on issues with a smaller technical team, which was composed of Brooke

Asleson, John Erdmann, and Mike Trojan of the MPCA, Keith Pilgrim and Len Kremer of Barr Engineering, and himself. Mr. Leaf explained that the focus was to look at the relative distribution of internal versus external load reductions and how were those load distributions reached. He said that Mr. Erdmann explained that the MPCA's concern is that the watershed load reduction that would be the responsibility of the MS4s is too small relative to the internal load reduction. The MPCA was not comfortable with the amount of regulatory control it had through its permit program because it wouldn't have the regulatory mechanism to enforce the internal load reductions. He said the MPCA was also concerned with the reasonable assurance process. Mr. Leaf said the MPCA was more comfortable with an external phosphorus load reduction on the order of 140 to 160 pounds and then using chemical treatment system as an added level of margin of safety, which is an increase over the 99 pounds of external load reduction currently in the TMDL. He said the MPCA said it thinks the U.S. Environmental Protection Agency (EPA) will push back on the 99 pounds number and that the number should be bumped up. Mr. Leaf said that for the purposes of today's discussion he picked the number of 150 pounds, which is 22%, for the external load reduction. Mr. Leaf asked the Commission if it wants to move forward with changing the external load reduction to 140 or 150 pounds and then submitting the TMDL to the MPCA for review or if it wants to hold a meeting with the MS4s and the MPCA to discuss the MPCA's recommendations further. Ms. Clancy said that the City of Golden Valley would like to meet with the MPCA. Commissioner Welch recommended having Chair Loomis attend the meeting on behalf of the Commission and having Commission staff attend the meeting. Mr. Leaf said SEH, Inc. will move ahead with making the other changes to the TMDL that were recommended and to get the meeting with the MPCA scheduled. Chair Welch moved that the Commission direct its consultant for the Sweeney Lake TMDL project to contact the MPCA to set up a meeting to review the proposed revisions to the draft TMDL with the MS4s and Commission representatives. Commissioner Stockhaus seconded the motion. Ms. Clancy said that one of the items that will come up when the public process begins is who is going to pay for the improvements. She asked if the Commission would start thinking about the funding process. The motion carried unanimously [City of Robbinsdale absent from vote].

- iii. **Medicine Lake TMDL.** Commissioner Welch said that Brooke Asleson told him that the Commission should receive the TMDL by tomorrow. Commissioner Welch volunteered to call Ms. Asleson, if the Commission does not receive the TMDL by tomorrow, to ask her what it would take to get the TMDL completed.

[Commissioner Elder departs the meeting]

E. BWSR Clean Water Fund Grant and BCWMC CIP Projects

- i. **Grant Award and Future Process.** Ms. Chandler reported that it looks like the total grant awards for the two projects will be \$650,000, which would be \$360,000 from the BWSR Clean Water Fund Grant and the rest coming from Hennepin County to the two cities for the projects. She said the grant agreement is being prepared and will need to be signed by the Commission. Ms. Chandler said the Commission needs to complete a work plan, which likely will be due in the end of April. She said once the Commission receives the funds, it will be required to submit project updates every six months through BWSR's eLink system. Ms. Chandler said the Commission Engineer recommends that the Commission direct staff to prepare the draft work plan for the BWSR grant and to coordinate with the cities of Golden Valley and Plymouth as necessary to prepare it. Commissioner Thornton moved to approve staff to prepare the draft work plan. Commissioner Welch seconded the motion. The motion carried unanimously [Cities of New Hope and Robbinsdale absent from vote].

- ii. **BCWMC CIP Project Schedule.** Ms. Chandler said the Commission could choose to reduce its ad valorem tax levy for 2011 to reflect the incoming grant funds or could accelerate its CIP project schedule. She said the Commission Engineer had one recommendation for a project to accelerate, which would be moving the North Branch channel restoration to 2011 from 2012 dependent on the City being prepared to move up the project. She said accelerating projects would mean the watershed would receive the water quality benefits sooner and also the Commission may stand a better chance to receive future water quality grants since it shows that when the Commission is awarded grants it gets more projects completed sooner. Ms. Chandler added that the bids are favorable in this economic climate.

Ms. Chandler reminded the Commission that the Commission needs to do a minor plan amendment for the 2011 CIP projects and if a CIP project is advanced then it needs to be included in the minor plan amendment. She said the Commission Engineer recommends submitting the minor plan amendment in early April. Ms. Chandler said the Commission Engineer thinks the Commission can add the Wirth Lake outlet structure modification, which is part of the TMDL, since the money is already available.

Chair Welch recommended that the Commission form a new committee that includes members of the Commission and the TAC that starts to draft a priority list of projects in light of the fact that the Commission has agreed to lead the categorical TMDL. Ms. Clancy recommended the Commission and the TAC review the prioritization process that was undertaken when the BCWMC's CIP was created. Mr. Oliver mentioned that given the number of items given by the Commission to the TAC for discussion that the TAC may need to start meeting more often, such as monthly.

Commissioner Sundberg moved that the Commission accelerate its CIP and that the TAC discuss which project to advance. Commissioner Welch seconded the motion. The motion carried unanimously [Cities of New Hope and Robbinsdale absent from vote]. Ms. Chandler asked the Commission to direct staff to prepare the draft minor plan amendment for the Main Stem project and the Wirth Lake outlet, which could be revised to add a third project if the Commission decides to advance the North Branch or other project. Commissioner Welch moved to authorize staff to prepare the draft minor plan amendment. Acting Commissioner Hoshal seconded the motion. The motion carried unanimously [Cities of New Hope and Robbinsdale absent from vote].

- F. **Administrative Services Committee Update – Contractor Position.** Chair Loomis reported that the Administrative Services Committee interviewed three individuals and felt that one of those individuals was a good match for the contractor position. She stated that the Committee checked the references of that one individual and the references were all positive. Chair Loomis asked if the Commission would want the individual to come to the next Commission meeting to meet with the full Commission. The Commission agreed it would like to meet and talk with the individual at the March meeting. Chair Loomis said the Administrative Services Committee would contact the individual to set it up. Commissioner Welch reminded the Commission that a contract would need to be drawn up and submitted to the Commission for approval. Chair Loomis said the Commission could authorize the Committee to negotiate the terms of the contract with the individual. Mr. LeFevere said the Committee could see if it can reach an agreement of terms with the individual and could present the terms at the March meeting. Chair Loomis directed staff to prepare a boilerplate contract for the March meeting.
- G. **Meadowbrook Elementary Education Grant Reimbursement Request.** Chair Loomis recommended that the Commission defer the discussion of this reimbursement request until after the grantee has communicated to the Commission that the work described in the grant application has been completed. The item was deferred.

7. Communications

A. Chair: No Communications

B. Commissioners:

- i. Commissioner Welch asked if the Commission is interested in hearing a presentation about how a biota TMDL would proceed. The Commission agreed it is interested and would like to hear the presentation this summer.**
- ii. Commissioner Welch encouraged any commissioner that could attend next Thursday's BWSR listening session at the Capitol Region Watershed offices to attend.**

C. Committees: No communications.

D. Counsel:

- i. Mr. LeFevere reported that it appears that the Minnesota Ball Park Authority easement for the tunnel will work out satisfactorily for all parties and signatures are currently being obtained. He said he will report on it when it is finalized. Mr. LeFevere said he and Barr are preparing an invoice to submit to the BPA for BCWMC legal and engineering work and review completed in regard to the easement issue.
- ii. Mr. LeFevere said Shingle Creek/ West Mississippi WMO has been talking to Brad Wozney of BWSR about a process to allow items to be added or amended to the CIP without going through the plan amendment process. He said BWSR suggested a hybrid process and now Shingle Creek/ West Mississippi is trying to set up a meeting with BWSR to explore the idea further. Mr. LeFevere said he will attend that meeting on behalf of Shingle Creek / West Mississippi and if the Commission approves, he will also attend on behalf of the Commission and will represent its interests. Commissioner Welch said he is also interested in attending the meeting. Mr. LeFevere said he thinks it is a good idea and thinks it is a good idea for Ms. Chandler to attend as well. Chair Loomis said she didn't hear any objections and authorized Mr. LeFevere to attend the meeting and represent the Commission.

E. Engineer: No communications.

9. Adjournment

Chair Loomis adjourned the meeting at 3:05 p.m.

Linda Loomis, Chair **Date**

Date _____

Amy Herbert, Recorder **Date**

Date _____

Pauline Langsdorf, Secretary Date

Date _____

CHECKING ACCOUNT 0100339

BEGINNING BALANCE	12-Feb-10			\$760,095.15
ADD:				
	General Fund Revenue:			
	February Interest	20.09		
*	Reimbursed Construction Costs	133.70		*
	Reimbursed Construction Costs	508,409.24		
	Total Revenue and Transfers In		508,563.03	
DEDUCT:				
*	Wells Fargo	Bank Charges - 2009/10	205.45	*
*	2229 Kennedy & Graven	Jan 2010 Legal Fees	921.80	*
	Checks:			
	2230 Barr Engineering	Feb Engineering Service	32,758.47	
	2231 Amy Herbert	Feb Secretarial Services	3,228.88	
	2232 D'Amico Catering	March Services	329.66	
	2233 Birchview Elementary	Education Grant	180.00	
	2234 City of Plymouth	West Medicine Lake Pond	501,475.74	
	Total Checks		537,972.75	
	Wells Fargo	Check Blanks	53.55	
Outstanding from previous month:				
	2219 Hopkins ISD 270	Education Grant	992.08	
	2226 Pauline Langsdorf	Education Outreach	41.88	
	2228 City of Plymouth	Education Outreach	60.00	
	Total Expenses		539,153.55	
ENDING BALANCE	10-Mar-10			\$729,504.63
*Recorded in 2009/10				

	2010/2011 BUDGET	CURRENT MONTH	YTD 2010/2011	BALANCE
OTHER GENERAL FUND REVENUE				
ASSESSMENTS	414,150	0.00	414,150.00	0.00
PERMIT REVENUE	55,000	0.00	3,500.00	51,500.00
REVENUE TOTAL	469,150	0.00	417,650.00	51,500.00
EXPENDITURES				
ENGINEERING				
ADMINISTRATION	110,000	8,189.80	8,189.80	101,810.20
PLAT REVIEW	60,000	6,314.00	6,314.00	53,686.00
COMMISSION MEETINGS	13,000	630.00	630.00	12,370.00
SURVEYS & STUDIES	20,000	1,721.50	1,721.50	18,278.50
WATER QUALITY/MONITORING	20,000	224.00	224.00	19,776.00
WATER QUANTITY	11,000	392.50	392.50	10,607.50
WATERSHED INSPECTIONS	8,000	262.00	262.00	7,738.00
ANNUAL FLOOD CONTROL INSPECTIONS	10,000	4,708.50	4,708.50	5,291.50
REVIEW MUNICIPAL PLANS	4,000	1,766.50	1,766.50	2,233.50
ENGINEERING TOTAL	256,000	24,208.80	24,208.80	231,791.20
ADMINISTRATOR	15,000	0.00	0.00	15,000.00
LEGAL COSTS	18,500	0.00	0.00	18,500.00
AUDIT, INSURANCE & BONDING	15,000	0.00	100.00	14,900.00
FINANCIAL MANAGEMENT	3,000	53.55	53.55	2,946.45
MEETING EXPENSES	5,000	329.66	700.40	4,299.60
SECRETARIAL SERVICES	45,000	3,332.30	3,332.30	41,667.70
PUBLICATIONS/ANNUAL REPORT	4,000	0.00	0.00	4,000.00
WEBSITE	4,500	42.75	42.75	4,457.25
PUBLIC COMMUNICATIONS	3,000	0.00	0.00	3,000.00
WOMP	10,000	1,470.00	1,470.00	8,530.00
DEMONSTRATION/EDUCATION GRANTS	5,000	180.00	180.00	4,820.00
EDUCATION AND PUBLIC OUTREACH	4,000	0.00	60.00	3,940.00
WATERSHED EDUCATION PARTNERSHIPS	15,000	0.00	0.00	15,000.00
EROSION/SEDIMENT (CHANNEL MAINT)	25,000	0.00	0.00	25,000.00
LONG TERM MAINTENANCE (moved to CF)	25,000	0.00	0.00	25,000.00
TMDL STUDIES (moved to CF)	10,000	0.00	0.00	10,000.00
GRAND TOTAL	463,000	29,617.06	30,147.80	432,852.20

BCWMC Construction Account (802-1119576)
Fiscal Year: February 1, 2010 through January 31, 2011
March 2010 Financial Report

Beginning Balance	18-Feb-10	\$2,573,051.99
ADD:	Interest:	
	February Interest	67.99
		67.99
DEDUCT:		
	Bank Charges - Recorded in 2009/10	695.49
	Construction Costs - Recorded in 2009/10	133.70
	Construction Costs	508,409.24
		509,238.43
Ending Balance:	10-Mar-10	\$2,063,881.55

Investments

Federal Home Loan Mtg Corp - Purchased 7/22/09 - Due 10/18/2010 - 0.55% (Current mkt value \$514,233.00)	\$533,957.50
Federal National Mtg Assoc-Purchased 01/21/2010-Due 01/21/2015-2% (Current mkt value -\$502,500.00)	500,000.00
Total Investments	1,033,957.50
Construction Account - Cash Balance (detailed above)	2,063,881.55
Total: Construction Fund Cash/Investments	3,097,839.05
Less: Reserved for CIP Projects	2,781,269.07
Construction Cash/Investments Available for projects	\$316,569.98

BCWMC Second Generation Projects	Budget	Current	YTD	Project Total	Balance
Approved CIP Projects:					
2006 Parkers Lake Water Quality Project	42,000	0.00	0.00	3,434.24	38,565.76
Twin Lake-expected completion 2006	140,000	0.00	0.00	5,724.35	134,275.65
Westwood Lake - will closed in 2010	312,000	0.00	0.00	225,864.90	86,135.10
Proposed CIP Projects:					
Lakeview Park Pond-expected completion 2007		0.00	0.00	637.50	(637.50)
West Medicine Lake Park Pond	1,100,000	501,685.74	501,685.74	524,389.80	575,610.20
Budget increase Resolution 08-07 (200,000)					
Northwood Lake East Pond	107,250	0.00	0.00	71,831.27	35,418.73
Twins Stadium	0	0.00	0.00	17,325.22	(17,325.22)
Ramada Pond (Crane Lake)	90,000	0.00	0.00	39.00	89,961.00
Plymouth Creek Restoration	550,000	224.00	224.00	67,385.55	482,614.45
Bassett Creek Feasibility Study	0	0.00	0.00	11,569.05	(11,569.05)
Plymouth Creek Feasibility	0	0.00	0.00	1,936.00	(1,936.00)
Crystal-Regent Avenue	0	210.00	210.00	210.00	(210.00)
Duluth Street-Crystal	0	140.00	140.00	140.00	(140.00)
Resource Management Plan	0	1,064.00	1,064.00	56,625.21	(56,625.21)
TMDL Projects					
TMDL Studies	125,000	0.00	0.00	87,582.90	37,417.10
Sweeney Lake TMDL	119,000	5,085.50	5,085.50	186,097.86	(67,097.86)
Annual Flood Control Projects:					
Flood Control Emergency Maintenance	500,000	0.00	0.00	0.00	500,000.00
Flood Control Long-Term Maintenance	773,373	0.00	0.00	13,566.33	759,806.67
Annual Water Quality					
Channel Maintenance Fund	200,000	0.00	0.00	2,994.75	197,005.25
	4,058,623	508,409.24	508,409.24	1,277,353.93	2,781,269.07

Project Reimbursements

Twins Stadium	0.00	0.00	20,395.44
Sweeney Lake TMDL	0.00	0.00	154,123.94

Tax Levy Revenues

	County Levy	Abatements / Adjustments	Adjusted Levy	Current Received	Year to Date Received	Inception to Date Received	Balance	BCWMO Levy
2010 Tax Levy	935,000.00		935,000.00			0.00	935,000.00	935,000
2009 Tax Levy	800,000.00		800,000.00			788,720.28	11,279.72	800,000
2008 Tax Levy	908,128.08	(850.59)	907,277.49			901,483.61	5,793.88	907,250
2007 Tax Levy	190,601.74	(200.27)	190,401.47			189,794.47	607.00	190,000
2006 Tax Levy	531,095.47	(1,134.64)	529,960.83			528,646.69	1,314.14	519,000
2005 Tax Levy	450,401.40	(1,429.91)	448,971.49			448,704.78	266.71	438,000
2004 Tax Levy	1,000,790.48	(6,332.23)	994,458.25			995,220.43	(762.18)	
							953,499.27	

Bassett Creek Watershed Management Commission General Account

General Fund (Administration) Financial Report

Fiscal Year: February 1, 2009 through January 31, 2010

MEETING DATE: March 18, 2010

	2009/2010 BUDGET	CURRENT MONTH	YTD 2009/2010	BALANCE
<u>OTHER GENERAL FUND REVENUE</u>				
ASSESSMENTS	449,875	0.00	449,874.00	1.00
PERMIT REVENUE	55,000	0.00	11,500.00	43,500.00
REVENUE TOTAL	504,875	0.00	461,374.00	43,501.00
<u>EXPENDITURES</u>				
ENGINEERING				
ADMINISTRATION	110,000	0.00	113,841.26	(3,841.26)
PLAT REVIEW	55,000	0.00	36,582.16	18,417.84
COMMISSION MEETINGS	13,000	0.00	12,706.45	293.55
SURVEYS & STUDIES	20,000	0.00	15,178.05	4,821.95
WATER QUALITY/MONITORING	49,000	0.00	54,613.35	(5,613.35)
WATER QUANTITY	11,000	0.00	7,271.45	3,728.55
WATERSHED INSPECTIONS	8,000	0.00	6,161.00	1,839.00
ANNUAL FLOOD CONTROL INSPECTIONS	10,000	0.00	11,871.00	(1,871.00)
REVIEW MUNICIPAL PLANS	6,000	0.00	6,160.50	(160.50)
ENGINEERING TOTAL	282,000	0.00	264,385.22	17,614.78
ADMINISTRATOR	35,000	0.00	1,500.00	33,500.00
LEGAL COSTS	18,500	788.10	16,463.68	2,036.32
AUDIT, INSURANCE & BONDING	13,000	0.00	13,745.00	(745.00)
FINANCIAL MANAGEMENT	3,000	205.45	3,205.45	(205.45)
MEETING EXPENSES	5,100	0.00	4,429.75	670.25
SECRETARIAL SERVICES	45,000	0.00	34,145.29	10,854.71
PUBLICATIONS/ANNUAL REPORT	4,000	0.00	1,696.50	2,303.50
WEBSITE	1,575	0.00	1,031.50	543.50
PUBLIC COMMUNICATIONS	3,000	0.00	1,706.25	1,293.75
WOMP	10,000	0.00	4,790.50	5,209.50
DEMONSTRATION/GRANTS/EDUCATION GRANTS	18,200	0.00	8,278.58	9,921.42
EDUCATION AND PUBLIC OUTREACH	8,200	0.00	8,278.60	(78.60)
EROSION/SEDIMENT (CHANNEL MAINT)	25,000	0.00	25,000.00	0.00
LONG TERM MAINTENANCE (moved to CF)	25,000	0.00	25,000.00	0.00
TMDL STUDIES (moved to CF)	10,000	0.00	10,000.00	0.00
GRAND TOTAL	506,575	993.55	423,656.32	82,918.68

Bassett Creek Project Analysis

Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
2003 Floodproofing	2004 Medicine Lake Water Quality	2005 Medicine Lake - In Lake Treatment	2006 Medicine Lake - In Lake Treatment	2005 Northwood Lake Project	2005 Wirth Lake Project	Medicine Lake - Goose Reduction	Sweeney Lake Branch Channel

Original Budget **700,000.00** **880,100.00** **105,000.00** **110,000.00** **182,700.00** **254,000.00** **500,000.00**

Expenditures:

Feb 2004 - Jan 2005	162,868.00	705,759.70	0.00	0.00	953.50	6,075.31	0.00	0.00
Feb 2005 - Jan 2006	17,105.34	165.39	120.00	0.00	0.00	4,586.92	0.00	0.00
Feb 2006 - Jan 2007	43,869.32	185,228.29	77,007.39	54,676.12	1,350.00	4,246.49	500.00	0.00
Feb 2007 - Jan 2008	35.40	7,260.68	0.00	0.00	150,549.79	69,182.00	0.00	13,228.26
Feb 2008 - Jan 2009	474,347.34	0.00	0.00	15,389.40	0.00	0.00	0.00	372,528.31
Feb 2009 - Jan 2010				0.00	0.00	0.00	0.00	0.00

Total Expenditures: **698,225.40** **898,414.06** **77,127.39** **70,065.52** **152,853.29** **84,090.72** **500.00** **385,756.57**

Project Balance **1,774.60** **(18,314.06)** **27,872.61** **39,934.48** **29,846.71** **169,909.28** **(500.00)** **114,243.43**

Amy Herbert · Virtual Administrator Services

733 Preakness Lane, Chanhassen, MN 55317
bcra@barr.com · 952-832-2652

4C
Invoices

March 4, 2010

Bassett Creek Watershed Management Commission (BCWMC)
Attn: Sue Virnig, Deputy Treasurer
7800 Golden Valley Road
Golden Valley, MN 55427

For contracted services February 1, 2010 through February 28, 2010

Administrative Services to BCWMC

- Created the February 18th BCWMC meeting agenda; organized packet materials for copying, copied and helped assemble meeting packets, addressed meeting packet envelopes, coordinated stuffing of packets by Barr Engineering and coordinated the delivery of envelopes to Barr Engineering mail room for Barr to weigh, add postage, and mail; posted meeting packet on BCWMC's Web site and e-mailed link to Commission; e-mailed agenda to agenda list and e-mailed approved meeting minutes to distribution list.
- Maintained BCWMC files; Communicated with BCWMC attorney, Chair, engineers, Deputy Treasurer, commissioners, and committee members.
- Organized BCWMC monthly invoices; Distributed invoice payments;
- Completed minutes from January 21st BCWMC meeting; Amended January minutes per Commission direction; Updated Commissioner roster and sent to the MN Board of Water and Soil Resources; Updated meeting packet mailing labels; Prepared placards for new commissioners; Confirmed interview times with Administrative Coordinator contractor candidates; Contacted Metropolitan Council Environmental Services to discuss 2009 CAMP invoice and 2010 CAMP participation; Sent request to TAC for information on project maintenance and compiled responses for March TAC meeting packet; Prepared March TAC meeting agenda and e-mailed agenda and meeting materials; Coordinated with MPCA and TAC and other parties for March 4th meeting about future monitoring in Bassett Creek Watershed.
- Prepared meeting notice for February 10th and February 18th Administrative Services Committee meeting; March 4th watershed monitoring and TAC meetings and March 5th Education Committee meeting

47.00 hours @ \$57.00 per hour \$2,679.00

Web Site Services to BCWMC

Updated meeting minute archive, calendar, and roster;
0.75 hours @ \$57.00 per hour \$42.75

Coordination with BARR Engineering

Coordinated with Barr on: distribution of tasks assigned at BCWMC meeting;
Questions to TAC re: CIP project maintenance; TAC meeting materials

1.50 hours @ \$57.00 per hour \$85.50

BCWMC Meetings

Coordinated and attended February 16th conference call with Chair Welch, Karen Chandler, and Len Kremer; Set up and attended February 18th BCWMC meeting (coordinated room reservation; ordered and received catering; prepared and provided handouts not provided in meeting packet; recorded meeting)

7.25 hours @ \$57.00 per hour \$413.25

Administrator Budget Charges

No Administrator Budget Charges for February

0.00 hours @ \$57.00 per hour..... \$0.00

Expenses

No February expenses..... \$0.00

Mileage

Mileage from Chanhassen to Golden Valley City Hall for February 18th meeting (16.76 miles x 0.50 = \$8.38);

\$8.38

Subtotal Administrative Services \$3,186.13

Subtotal Web Site Services \$42.75

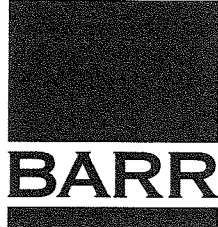
Subtotal Administrator Budget Charges \$0.00

Total Current Billing: \$3,228.88

I declare, under penalty of law, that this account, claim or demand is just and correct and that no part of it has been paid.



Signature of Claimant



Bassett Creek WMO
7800 Golden Valley Road
Golden Valley, MN 55427

Page # 1
Invoice # 23270051-2010-1
Project # 23/27-0051
Client # 59
March 8, 2010

Invoice of Account with
BARR ENGINEERING COMPANY

For professional services during the period of
January 30, 2010 through February 26, 2010

ENGINEERING

TECHNICAL SERVICES

Calls/emails to or from the Commissioners, watershed communities, developers in the watershed, Minneapolis Park and Recreation Board (MPRB), Three Rivers Park District (TRPD), Mississippi Watershed Management Organization, Minnesota Department of Transportation (Mn/DOT), Hennepin County, Minnesota Board of Water and Soil Resources (BWSR), Metropolitan Council Environmental Services (MCES), Minnesota Pollution Control Agency (MPCA), Corps of Engineers and interested citizens; correspondence with Chair Loomis regarding budget questions; internal meeting to discuss administration transition issues/procedures; communications with Charlie LeFevre regarding CIP/plan amendments meeting with BWSR, telephone conference call with MPCA regarding E-Coli TMDL.

James P. Herbert, Principal Engineer/Scientist	
2.2 hours @ \$140.00 per hour	\$ 308.00
Leonard J. Kremer, Principal Engineer/Scientist	
4.5 hours @ \$160.00 per hour	\$ 720.00
Karen L. Chandler, Senior Consultant	
2.0 hours @ \$140.00 per hour	\$ 280.00
Technicians/Administrative	\$ 240.00
Expenses (copies)	\$ 3.00
Subtotal, Technical Services	\$ 1,551.00

PRELIMINARY SITE REVIEW/CORRESPONDENCE

Telephone conversations regarding proposed developments; provided watershed hydraulic information, flood profiles and BCWMC development requirements to applicants; coordination with St. Louis Park and preliminary review of final plat for Metroquip site; communication with Inspec regarding Birchview School in Plymouth; telephone conversation with consultant regarding Minneapolis site; telephone conversation with Advanced Engineering and correspondence with Golden Valley staff regarding proposed Menards redevelopment, reviewed proposed drainage and water quality issues for Menard's site and prepared email letter to developer and City of Golden Valley.

James P. Herbert, Principal Engineer/Scientist	
8.6 hours @ \$140.00 per hour	\$ 1,204.00

MONTHLY MEETING PREPARATION

Preparation of monthly memorandum for BCWMC meeting; reviewed draft BCWMC meeting minutes, agenda and packet materials and discussed comments with Bassett Creek Recording Administrator; conference call with BCWMC Chair regarding meeting agenda; communications with Bassett Creek Recording Administrator; internal meetings regarding agenda, to-do list and meeting packet and February 18, 2010 meeting; prepared permit figures; email correspondence to Chair Loomis and Sue Virnig regarding biotic index monitoring charges; correspondence regarding Northwood Lake wetland classification; e-mail exchanges with Howard Markus and Pam Anderson; preparation and review of approved 2010 budgets and 2009 year end invoice and budgets.

James P. Herbert, Principal Engineer/Scientist	
13.5 hours @ \$140.00 per hour	\$ 1,890.00
Leonard J. Kremer, Principal Engineer/Scientist	
4.7 hours @ \$160.00 per hour	\$ 752.00
Henry M. Runke, Principal Engineer/Scientist	
1.0 hours @ \$165.00 per hour	\$ 165.00
Karen L. Chandler, Senior Consultant	
14.6 hours @ \$140.00 per hour	\$ 2,044.00
Michael B. Strong, Engineer/Scientist	
0.2 hours @ \$70.00 per hour	\$ 14.00
Technicians/Administrative	\$ 187.50
Expenses (postage)	\$ 32.30
Subtotal, Monthly Memorandums	\$ 5,084.80

TAC MEETING PREPARATION

Preparation for March 4, 2010 TAC meeting; reviewed agenda and coordination with Amy and MPCA; prepared write-up for CIP agenda item, reviewed maintenance responses from cities.

Karen L. Chandler, Senior Consultant	
2.5 hours @ \$140.00 per hour	\$ 350.00
Subtotal, TAC Meeting Preparation	\$ 350.00

Subtotal Technical Services \$ **8,189.80**

PLAT REVIEW Note: Projects in **Bold** have provided review fees to offset review costs. Projects not in Bold are either in a preliminary stage or were submitted prior to implementation of the fee schedule.

Trustone Federal Credit Union

Correspondence with applicant and City regarding proposed modifications to approved plans.

James P. Herbert, Principal Engineer/Scientist	
0.6 hours @ \$140.00 per hour	\$ 84.00
Subtotal, Trustone Federal Credit Union	\$ 84.00

South Shore Drive Reconstruction/Bridge

Correspondence with Mn/DNR and City of Plymouth Staff; reviewed DNR permit application for South Shore Drive Bridge replacement; prepared BCWMC memorandum; prepared letter of recommendation to Plymouth/DNR; reviewed HEC II model information along reach of Bassett Creek.

James P. Herbert, Principal Engineer/Scientist	
13.7 hours @ \$140.00 per hour	\$ 1,918.00
Karen L. Chandler, Senior Consultant	
0.7 hours @ \$140.00 per hour	\$ 98.00
Subtotal, South Shore Drive Reconstruction/Bridge	\$ 2,016.00

Golden Valley 2010 Pavement Mgmt Project

Correspondence with City of Golden Valley Staff and its consultant; reviewed grading, drainage and erosion control plans; reviewed Golden Valley Surface Water Management Plan regarding project area; reviewed potential improvements of downstream water quality facilities; prepared BCWMC memorandum; prepared letter of recommendation to City of Golden Valley.

James P. Herbert, Principal Engineer/Scientist	
14.3 hours @ \$140.00 per hour	\$ 2,002.00
Karen L. Chandler, Senior Consultant	
0.5 hours @ \$140.00 per hour	\$ 70.00
Michael B. Strong, Engineer/Scientist	
0.3 hours @ \$70.00 per hour	\$ 21.00
Subtotal, GV 2010 Pavement Mgmt Project	\$ 2,093.00

Wirth Park Pedestrian Bridge

Several telephone calls with Met Counsel, City of Golden Valley and HDR staff; reviewed proposed bridge replacement plan and provided preliminary recommendations; reviewed revised drawings; reviewed HEC II model along the creek at Wirth Golf Course; prepared BCWMC memorandum; prepared letter of recommendation to City of Golden Valley.

James P. Herbert, Principal Engineer/Scientist	
10.7 hours @ \$140.00 per hour	\$ 1,498.00
Leonard J. Kremer, Principal Engineer/Scientist	
1.1 hours @ \$160.00 per hour	\$ 176.00
Karen L. Chandler, Senior Consultant	
1.4 hours @ \$140.00 per hour	\$ 196.00
Sarah Stratton, Senior Consultant	
2.0 hours @ \$115.00 per hour	\$ 230.00
Michael B. Strong, Engineer/Scientist	
0.3 hours @ \$70.00 per hour	\$ 21.00
Subtotal, Wirth Park Pedestrian Bridge	\$ 2,121.00

Subtotal Plat Review	\$ 6,314.00
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COMMISSION MEETINGS

Attended February 18, 2010 Commission meeting.

Karen L. Chandler, Senior Consultant	
4.5 hours @ \$140.00 per hour	\$ 630.00
Subtotal, Commission Meetings	\$ 630.00

SURVEYS AND STUDIES

Coordinated and performed February sampling of Twin Lake; prepared water sample jars and delivered samples to laboratory; organized field data. Reviewed drawings and coordinated with Minnesota Ballpark Authority regarding easement issues.

Leonard J. Kremer, Principal Engineer/Scientist	
5.3 hours @ \$160.00 per hour	\$ 848.00
Karen L. Chandler, Senior Consultant	
0.5 hours @ \$140.00 per hour	\$ 70.00
Technicians/Administrative	\$ 704.00
Expenses (mileage/2WD field vehicle/ice auger/ WQ meter)	\$ 99.50
Subtotal, Surveys and Studies	\$ 1,721.50

WATER QUALITY MONITORING

Preparation of final edits to 2009 Lake Water Quality Study Report.

Karen L. Chandler, Senior Consultant	
1.6 hours @ \$140.00 per hour	\$ 224.00
Subtotal, Water Quality Monitoring	\$ 224.00

WATER QUANTITY

Measured and reviewed lake level elevations as part of the lake-gauging program.

Technicians/Administrative	\$ 344.00
Expenses (mileage/2WD vehicle)	\$ 48.50
Subtotal, Water Quantity	\$ 392.50

WATERSHED INSPECTION

Coordination with City of Minneapolis regarding its inspection program.

James P. Herbert, Principal Engineer/Scientist	
0.5 hours @ \$140.00 per hour	\$ 70.00

Technicians/Administrative	\$ 192.00
Subtotal, Watershed Inspection	\$ 262.00

FLOOD CONTROL PROJECT INSPECTION

Correspondence with municipalities and Corps of Engineers; prepared field recording documents; prepared field records for double box culverts inspection; reduced field notes following inspection; prepared and labeled inspection photographs; prepared draft memorandum regarding Bassett Creek Flood Structures; prepared double box culvert inspection report; prepared annual flood control features inspection report.

James P. Herbert, Principal Engineer/Scientist 6.0 hours @ \$140.00 per hour	\$ 840.00
Jacob Burggraff, Senior Consultant 22.8 hours @ \$115.00 per hour	\$ 2,622.00
Richard Ver Strate, Senior Engineer/Scientist 6.3 hours @ \$115.00 per hour	\$ 724.50
Whitney Eriksson, Engineer/Scientist 1.8 hours @ \$85.00 per hour	\$ 153.00
Whitney Eriksson, Engineer/Scientist 3.0 hours @ \$90.00 per hour	\$ 270.00
Alicia Duncan, Communication Specialist 1.1 hours @ \$90.00 per hour	\$ 99.00
Subtotal, Flood Control Project Inspection	\$ 4,708.50

REVIEW MUNICIPAL PLANS

Communications with city of Robbinsdale and review of its Local Surface Water Management Plan (LSWMP); prepared review comments for BCWMC meeting.

Karen L. Chandler, Senior Consultant 5.2 hours @ \$140.00 per hour	\$ 728.00
Sterling G. Williams, Senior Engineer/Scientist 0.7 hours @ \$95.00 per hour	\$ 66.50
Katherine Wenigmann, Engineer/Scientist 10.8 hours @ \$90.00 per hour	\$ 972.00
Subtotal, Municipal Plans	\$ 1,766.50

TOTAL ENGINEERING \$ 24,208.80

SECRETARIAL SERVICES

SECRETARIAL SERVICES EXPENSES

Administrative expenses requested by Amy Herbert including: copies, color copies for meeting packet; postage, CD duplication, video digital capture/conversion and BCWMC meeting catering; packet assembly; report assembly.

Expenses (B&W/color copies/postage)	\$	146.17
Catering (BCWMC meeting date)	\$	<u>-0-</u>
TOTAL SECRETARIAL SERVICES EXPENSES	\$	146.17

WATERSHED OUTLET MONITORING PROGRAM (WOMP)

WOMP

Coordination with Met Council regarding rating curve at WOMP station; performed rating curve analysis and modified curve using newest stage-flow measurements.

Christopher Bonick, Senior Engineer/Scientist	
14.0 hours @ \$105.00 per hour	\$ 1,470.00
Subtotal, Public Relations/WOMP.	\$ 1,470.00

TOTAL PUBLIC RELATIONS/WOMP \$ 1,470.00

CAPITAL IMPROVEMENT PROJECTS

W MEDICINE LAKE PK POND

Reviewed submittal from City of Plymouth and prepared recommendation for payment

James P. Herbert, Principal Engineer/Scientist	
1.5 hours @ \$140.00 per hour	\$ 210.00
Subtotal, W Medicine Lake Park Pond	\$ 210.00

PLYMOUTH CREEK RESTORATION PROJECT (2010 CR)

Calls from BWSR staff regarding grant award, contracting, and future process; prepared memo for February Commission meeting regarding clean water fund grant award and future process.

Karen L. Chandler, Senior Consultant	
1.6 hours @ \$140.00 per hour	\$ 224.00
Subtotal, Plymouth Creek Restoration Project	\$ 224.00

RESOURCE MANAGEMENT PLAN (RMP)

Coordination with Corps of Engineers (COE) regarding final RMP report and pre-application protocols; prepared memorandum for meeting packet.

Karen L. Chandler, Senior Consultant	
1.1 hours @ \$140.00 per hour	\$ 154.00
Jeffrey T. Lee, Senior Consultant	
7.0 hours @ \$130.00 per hour	\$ 910.00
Subtotal, Resource Management Plan	\$ 1,064.00

CRYSTAL-REGENT AVENUE (2010 CR)

Calls from BWSR staff regarding grant award, contracting, and future process. Prepared memo for February Commission meeting regarding clean water fund grant award and future process

Karen L. Chandler, Senior Consultant	
1.5 hours @ \$140.00 per hour	\$ 210.00
Subtotal, Crystal-Regent Avenue (2010 CR)	\$ 210.00

DULUTH STREET – CRYSTAL (2011 CR)

Prepared memo for February Commission meeting regarding impact of grant funds on CIP schedule and moving North Branch project up earlier in schedule

Karen L. Chandler, Senior Consultant	
1.0 hours @ \$140.00 per hour	\$ 140.00
Subtotal, Duluth Street – Crystal (2011 CR)	\$ 140.00

TOTAL CAPITAL IMPROVEMENT PROJECTS \$ 1,848.00

TMDL STUDIES

SWEENEY LAKE TMDL

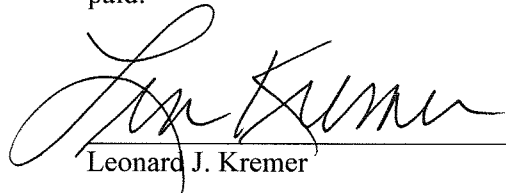
Coordination regarding Sweeney Lake TMDL; communication with SEH (Ron Leaf); coordination with MPCA; data collection and graphing of average spring, summer, fall TP concentration in lakes after proposed alum treatment; reviewed SEH meeting summary memo and other materials; preparation for TMDL meeting with MPCA; prepared written description of modeling.

Leonard J. Kremer, Principal Engineer/Scientist	
7.0 hours @ \$160.00 per hour	\$ 1,120.00
Karen L. Chandler, Senior Consultant	
0.5 hours @ \$140.00 per hour	\$ 70.00
Keith M. Pilgram, Senior Consultant	
30.2 hours @ \$125.00 per hour	\$ 3,775.00
Brian Huser, Senior Engineer/Scientist	
1.0 hours @ \$110.00 per hour	\$ 110.00
Expenses (mileage)	\$ 10.50
Subtotal, Sweeney Lake TMDL	\$ 5,085.50
TOTAL TMDL STUDIES	\$ 5,085.50

SUMMARY TOTALS

Total Engineering	\$ 24,208.80
Total Secretarial Services Expenses	\$ 146.17
Total Public Relations	\$ 1,470.00
Total Capital Improvement Projects	\$ 1,848.00
Total TMDL Studies	\$ 5,085.50
TOTAL PAYABLE	\$ 32,758.47

Barr declares under the penalties of law
that this account, claim or demand
is just and that no part of it has been
paid.


Leonard J. Kremer

ACE Drop-Off Catering

Invoice

VB Box 132
PO Box 9202
Minneapolis, MN 55480-9202
612/238-4016 ahoffer@damico.com

INVOICE #

45547

BILL TO

Barr Engineering
Amy Herbert
4700 W 77th Street
Edina, MN 55435-4803

SHIP TO

Golden Valley City Hall-2nd Fl-Council Rm
7800 Golden Valley Road
Site Contact: Judy N 763/593-3991
PO#23270512008300
952/832-2652 fax: 832-2601

P.O. NUMBER		TERMS			DELIVERY DATE	DAY	PPL	DELIVERY TIME	
see above		Due on receipt			3/18/2010	Thursday	18	11 AM (10:45-11:15)	
QUANTITY	DESCRIPTION							PRICE EACH	AMOUNT
1	Gallon of Homemade TUSCAN CHICKEN Soup, Bowls, Spoons, Crackers, Chafer & Ladle							29.95	29.95T
18	Cold Monthly Special Buffet							10.95	197.10T
1	Vegetarian Asian Wrap with Napa Cabbage, Red Peppers, Scallions, Carrots, Sunflower Seeds with Sweet & Spicy Sauce on the Side							0.00	0.00T
6	Southwest Chicken Wrap with Black Beans, Roasted Corn, Shredded Cheese, Onions, Lettuce, Salsa and Chipotle Ranch Sauce on the Side							0.00	0.00T
5	Smoked Turkey Caesar Wrap with Chopped Romaine Lettuce, Parmesan Cheese and Caesar Dressing on the Side							0.00	0.00T
3	Sliced Ham and Mozzarella Wrap							0.00	0.00T
3	Sliced Beef, Caramelized Onion & Havarti Cheese Wrap							0.00	0.00T
18	Gourmet Pasta Salad							0.00	0.00T
18	Seasonal Fresh Fruit							0.00	0.00T
18	Bowl of Potato Chips							0.75	13.50T
18	Assorted Bars & Cookies							0.00	0.00T
1	Dozen-Assorted Bars & Cookies-Sets aside for break-Different than above							18.00	18.00T
7	Assorted Sodas - 3 Diet Coke & 4 Mineral Water							1.25	8.75T
20	Spring Water							1.00	20.00T
	Subtotal								287.30
	Delivery Charge							20.00	20.00T
	Metro Sales Tax							7.275%	22.36
Thank you for your business.							Total		\$329.66

Please note NEW PO BOX as of July 2009

Please make checks payable to "D'Amico Catering".

Reference the invoice # and delivery date on your check, unless paid by credit card.

Thank you for your business.

Agreed to by (customer)_____

Kennedy & Graven, Chartered

200 South Sixth Street
Suite 470
Minneapolis, MN 55402

(612) 337-9300

Tax ID No. 41-1225694

February 24, 2010

Statement No. 94424

Bassett Creek Water Management Commission
Sue Virnig

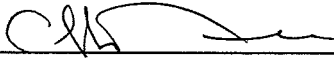
7800 Golden Valley Road
Golden Valley, MN 55427

Through January 31, 2010

BA295-00001 General	740.35
BA295-00019 Twins Stadium	133.70
BA295-00028 2010 Bassett Creek Main Stem Restoration	47.75

Total Current Billing: 921.80

I declare, under penalty of law, that this
account, claim or demand is just and correct
and that no part of it has been paid.



Signature of Claimant

Kennedy & Graven, Chartered200 South Sixth Street
Suite 470
Minneapolis, MN 55402Bassett Creek Water
Sue Virnig

January 31, 2010

BA295-00001 General

Through January 31, 2010

For All Legal Services As Follows:

			Hours	Amount
1/5/2010	CLL	Review minutes	0.35	66.85
1/10/2010	CLL	Exchange emails with A. Herbert regarding RFPs	0.10	19.10
1/20/2010	CLL	Review agenda materials	0.40	76.40
1/21/2010	CLL	Attend commission meeting	3.00	573.00
Total Services:			\$	735.35

For All Disbursements As Follows:

1/21/2010	Charles L. LeFevere; Mileage expense	5.00
Total Disbursements:		\$ 5.00

Total Services and Disbursements:\$ 740.35

Kennedy & Graven, Chartered200 South Sixth Street
Suite 470
Minneapolis, MN 55402Bassett Creek Water
Sue Virnig

January 31, 2010

BA295-00019 Twins Stadium

Through January 31, 2010

For All Legal Services As Follows:

			Hours	Amount
1/4/2010	CLL	Phone call from L. Kremer regarding review of attachments and exhibits	0.15	28.65
1/27/2010	CLL	Review amended tunnel easement; message to C. Conover regarding same	0.35	66.85
1/28/2010	CLL	Exchange emails with C. Conover regarding tunnel easement	0.20	38.20
Total Services:			\$	133.70

Total Services and Disbursements:\$ 133.70

Kennedy & Graven, Chartered

200 South Sixth Street
Suite 470
Minneapolis, MN 55402

Bassett Creek Water
Sue Virnig

January 31, 2010

BA295-00028 2010 Bassett Creek Main Stem Restoration

Through January 31, 2010

For All Legal Services As Follows:

Hours Amount

1/29/2010 CLL Review Golden Valley/Crystal agreement 0.25 47.75

Total Services: \$ 47.75

Total Services and Disbursements:\$ 47.75



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4700 West 77th Street • Minneapolis, MN 55435-4803
Phone: 952-832-2600 • Fax: 952-832-2601 • www.barr.com An EEO Employer

4D

Minneapolis, MN • Hibbing, MN • Duluth, MN • Ann Arbor, MI • Jefferson City, MO • Bismarck, ND

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Agenda Item 4D– West Medicine Lake Park Pond Project (ML-11) Reimbursement: Plymouth
Date: March 10, 2010
Project: 23/27 051 2010

4D. West Medicine Lake Park Pond Project (ML-11) Reimbursement: Plymouth

The BCWMC received a letter and supporting documentation from the City of Plymouth requesting reimbursement of **\$501,475.74** from the BCWMC for the referenced project. Construction is approximately 50% complete (as of February 1, 2010). Reimbursement includes P8 Modeling, Topographical Survey, Wetland Delineation and Replacement Plan, Wetland Mitigation Credits, Engineering Services, Permit Fees and Construction. Note the following budget summary:

- BCWMC Project Budget (per 9/18/08 addendum to cooperative agreement): \$1,100,000.00
- Total completed as of February 1, 2010: \$651,475.74
- Reimbursement requested from other project partners (Met Council, TRPD): (\$150,000.00)
- Current BCWMC Reimbursement Request \$501,475.74

We have reviewed the supporting documents provided by the City and recommend payment, as requested. Attached is a copy of the letter of request from the City of Plymouth.

Recommended Commission Action:

- a. As requested by the City of Plymouth, provide partial reimbursement for West Medicine Lake Park Pond Project in the amount of \$501,475.74.



Adding Quality to Life

February 19, 2010

Ms. Amy Herbert, Recording Administrator
BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435-4803

SUBJECT: WEST MEDICINE LAKE PARK POND IMPROVEMENTS aka
PLYMOUTH CREEK WATER QUALITY PONDS PROJECT
CITY PROJECT NO. 3105

Dear Ms. Herbert,

Enclosed you will find documentation of completed design, wetland mitigation, and construction expenses for the "West Medicine Lake Park Pond Improvements " aka the "Plymouth Creek Water Quality Ponds Project" totaling \$651,475.74. The City has requested reimbursement of \$150,000 from other project partners (Met Council and Three Rivers Park District) and is requesting reimbursement of \$501,475.74 from the Bassett Creek Watershed Management Commission (BCWMC) per the terms of the Cooperative Agreement for the West Medicine Lake Park Pond Improvements dated April 19, 2007 and Addendum to Cooperative Agreement for the West Medicine Lake Park Pond dated September 18, 2008.

Construction is 50% complete as of February 1, 2010 (the date of the most recent invoice). Reimbursement to the City should be sent to my attention at:

Derek Asche
Engineering Department
Plymouth City Hall
3400 Plymouth Blvd.
Plymouth, MN 55447

Thank you again for your support on this project. If you have any questions regarding the submission, please contact me at 763-509-5526.

Sincerely,

Derek Asche
Water Resources Manager

enc: Photos
Design
Cooperative Agreement
Addendum to Cooperative Agreement
Invoices



Bassett Creek Watershed Management Commission 2008 Annual Report



Executive Summary: The Year in Brief

2008 COMMISSION REPRESENTATIVES

Pauline Langsdorf – Crystal
Linda Loomis – Golden Valley
Cheri Templeman – Medicine Lake
Michael Welch – Minneapolis
Kristine Sundberg – Minnetonka
Daniel Stauner – New Hope
Ginny Black – Plymouth
Karla Peterson – Robbinsdale
Manuel Jordan – St. Louis Park

2008 ALTERNATES

Stuart Stockhaus – Crystal
David Hanson – Golden Valley
John O'Toole – Medicine Lake
Lisa Goddard – Minneapolis
Tony Wagner – Minnetonka
Elizabeth Thornton – Plymouth
Wayne Sicora – Robbinsdale
Sue Sanger – St. Louis Park

The Bassett Creek Watershed Management Commission (BCWMC) is governed by a board composed of representatives from each of the nine member cities: Crystal, Golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, St. Louis Park, & Robbinsdale. Representatives are appointed by their cities and serve three-year terms on the board. Commissioners who served in 2008 are listed above.

2008 Activities & Achievements Follow Roadmap Set by BCWMC Plan

The BCWMC's most recent Watershed Management Plan (Plan) was approved by the Minnesota Board of Water and Soil Resources on August 25, 2004, and adopted by the BCWMC board of commissioners on September 16, 2004. The BCWMC has a long history of achievements, having formed in 1969 as the Bassett Creek Flood Control Commission covering the nine communities in the watershed. In accordance with provisions of the 1982 Metropolitan Surface Water Management Act, the Bassett Creek Flood Control Commission revised its Joint Powers Agreement and created the Bassett Creek Watershed Management Commission (BCWMC).

The 2004 Plan includes an implementation program that provides a roadmap for the BCWMC's activities in the areas of capital improvements, annual water quality programs, and annual flood control programs. This executive summary communicates the BCWMC's 2008 accomplishments in the following areas: capital improvements program, inspections, water quality activities, education activities, and other activities. See the full 2008 BCWMC Annual Report for more details.

Capital Improvements Program

The BCWMC continued to implement its capital improvements program. In 2008, these achievements included:

- Completing the BCWMC's first channel restoration project for a portion of the Sweeney Lake Branch, at a total cost of \$386,000. The project was constructed by the City of Golden Valley.
- Funding a portion of an in-lake herbicide treatment targeting curlyleaf pondweed in Medicine Lake; the BCWMC also contributed to similar treatments in 2005 and 2006.
- Completing a draft feasibility study to restore the downstream reach of Plymouth Creek, in the City of Plymouth.
- Passing Resolution No. 08-07, which updated the cost of the West Medicine Lake Park Pond Capital Improvement Project. The resolution also certified \$800,000 of the project cost to be assessed by Hennepin County for 2008.

Past completed capital improvement projects include construction or improvement of water quality treatment ponds to treat stormwater runoff in the Medicine Lake, Northwood Lake, Westwood Lake and Wirth Lake watersheds.

Inspection Activities

The BCWMC conducted the following inspection activities in 2008:

- Monthly erosion control inspections of construction sites
- Annual inspections of the flood control project
- Performing the 20-year inspection of the Bassett Creek tunnels, which included coordinating with the City of Minneapolis, MnDOT and Corps of Engineers

The BCWMC is assisted by its Technical Advisory, Education and Public Outreach, Administrative Services, and Budget committees.

Regular meetings for the BCWMC are held monthly on the third Thursday (except in November) at 11:30 a.m. at the Golden Valley City Hall, 7800 Golden Valley Road, Golden Valley. In November the meeting is held on the third Wednesday of the month. The meetings are open to the public and the meeting time and dates are posted on the BCWMC's web site at www.bassettcreekwmo.org.



Water Quality Activities

- Working diligently on three TMDL (Total Maximum Daily Load) studies toward the outcome of setting pollutant goals needed to restore the waters of Sweeney Lake and Wirth Lakes in Golden Valley and Medicine Lake in Plymouth.
- Participating in the stakeholder and technical advisory committees of the Upper Mississippi River Bacteria TMDL study
- Participating in Metropolitan Council Environmental Services' Citizen-Assisted Monitoring Program (CAMP) for five lakes
- Sampling Bassett Creek Main Stem for fecal coliform
- Participating with Minnesota Pollution Control Agency in sampling Bassett Creek Main Stem for biota
- Conducting water quality monitoring and analysis for Sweeney and Twin Lakes in Golden Valley
- Participating in Hennepin County's River Watch program by funding two Bassett Creek monitoring sites for benthic invertebrates, which are a sign of the health of a stream
- Reviewing the local water management plans for four member-cities to ensure the plans meet the watershed's goals
- Approving development of a Resource Management Plan, a plan to expedite the Army Corps of Engineers' permitting process for future BCWMC projects

Education Activities

- Cosponsoring MetroBlooms rain garden workshops with member cities
- Reviewing results of the 2007 joint watershed residential survey (Bassett Creek, Shingle Creek, Elm Creek, West Mississippi WMOs)
- Participating in the Joint Education and Public Outreach Committee with the previously listed watersheds and with Pioneer-Sarah Creek watershed
- Running the BCWMC's education grant program
- Staffing a booth at public education events such as Plymouth's Environmental Expo and Yard and Garden event and Westwood Nature Center's Earth Day
- Showing the BCWMC's education displays at City Halls in the watershed
- Giving away native plant seed packets
- Joining Blue Thumb, a local program that encourages homeowners to use native plantings, rain gardens, and shoreline stabilization to reduce runoff from home yardscapes
- Participating in Metro WaterShed Partners, including the Minnesota Waters "Let's Keep Them Clean" campaign

General Achievements

- Requesting proposals for legal, engineering and technical, and administrative services
- Hiring consultant Springsted, Inc. to conduct an organizational analysis of the BCWMC's operations and provide recommendations



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4E

Minneapolis, MN • Hibbing, MN • Duluth, MN • Ann Arbor, MI • Jefferson City, MO • Bismarck, ND

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Agenda Item 4E – Review Format of BCWMC's Annual Report
Date: March 11, 2010
Project: 23/27 051 2009 072

4E. Review Format of BCWMC's Annual Report

Recommended/requested Commission actions:

1. Provide feedback regarding current format of the BCWMC annual report.

Review Format of BCWMC's Annual Report

At their February 18, 2010 meeting, the Commission requested that the March meeting agenda include a review and discussion of the annual report format. New for the 2008 annual report (prepared in 2009) was the addition of an Executive Summary to the beginning of the report; the format of the remainder of the report remained the same. The 2008 annual report can be accessed on the BCWMC website:

<http://www.bassettcreekwmo.org/Annual%20Reports/AnnualReportsHomepage.htm>

Bassett Creek Watershed Management Organization

Request for Proposals: Administrative Coordination

The Bassett Creek Watershed Management Organization, a joint powers organization of nine west-metro cities, is seeking proposals from contractors to provide administrative coordination and management services.

Proposals should describe the skills, capacity and experience a contractor would draw on to: Act as the primary contact for the organization with cities, Hennepin County, state and federal agencies, coordinate communication and projects with member cities, assist in the development and implementation of a strategic plan for the organization, establish processes to increase the organization's efficiency, coordinate the implementation of the Commission's Watershed Management Plan (WMP), identify opportunities to secure grant funding for proposed capital projects, develop partnerships to accomplish the implementation of the commission's WMP, and track implementation of Watershed-funded project and activities to ensure objectives, project budgets and schedules are met.

Contractors should have a bachelor's degree and a minimum of three years of training, education and experience directly related to water management and administration of organizations . Excellent interpersonal and management skills; effective written/oral communication skills; and skill using computer software for preparation of reports and analysis are needed for the position. Must have valid Minnesota driver's license.

For additional details please see the attached Request for Proposals .

An Equal Opportunity/Affirmative Action Employer

Request for Proposals

Project Background

The Bassett Creek Watershed Management Commission (BCWMC) is a joint powers organization formed by these member cities: Crystal, Golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, Robbinsdale, and St. Louis Park. Initially organized to provide flood control, the BCWMC's primary emphasis is focused now on improving surface water quality.

The BCWMC is governed by a nine-member Board of Commissioners with a representative appointed by each member community. Technical matters are addressed with assistance from a nine-member Technical Advisory Committee (TAC) with each member community appointing a staff representative to the committee.

The Board functions as a "working" board with subcommittees responsible for administration, education, and other BCWMC activities. Two consultants work at the board's direction: Barr Engineering, which provides engineering services and Kennedy & Graven, which provides legal services. The BCWMC also has a contract with an independent contractor who provides recording and administrative support services.

In 2008, the BCWMC completed an organizational analysis and is now moving forward with the implementation of recommendations coming out of that study. These recommendations include:

- Increasing the organization's administrative capacity to provide assistance in strategic planning and implementation, establishing effective administrative procedures, providing project oversight, and facilitating communications among the Commission's members and stakeholders
- Clarifying roles, responsibilities, and relationships of the Board, TAC, contractors and consultants
- Reviewing the Commission's committee structure
- Ensuring alignment between the Commission's mission and strategic plan and annual work plans
- Defining processes and procedures to ensure effective communications between the Board, the TAC, and consultants.

The BWCWC is preparing to implement these recommendations beginning with retaining an independent contractor who can provide increased administrative capacity. The Board has set aside \$35,000 in its 2010 budget to start the development and implementation of processes and procedures to establish an administrative framework to accomplish the Commission's work.

Scope of Services

The Commission is seeking proposals from independent contractors to provide administrative direction and coordination services for the Bassett Creek Watershed Management Commission.

The services to be provided by the independent contractor are listed below:

- Facilitate the development and implementation of a strategic organizational plan
- Establish processes to increase the organization's efficiency and to reduce duplication of effort
- Serve as the primary point of contact for Commission business and coordinate activities among consultants
- Provide coordination with representatives of City, County, State and Federal agencies and other stakeholder groups
- Coordinate the implementation of the Commission's Watershed Management Plan with member cities
- Identify opportunities to secure grant funding and develop partnerships to accomplish the Commission's Watershed Management Plan
- Track implementation of Watershed-funded annual water quality projects and activities to ensure that established objectives, project budgets, and schedules are met
- Other duties or activities as mutually agreed upon.

Services are to be accomplished based on an estimated hour per month level of effort. The successful independent contractor will be asked to develop an annual work plan and reporting system in consultation with the Executive Committee.

Proposal Requirements

Proposals must contain the following information:

1. Your name, address, telephone number and e-mail and experience working as an independent contractor
2. A statement detailing your understanding of this project and the approach you would use to provide the requested services
3. A summary of comparable projects and relevant experience in the following areas:
 - a. providing administrative direction and coordination services for a governing body
 - b. interacting with local government agencies on matters involving water management, planning, and civil engineering
 - c. developing and implementing administrative and financial processes
 - d. securing and managing grant funding
4. The resumes of the individual(s) who will be providing the requested services, noting any special or unique experiences and/or qualifications that the proposer brings to this assignment
5. Your availability to start this project and the resources you have available to take on this contract. Please comment on other projects currently under contract and your ability to commit to a 12-month service contract with the BCWMC
6. The names and contact information for four professional references and a statement for each reference explaining how this individual is familiar with your work.
7. The hourly rate that will be in effect for the *12-month* term of a contract.
8. A professional writing sample

Evaluation and Selection Criteria

1. The BCWMC reserves the right to reject and/or award any or all proposals or parts thereof and to waive any technicalities or formalities according to the best interests of the Commission.
2. The BCWMC reserves the right to interview any or all proposers at its discretion.
3. The BCWMC reserves the right to negotiate an agreement with the selected proposer, including refining the scope of services to be provided and hourly rate.
4. The BCWMC will review the proposals based on the following criteria:
 - a. The proposer's understanding of the scope of services requested
 - b. The proposer's experience and qualifications
 - c. Experience with similar projects, especially watershed-related work
 - d. Ability to meet project requirements as outlined in this Request for Proposals.

Timeline and Submission Procedures

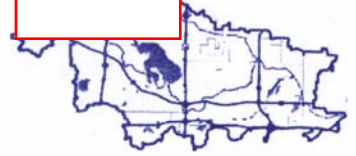
The deadline for proposals is Friday, January 15, 2010, by no later than 4:30 p.m.

All proposals must be submitted electronically to Sue Virnig svirnig@ci.golden-valley.mn.us in a single PDF document.

Questions

Please direct all questions to:

*Ms. Ginny Black, Vice Chair
Bassett Creek Watershed Management Commission
c/o City of Plymouth
3400 Plymouth Boulevard
Plymouth, MN 55447
E-mail: gblack@ci.plymouth.mn.us
Telephone number: 763-370-5618 (cell)*



Bassett Creek Watershed Management Commission

www.bassettcreekwmo.org

• Crystal • Golden Valley • Medicine Lake • Minneapolis • Minnetonka • New Hope • Plymouth • Robbinsdale • St. Louis Park

Memorandum

To: Bassett Creek Watershed Management Commission
From: Technical Advisory Committee (TAC)
Subject: March 4, 2010 TAC Meeting and Recommendations
Date: March 11, 2010
Project: 23/27-051 2010

The Technical Advisory Committee (TAC) met on March 4, 2010, immediately following a meeting where staff from the MPCA presented information about the agency's 2010 stream monitoring program. Attached is a summary of the presentation and discussion, along with a map of the MPCA monitoring locations, provided by MPCA staff. The MPCA also provided a copy of their presentation in electronic format, this will be placed on the BCWMC website.

The following TAC members, city representatives, and staff attended the meeting:

City	TAC Members/Alternates	Other City Representatives
Crystal	Tom Mathisen	
Golden Valley	Jeannine Clancy Jeff Oliver	Linda Loomis
Medicine Lake	Vacant position	
Minneapolis	Absent	Lisa Goddard
Minnetonka	Lee Gustafson Liz Stout	
New Hope	Guy Johnson	
Plymouth	Bob Moberg Derek Asche	
Robbinsdale	Absent	
St. Louis Park	Laura Adler Jim Vaughan	Jim deLambert
BCWMC Staff	Karen Chandler	

Also in attendance: Rachael Crabb (Minneapolis Park and Recreation Board), and MPCA staff—Brooke Asleson, Mike Koschak, Kim Lang

The TAC directed staff to forward the following recommendations to the Commission for its

Michael Welch, BCWMC Chair
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
612-385-6885

Charlie LeFevre, Attorney
Kennedy & Graven
470 US Bank Plaza, 200 South Sixth Street
Minneapolis, MN 55402
612-337-9215
612-337-9310 (fax)

Leonard Kremer, Engineer
Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
952-832-2600
952-832-2601 (fax)

consideration. This memorandum presents TAC recommendations regarding:

1. Scheduling more frequent TAC meetings
2. Accelerating CIP project(s)
3. Adding Hidden Lake and Medicine Lake to the 2010 Citizen-Assisted Monitoring Program (CAMP)
4. Maintenance of Bassett Creek Watershed projects
5. TMDLs
 - o Mississippi River E. coli and Bassett Creek main stem TDML
 - o Sweeney Lake TMDL

1. Scheduling More Frequent TAC Meetings

The TAC discussed the backlog of agenda items assigned to the TAC and agreed that the TAC should meet monthly for the time being. Their next meeting will be Thursday, April 1.

Recommendation

- The TAC recommends that they meet monthly, starting in April, and continue to meet monthly as directed by the Commission.
- The TAC recommends that the recording secretary send out an email to all TAC members to inform them of this schedule change.

2. Accelerating CIP project(s)

The TAC discussed the upcoming CIP projects (as revised and approved in January 2010), and which project could be constructed in 2011 in addition to the Main Stem restoration project already scheduled for that year. In particular, the TAC discussed whether the North Branch restoration project should be recommended for implementation in 2011 (it is currently in the CIP schedule for 2012), or if another project should be moved up.

Crystal city staff indicated they could be ready to implement the North Branch stream restoration project in 2011. The estimated cost of the North Branch project is \$660,000. Since there appears to be adequate additional funding in 2011 to construct the North Branch project (\$650,000 from available grants and funds from the BCWMC closed project account) and the City of Crystal feels they could implement the project within that time frame, the TAC recommends that the North Branch project be moved from 2012 to 2011.,

The TAC also asked staff to report back to the TAC regarding the status of the MPRB's stream erosion inventory for Bassett Creek through Wirth Park.

The proposed revised Bassett Creek CIP is attached.

Recommendation

- The TAC recommends that the Commission approve a revised CIP that moves the North Branch Channel Restoration project from 2012 to 2011.

3. Adding Hidden Lake and Medicine Lake to the 2010 Citizen-Assisted Monitoring Program (CAMP)

The TAC discussed whether Hidden Lake (in Plymouth) and Medicine Lake should be added to the 2010 CAMP. Plymouth staff noted that Hidden Lake is 13.6 acres and that the city's surface water management plan indicates that the lake is a low priority for water quality projects. It also is not clear how the Medicine Lake TMDL development will affect Hidden Lake. The TAC expressed concern that if Hidden Lake was included in the CAMP, then the resultant monitoring data could be used to place the lake on the impaired waters list.

During this discussion, MPCA staff stated that they won't list waterbodies based on citizen monitoring (e.g., CAMP) data only. In a subsequent communication from MPCA staff, they corrected/clarified this statement—for listing lakes, the MPCA does use CAMP data, but for listing streams, they may use citizen collected data for some parameters, if they have other data as well, but not use citizen data at all for other parameters.

The MPCA staff also noted that, in general, the MPCA will not monitor lakes that are smaller than 500 acres in size. In a subsequent communication from MPCA staff, they provided additional clarifying information—for the MPCA's intensive watershed monitoring (see attached summary), they are collecting data at all lakes greater than 500 acres in size, and at a small fraction (~25%) of lakes that are 100 to 500 acres in size. For lakes smaller than 100 acres in size, the MPCA may not be performing the monitoring, but they are obtaining data through their citizen monitoring programs, SWAG, and other pass-through funding programs.

The TAC decided that Hidden Lake should not be added to the 2010 CAMP because it is not clear if there is an individual that is willing/available to monitor the lake, and there does not appear to be a need for the data at this time.

The TAC discussed the ongoing and upcoming monitoring efforts on Medicine Lake. The TAC felt it would be worthwhile to add Medicine Lake to the CAMP, but only if an educational benefit could be achieved. Because the small bay adjacent to the City of Medicine Lake is monitored less frequently than the large bay (i.e., every four years as part of the BCWMC monitoring program), the TAC thought it would be a good opportunity for the residents of this city to learn more about the lake by performing the monitoring.

Recommendation

- The TAC recommends that Hidden Lake not be added to the 2010 CAMP.
- The TAC recommends that Medicine Lake be added to the CAMP, but only if an educational benefit can be achieved, and if the City of Medicine Lake can provide or secure the personnel to perform the monitoring.

4. Maintenance of Bassett Creek Watershed Projects

At their January 21 meeting, the Commission authorized the recording secretary to gather and tabulate comments regarding a list of seven maintenance issues (as discussed in Barr's October 30, 2009 memo to the TAC). The TAC considered/discussed each issue and offers the following recommendations.

Issues/Recommendations

1. Should easements be obtained as part of the CIP projects to allow for access for future maintenance?

Recommendation: The TAC recommends that

- a. Easements be obtained as part of CIP projects
 - b. Easements be held by the city/cities in which the project is located
 - c. City easement expenses be reimbursed by the Commission, with the understanding that cities must first try to obtain easements at no cost
 - d. Easements be acquired by the cities
 - e. Permanent access easements be discussed and decided on a project-by-project basis
2. Should the BCWMC fund maintenance of BCWMC-funded water quality projects? If so, the funding would need to come from annual member assessments, as the BCWMC is not allowed to use the ad valorem tax levy for maintenance of CIP projects (statute only gives watershed districts this authority).

Recommendation: The TAC recommends that

- a. The BCWMC fund only major maintenance work; routine maintenance should be performed by the cities
 - b. If major maintenance projects (pond or stream) are needed, such projects should be evaluated as part of the Commission's annual CIP review process
 - c. Potential BCWMC funding of major pond maintenance be extended to all water quality ponds, not just those paid for with BCWMC funds
3. Should the BCWMC require that the warranty period for construction projects be extended so that there will be a higher likelihood of success in establishing the vegetative components of

a project? For example, the warranty period could be five years. The project cost would increase if the warranty period was extended.

Recommendation: The TAC recommends that

- a. The warranty period for vegetation be up to two growing seasons
 - b. Projects have a separate contract for landscape planting; vegetation maintenance could be included in this separate contract
4. The Commission suggested the inclusion of ongoing maintenance costs in the cost estimates for proposed CIP projects, as they could affect the Commission's evaluation of the proposed projects.

Recommendation: The TAC recommends that

- a. Maintenance costs not be added to all feasibility studies/cost estimates, as maintenance information and costs may not be well-known (especially for "softer" restoration projects)
 - b. Maintenance costs be added to feasibility studies, if requested by the cities, especially for projects with significant operational costs (e.g., alum treatment facilities)
5. The Commission believes that maintenance commitments need to be included in the cooperative agreements between the cities and the Commission for the CIP projects. The Commission suggested that there should be a maintenance declaration on all properties involved in the project; on private property this would be recorded on the deed. The maintenance declaration would include the required maintenance activities and maintenance schedule.

Recommendation: The TAC recommends that

- a. Maintenance commitments not be included in cooperative agreements because the cities' MS4 permits already require them to perform routine maintenance (also see response to issue/question 2)
 - b. Maintenance declarations not be recorded on private property deeds; instead, the affected cities should obtain any needed maintenance agreements with private property owners
6. Should the Commission build flexibility into a maintenance policy so that the Commission could consider funding maintenance costs (or a portion of the costs) when the costs are unusually expensive, or which recur on an annual basis? Examples would include chemical treatment or annual treatment of vegetation.

Recommendation: See response to issue/question 2

7. The Minnesota Conservation Corps (MCC) could provide low-cost services to the member cities and/or the BCWMC to install, maintain and inspect the vegetative components of CIP projects. The Plymouth and Golden Valley grant applications to Hennepin County encourage

the involvement of the MCC on their projects (the BCWMC's grant applications to BWSR will likely include similar language). The MCC also receives an annual \$500,000 grant directly from BWSR. If the city/BCWMC project(s) qualify for the funding and the MCC receives the funding for the project(s), then the MCC services would be provided at no charge.

Recommendation: The TAC has no recommendation; it should be up to the individual cities to decide if they want to use the MCC.

5. TMDLs

A. Mississippi River E. Coli and Bassett Creek Main Stem TDML

The TAC tabled discussion on this item indefinitely.

B. Sweeney Lake TMDL

After a brief discussion about the draft TMDL and the external versus internal load reductions, the TAC agreed that the Sweeney Lake TMDL needed to be brought back to the TAC at a later date, after the final draft TMDL is ready, and after the Commission has asked the TAC to review the TMDL and make recommendations. The TAC also recommended that there be a technical presentation to the TAC regarding the TMDL at that time.

Recommendation

- a. After the final draft TMDL is ready, and the Commission has directed the TAC to review and comment on the TMDL, the TAC recommends that the Sweeney Lake TMDL be brought back to the TAC for review and comment, and that a formal technical presentation be made to the TAC regarding the TMDL and implementation plan.

MPCA's Intensive Watershed Monitoring-Bassett Creek

The MPCA's Intensive Watershed Monitoring design is the agency's plan to monitor the 81 major watersheds of the state in a 10 year cycle. This monitoring will be a complete assessment of physical, chemical and biological components. This focus of this design is to monitor waters at the pour point (outlet) of the different watershed scales.

In 2010, sampling will begin in the Mississippi River-Twin Cities watershed. This watershed includes the likes of local watersheds such as Minnehaha, Bassett, Shingle, Rice, Coon, and Elm creeks. At the pour point of each of those watersheds, a site is placed. This site, called a 10x or water chemistry site, is monitored for determination of aquatic recreation aquatic life use support. Water chemistry samples are taken from these locations twice a month from May-September with *E. coli* samples taken twice a month June-August. Sampling at this site also includes a fish and invertebrate community collection.

Moving further upstream of these water chemistry sites, sampling locations are placed at the pour point of the subwatershed scale. For example, the Plymouth Creek watershed is a subwatershed of the Bassett Creek watershed, and therefore a site is placed near the outlet of Plymouth Creek. Sampling at these sites includes a fish and invert community collection as well as a one-time water chemistry collection.

In the Bassett Creek watershed, the water chemistry/10x site was chosen at Irving Ave, to utilize the information being collected at the WOMP station. The biological component of that site will be taken downstream of Penn Ave to match a site the MPCA has monitored in the past. A site was recommended by the Bassett Creek TAC to be placed downstream of Medicine Lake, so one was placed near Hwy-55. This site location has been monitored recently by the MPCA. A site was also located on the Plymouth Creek subwatershed downstream of 26th Ave N in Plymouth. This site was moved to a location downstream of the fish barrier as recommended by the TAC. This location has not been monitored before.






All of this sampling will occur during the summer of 2010, with an additional round of *E. coli* sampling taking place three times a month June-August in 2011. At the conclusion of the sampling a watershed conditions report will be prepared for the Mississippi River-Twin Cities watershed with focuses on the smaller watersheds such as Bassett Creek.

Any questions can be directed to Mike Koschak (651) 757-2504 or Brooke Asleson (651) 757-2205 both of the MPCA.

2010 MPCA Bassett Creek Biological Sampling



Legend

-  10x Water Chemistry, Fish, and Invert Sample
-  1x Water Chemistry, Fish, and Invert Sample
-  Statewide Stream Trace
-  14 Digit HUC
-  11 Digit HUC

0 1 2
Miles

Recommended Bassett Creek Capital Improvements Program

Revised March 4, 2010

Year	Project Description	Project Number	Estimated Cost	Proposed Assessment
2010	Restore Main Stem Channel, Crystal Border to Regent Ave.-Golden Valley/Crystal	2010CR	\$636,000 ¹	\$ 34,800-2010 ⁴ \$601,200-2011
2010	Restore Plymouth Creek, Medicine Lake to 26 th Ave-Plymouth	2010CR	\$965,000 ²	\$902,462-2010 ⁴
2011	Restore Main Stem Channel, Duluth St. to Crystal Border-Golden Valley	2011CR	\$780,000 ³	\$398,800-2011 ⁵ \$381,200-2012 ⁵
2011	Restore North Branch, 36 th Ave to Bassett Creek Park-Crystal	2011CR	\$660,000 ³	\$618,800-2011 ⁵ \$ 41,200-2012 ⁵
2013	Dredge Pond NB-07, Northwood Lake Watershed-Plymouth	NL-2	\$943,000 ³	\$943,000-2013
2014	Main Stem Watershed Ponding Areas-Golden Valley	BC-2,4,8	\$1,000,000 ³	\$ 15,800-2013 \$984,200-2014
2015	Main Stem Watershed Ponding Areas-Golden Valley-Minneapolis	BC-3,5,7	\$1,300,000 ³	\$ 15,800-2014 \$984,200-2015 \$300,000-2016
2016	Construct Ponds NB35A,B,C And 29A,B, Northwood Lake Watershed - New Hope	NL-1	\$595,000 ³	\$595,000-2016
2016	Restore Plymouth Creek, 37 th Ave to 26 th Ave-Plymouth	2016CR	\$559,000 ³	\$105,000-2016 \$454,000-2017
2017	Restore Main Stem Channel, Irving Ave to Golden Valley Road- Minneapolis	2017CR	\$1,000,000 ³	\$546,000-2017 \$454,000-2018
2017	Divert Lancaster Lane Storm Sewer Northwood lake Watershed—New Hope	NL-3	\$59,000 ¹	\$59,000-2018

¹August 2009, *Feasibility Report for Bassett Creek Restoration Project*

²July 2009, *Feasibility Report for Plymouth Creek Restoration Project*

³Bassett Creek CIP, 2008 Cost Update

⁴Approved 2010 Assessment

⁵Proposed assessments have not been updated to reflect awarded/expected grant funds

**COOPERATIVE AGREEMENT
FOR
BASSETT CREEK MAIN STEM RESTORATION**

This Agreement is made as of this ____ day of _____, 2010, by and between the Bassett Creek Watershed Management Commission, a joint powers watershed management organization (hereinafter the “Commission”), and the City of Golden Valley, a Minnesota municipal corporation (hereinafter the “City”).

WITNESSETH:

WHEREAS, the Commission adopted the Bassett Creek Watershed Management Commission Water Management Plan, July 2004 on September 16, 2004 (the “Plan”), a watershed management plan within the meaning of Minn. Stat. § 103B.231; and

WHEREAS, the Plan, as amended on July 16, 2009, includes a capital improvement program (“CIP”) that lists a number of water quality project capital improvements; and

WHEREAS, the water quality projects identified in the CIP include a stream bank restoration project in the Cities of Golden Valley and Crystal described as the Restoration of the Main Stem of Bassett Creek from the Crystal City Boundary to Regent Avenue in the City of Golden Valley, as more fully described in Attachment One to this Agreement, the feasibility report for the Project, which is made a part hereof (the “Project”); and

WHEREAS, the Plan specifies that projects in the CIP will be funded by a County tax levy under Minn. Stat. § 103B.251; and

WHEREAS, on September 17, 2009, the Commission adopted a resolution ordering the Project, directing that it be constructed by the City; and

WHEREAS, it is expected that Hennepin County will levy taxes throughout the watershed in 2009 and 2010 for the Project for collection and settlement in 2010 and 2011; and

WHEREAS, the City is willing to construct the Project on the terms and conditions hereinafter set forth.

NOW, THEREFORE, ON THE BASIS OF THE PREMISES AND MUTUAL COVENANTS HEREINAFTER SET FORTH, THE PARTIES AGREE AS FOLLOWS:

1. The Project will consist of the stream bank restoration improvements in the City of Golden Valley and the City of Crystal as more fully described in Attachment One.
2. The City will design the Project and prepare plans and specifications for construction of the Project. Plans and specifications, and any changes to such plans and specifications, are subject to approval by the Commission’s consulting engineer.

3. The City will advertise for bids and award contracts in accordance with the requirements of law. The City will award the contract and supervise and administer the construction of the Project to assure that it is completed in accordance with plans and specifications. The City will require the contractor to provide all payment and performance bonds required by law. The City will require that the Commission be named as additional insured on all liability policies required by the City of the contractor. The City will require that the contractor defend, indemnify, protect and hold harmless the Commission and the City, their agents, officers, and employees, from all claims or actions arising from performance of the work of the Project conducted by the contractor. The City will supervise the work of the contractor. However, the Commission may observe and review the work of the Project until it is completed. The City will display a sign at the construction site stating "Paid for by the Taxpayers of the Bassett Creek Watershed".
4. The City will pay the contractor and all other expenses related to the construction of the Project and keep and maintain complete records of such costs incurred.
5. The Commission will reimburse Two Thousand Two Hundred Sixty-Two Dollars (\$2,262) of Project expenses from its Capital Improvement Program Closed Project Account. The Commission will use its best efforts to secure payment from the County in accordance with Minn. Stat. § 103B.251 in the amount of Thirty-Two Thousand Five Hundred Thirty-Eight Dollars (\$32,538) by tax levy in 2009 for collection in 2010 and in the amount of Six Hundred One Thousand Three Hundred Dollars (\$601,300) by tax levy in 2010 for collection in 2011.

Out-of-pocket costs related to the Project, incurred and paid by the Commission for publication of notices, securing County tax levy, preparation of contracts, review of proposed contract documents and administration of this contract shall be repaid from funds received in the tax settlement from Hennepin County. All funds in excess of such expenses are available for reimbursement to the City for costs incurred by the City in the design and construction of the Project. Reimbursement to the City will be made as soon as funds are available provided a request for payment has been received from the City providing such detailed information as may be requested by the Commission to substantiate costs and expenses.

6. Reimbursement to the City will not exceed the amount received from the County for the Project less any amounts retained by the Commission for Commission expenses. Reimbursement will not exceed the costs and expenses incurred by the City for the Project, less any amounts the City receives for the Project as grants from other sources. All costs of the Project incurred by the City in excess of such reimbursement shall be borne by the City or secured by the City from other sources.
7. All City books, records, documents, and accounting procedures related to the Project are subject to examination by the Commission.

8. The City will secure all necessary local, state, or federal permits required for the construction of the Project and will not proceed with the Project until any required environmental review is completed.
9. The City will enter into an agreement with the City of Crystal, in the form attached hereto as Attachment Two, to address all issues related to the fact that the Project is located partially within the City of Crystal. Amendments to the agreement between the City and the City of Crystal must be approved by the Commission or the Commission's legal counsel.
10. This Agreement will be effective only upon execution by an authorized representative of the City of Crystal of an acknowledgment that the City of Crystal has received a copy of this Agreement and approves of its terms.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers on behalf of the parties as of the day and date first above written.

**BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION**

By: _____
Its Chair

And by: _____
Its Secretary

CITY OF GOLDEN VALLEY

By: _____
Its Mayor

And by: _____
Its Manager

ACKNOWLEDGMENT AND APPROVAL

The undersigned, as a duly authorized representative of the City of Crystal, acknowledges receipt of a copy of this Agreement and approves of its terms.

CITY OF CRYSTAL

By: _____
Its: _____

***Feasibility Report for
Bassett Creek Restoration Project***

Golden Valley and Crystal, Minnesota

***Prepared for
Bassett Creek Watershed Management Commission***

August 2009


Feasibility Report for Bassett Creek Restoration Project

Golden Valley and Crystal, Minnesota

***Prepared for
Bassett Creek Watershed Management Commission***

August 2009

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the Laws of the State of Minnesota.



Karen L. Chandler

Reg. No 19252 Date August 7, 2009



Prepared by
Barr Engineering Company
4700 West 77th Street • Minneapolis, MN 55435-4803
Phone: 952-832-2600 • Fax: 952-832-2601

Feasibility Report for Bassett Creek Restoration Project

August 2009

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1.0 Summary and Conclusions

1.1 Background

In January 2007 the Bassett Creek Watershed Management Commission's Technical Advisory Committee recommended that the Commission add stream channel restoration projects to the Commission's 10-year Capital Improvements Program (CIP). The restoration projects included the Main Stem of Bassett Creek, the North Branch of Bassett Creek, the Sweeney Lake Branch of Bassett Creek, and Plymouth Creek. Stream bank erosion and streambed aggradation and scour have occurred as a result of both natural stream processes and increased runoff volumes and higher peak discharges that have occurred with development of the watershed. The resulting sediment load from the erosion and scour increases phosphorus loads to downstream water bodies, decreases the clarity of water in the stream, destroys aquatic habitat, and reduces the discharge capacity of the channel.

In April 2009, the Commission completed a draft Resource Management Plan (RMP) that included several stream restoration projects. Bassett Creek Reach 2 was one of the stream projects included in the RMP and calls for the restoration of a reach from the Golden Valley-Crystal boundary (approximately 1,600 feet upstream of Highway 100) to Regent Avenue in Golden Valley (see **Figure 1**, Location Map). This reach is included in the Commission's CIP for construction in 2010 – 2011. Table 1 presents the restoration projects included in the RMP, along with their estimated start dates and costs.

Table 1 Channel Restoration Projects added to CIP and included in the RMP

Creek Project	Target Project Start	Estimated Project Cost ¹
Plymouth Creek, Reach 1 (PC-1)	2010	\$965,200
Bassett Creek Main Stem, Reach 2	2010	\$780,000
Bassett Creek Main Stem, Reach 1	2011	\$715,000
North Branch	2013	\$660,000
Plymouth Creek, Reach 2 (PC-2)	2015	\$559,000

¹ Costs as estimated in revised 2009 CIP

In 2008, the City of Golden Valley completed the Commission's first channel restoration project – the Sweeney Lake Branch, King Hill Area project. This project involved restoration of approximately 600 feet of the upstream end of the Sweeney Lake Branch of Bassett Creek.

1.2 General Project Description and Estimated Cost

Similar to many other urban streams, Bassett Creek Reach 2 suffers from stream bank and streambed erosion, which is caused by increased urban runoff. The potential stabilization measures for this reach consist of the following:

- removal of some trees and vegetation,
- regrading some reaches of stream bank,
- stabilizing some of the storm sewers that discharge into the channel,
- establishing new vegetation on areas disturbed by construction,
- installing a variety of stream stabilization measures to address erosion problems, including
 - riprap
 - root wads
 - biologs
 - cross vanes
 - j-vanes
 - live stakes
 - live fascines
 - vegetated reinforced soil slope (VRSS)

A more detailed project description is given in Section 4.1 and listed in **Table 2**.

The Reach 2 construction costs are estimated to be \$636,100, including \$476,200 in Golden Valley and \$159,900 in Crystal. A detailed cost estimate is included in **Section 4.3**. Construction easements are not included in the cost estimate at this time, but they are not expected to significantly increase the total cost. The proposed restoration work within the City of Golden Valley is on public property and will not require easement acquisitions to complete construction.

1.3 Recommendations

The Commission's CIP includes restoration of Bassett Creek Reach 2, with project work slated to begin in 2010. The stabilization of this reach will provide water quality improvement by 1) repairing actively eroding sites; and 2) preventing erosion at other sites by installing preemptive measures to protect existing stream banks. This project will also be cost efficient because no permanent easements will be required. The portion of the project in Golden Valley is located on public land and construction access will be relatively easy through the Briarwood Nature Area. The portion of the project within Crystal is located adjacent to 29th Avenue N. The sites in Crystal will only require

temporary construction easements and access will be relatively easy even though they are located on private property.

Therefore, it is recommended that the restoration of Bassett Creek Reach 2 proceed into the design and construction phase of the project. It is also recommended that the Bassett Creek CIP be revised to reflect the revised cost estimate.

2.0 Background and Objective

2.1 Background

2.1.1 Reach Description

Bassett Creek Reach 2 (**Figure 1**) extends for 5,100 feet from the Golden Valley-Crystal city boundary (approximately 1,600 feet upstream of Highway 100) to Regent Avenue in the City of Golden Valley. Bassett Creek Reach 2 flows for approximately 1,600 feet through the City of Crystal. The remaining 3,500 feet of the reach is in the City of Golden Valley, including approximately 2,750 feet within the Briarwood Nature Area. Land use immediately adjacent to this reach is predominantly publicly-owned parkland, single family residential homes, and some multi-family residential homes nearby. At least fifteen distinct sites were identified and evaluated along this reach that need some form of stabilization to address bank erosion, scour, and/or bank failure. Of the 15 sites, seven have minor erosion, six have moderate erosion, and two have severe erosion. The total length of bank erosion is approximately 1,320 feet. The bank failures along this reach appear to be caused by a combination of natural stream morphology processes and problems associated with changing watershed hydrology. Even when cities incorporate best management practices (BMPs) to minimize the impacts, development still fundamentally changes the hydrology of the watershed. The BMPs commonly used significantly reduce the impacts of development on the streams receiving stormwater runoff, but changes to the streams and erosion can still occur.

There are also four minor obstructions along this reach that could impede flow during extreme events. Two of the obstructions are trees leaning over the channel; these would be removed during stabilization of one of the erosion sites. The other two obstructions are pedestrian bridges on the recreation trails along the creek. Existing hydraulic models for Bassett Creek indicate that neither of these bridges causes a significant obstruction during the 100-year flood event. There are also nine storm sewer outfalls within the reach. At least two of the outfalls are near meanders. As natural meander migration progresses near these outfalls, the banks around the outfalls may erode; causing the outfalls to lose support and fail, project into the stream in an unsightly manner, and act as an obstruction during high flows. Stabilizing the outfalls and preventing the meander migration from occurring will prevent the need to repair or replace the storm sewer outfalls in the future. The estimated costs in this feasibility study include costs to add protection to the storm sewer outfalls as part of the stream stabilization work.

Implementation of the project will ultimately require close coordination between the BCWMC and the Cities of Crystal and Golden Valley to ensure long term project success. Most importantly, the Cities of Crystal and Golden Valley will need to assist in the maintenance of the designed measures, particularly the vegetation component since poor vegetation management practices are a common cause of bank failures. A major aspect of the vegetation component will be the cities working with the private landowners to ensure that the vegetation establishment and maintenance meets the objectives of stream bank stabilization while considering the landowners' needs.

2.1.2 Past Documents and Activities Addressing this Reach

City Erosion Inventories

The Cities of Golden Valley and Crystal have each completed erosion inventories and assessments on the portions of the Bassett Creek Main Stem that flow through their respective cities. The City of Golden Valley has updated its inventory annually, and the City of Crystal has updated its inventory once every two years.

The inventories were completed by city staff who walked the length of Bassett Creek identifying, locating, and documenting sites of significant bank erosion and sediment deposition, as well as the presence of obstructions, storm sewer outlet structures, and other utilities within the stream channel. Documentation included location of the site on aerial photographs, notes on the details of each site, and a digital photograph of each site.

The inventories included an estimate of the extent of erosion as a percent of the entire bank that was eroding was estimated, and each site was classified as minor (less than 25%), moderate (25 – 50%), and severe (more than 50%). Typically, the causes of erosion were related to the following:

- concentrated runoff from parking lots, streets, and ditch drainage
- storm sewer outfalls discharging above the normal water level of the creek
- surface runoff across exposed unvegetated slopes, steep slopes, or shaded slopes
- areas where turf is maintained to the edge of the creek with no vegetative buffer area.

Additionally, the inventories identified problems with utility structures, including

- rusty corrugated metal pipes
- broken or cracked concrete pipes
- pipes pulled apart at the joint
- flared end sections that have been removed
- buried pipe outlets

- significant deposition at the outlet of a structure
- debris blocking a structure
- protruding pipes and outlets located above the normal water levels of the creek

The cities' creek erosion inventories for Reach 2 identified eight erosion sites, including two sites with severe erosion and six with moderate erosion. There were also four obstructions and nine utility structures identified within the reach. When Barr staff walked the reach in 2009, seven additional sites were identified as having minor erosion problems or the potential for erosion problems in the near future. Combining the eight sites identified by the cities and the seven sites added by Barr staff brings to 15 the number of sites along the reach.

BCWMC

As part of the *Bassett Creek Main Stem Watershed Management Plan* (2000), the BCWMC estimated the sediment and phosphorus loading to Bassett Creek from channel erosion. Three erosion scenarios were evaluated as to increased loadings resulting from minor, moderate, and severe channel erosion. The most likely condition present in Bassett Creek was between the moderate and severe scenarios with approximately 10 percent of the stream channel suffering from erosion. Similar scenarios were used to estimate the additional loading of phosphorus to Bassett Creek. The study results indicated that moderate channel erosion could contribute an additional 1,000,000 pounds of suspended sediments annually (increase from approximately 500,000 pounds to 1,500,000 pounds) and 50 pounds of phosphorus annually (increase from approximately 2,650 pounds to 2,700 pounds) to the Main Stem of Bassett Creek. Stabilizing this reach was estimated to reduce phosphorus loads by 96 pounds per year and suspended solids loads by 200,000 pounds per year.

The BCWMC Watershed Management Plan recognized the need to restore stream reaches damaged by erosion or affected by sedimentation. The BCWMC established a fund to cover the costs of channel stabilization projects. However, the fund was insufficient to cover the costs of all of the identified projects. In January 2007 the BCWMC's Technical Advisory Committee recommended that the Commission add stream channel restoration projects to the Commission's 10 year CIP. The BCWMC then went through a process to identify potential channel restoration projects by stream reach, prepare cost estimates for the restoration of the reach, prioritize the restoration projects, and add the larger projects to the CIP. The restoration projects included the Main Stem of Bassett Creek, the North Branch of Bassett Creek, the Sweeney Lake Branch of Bassett Creek, and Plymouth Creek. Increased runoff volumes and higher peak discharges that occur with development of the watershed in these reaches of the creek have resulted in stream bank erosion and streambed aggradation and

scour. The resulting sediment from the erosion and scour increases phosphorus loads to downstream water bodies, decreases the clarity of water in the stream, destroys aquatic habitat, and reduces the discharge capacity of the channel. The Commission added several of these channel restoration projects to their long range CIP in May of 2007, including Reach 2 of Bassett Creek.

The BCWMC completed a draft Resource Management Plan (RMP) in April 2009 (updated July 2009) for water quality improvement projects within the Bassett Creek watershed scheduled to be completed between 2010 and 2016. The goal of the RMP was to streamline the permitting process with the Army Corps of Engineers (ACOE) for all of the projects. The RMP provided concept designs for stabilizing the stream banks along this reach of Bassett Creek as well as background information about impacts to wetlands, threatened and endangered species, and cultural and historical resources. Reach 2 of Bassett Creek was included in the RMP. Relevant information from the RMP is included in this feasibility study.

The BCWMC Technical Advisory Committee (TAC) met in June of 2009 to discuss erosion problems within the district and the list of stream stabilization projects included in the RMP. The TAC recommended that the first step should be completion of a feasibility study for Reach 2 of Bassett Creek.

2.2 Goals and Objective

Reach 2 of Bassett Creek has erosion problems in at least 15 locations, including at least three storm sewer outfalls that currently or potentially are in danger of being damaged due to stream bank erosion and stream migration. The objective of this study is to review the feasibility of implementing measures to stabilize the stream banks and storm sewer outfalls on Reach 2 of Bassett Creek and to provide conceptual designs and cost estimates of measures that could potentially be used at each of the 15 erosion sites.

Stream Stabilization

The Cities of Golden Valley and Crystal have recognized the importance of addressing stream erosion and sedimentation issues; however, funding limitations have prevented repair of these sites to date. With the availability of funding from the BCWMC, repair of these sites can now proceed.

The Cities of Golden Valley and Crystal have completed periodic erosion inventories along this reach, beginning in 2003. The latest inventory identified eight erosion sites, including two sites with severe erosion. As stated earlier, Barr staff added seven sites with minor erosion or the potential for

erosion problems in the near future. One of the sites identified as moderate erosion was reclassified as severe erosion.

The goals of the stream stabilization project are to:

- Stabilize eroding banks to improve water quality.
- Preserve natural beauty in the Briarwood Nature Area and contribute to the natural habitat and species diversification in place by revegetating eroded areas with native vegetation.
- Prevent future channel erosion along the creek to reduce its negative water quality impact on downstream water bodies.

Considerations

- Restoration must minimize floodplain impacts. Only a few homes are near the creek, however it is critical to ensure the proposed project does not increase flood elevations that impact these properties.

3.0 Site Characteristics

3.1 Bassett Creek Watershed

The watershed area to this reach of Bassett Creek is approximately 20,000 acres and represents approximately 80% of the entire watershed within the BCWMC boundary. The watershed to this point along Bassett Creek drains all or portions of Plymouth, Crystal, Minnetonka, Medicine Lake, New Hope, St. Louis Park, and Golden Valley. Existing land use includes approximately 28 percent commercial/industrial; 40 percent single-family residential; four percent multi-family residential; seven percent highway; seven percent parks and undeveloped land; and water surface area over the remaining land area.

3.2 Stream Characteristics

The project area (**Figure 2**) extends for 5,100 feet from upstream of Highway 100 to Regent Avenue in the Cities of Crystal and Golden Valley. The upstream portion of Reach 2 extends 1,600 feet through the City of Crystal. All of the reach in Crystal is on private property. The riparian vegetation in this section is a mix of woody vegetation, non-native grasses, and turf grass. Most of Reach 2 in Golden Valley is within the publicly-owned Briarwood Nature Area, and all of the bank stabilization sites in Golden Valley are on public property. The riparian vegetation along this portion of the reach is a mix of open woodland and grasses.

For this feasibility study, Barr staff walked the reach to further investigate the scale and severity of the erosion problems. Barr staff observed the previously documented erosion sites and identified the additional sites. It is more cost effective to fix minor repairs before they become severe, particularly if a contractor is already mobilized and on-site to complete other repairs.

3.3 Site Access

Access to most of the sites in Golden Valley will be relatively easy due to the presence of the recreation trail system adjacent to the stream. A contractor will easily be able to use the trails to get relatively close to nine of the eleven sites to be stabilized in Golden Valley. The remaining two sites (1 and 2) will have a longer access route from a nearby street, but it will be possible to access those sites with minimal disturbance and vegetation removal. The erosion sites in Crystal are adjacent to or very near 29th Avenue N, which will also make site access relatively easy.

4.0 Potential Improvements

4.1 Description of Potential Improvements

As described in Section 1.2, the project along Reach 2 of Bassett Creek consists of a variety of stream stabilization measures to address erosion problems. **Figure 2** shows the 15 stabilization sites and **Table 2** lists the potential improvements for each site. The following paragraphs describe the potential stream stabilization practices included for this reach. There are dozens of stream restoration techniques that can be used, although not all of them would be practicable or applicable to the problems on Bassett Creek. The techniques discussed below and included in the conceptual design are among the commonly used techniques. They were included in the concept design for their functionality and the expectation that most contractors have had experience with these techniques and understand how to install them. The final design will determine the most appropriate measures to use at each individual site in order to meet the stabilization objectives of all parties involved. The final design may include techniques not in these concept designs.

Riprap

Riprap (also called stone toe protection) is used to protect the toe of the stream bank. In stream systems, riprap typically consists of cobble-sized rock (six inches to 12 inches in diameter). The riprap is keyed in to the streambed and extends up the bank to approximately the bankfull level. The bankfull level is the elevation of the water in the channel during a 1.5-year event. In some cases, this level may be below the top of the stream bank. Riprap is typically used in conjunction with revegetation of the upper banks to provide full bank protection. Riprap is especially effective in heavily shaded areas, where it is difficult to establish vegetation. **Figure 3** illustrates this practice.

Root Wads

Root wads are constructed from root balls with sections of their tree trunks attached. Approximately 20 of the trees will be salvaged for their use as root wads. The trunks are buried into the bottom of the stream bank, with the root wad end sticking out into the stream. Supporting “footer logs” and boulders are often used to stabilize the root wads. **Figure 4** illustrates this practice.

Biologs

Biologs are natural fiber rolls made from coir fiber that are laid along the toe of the stream bank slope to stabilize the toe of the stream bank. The biologs are typically 10 – 22 inches in diameter. Because they are made of natural fiber, vegetation can grow on the biologs. When needed, grading of

the stream bank slope above the biolog will achieve a more stable slope (2:1 to 3:1). **Figure 5** illustrates this practice.

Cross Vanes

Cross vanes (or constructed riffles) are drop structures, which are typically constructed of boulders and rocks to flatten the slope of the channel and reduce the velocity of the flow in the channel. Cross vanes extend across the creek bottom, and are embedded in each bank. Cross vanes direct the main flow to the center of the stream to reduce bank erosion. **Figure 6** illustrates this practice.

J-Vanes

J-vanes (also called rock vanes) are constructed of boulders embedded into the creek bottom. The vanes are embedded in the stream bank and are oriented upstream to direct the flow away from that bank. J-vanes typically occupy no more than one-third of the channel width. **Figure 7** illustrates this practice.

Vegetated Reinforced Slope Stabilization (VRSS)

VRSS is a bioengineering method that combines rock, geosynthetics, soil, and plants to stabilize steep, eroding banks. VRSS typically involves protecting layers of soil with a blanket or geotextile material creating “soil lifts” (also called “soil pillows”) and vegetating the slope. The vegetation root system provides the long-term slope stabilization. **Figure 8** illustrates this practice.

Pipe Outlet Stabilization

Pipe outlet stabilization measures vary according to specific site circumstances. At most sites, additional rock riprap is needed at the pipe outlet. In other cases, pipe realignment and/or lowering of the pipe may be needed to correct existing problems, prevent future erosion, and prevent pipe failure. **Figure 9** illustrates this practice.

Live Stakes

Live stakes are dormant stem cuttings, typically willow and dogwood species. They are collected and installed during the dormant season and grow new roots and leaves, quickly and cheaply revegetating a stream bank. The willows and dogwoods grow into thick stands that provide long lasting bank protection. **Figure 10** illustrates this practice.

Live Fascines

Live fascines also use dormant willow and dogwood cuttings installed during the dormant season. In this case, the cuttings are bundled together and planted in a row parallel to the stream flow. They can

be effective in reducing sheet erosion along a slope because a portion of the fascine extends above the ground surface. **Figure 11** illustrates this practice.

Site Grading

In many places, the eroding bank will be graded to a 3:1 slope. This provides a stable slope that will not naturally slough and it provides a surface that is flat enough on which vegetation can be planted.

Table 2 Potential stabilization measures at each site.

Site #	Station	Potential Stream Stabilization Practices ¹	Photos ²
1	16+00	Install two j-vanes Install three root wads. Grade the bank to a 3:1 slope. Remove 6 trees during grading. Install biologs and live stakes to provide additional toe protection.	1
2	17+75	Install 2 j-vanes and 2 root wads to direct flow away from bank. Grade bank to a 3:1 slope Remove 6 trees during grading. Install biologs and live fascines for toe protection. Install riprap under undercut tree to prevent tree from falling	2
3	21+90	Grade bank to a 3:1 slope Install riprap on 20 feet of bank to protect and stabilize undercut storm sewer Install four root wads. Install biologs and fascines for toe protection. Remove four trees. Install cross vane to redirect flow to center of stream.	3
4	24+00	Install three j-vanes and three root wads Grade bank to a 2:1 slope. Install biolog, live stakes, and fascines. Remove nine trees.	4
5	26+25	Place riprap along 35 feet of channel length to protect bridge Install cross vane to direct flow into center of stream Remove two trees.	5
6	27+25	Install 800 square feet of vegetated reinforced soil stabilization (VRSS) on channel bank. Remove six trees.	6
7	28+25	Install 40 feet of riprap to protect recreation trail. Remove 5 trees.	7
8	29+00	Grade bank to a 3:1 slope. Remove two trees. Install four root wads Install biologs and live stakes.	8
9	31+25	Install three j-vanes. Install four root wads. Install live stakes in the bank.	9
10	32+00	Install three j-vanes. Install four root wads. Install live stakes in the bank.	10

Site #	Station	Potential Stream Stabilization Practices ¹	Photos ²
11	33+00	Install three j-vanes. Install live stakes in the bank. Install 25 feet of riprap to protect and stabilize undercut storm sewer outlet	11
12	38+50	Grade bank to a 3:1 slope. Install cross vane. Install 50 feet of riprap to provide toe protection and protect private property. Remove 6 trees.	12
13	39+00	Grade portions of the bank to the extent possible without disturbing large trees. Install 50 feet of riprap to prevent migration toward city street. Remove 5 trees.	13
14	40+25	Grade portions of the bank to the extent possible without disturbing large trees. Install 50 feet of riprap to prevent migration toward city street. Install cross vane. Remove 6 trees.	14
15	41+00	Install 2 j-vanes. Install 60 feet of riprap to protect culvert. Remove 8 trees.	15

¹ All sites will be revegetated with native grasses, shrubs, and trees. The final design phase will determine which practices will be used at each site and may or may not use the practices specified in this table.

² Photos are located in Appendix A

4.2 Project Impacts

4.2.1 Easement Acquisition

Construction easements will not be required to complete the stabilization work within the City of Golden Valley because all of the stabilization sites are located on public land owned by the City. The sites within the City of Crystal are located on private property and construction easements will be required. Estimates for the construction easements are not included in this feasibility study and the City of Crystal expects the costs of the temporary easements to complete the stabilization work will be negligible. The sites are adjacent to 29th Avenue N and access to the sites will not require the crossing of significant portions of private property.

4.2.2 Permits Required for Project

The proposed project will require 1) a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE) and Section 401 certification from the Minnesota Pollution Control Agency (MPCA), 2) compliance with the Minnesota Wetland Conservation Act, and 3) a Public Waters Work Permit from the Minnesota Department of Natural Resources (MNDNR). The proposed project should also follow the MPCA's guidance document for managing dredged materials.

Section 404 Permit

The COE regulates the placement of fill into wetlands, if the wetlands are hydrologically connected to a Waters of the United States, under Section 404 of the Clean Water Act (CWA). In addition, the COE may regulate all proposed wetland alterations if any wetland fill is proposed. The MPCA may be involved in any wetland mitigation requirements as part of the CWA Section 401 water quality certification process for the 404 Permit.

The Bassett Creek project has been included in the *Resource Management Plan for Bassett Creek Watershed Management Commission Water Quality Improvement Projects 2010 – 2016* submitted to the COE in April 2009. The goal of the *Resource Management Plan* (RMP) is to complete on a conceptual level the COE permitting process for all of the projects proposed.

The COE 404 permit will require a Section 106 review for historic and cultural resources. If more detailed information is requested by the State Historic Preservation Office (SHPO), then a Phase I Archaeological Survey may need to be completed. A Phase I Archaeological Survey can be completed in 45 days or less during the frost-free period. Even with the information collected as part of the RMP, the COE staff anticipates that the 404 permit review and approval process could require 120 days to complete.

Minnesota Wetland Conservation Act

The Wetland Conservation Act (WCA) regulates the filling and draining of wetlands and excavation within Type 3, 4, and 5 wetlands. In addition, the WCA may regulate all types of wetland alteration if any wetland fill is proposed. The WCA is administered by local government units (LGU), which include: cities, counties, watershed management organizations, soil and water conservation districts, and townships. Golden Valley and Crystal are the LGU's for the proposed project site. The Minnesota Board of Water and Soil Resources (BWSR) oversees administration of the WCA statewide.

The proposed project will only involve grading existing stream banks and other stream bank work. This type of work is considered self mitigating and will not require wetland mitigation.

Public Waters Work Permit

The MNDNR regulates projects constructed below the ordinary high water level of public waters or public waters wetlands, which alter the course, current, or cross section of the water body. Public waters regulated by the MNDNR are identified on published public waters inventory (PWI) maps.

Bassett Creek is a public water/water course, so the proposed work will require a MNDNR public waters work permit.

4.2.3 Other Project Impacts

Tree Loss

The proposed project includes the removal of approximately 65 trees. All of the trees are located in areas where bank grading will be necessary. Twenty of the trees can be salvaged for root wads on this project. A detailed tree inventory should be completed during the final design.

Water Quality Impacts

The proposed stabilization measures will result in a reduction of the sediment and phosphorus loading to Bassett Creek and all downstream water bodies, including the Mississippi River and Lake Pepin. As discussed in Section 2.1.2, the BCWMC estimated sediment and phosphorus loading to Bassett Creek from channel erosion as part of the *Bassett Creek Main Stem Watershed Management Plan* (2000). Stabilizing this reach was estimated to reduce phosphorus loads by 96 pounds per year and suspended solids loads by 200,000 pounds per year.

4.3 Cost Estimate

The estimated project cost for the Bassett Creek Restoration Project is \$636,100 for design and construction. This total includes a \$476,200 within Golden Valley and \$159,900 in Crystal. The cost estimate assumes a total of 35% of construction costs for final design, permitting, construction observation, and contingency. Construction easements will not be necessary within the City of Golden Valley and the costs of temporary construction easements within the City of Crystal are expected to be negligible. The cost estimate includes the costs of testing stream bank material for hazardous compounds that would require them to be treated as dredged materials per MPCA regulations. It is assumed that hazardous compounds and pollution that will require special disposal of excavated stream bank material are not present at any of these sites. Therefore, the cost of disposing the excavated material as hazardous waste is not included in the cost estimate. A feasibility-level cost estimate for the project construction is included in **Table 3**. **Figure 2** shows the corresponding site numbers and stationing referenced in **Table 3**.

The opinion of probable construction costs provided in this report is made on the basis of Barr's experience and qualifications, and represents our best judgment as experienced and qualified professionals familiar with the project. The cost opinion is based on project-related information available to Barr at this time and includes a conceptual-level design of the project.

4.4 Funding Sources

The Cities of Crystal and Golden Valley propose to use BCWMC capital improvement program (CIP) funds to pay for this project. BCWMC channel restoration projects are funded through the BCWMC's CIP and are paid for via an ad valorem tax levied by Hennepin County over the entire Bassett Creek watershed.

4.5 Project Schedule

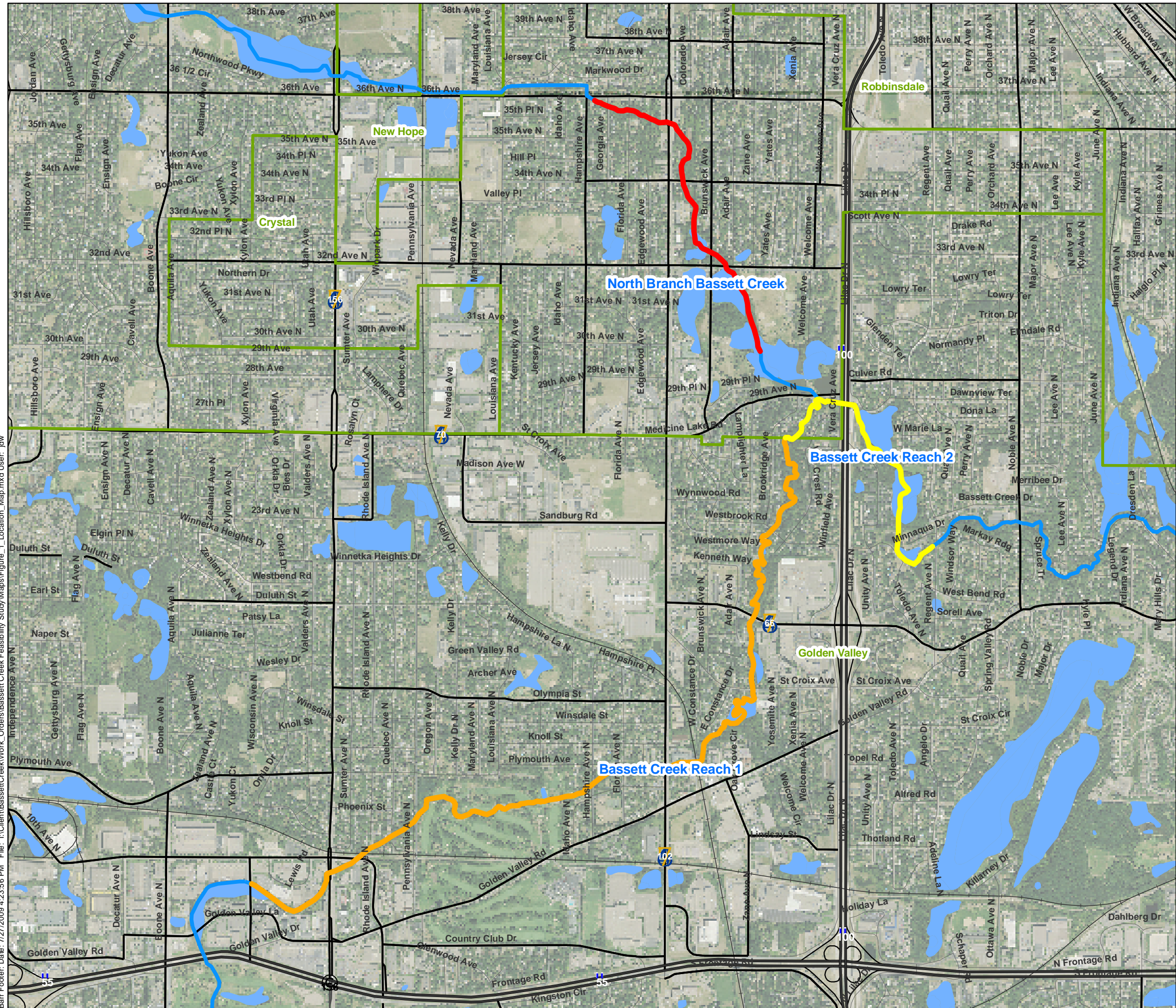
Figure 10 shows the proposed project schedule. The project is slated to begin in 2010. However, because the BCWMC allocated only a small amount of CIP funding for this project in 2010, the bulk of the construction work will be completed in 2011 and could extend into 2012. For project work to occur in 2010, the Commission must hold a public hearing and order the project in time for the Commission's submittal of its 2010 ad valorem tax levy request to Hennepin County by October 1, 2009. If project construction is to occur in fall or winter, it is recommended that the project bidding take place in the summer. This will allow contractors to acquire plant materials at a reasonable price for the required quantities, the project bidding is recommended to take place in the summer of 2010. In the intervening time, the Cities will gather public input, conduct the environmental review, prepare the final design, and obtain permits.

Table 3. Site Locations, Proposed Stream Stabilization Practices, and Overall Cost Estimate for Plymouth Creek - Reach 4.

Site Total ⁽²⁾
(rounded to \$100)

Site #	Downstream station ⁽¹⁾	Site length (feet)	Proposed stream stabilization practices	
1	16+00	150	Grade the bank to a 3:1 slope; 2 j-vanes; 3 root wads; 300' biolog; 150 live stakes; remove 7 trees (5 for salvage)	\$ 69,700
2	17+75	150	Grade bank to a 3:1 slope; 2 j-vanes; 2 root wads; 300' biolog; 150' fascines; riprap to stabilize undercut tree; remove 5 trees (2 for salvage)	\$ 52,200
3	21+90	100	Grade bank to 3:1 slope; 2 j-vanes; 2 root wads; cross vane; riprap to protect storm sewer; 200' biolog; 100' fascine; remove 6 trees (1 for salvage)	\$ 40,200
4	24+00	225	Grade bank to 2:1 slope; 3 j-vanes and 3 root wads; 250' biolog; 150' fascines; 200 live stakes; remove 9 trees (6 for salvage)	\$ 61,600
5	26+25	25	Cross vane; riprap to protect bridge abutment	\$ 22,000
6	27+25	125	800 square feet of VRSS; Remove 6 trees (3 for salvage)	\$ 68,900
7	28+25	30	30' of riprap to protect trail and bridge; remove 5 trees	\$ 20,900
8	29+00	100	Grade bank to a 3:1 slope; 2 j-vanes, 2 root wads; 200' biolog; 100 live stakes; remove one tree for salvage	\$ 33,500
9	31+25	70	3 j-vanes; 3 root wads; 50 live stakes	\$ 39,000
10	32+00	75	3 j-vanes; 3 root wads; 50 live stakes	\$ 39,000
11	33+00	70	3 j-vanes; 50 live stakes; 25' of riprap to protect storm sewer	\$ 29,200
12	38+50	50	Grade bank to a 3:1 slope; riprap; cross vane; remove 7 trees (2 for salvage)	\$ 41,900
13	39+00	40	Grade bank to extent possible without disturbing large trees; riprap; remove 5 trees	\$ 28,900
14	40+25	50	Grade portions of the bank without disturbing largest trees; riprap; cross vane; remove 6 trees	\$ 46,200
15	41+00	60	2 j-vanes; riprap to protect culverts; remove 8 trees	\$ 42,900
Subtotal within the City of Golden Valley				\$ 476,200
Subtotal within the City of Crystal				\$ 159,900
Summation				\$ 636,100
⁽¹⁾ Stream stationing: 0+00 at Regent Avenue bridge				
⁽²⁾ All sites totals include final design, permitting, construction observation and contingency (35%); restoration seeding and erosion control blanket for disturbed areas; and a 2:1 tree replacement as needed.				

Figures



Legend

- Bassett Creek Reach 1
- Bassett Creek Reach 2
- North Branch Bassett Creek
- Streams
- Municipal Boundaries



Feet
1,500 0 1,500 3,000

Meters
500 0 500



Figure 1

LOCATION MAP
Bassett Creek Reach 2 Restoration
Bassett Creek Watershed
Management Commission

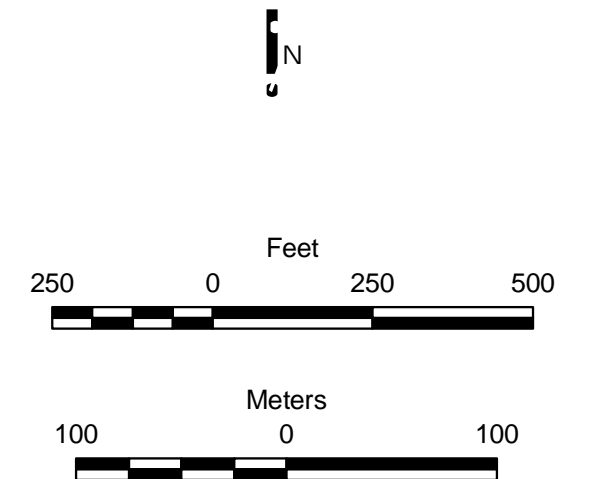
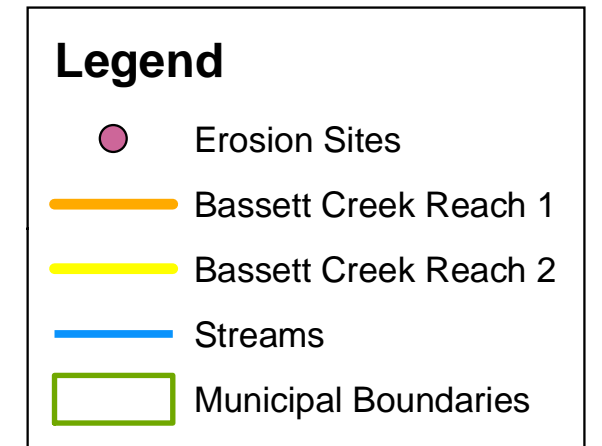


Figure 2

STREAM STABILIZATION SITES
Bassett Creek Reach 2 Restoration
Bassett Creek Watershed
Management Commission

Stream Stabilization Plan



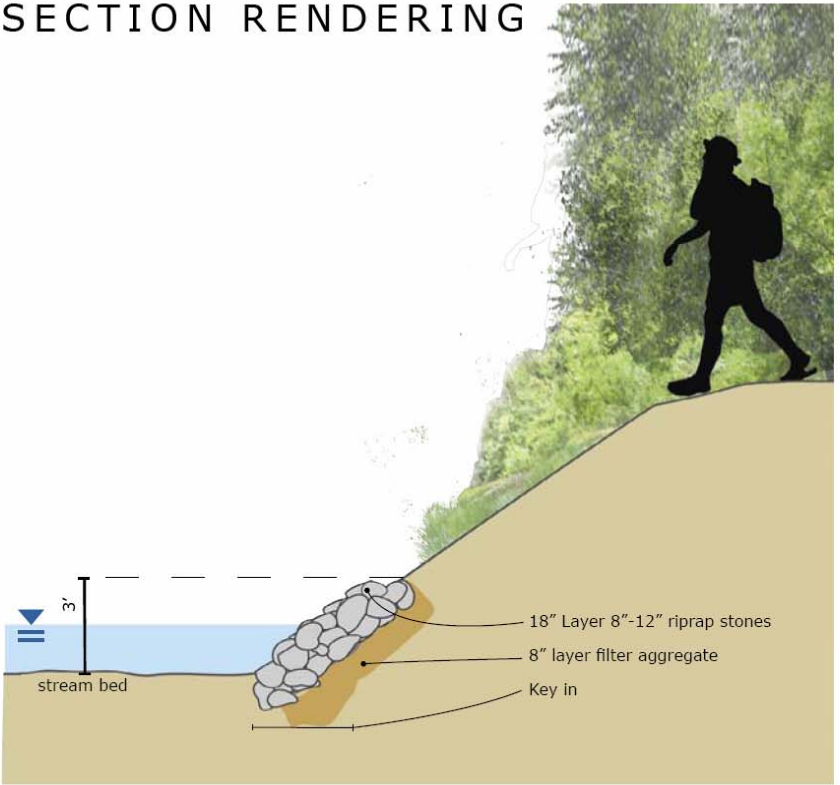
EXISTING CONDITIONS



Fluvial bank erosion is caused by water in the stream moving past the streambanks. The shear stress caused by the flow entrains soil particles into the flow, causing the stream bank to erode away. This is the most common type of erosion that occurs in streams. Virtually all streams experience this type of erosion as their flow path evolves over time. However, the rate of fluvial bank erosion can increase when the stream is out of equilibrium with its watershed. Increased flow from a watershed will increase the rate of fluvial bank erosion. In many cases, it appears to be a part of the natural process of stream evolution. In places where the channel is confined by the valley walls, however, fluvial bank erosion can lead to failure of the high banks. It can also undermine storm sewer inlets.

Stone Toe Protection is constructed from cobble-sized rock on the creek edges. It extends to approximately the bankfull level, which will protect the channel banks for flow events that occur every 1 to 2 years or less. The material will extend into the ground to resist scour. Coarse gravel is used to separate the larger rock material from underlying soil. Stone toe protection is typically used in conjunction with revegetation of the upper banks.

SECTION RENDERING



SIMILAR PROJECTS



Stone toe protection has been used extensively in Nine Mile Creek's Lower Valley, in conjunction with deflector dikes, grade control measures and stabilization of large bank failures. Following the 1987 "super storm," the proposed design allowed the stream to continue its course while taking measures to protect areas where water flow was eroding valley walls. The resulting measures have stabilized the stream channel and valley walls while blending seamlessly with the natural environment.

MATERIALS

Materials will consist of cobble-sized material with coarse gravel filter layer to provide separation from the underlying soil. Natural fieldstone material will be used.



Stone Toe Protection

Bank Protection



Figure 3

Stream Stabilization Plan



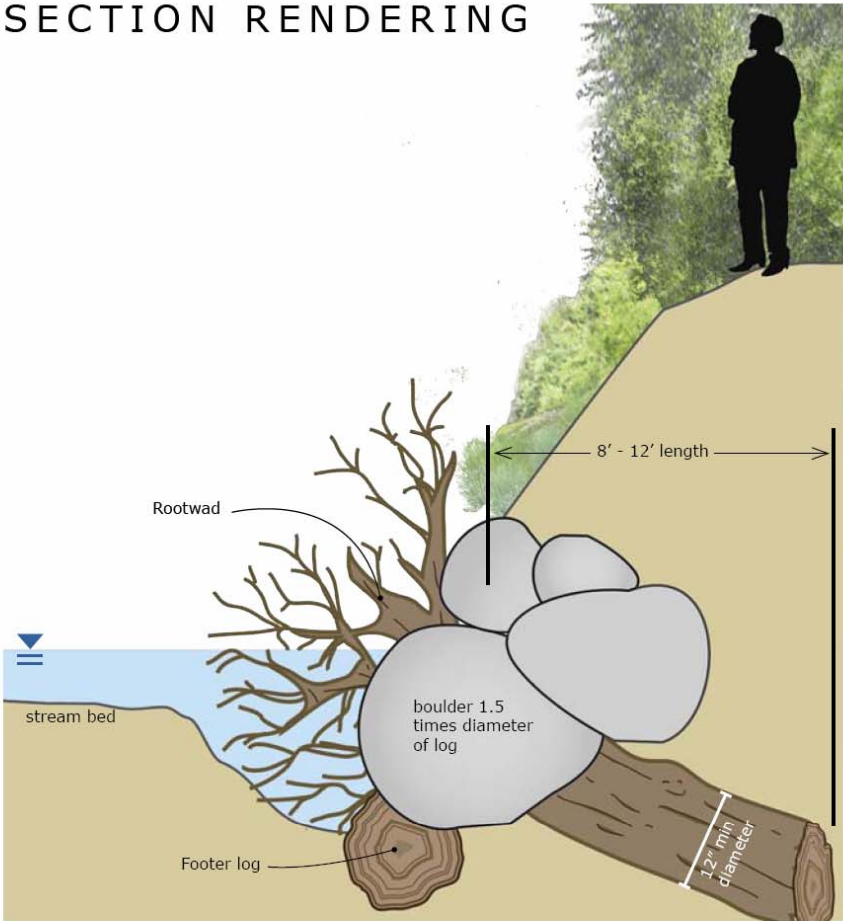
EXISTING CONDITIONS



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Root wads are constructed using sections of tree trunks with their root balls attached. The trunks extend into the stream bank leaving only the roots exposed, partially submerged. The root wads are spaced to protect a given length of bank. Footer logs and boulders are often used to help stabilize the root wads. Root wads work well where the water is deep, such as on the outside of bends, and where there is adequate sunlight to allow vegetation to grow around the exposed root wads. As the vegetation becomes established, it becomes difficult to distinguish the root wads from their natural surroundings.

SECTION RENDERING



SIMILAR PROJECTS



Root wads were used to stabilize two sites on the Rum River in Anoka, Minnesota, where severe bank erosion threatened to destroy adjacent trails. Approximately six root wads were placed at each site under difficult, high-water conditions. The banks were then graded, topsoil was added, and native vegetation was planted. Despite the difficult placement, the root wads have protected the lower bank, allowing the vegetation to become well established.



MATERIALS

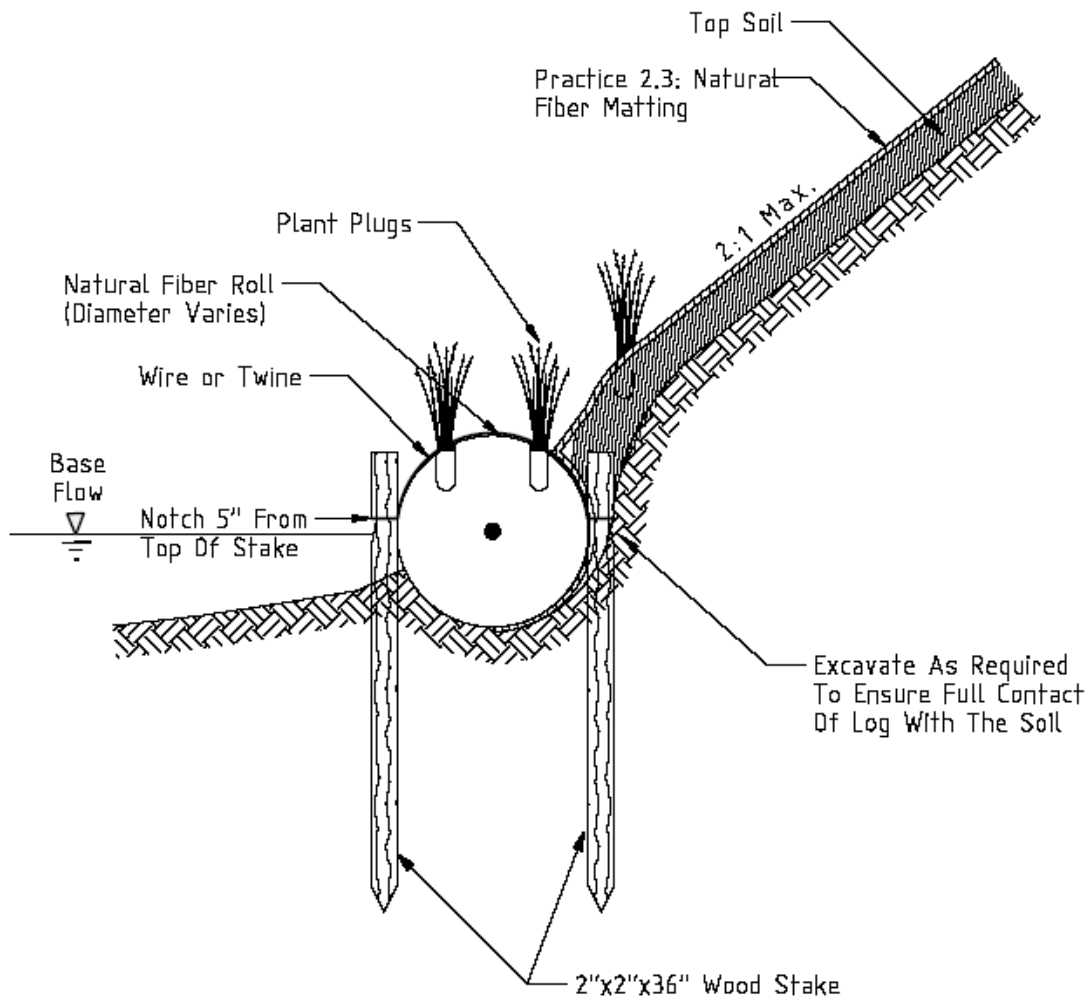
Materials will consist of 12 to 16 foot long tree trunks, minimum 12-inch diameter, with the root ball attached. Materials should be harvested on-site as much as possible. Smaller logs and boulders are also helpful to stabilize and support the root wads.



Root Wads

Bank Protection **BARR**

Figure 4



Source:
The Virginia Stream Restoration &
Stabilization Best Management Practices Guide

Figure 5
Biologs Bank Protection
Bassett Creek Restoration Project
Bassett Creek Watershed Management Commission

Stream Stabilization Plan



EXISTING CONDITIONS



Channel incision occurs when there is an imbalance between the sediment supply and the sediment carrying capacity of the stream. Erosion will occur when the sediment carrying capacity of a stream exceeds the sediment supply. In streams with cohesive banks and steep channel slope, the erosion will first occur primarily on the channel bottom because that is where the erosive forces are the strongest. As the channel deepens, the stream will gradually become wider as the banks eventually fail. The stream will gradually return to equilibrium; however, the process can take many years and significant amounts of erosion will occur during the process.

Grade control measures are used where channel downcutting has occurred. Various types of weirs are commonly used to provide grade control on streams, particularly in steeper systems. Weirs can be constructed of sheetpile, concrete, or natural materials such as rock. In most cases, natural rock is used to emulate natural riffles. Large boulders would comprise the core of the structure, with smaller rock material placed on the upstream and downstream sides of the boulders to provide a gradual transition to the channel.

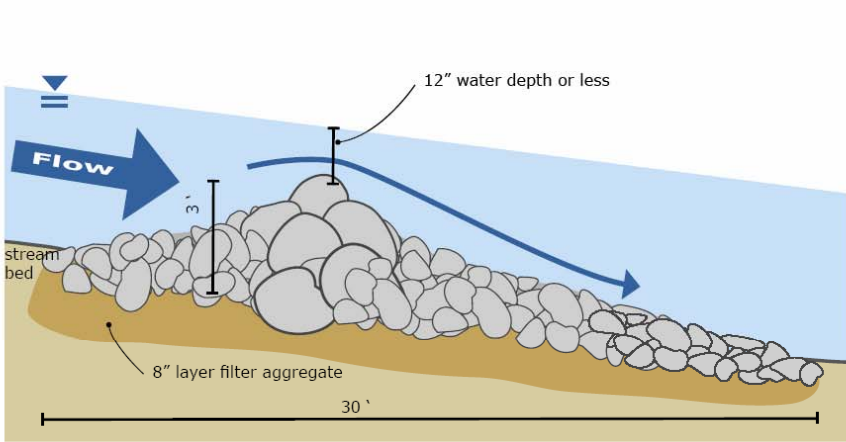
The riffles will serve to raise the surface of the water profile, and will reconnect the stream to its floodplain areas. Following the installation of the riffles, pools will be created upstream of the riffles. However, these pools will fill with sediment over time, which will in effect raise the channel bottom to the desired elevation.

MATERIALS

Materials will consist of various gradations of rock, ranging from large, 3-foot boulders to coarse gravel.



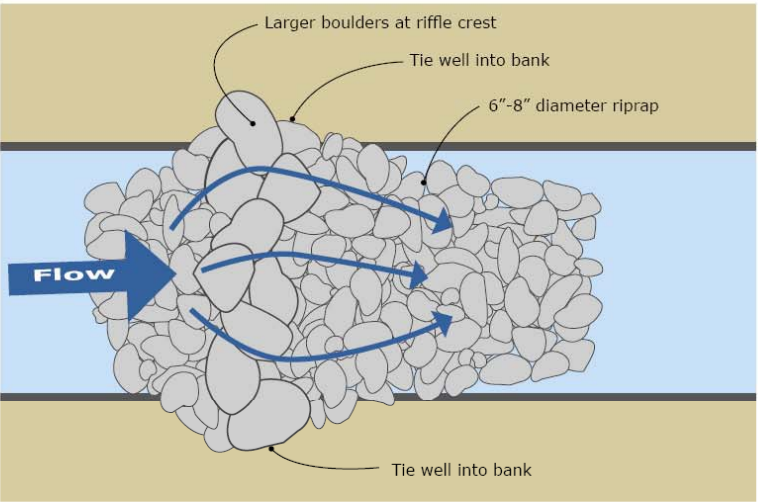
SECTION/PLAN RENDERING



SIMILAR PROJECTS

A photograph of a stream flowing over a rocky bed, creating white water rapids. A wooden bridge is visible in the background, spanning the stream.

Following the 1987 "super storm," a rapids was constructed on Nine Mile Creek downstream of the 106th Street Bridge. The rapids was one of several grade-control structures that were installed on a three-mile stretch of creek in the lower valley. The proposal allowed the stream to continue its course while taking measures to protect areas where water flow was eroding valley walls. Protection measures included applying porous deflector dikes, burying sheetpile walls parallel to the creek to prevent undercutting of slopes, installing weirs (rock or capped sheetpile) to limit stream-bed degradation, and improving storm-sewer outlets.



Constructed Riffle
Grade Control

Figure 6

Stream Stabilization Plan



EXISTING CONDITIONS



Fluvial bank erosion is caused by water in the stream moving past the streambanks. The shear stress caused by the flow entrains soil particles into the flow, causing the stream bank to erode away. This is the most common type of erosion that occurs in streams. Virtually all streams experience this type of erosion as their flow path evolves over time. However, the rate of fluvial bank erosion can increase when the stream is out of equilibrium with its watershed. Increased flow from a watershed will increase the rate of fluvial bank erosion. In places where the channel is confined by the valley walls, however, fluvial bank erosion can lead to failure of the high banks. It can also undermine storm sewer inlets.

Rock vanes are constructed from boulders on the creek bottom. They function by diverting channel flow toward the center and away from the bank. They are typically oriented in the upstream direction and occupy no more than one third of the channel width. Vanes are largely submerged and inconspicuous. The rocks are chosen such that they will be large enough to resist movement during flood flows or by vandalism, with additional smaller rock material to add stability. Rock vanes function in much the same way as root wads in that they push the stream thalweg (zone of highest velocity) away from the outside bend. They also promote sedimentation behind the vane, which adds to the toe protection.

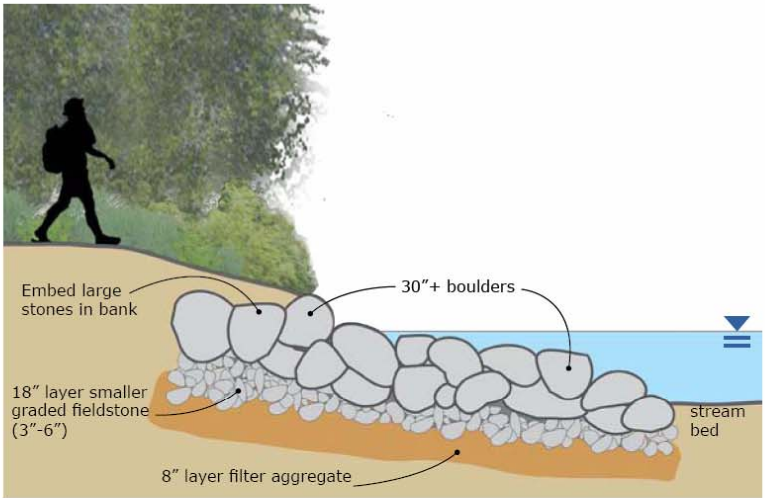
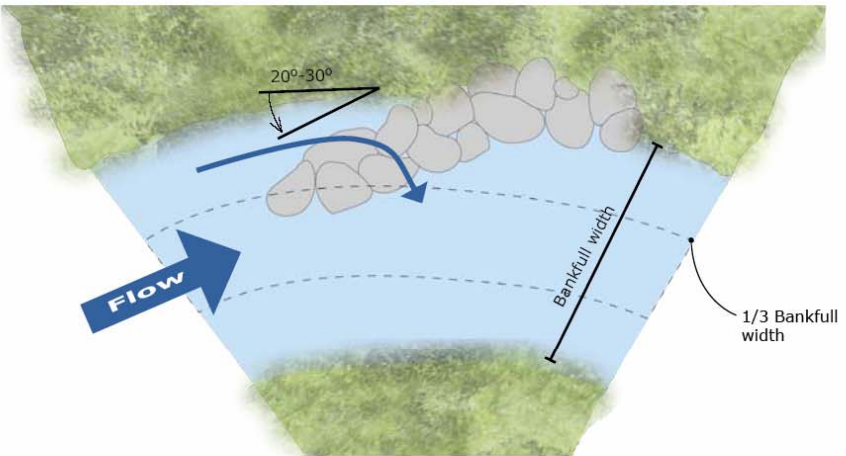
Vanes can also be constructed from both banks, forming an upstream-pointing "V." In this configuration, the vane protects both banks and also provides grade control.

MATERIALS

Materials will consist of various gradations of rock, ranging from large, 3-foot boulders to coarse gravel.



PLAN/SECTION RENDERING

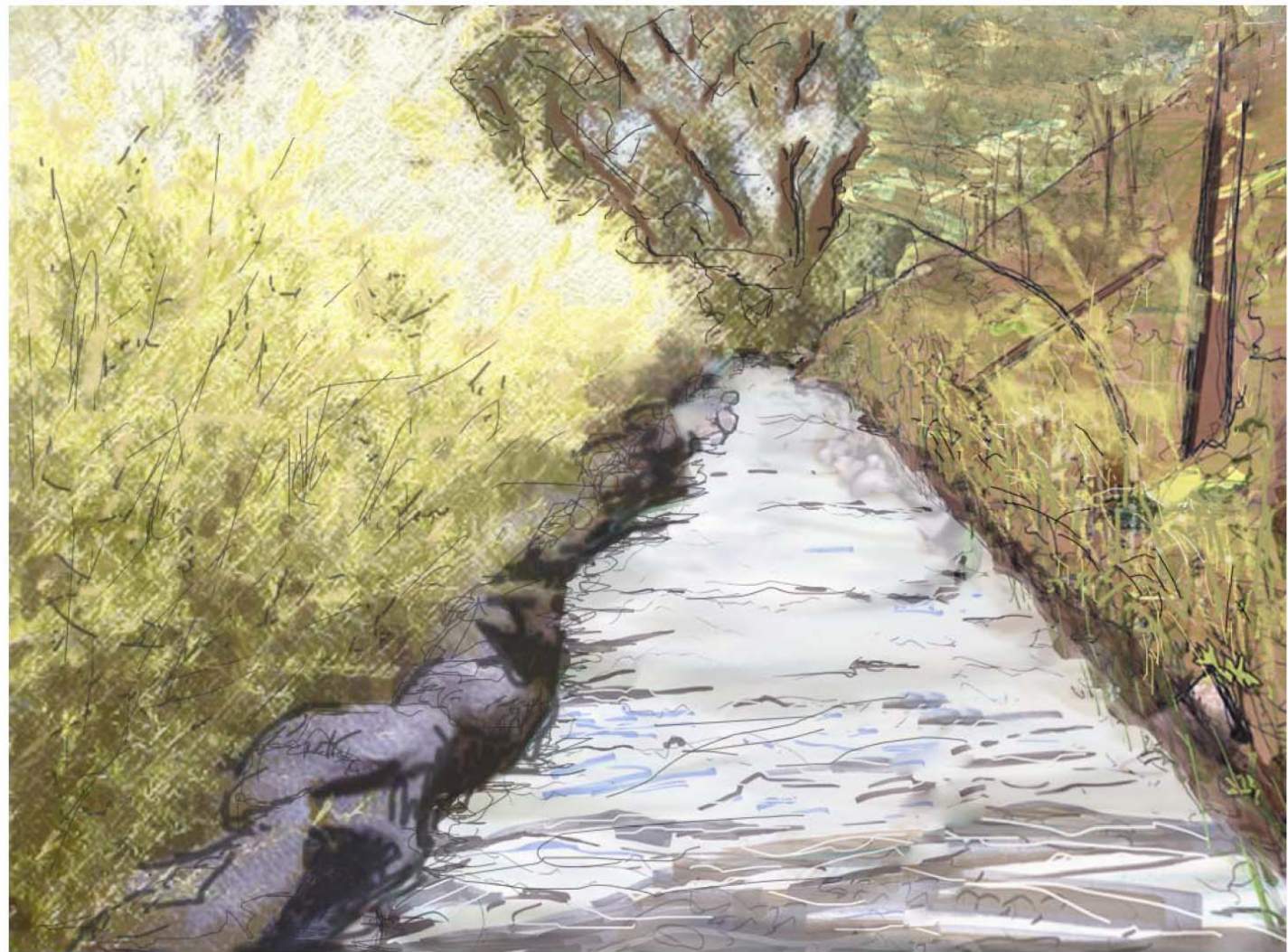


SIMILAR PROJECTS



Here is an example of a stabilization project designed for a 1,000-foot long, 20-foot high streambank that was severely eroded. The channel was directed away from the bank toe by installing six rock vanes. The bank was planted with native vegetation and protected with erosion control blanket, while the terrace above the bank was graded to redirect surface runoff to a less vulnerable area. The restored streambank withstood significant flooding during 2001, and has become nicely vegetated (see picture above).

Stream Stabilization Plan



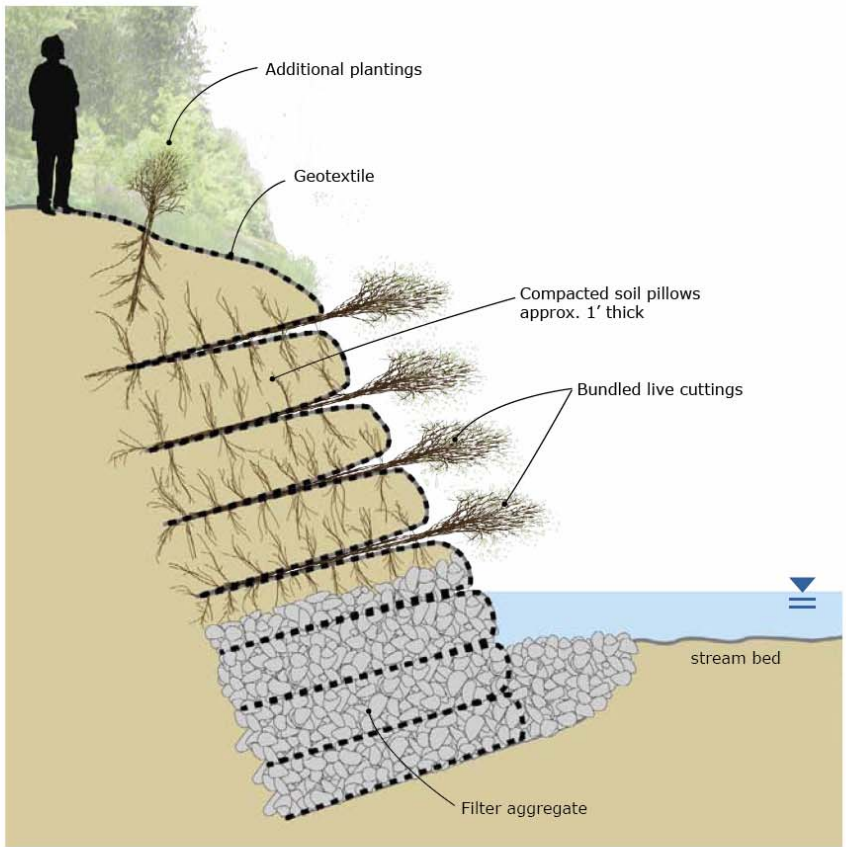
EXISTING CONDITIONS



Fluvial bank erosion is caused by water in the stream moving past the streambanks. The shear stress caused by the flow entrains soil particles into the flow, causing the stream bank to erode away. This is the most common type of erosion that occurs in streams. Virtually all streams experience this type of erosion as their flow path evolves over time. However, the rate of fluvial bank erosion can increase when the stream is out of equilibrium with its watershed. Increased flow from a watershed will increase the rate of fluvial bank erosion.

Soil Pillows are utilized in a bioengineering method known as Vegetated Reinforced Slope Stabilization (VRSS). The method combines rock, geosynthetics, soil and plants to stabilize steep, eroding slopes in a structurally sound manner. VRSS typically involves protecting layers of soils with a blanket or geotextile material (e.g. erosion control blanket) and vegetating the slope by either planting selected species (often willow or dogwood species) between the soil layers or by seeding the soil with desired species before it is covered by the protective material. In either case, with adequate light and moisture, the vegetation grows quickly and provides significant root structure to strengthen the bank. This method tends to be labor intensive and, therefore, relatively expensive.

SECTION RENDERING



In places where the channel is confined by the steep valley walls, however, fluvial bank erosion can lead to failure of the high banks. It can also undermine storm sewer inlets. For sites where groundwater seepage is a problem and where it is desirable to maintain steep banks, soil pillows are a feasible solution.

SIMILAR PROJECTS



The Mill Creek Restoration Project utilized soil bioengineering design to stabilize 175 linear feet of severely eroding streambanks within the Caldwell Recreation Park in southeastern Ohio. The work included two 25-foot vegetated reinforced soil slope (VRSS) sections, two 50-foot fill bank sections protected with woven coir and direct woody plantings, and a 12.5-foot tie-in on the upstream and downstream end of streambank work area.

MATERIALS

Materials consist of graded rock for the lower layers of the structure and for internal drainage, if necessary. Geotextile fabric is used to wrap the soil. Plants, such as willow or dogwood, or seed mixture is used for planting in and between the soil pillows.



Soil Pillows

Bank Protection **BARR**

Figure 8

Stream Stabilization Plan



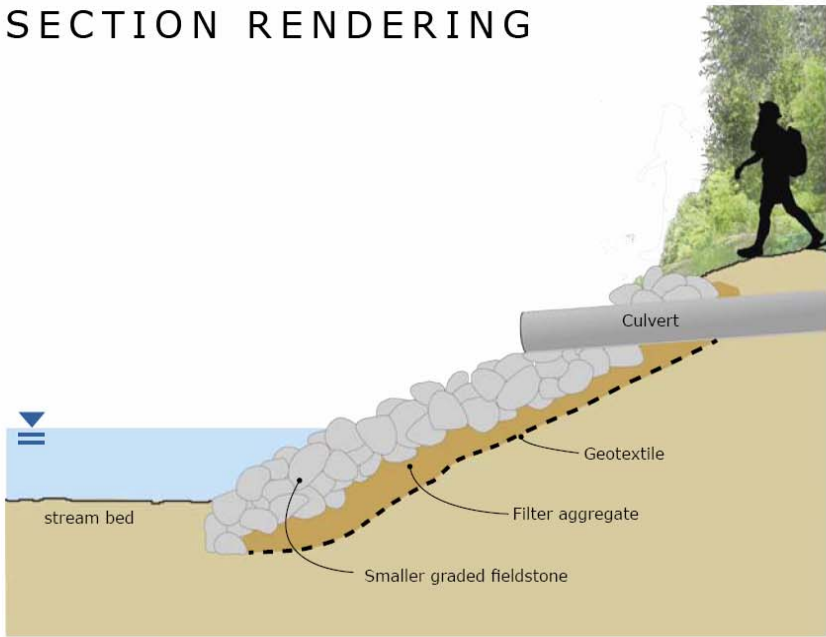
EXISTING CONDITIONS



Erosion is frequently observed at culvert outlets for a variety of reasons, including insufficient erosion protection at the culvert outlet, streambank erosion, and channel downcutting, which leaves the culvert perched above the channel. Filter fabric is often used at culvert outlets to separate riprap protection from underlying soils, however the fabric provides a slippery surface for the riprap, which commonly slides into the channel.

Culvert Stabilization is somewhat unique to each situation, depending on the site circumstances. Most sites require additional rock placement with a granular filter layer (rather than filter fabric). Some cases may require re-alignment and/or lowering of the outlet to better align with the stream channel. Typically, outlets should be aligned in the downstream channel direction so that flow doesn't impinge on the opposite bank. It is usually desirable for the culvert to enter the stream at or just above the normal water level in order to minimize the potential for undercutting.

SECTION RENDERING



SIMILAR PROJECTS



There are many culvert stabilization designs used on various streams and rivers. Because they are often small projects, the work is often performed by local municipalities or completed as part of a larger project.

MATERIALS

Materials consist of rock materials ranging from graded riprap (either fieldstone, or, for steep slopes, angular) and granular filter material (typically coarse gravel). If necessary, additional pipe, manholes and end sections may be necessary.

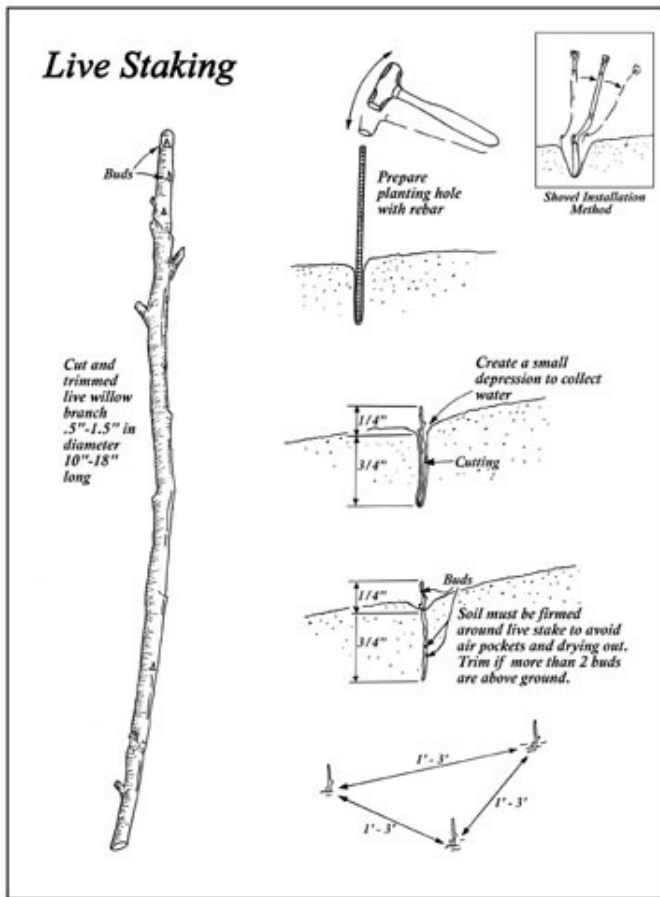


Culvert Stabilization

Bank Protection



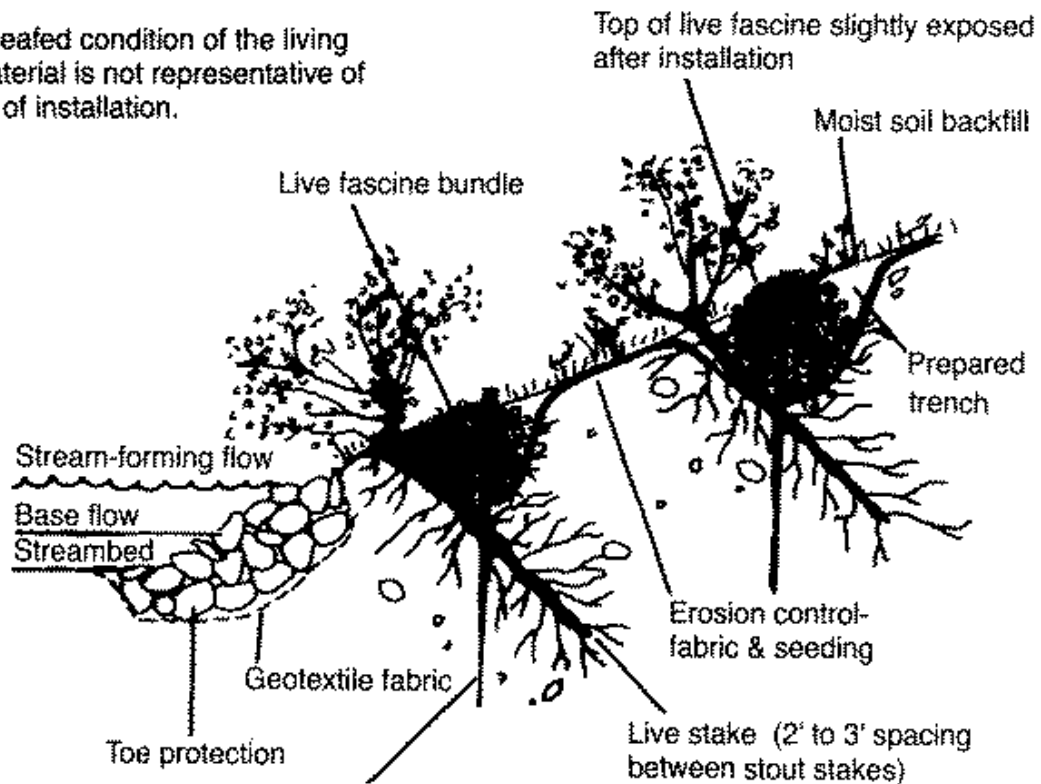
Figure 9



Source: <http://www.sf.adfg.state.ak.us/SARR/restoration/techniques/livestake.cfm>

Figure 10
Live Stakes for Bank Protection
Bassett Creek Restoration Project
Bassett Creek Watershed Management Commission

Note:
Rooted/leafed condition of the living
plant material is not representative of
the time of installation.



Source: http://www.dnr.state.oh.us/water/pubs/fs_st/stfs14/tabid/4169/Default.aspx

Figure 11
Live Fascines for Bank Protection
Bassett Creek Restoration Project
Bassett Creek Watershed Management Commission

Project Task	2009						2010												2011											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Feasibility study to BCWMC & City																														
BCWMC review of feasibility study																														
BCWMC hearing & order project for 2010																														
BCWMC submit final 2010 tax levy amount to Hennepin County (Due by Oct. 1 st)																														
BCWMC submit final 2011 tax levy amount to Hennepin County (Due by Oct. 1 st)																														
City of Golden Valley public input process																														
City of Crystal public input process																														
Project final design																														
COE and other permits - COE permit may be issued as part of Resource Management Plan																														
BCWMC re-review of project, if needed																														
Project bidding and city council approval																														
Project contracting/notice to proceed																														
Project mobilization																														
Streambank restoration (*project could extend into 2012)																													*	

Figure 12

PROJECT SCHEDULE
Bassett Creek Reach 2 Restoration Project
Bassett Creek Watershed Management Commission

Appendices

Appendix A

2009 Site Photos

Photo 1. *Site 1.* Moderate to severe erosion on an outside bank of a meander



Photo 2. *Site 2.* Minor erosion and undercut bank.



Photo 3. *Site 3.* Moderately eroding bank.



Photo 4. *Site 4.* Moderately eroding bank



Photo 5. *Site 5.* Bank at pedestrian bridge on outside bank of a meander.



Photo 6. *Site 6.* Severe erosion on outside bank of a meander.



Photo 7. *Site 7.* Erosion threatening walking trail.



Photo 8. *Site 8.* Moderate erosion.



Photo 9. *Site 9.* Bank is being undercut and will likely fall into stream in the future



Photo 10. *Site 10.* Minor bank undercutting that could lead to future erosion.



Photo 11. *Site 11.* Bank erosion near culvert under Highway 100.



Photo 12. *Site 12.* Severe bank erosion on private property.



Photo 13. *Site 13.* Moderate bank erosion.



Photo 14. *Site 14.* Moderate bank erosion.



Photo 15. *Site 15.* Minor bank erosion.



**JOINT AND COOPERATIVE AGREEMENT
FOR STREAM BANK RESTORATION
ON THE MAIN STEM OF BASSETT CREEK**

**BETWEEN
THE CITIES OF GOLDEN VALLEY AND CRYSTAL, MINNESOTA**

**GOLDEN VALLEY PROJECT 09-21
CRYSTAL PROJECT 09-31**

March 8, 2010

**JOINT AND COOPERATIVE AGREEMENT
FOR STREAM BANK RESTORATION
ON THE MAIN STEM OF BASSETT CREEK**

This **AGREEMENT** is made this 16th day of March, 2010 by and between the **CITY OF CRYSTAL**, a Minnesota municipal corporation ("Crystal"), and the **CITY OF GOLDEN VALLEY**, a Minnesota municipal corporation ("Golden Valley") (collectively hereinafter, "the Cities").

RECITALS

WHEREAS, Minnesota statute § 471.59, et. seq., authorizes cities to enter into joint powers agreements; and

WHEREAS, Crystal and Golden Valley are member cities of the Bassett Creek Watershed Management Commission ("BCWMC"), a joint powers watershed management organization; and

WHEREAS, the BCWMC has identified a 2010 stream bank stabilization project in its Capital Improvement Plan (CIP) described as the Restoration of the Main Stem of Bassett Creek from the Crystal and Golden Valley city boundary west of Trunk Highway 100 to Regent Avenue North east of Trunk Highway 100 ("Project"); and

WHEREAS, the BCWMC has delegated responsibility for implementing CIP projects to the member cities; and

WHEREAS, Crystal and Golden Valley wish to work cooperatively on the design and construction of the bank stabilization project; and

WHEREAS, as detailed in **Exhibit A** attached hereto and made a part hereof, the project cost estimate for the improvements located within Crystal is \$159,900. And the project cost estimate for the improvements located within Golden Valley is \$476,200. These costs include design, construction, inspection, and all other related project costs.

NOW, THEREFORE, in consideration of the mutual covenants herein, and other good and valuable consideration, the sufficiency of which is hereby acknowledged, Crystal and Golden Valley hereby agree as follows:

1. Plans and Specifications. Golden Valley shall be responsible for the design of the Project and preparation of plans and specifications for construction of the Project. Golden Valley reserves the right to obtain the services of a consulting engineer to design the Project and prepare the plans and specifications. The plans and specifications shall be certified by a professional engineer licensed in the State of Minnesota and shall submit the plans and specifications to Crystal for review and

approval. Golden Valley shall submit the plans and specifications to the BCWMC engineer for its review and approval.

2. Advertisement for Bids and Construction. Golden Valley will advertise for bids and award contracts in accordance with the laws of the State of Minnesota and shall name the City of Crystal as additionally insured by its contractor. Golden Valley will award the contract and administer the construction of the Project and in accordance with the plans and specifications. Golden Valley will provide all construction management, observation and inspection in connection with the Project. However, the Project will be open for inspection by Crystal upon request. Golden Valley will verify and record the quantities of materials installed by the contractor and pay the contractor in accordance with the contract. The parties expect construction of the Project will be undertaken in the Fall of 2010 and be completed in or about the Spring of 2011.
3. Construction Changes. Crystal agrees that Golden Valley may make changes to the plans or in the character of the construction based upon conditions encountered in the field and in accordance with accepted engineering standards. Golden Valley will make all reasonable efforts to consult with Crystal prior to making changes within the portion of the Project in Crystal. However, Crystal agrees that in cases of minor modifications to the project, no notice or consultation is required. For the purposes of this section, "minor modification" shall mean any modification of the project resulting in a change in compensation owed to the selected contractor of \$5,000 or less.
4. Easements. Crystal shall obtain at its cost any temporary or permanent easements deemed necessary for that portion of the Project located within Crystal. Crystal shall obtain the required easements prior to advertisement for bids in accordance with the schedule developed for the Project. The portion of the Project located in Golden Valley is entirely within property owned by Golden Valley and no easements are necessary.
5. Construction Access. Crystal and Golden Valley agree to provide the contractor access to the work areas in the Project prior to advertisement for bids for the Project.
6. Permits. Golden Valley shall obtain all the permits required from other governmental entities for the construction of the Project. Crystal will cooperate with Golden Valley and assist as requested in securing the necessary permits. Permits shall be obtained prior to advertisement for bids for the Project.
7. Communications. Golden Valley will perform all Project communication with the people in the project area during all phases of the design and construction of the Project. Crystal will participate in all Project design and construction meetings deemed necessary, including meetings with residents during Project design. If requested by Crystal, Golden Valley shall submit all written communications to Crystal for its review prior to mailing.

8. Payment from Crystal to Golden Valley. Crystal shall reimburse Golden Valley for Crystal's share of the total project costs as set forth in **Exhibit A** of this Agreement. It is agreed that the total cost estimate set forth by Golden Valley as **Exhibit A** of this Agreement is only an estimate of the total project costs for the work contemplated by this Agreement. In addition, the unit prices set forth in the contract with the successful bidder(s) and the final quantities as measured by the Golden Valley Engineer shall govern in computing the total final contract construction cost and the related apportionment between the Cities as contemplated by this Agreement.

Once the Contractor begins work, and Contractor payments are being made, at its option, Golden Valley may invoice Crystal monthly for Crystal's prorated share of the work completed (less retainage) being paid on the Contractor's invoice and the prorated indirect project costs.

The remaining amount related to retainage, is to be paid to Golden Valley upon the completion of the project and submittal to Crystal of a copy of the Golden Valley Engineer's final cost report for the project. This report shall show each City's final shares of construction, engineering and other project costs.

Record drawings shall be provided by Golden Valley to Crystal within 90 days of Golden Valley's final payment to the contractor(s) retained to complete the work.

9. Cost Overruns. Crystal and Golden Valley understand all the funds for the project will be provided by the Bassett Creek Water Management Commission; but to the extent there are cost overruns each assume responsibility for such overruns in the design, construction and administration of the Project that exceed the funding provided by the BCWMC. Construction cost overruns will be prorated based upon the location of the work performed and the recorded quantities of materials installed. Cost overruns related to design, construction observation and administration shall be prorated based upon the percentage of contract construction costs in each City. Crystal agrees to pay Golden Valley for cost overruns within 45 days of receipt of billing by Golden Valley.
10. Examination of Books, Records, etc. As provided by Minnesota Statutes Section 16C.05, Subdivision 5, the books records, documents and accounting procedures and practices of Golden Valley and Crystal relevant to the Project are subject to examination by both parties, and either the legislative auditor or the state auditor as appropriate, for a minimum of six years from final payment.
11. Workers Compensation Claims. It is agreed that any and all employees of each City and all other persons engaged by that City in the performance of any work or services required or provided as contemplated by this Agreement shall not be considered employees of the other City, and that any and all claims that may or might arise under the Worker's Compensation Act or the Unemployment Compensation Act of the State of Minnesota on behalf of said employees while so

engaged and any and all claims made by any third parties as a consequence of any act or omission on the part of said employees while so engaged on any of the work or services provided as contemplated by this Agreement shall in no way be the obligation or responsibility of the other City.

12. Authorized Agents. The City of Golden Valley's Authorized Agent for the purpose of administration of this agreement is Jeannine Clancy, Director of Public Works, or her successor or assign. Her current address and telephone number is: 7800 Golden Valley Road, Golden Valley, MN 55427, 763.593.8035.

The City of Crystal's Authorized Agent for the purpose of administration of this agreement is Tom Mathisen, Director of Public Works/City Engineer, or his successor or assign. His current address and telephone number is: 4141 Douglas Drive, Crystal, MN 55422, 763.531.1160.

13. Indemnification. The intent of this section is to limit a party's obligation to indemnify the other party. Except as provided in Paragraph 11 and hereafter in this Paragraph 13, Golden Valley shall assume liability for all claims arising out of the Project. Golden Valley shall indemnify, defend and hold harmless Crystal from any loss, liability, cost, damage and claim arising from any act or omission on the part of its officers, employees, agents, contractor or representatives in connection with the Project, including any attorney fees and expenses incurred in defending any such claim, to the extent of Golden Valley's statutory liability described in Minn. Stat. § 466.04, as amended. The liability limitations established in Minn. Stat. § 466.04 shall apply to undertakings pursuant to this Agreement, and no individual or entity may seek to increase recovery beyond the statutory amounts applicable to a single party set forth in Minn. Stat. § 466.04 by attempting to aggregate the statutory amounts to increase the maximum amount of liability for any party. No party to this Agreement shall be required to pay on behalf of itself and to the other party any amount as indemnification to the party, arising pursuant to this Agreement, expressly, by operation of law or otherwise, in excess of the limits of liability applicable to the party required to pay as established in Minnesota Statutes Chapter 466, or in the event that Minnesota Statutes Chapter 466 does not apply, the maximum amount of insurance coverage available to the party required to pay. In those instances in which a party is directly liable for damages as well as for indemnification to the other party, the combined liability of the party will not exceed the limits of liability under Minnesota Statutes Chapter 466 applicable to the liable party or in the event that Minnesota Statutes Chapter 466 does not apply, the maximum amount of insurance coverage available to the liable party.

Crystal shall indemnify, defend and hold harmless Golden Valley from any loss, liability, cost, damage and claim arising from any act or omission on the part of its officers, employees, agents, contractor or representatives arising solely from a specific action it takes under this Agreement which results in a liability claim(s), including any attorney fees and expenses incurred in defending any such claim, to the extent of Crystal's statutory liability described in Minn. Stat. § 466.04, as

amended. Nothing herein shall change or otherwise affect the liability limits established under Minn. Stat. § 466.04, as amended. No party to this Agreement shall be required to pay on behalf of itself and to the other party any amount as indemnification to the party, arising pursuant to this Agreement, expressly, by operation of law or otherwise, in excess of the limits of liability applicable to the party required to pay as established in Minnesota Statutes Chapter 466, or in the event that Minnesota Statutes Chapter 466 does not apply, the maximum amount of insurance coverage available to the party required to pay. In those instances in which a party is directly liable for damages as well as for indemnification to the other party, the combined liability of the party will not exceed the limits of liability under Minnesota Statutes Chapter 466 applicable to the liable party or in the event that Minnesota Statutes Chapter 466 does not apply, the maximum amount of insurance coverage available to the liable party.

13. Successor and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, provided, however, that neither Crystal nor Golden Valley shall have the right to assign its rights, obligations and interests in or under this Agreement to any other party without the prior written consent of the other party hereto.
14. Amendment, Modification or Waiver. No amendment, modification or waiver of any condition, provision or term of this Agreement shall be valid or of any effect unless made in writing and signed by the party or parties to be bound, or its duly authorized representative. Any waiver by either party shall be effective only with respect to the subject matter thereof and the particular occurrence described therein, and shall not affect the rights of either party with respect to any similar or dissimilar occurrences in the future.
15. Saving Provision. If any provision of this Agreement shall be found invalid or unenforceable with respect to any entity or in any jurisdiction, the remaining provisions of this Agreement shall not be affected thereby, and such provisions found to be unlawful or unenforceable shall not be affected as to their enforcement or lawfulness as to any other entity or in any other jurisdiction, and to such extent the terms and provisions of this Agreement are intended to be severable.
16. Notices. Any notice given under this Agreement shall be deemed given on the first business day following the date the same is deposited in the United States Mail (registered or certified) postage prepaid, addressed as follows:

If to Crystal:

Director of Public Works/City Engineer
City of Crystal
4141 Douglas Drive
Crystal, MN 55422

If to Golden Valley:

Director of Public Works
City of Golden Valley
7800 Golden Valley Road
Golden Valley, MN 55427

17. Termination. This Agreement shall remain in effect until terminated by mutual consent of the Cities.

IN WITNESS WHEREOF, Crystal and Golden Valley have entered into this Agreement as of the date and year first above written.

CITY OF CRYSTAL

By: _____
Its Mayor

By: _____
Its City Manager

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

The foregoing Agreement was acknowledged before me this ____ day of _____, 2009 by _____ and _____, respectively the Mayor and City Manager of the City of Crystal, a municipal corporation, on behalf of the City.

Notary Public

CITY OF GOLDEN VALLEY

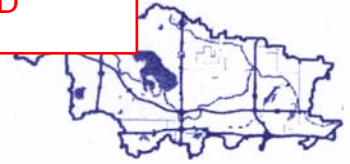
By: _____
Its Mayor

By: _____
Its City Manager

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

The foregoing Joint and Cooperative Agreement was acknowledged before me this ____ day of _____, 2009 by _____ and _____, respectively the Mayor and City Manager of the City of Golden Valley, a municipal corporation, on behalf of the City.

Notary Public



Bassett Creek Watershed Management Commission

www.bassettcreekwmo.org

• Crystal • Golden Valley • Medicine Lake • Minneapolis • Minnetonka • New Hope • Plymouth • Robbinsdale • St. Louis Park

March 18, 2010

DRAFT

Mr. Brad Wozney
MN Board of Water and Soil Resources
520 Lafayette Road N.
St. Paul, MN 55155

**Re: Minor Plan Amendment—Bassett Creek Watershed Management Commission's
September 2004 "Watershed Management Plan"**

Dear Mr. Wozney:

The Bassett Creek Watershed Management Commission (BCWMC) proposes a minor plan amendment to the September 2004 BCWMC *Watershed Management Plan* (BCWMC Plan). The amendment involves three additions to Table 12-2, Water Quality Management and Flood Control 10-Year Capital Improvements Program (CIP):

- One project is proposed to restore the Main Stem of Bassett Creek from Duluth Street in the City of Golden Valley to the City of Crystal boundary; construction is to begin in 2011
- One project is proposed to restore the channel of the North Branch of Bassett Creek from 36th Avenue to Bassett Creek Park in the City of Crystal; construction is to begin in 2011
- One project is proposed to implement one of the Best Management Practices (BMPs) identified in the Wirth Lake Total Maximum Daily Load (TMDL) study, the modification of the Wirth Lake outlet in the City of Golden Valley; construction is to begin in 2011

The remainder of this letter describes the proposed BCWMC Plan modifications in more detail and the minor plan amendment process.

Additions to the CIP— Main Stem of Bassett Creek, North Branch of Bassett Creek, Wirth Lake Outlet Structure

The BCWMC Plan recognized the need to restore stream reaches (e.g., the Main Stem of Bassett Creek and the North Branch of Bassett Creek) damaged by erosion or affected by sedimentation. Section 7.0 of the BCWMC Plan describes the issue, the Commission's policies relating to channel restoration and the benefit of stream restoration in preserving fisheries habitat and minimizing nutrient and sediment loads to the creek and downstream waters. The Commission established the Creek and Streambank Trunk System Maintenance, Repair and Sediment Removal Fund (the Restoration Fund) to address the issue. The Commission decided to assess the cities in the watershed \$25,000 annually to fund channel restoration projects (Restoration Fund). The cities conducted

*Michael Welch, BCWMC Chair
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
612-385-6885*

*Charlie LeFevre, Attorney
Kennedy & Graven
470 US Bank Plaza, 200 South Sixth Street
Minneapolis, MN 55402
612-337-9215
612-337-9310 (fax)*

*Leonard Kremer, Engineer
Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
952-832-2600
952-832-2601 (fax)*

inventories of the channel reaches and the BCWMC Plan identified specific problem areas.

As part of the Commission's 2007 annual review of the CIP, the Commission noted that money was accumulating in the Restoration Fund, but there were no restoration projects scheduled for construction. The cities noted that to repair the identified channel erosion and sedimentation problems efficiently and cost effectively, reaches with several problem areas needed to be completed as one project. It was further noted that if the restoration was completed by reach that sufficient money in the Restoration Fund was not available to complete any of the projects.

The Commission decided to identify channel restoration projects by stream reach, prepare cost estimates for the restoration of the reach, prioritize the restoration projects and add the larger projects to the CIP. A reach of the Sweeney Lake Branch of Bassett Creek was restored in 2008-2009 and reaches of Plymouth Creek and the Main Stem of Bassett Creek are being restored in 2010-2011. The principal difference between completing the restoration projects as part of the CIP rather than completing them using the Restoration Fund is the source of the funds. The CIP is funded by ad valorem taxes and the Restoration Fund receives funds from the cities, which could come from a variety of sources.

The Bassett Creek Main Stem and North Branch of Bassett Creek channel restoration projects proposed to be added to the CIP will consist of a variety of erosion control measures including:

- Rock vanes to direct flow away from eroding stream banks
- Check dams to prevent erosion of the stream bottom
- Realigning portions of the stream
- Armoring the banks
- Removing accumulated sediment
- Redirecting runoff that is contributing to slope failures
- Regrading, stabilizing and revegetating slopes and shoreline

The total estimated cost of the two restoration projects is \$1,440,000; \$780,000 for the Bassett Creek Main Stem project and \$660,000 for the North Branch, Bassett Creek project.

Attached is an excerpt from the July 2009 draft *Resource Management Plan for the Bassett Creek Watershed Management Commission, Proposed Water Quality Improvement Projects, 2010-2016* (prepared for the BCWMC). The excerpt provides background information on the proposed channel restoration projects.

The BCWMC Plan also recognized that future TMDL studies would identify BMPs that would need to be implemented to meet water quality standards and goals for lakes and creeks in the watershed. The possibility of implementing these BMPs was identified in Table 12-3 of the BCWMC Plan. The BCWMC Plan proposed to add these projects to the CIP with a minor plan amendment. The Wirth Lake outlet structure project consists of modifying the existing outlet structure for Wirth Lake to prevent overflow from the creek into the lake during flood periods, which will eliminate the contribution of phosphorous to the lake from those overflows. The project is described in the attached draft *Wirth Lake, Total Maximum Daily Load Report, January 2010*, (prepared for the Minnesota Pollution Control Agency).

Minor Plan Amendment Process

In accordance with MN Rules 8410.0140, copies of this proposed plan amendment are being sent to the affected cities, Hennepin County, the Metropolitan Council and the state review agencies for their review and comment. Copies of the minor plan amendment will also be made available on the BCWMC's website (www.bassettcreekwmo.org). Written comments should be sent to the Commission at the address shown below. As provided by MN Rules 8410.0140, the BCWMC will conclude that this is a minor plan amendment and proceed accordingly, unless the Commission hears to the contrary from the MN Board of Water & Soil Resources (BWSR) within 45 days of your receipt of this amendment. Assuming you receive this minor plan amendment on March 30, 2010, the 45-day review period will end on May 14, 2010. As required by the BCWMC Plan, Hennepin County's review period is 75 days, which will end on June 15, 2010.

Thank you for your review of this proposed amendment. We look forward to the approval of this minor plan amendment by BWSR. After approval of the minor plan amendment, but prior to ordering the channel restoration projects and the Wirth Lake outlet modification in the amendment, the BCWMC will hold a public hearing to receive comments on the proposed projects.

Please call either Charlie LeFevre, Esq., the BCWMC's legal representative, at (612) 337-9215, or Len Kremer, P.E., the BCWMC's engineer, at (952) 832-2781 if you have any questions.

Sincerely,

Chairperson, Bassett Creek Watershed Management Commission

Note: please send written comments to:

Ms. Linda Loomis
Bassett Creek Watershed Management Commission Chairperson
c/o Barr Engineering Co.
4700 West 77th Street
Minneapolis, MN 55435

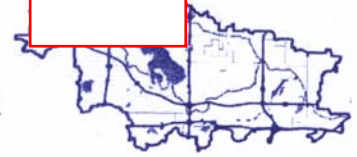
Enclosures

c: Hennepin County – Mr. Joel Settles
Hennepin Conservation District – Ms. Stacey Lijewski
City of Crystal – Ms. Janet Lewis, City Clerk
City of Golden Valley – Ms. Sue Virnig, City Clerk
City of Medicine Lake – Ms. Nancy Pauly, City Clerk
City of Minneapolis – Mr. Steven Ristuben, City Clerk
City of Minnetonka – Mr. David Maeda, City Clerk
City of New Hope – Ms. Valerie Leone, City Clerk
City of Plymouth – Ms. Sandra Engdahl, City Clerk
City of Robbinsdale – Mr. Tom Marshall, City Clerk
City of St. Louis Park – Ms. Nancy Stroth, City Clerk
Minnesota Department of Natural Resources – Ms. Charlotte Cohn
Minnesota Pollution Control Agency – Mr. David L. Johnson
Minnesota Department of Health – Mr. Art Persons

Minnesota Department of Agriculture – Ms. Becky Balk
Metropolitan Council – Ms. Judy Sventek
Bassett Creek Watershed Management Commission

Bassett Creek Watershed Management Commission

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Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: February 24, 2010 Telephone Conference Call with MPCA re: E. Coli TMDL
Date: March 5, 2010

On February 24, 2010 Bassett Creek WMO Chairperson Linda Loomis, Commissioner Justin Riss, Jeff Oliver and Len Kremer had a telephone conference call with Brooke Asleson and Barb Peichel, MPCA regarding the upper Mississippi River E. Coli TMDL and the Bassett Creek Watershed Management Commission. The questions that were asked and the responses that were received are summarized below.

1. Assuming that Bassett Creek is included in the upper Mississippi River E. Coli TMDL is there any additional information that can be provided to the Commission on the process that will take place in the completion of the TMDL and how the Commission will be involved?
The first phase of the Mississippi River E. Coli TMDL, which consisted of a collection and review of all relevant information is complete and the second phase of the TMDL, the collection of data to supplement existing data is starting. The additional data that is needed will be collected in 2010 and 2011. Meetings with the stakeholders to discuss the progress of the TMDL will be held every six to eight months. Stakeholders will be involved in the review of data and the discussion of impairments, the identification of BMPs to improve water quality, and the development of the TMDL. A draft TMDL report will be available for stakeholders sometime in 2012. Review and approval of the Mississippi River E. Coli TMDL is expected to occur in 2013. The Bassett Creek watershed will be included in the upper Mississippi River E. Coli TMDL unless the Bassett Creek Watershed Management Commission specifically requests that it not be included.
2. If the Commission decided that they wanted to have the Bassett Creek E. Coli TMDL completed earlier than the scheduled completion of the Upper Mississippi River E. Coli TMDL would there be resources available from the MPCA such as MPCA financial

*Michael Welch, BCWMC Chair
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
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*Charlie LeFevre, Attorney
Kennedy & Graven
470 US Bank Plaza, 200 South Sixth Street
Minneapolis, MN 55402
612-337-9215
612-337-9310 (fax)*

*Leonard Kremer, Engineer
Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435
952-832-2600
952-832-2601 (fax)*

To: Bassett Creek Watershed Management Committee
From: Barr Engineering Co.
Subject: February 27 , 2010 Conference Call re: E. Coli TMDL
Date: March 5. 2010
Project: 23/27-051 2010

assistance and staff coordination?

If the Commission decided to complete the E. Coli TMDL for the Bassett Creek Watershed, the MPCA would want the Commission to complete a watershed-wide TMDL for all remaining impairments in the watershed. Staff assistance would be available however funding assistance would not be available until 2012 for the watershed-wide TMDL. It should be noted that biota TMDLs in the metro area will be delayed at this time because the standards are being reviewed. It is expected that the review and any needed modification of the standards will be completed in three years.

3. If the Commission decided to complete the Bassett Creek E. Coli TMDL, when would MPCA assistance be available?

Staff assistance would be available now to complete a Bassett Creek Watershed TMDL but financial assistance from the MPCA would not be available until 2012.

4. What would the MPCA estimated completion date be if the Commission completed the Bassett Creek E. Coli TMDL, including MPCA and EPA review?

If the Commission started a watershed-wide TMDL in 2012, the MPCA would expect that the watershed wide TMDL would take until 2013 to complete.

5. What would the MPCA estimate the Commission's cost to be for completing the Bassett Creek E. Coli TMDL independently of the Upper Mississippi River E. Coli TMDL?

The MPCA would want the Commission to complete a watershed-wide TMDL for Bassett Creek if the Commission decides not to participate in the upper Mississippi River E. Coli TMDL. A watershed-wide TMDL was completed for Lambert Creek for about \$40,000 that consisted of a TMDL for four lakes.

6. The Commission has collected E. Coli samples and the MPCA has analyzed the samples for the past two years. Is that data adequate to complete the TMDL or would additional data need to be collected?

The data collected by the Commission over the last two years is adequate for completing an E. Coli TMDL for the Bassett Creek Watershed.



Barr Engineering Company
4700 West 77th Street • Minneapolis, MN 55435-4803
Phone: 952-832-2600 • Fax: 952-832-2601 • www.barr.com An EEO Employer

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6G

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Agenda Item 6G of BCWMC February 18, 2010 Meeting Agenda
Date: February 11, 2010
Project: 23/27 051 2010 003

6G. 2009 Flood Control Project Inspection

In accordance to the Operation and Maintenance Manual for the Bassett Creek Flood Control Project, an annual inspection is required to review the condition of the flood control features. The inspection program covers the flood control project features completed by the BCWMC between 1974 and 1996. The objective of the inspection program is to address erosion, settlement, sedimentation, and structural issues. The annual flood control project inspection and report preparation was performed between November, 2009 and February 2010. See the attached memorandum.

The 5-year double box culvert inspection performed during 2009 was discussed during the December 17, 2009 BCWMC meeting.

Recommended Commission Action:

- a. Provide copies of inspection report to communities, DNR and Corps of Engineers regarding results of inspection and recommended action.
- b. Provide copy of inspection report regarding inspection of Highway 100 culvert to Mn/DOT.



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4700 West 77th Street • Minneapolis, MN 55435-4803
Phone: 952-832-2600 • Fax: 952-832-2601 • www.barr.com *An EEO Employer*

Minneapolis, MN • Hibbing, MN • Duluth, MN • Ann Arbor, MI • Jefferson City, MO

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Bassett Creek 2009 Flood Control Project Inspection
Date: February 5, 2010
Project: 23/27 0051 2010 065

In accordance to the Operation and Maintenance Manual for the Bassett Creek Flood Control Project, an annual inspection is required to review the condition of the flood control features. The flood control project was turned over to the local sponsor during 2002. Therefore, inspection of the flood control features was initialized during the fall of 2002, which was the first formal inspection by the BCWMC. Annual inspections were performed during 2004-2009. Some of the municipalities have performed independent inspections of several of the structures. The BCWMC is responsible for maintaining the structures and the municipalities are responsible for general debris removal. Following are comments and recommendation regarding the 2009 inspection:

Plymouth Features

Inspection Date: November 17, 2009

Personnel: Jake Burggraff (Barr), Whitney Eriksson (Barr)

1. Plymouth Creek Fish Barrier (Constructed 1987)

- a. The water flow was a couple inches over the structure.
- b. The overall condition of the structure was satisfactory and appeared similar to the previous inspection (the concrete appeared to be in good condition).
- c. There are a few small cracks in the downstream portion of the left wing wall. No change from previous inspection notes.
- d. The expansion joint in the middle of the right abutment wall appears to be consistent to last few years and the gap was measured at approximately 7/8".
- e. Both sides of downstream banks were stabilized with new granite rip rap. Accumulated sediment downstream has been removed.
- f. Sediment has accumulated upstream of the structure. The upstream pool is filling in with sediment and has formed a delta/island with grass growing on it. The island is forcing the creek current to the west bank.
- g. Tree was growing on left side of the embankment.
- h. Rust was noted on the handrail.

Recommended Action:

- Monitor width of joint opening during future inspection
- Remove accumulation of upstream sediment.

Note: references to "right" and "left" are with respect to facing downstream.

2. Medicine Lake Outlet Structure (Constructed 1996)

- a. The overall condition of the structure appeared satisfactory. The concrete appeared to be in good condition with no major cracks.
- b. A couple inches of water was flowing over the weir. A couple feet of water existed in the channel between the weir and the lake during the inspection.
- c. The top rail of the chain link fence along the north side of bridge was loose and one of the fence posts has settled and no longer reaches the top rail, as noted in the 2008 inspection.
- d. Geotextile fabric flap referenced and submerged during previous inspections was observed as a lapped joint in 2008. In 2009 more of the filter fabric was exposed than in the previous year.

Recommended Action:

- None

Golden Valley Features

Inspection Date: November 17 and 18, 2009

Personnel: Jake Burggraff (Barr), Whitney Eriksson (Barr)

1. Wisconsin Avenue Control Structure (Constructed 1987)

- a. The overall condition of the structure appeared to be satisfactory.
- b. The culverts have settled approximately 3-4 inches directly under Wisconsin Avenue (water is deeper in the middle). This comment was noted in previous inspections and no noticeable change has occurred since 2005 inspection.
- c. The portion of the gabion baskets that were below water have deteriorated and baskets are not intact; riprap has fallen out of the baskets at some locations (the deterioration has increased over the years and since the 2002 inspection).
- d. A small sediment delta has been forming on the upstream end of the structure as noted in previous inspections.
- e. The flood gate was in the down-position at the time of the inspection; some of the paint was peeling from the gate and rust forming on either side of the gate.
- f. Noted erosion around CMP pipe on North side, just upstream of Wisconsin flood gate.

Recommended Action:

- Monitor gabion baskets and potential erosion during future inspections.
- The flood gate should be repainted to prevent further rusting.

2. Golden Valley Country Club – Includes Box Culvert, Overflow Weir, D/S Channel Constructed 1994)

- a. The channel appeared to be in satisfactory condition with no change as stated in previous inspections. The riprap is in place along the channel and there was no erosion noted on either bank. Some riprap had collected in the channel bottom. Weeds and grass have grown in the riprap in the lower part of the channel. No debris, trees or brush have accumulated in the channel.

Note: references to “right” and “left” are with respect to facing downstream.

- b. The box culvert structure appears to be satisfactory. No debris was found around the structure to obstruct the flow through it.
- c. The handrails along the box culvert are covered in rust.
- d. There still is a delta forming downstream of the box culvert, as noted in previous inspections. Vegetation has started to grow on the delta. Consideration should be give to remove the delta so the channel does not change course, re-route itself, or erode slopes.
- e. The overflow weir appeared in very good condition. The turf grass on the weir is very well established and groomed. New 8" pipe drain installed during 2008 inspection now in place upstream of box culvert.

Recommended Action:

- Paint box culvert hand rails
- Remove downstream delta

3. Westbrook Road Crossing (Constructed 1993)

- a. The overall condition of the structure appeared satisfactory.
- b. As noted in previous inspections a small hairline crack was observed along the top of most sections of the Bebo arch culvert. The crack had extended across the entire section (pre-cast section) width. The cracks appeared to be about 2' off center of the structure (no change since 2002).
- c. Small piece of concrete spalled off of top of wing wall section at downstream eastside there has been no change to the top of the wing wall since the 2007 inspection.
- d. Storm sewer pipe entering bebo from west side has exposed rebar and could use some mortar around the top of the pipe to form a better seal to the bebo.

Recommended Action:

- Monitor cracks during future inspections.

4. Regent Avenue Crossing (Constructed 1981-1984)

- a. The overall condition of the structure is satisfactory.
- b. The channel bottom was very soft and approximately one foot of very soft silt coated the base of the structure. Due to high water levels and silt inspectors were unable to walk through the culvert.
- c. The depth from the Bebo arch culvert crown to the creek bottom was measured again this year at each end of the culvert and there appears to be a slight decrease in depths. The measurements of 9.65 feet upstream side and 9.2 feet downstream side were slightly less than the same measurements in previous years. (2008 – 10.0' upstream and 9.4' downstream, 2007 - 10.4' upstream and 9.6' downstream)
- d. Some scour/erosion was again observed around the end of the left downstream wing wall as was noted in the last four years and some erosion has now been discovered at the upstream right side wing wall, as noted last year. Additionally, erosion was noted on the left upstream bank and the right downstream bank due to the high flows.
- e. Top of upstream right wing wall minor spalling with 3 small cracks, as noted previously.
- f. Diagonal hairline crack near top of upstream left wing wall.

Note: references to "right" and "left" are with respect to facing downstream.

- g. Large maple tree undercut at upstream left bank, as noted in 2008 inspection.

Recommended Action:

- Monitor channel depth during future inspections
- Monitor erosion of bank at downstream of left wing wall and upstream right wing wall and consider repair of bank with rip rap.

5. Noble Avenue Crossing (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. Hairline cracks were noted along the top of the Bebo arch culvert. Most Bebo pre-cast sections had 2-4 hairline cracks across each section. Most cracks were either down the center or spaced 2 ft. off from center. (Same comment noted in past inspections since 2002).
- c. Downstream right wing wall tilted in (toward creek) 1-1/8-inch. Measurement increased by 1/8 inch since 2008 inspection.
- d. The depth from the Bebo arch culvert crown to the creek bottom was measured this year at each end of the culvert. The measurements were 9.96 feet upstream side and 8.67 feet downstream side. Previous measurements have not been taken.
- e. Small piece of concrete chipped off the top of the left downstream wing wall and cracks nearby as noted in previous inspections. Some of the cracking appears to be expanding.
- f. Erosion at the upstream right wing wall at the outside edge of the wing wall. Filter fabric is exposed. Creek is entering the Bebo arch culvert at an angle. Additional riprap may minimize erosion.
- g. Storm sewer pipe on the north side entering the Bebo under the road needs re-grouting as there is exposed rebar. This has been noted in previous inspections since 2002.
- h. The hand rails were painted in 2007 and look in good condition except for a small amount of peeling on the bottom of the rails.
- i. 4 to 5 hairline cracks on downstream right wing wall section nearest roadway no change since previous inspection.

Recommended Action:

- Monitor cracks, spalling and scour during future inspections especially the downstream left wing wall.
- Patch exposed end of RCP storm sewer connecting bebo section from north side of culvert.

Golden Valley/Minneapolis Features

Inspection Date: November 18, 2009

Personnel: Jake Burggraff (Barr), Whitney Eriksson (Barr)

1. Highway 55 Control Structure (Constructed 1987)

- a. The overall condition of the structure appeared satisfactory.

Note: references to “right” and “left” are with respect to facing downstream.

- b. There is some erosion around both the east and west sides of the structure from water flowing along the bituminous path from above the structure as noted in 2007 inspection. The east side is more noticeable than the west side. Riprap and filter fabric could be placed on both sides.
- c. There is a small hairline crack in the left wall of the inlet structure. The crack is positioned in the middle of the wall extending full height, this crack has been noted in previous inspections and there is no apparent change.
- d. One smaller bush is growing into the fence between the control structure and the bituminous path.

Recommended Action:

- Monitor cracks and erosion during future inspections
- Consider adding riprap and filter to each side of the structure, same comment since 2007. (not urgent)

Crystal Features

Inspection Date: November 17-18 and 25, 2009

Personnel: Jake Burggraaf (Barr), Whitney Eriksson (Barr); Dave Fritzke, November 25 (Crystal)

1. 36th Ave. & Hampshire Ave. Crossing/Markwood 8'x 6' Box Culverts (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. The riprap in the box culverts still remains as noted in previous inspections; most of the riprap was located in the upstream end of the left (north) box culvert.
- c. The crack located in the right/top of the south culvert noted in previous inspections has not changed.
- d. On both culverts, the fifth joint from the downstream end had a 2 1/2" gap.
- e. The RCP drainage pipe that was noted first in the 2004 inspection ties directly into the left (north) box. No grout exists on the inside of the connection and exposed wire is visible (no change since 2004).
- f. On the downstream end of the box culverts trees are growing between the culverts.
- g. Catch basins on north side of 36th Ave. at Jersey have loose bolts on curb boxes.

Recommended Action:

- Monitor cracks and joint gaps during future inspections.
- Remove riprap and debris from inside culvert and replace at upstream inlet.
- Patch exposed end of RCP drain.
- Cut trees growing between the box culverts.
- Tighten bolts on curb boxes

2. Markwood Open Channel (Constructed 1981-1984)

- a. The channel banks have become inundated with trees and brush as noted in previous inspections. The trees are becoming large now and the brush very thick. The bottom of the channel is mostly free of vegetation except for one larger twin trunk maple tree that has slid into the middle of the channel (behind 7001 Markwood Dr.)

Note: references to "right" and "left" are with respect to facing downstream.

- b. Behind 7002 36th Ave N. and 6926 36th Ave. N there is erosion on the south bank of the channel.
- c. Erosion on the south bank behind 6917 36th Ave is causing a lattice fence to become unstable and lean towards the channel.

Recommended Action:

- Any trees, limbs, and brush that may impede high flows should be removed from the channel.
- The twin trunk maple tree should be removed.

3. Markwood Channel Gabion Section (Constructed 1981-1984)

- a. Some small trees and brush continue to grow through the gabions as noted in previous inspections. They have been cut down before and have re-sprouted even thicker than before; however the gabions appear to be intact.
- b. The east edge of the gabions are located next to a retaining wall, behind 7010 36th Ave. The retaining wall has blocks on the top that are separated from the others and leaning towards the channel.

Recommended Action:

- Any trees and brush should be cut off of the gabions and the stumps treated with herbicide to prevent re-sprouting. Gabions will be damaged if the trees continue to grow.

4. Markwood D/S Overflow (Constructed 1981-1984)

- a. Sediment has accumulated in front of the overflow inlet as noted since the 2006 inspection and some small trees and brush.

Recommended Action:

- The sediment should be removed to bring the channel to the overflow back to the designed elevation.
- Any trees or brush that may impede flows should be removed.

5. Markwood 8'x4' Box Culvert (Constructed 1981-1984)

- a. The downstream side of the box culvert is undermined approximately 4 feet in the middle of the box. This section should continue to be monitored, and repaired when other features along this reach are maintained or if undermining extends further.

Recommended Action:

- Continue to monitor the erosion under the box culvert outlet during future inspections. Repair when other features along reach are maintained or if undermining increases.

Note: references to “right” and “left” are with respect to facing downstream.

6. Georgia Ave. Crossing (Constructed 1981-1984)

- a. The overall condition of the structures is satisfactory; however some maintenance may be required to preserve structural integrity.
- b. Sediment has accumulated on the south side of the creek bank directly in front of the south culvert thus directing the majority of the base flows into the northern culvert. This was first noted in the 2008 inspection.
- c. The casting assembly on the manhole over the north culvert on the east side of Georgia is off-set on the concrete opening of the manhole top exposing soil when observed from below. The manhole is in the boulevard area and the soil around it seems to be very firm and should be checked in the future. This was first noted in the 2007 inspection.
- d. Large trees are growing on the upstream side between the culvert inlets. First noted in 2009 inspection.
- e. As noted in previous inspections, the upstream culvert flares have settled slightly and there is some under cutting of the flared sections. No soil remains between the culverts from the upstream side to approximately 4 feet downstream of the upstream edge.
- f. The downstream culvert flares are undercut nearly 4 feet and the first sections are supported only by the tie rods. The under cutting of the outlets were measured again this year at 4 feet. The banks on the down stream end on each side of the culvert flares have also eroded as noted since the 2005 inspection. The south bank continues to show the most erosion. The north bank has an old concrete sewer exposed and failing.

Recommended Action

- Repair undermined flared end sections and eroded banks by backfilling and protecting with riprap and filter fabric.
- Remove old concrete pipe in downstream north bank of creek.

7. Edgewood Embankment (Constructed 1981-1984)

- a. The overall condition of the feature appeared satisfactory.
- b. There is no visible settlement along the embankment
- c. The trees on the west side of the berm that have been referenced in previous inspections are now 3 to 4 inches in diameter.
- d. The creek banks approximately 200 feet downstream of the outlet structure are eroded on each side of the creek and are about 6 feet vertical as were noted during previous inspections.

Recommended Action

- Monitor erosion of down stream banks during future inspections.
- Remove trees along embankment, as necessary

8. Douglas Drive (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. Erosion noted on upstream right bank.

Note: references to “right” and “left” are with respect to facing downstream.

- c. Erosion on left side of private drive CMP culvert just downstream of the downstream end of the box culvert.
- d. Private CMP culvert is sagging on private driveway

Recommended Action

- Monitor street pavement for settlement.

9. 34th Ave. Crossing (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. Some erosion on the upstream east side bank as noted in previous inspections.
- c. Tree roots are exposed along the bank on either side for approximately 200 feet upstream from the crossing culvert. A sanitary sewer manhole is exposed in the middle of the creek as noted in previous inspections.
- d. Some sediment was noted on the bottom of the pipe, at similar levels to the 2008 inspection.
- e. The tie rods are very rusty and flaking near the center section of the culvert, as noted in previous inspections.
- f. Handrails need paint.
- g. Road guardrail cables are broken and hanging loose on the south side of the road.

Recommended Action

- Monitor erosion during future inspections.
- Remove rip rap and debris from in front of the outlet end of the culvert.
- Paint handrails.
- Fix broken guardrail cables.

10. Brunswick Crossing (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. There are still rocks missing from the bottom gabion on the north side adjacent the home as noted in previous inspections. The gabion appears to be settling as indicated by the repairs added to the top of the gabions. Noted sloughing of gabion baskets and potential issues with neighbor's fence. Comparing photos from year to year shows some additional settlement from 2008 to 2009. There appears to be no foundation for the gabion wall with a majority of rocks missing from the bottom row of the gabions.
- c. Drive and fence settling towards creek at 3224 Brunswick.
- d. Sediment has accumulated over the years along the south bank of the creek on the up-stream end of the culverts thus directing most of the base flows to the northern culvert.
- e. On the south culvert, the fourth pipe joint from the downstream side has two broken ties and had been re-grouted by the City. The joint appears to be moving and is now about a 3 inch opening, with a gap between the pipe joint and the new grout. There is little change with the several other broken culvert tie-rods along each culvert as noted in previous inspections, with joint offsets up to 3/4 inch.

Note: references to "right" and "left" are with respect to facing downstream.

- f. The wide gap in the pavement noted during the previous inspection was repaired and seal coated prior to the 2008 inspection. The 2008 inspection noted some settlement, at about a half an inch at the crack. A similar measurement was taken during the 2009 inspection.
- g. A sediment delta is forming on the downstream end of the culverts.
- h. The downstream banks on each side of the creek between Brunswick and 32nd Avenue are eroded vertically 4 to 6 feet high exposing soil and tree roots.
- i. Large debris pile between two culverts on the upstream end.

Recommended Action

- Monitor concrete pipe condition and pipe ties during future inspections.
- Continue to monitor crack in pavement.
- Consider replacement of gabions before they fail or cause damage to neighbor's drive and fence.
- Remove accumulated sediment at upstream and down stream ends of culverts to keep creek aligned with culverts.

11. 32nd Ave. Crossing (Constructed 1981-1984)

- a. The overall condition of the structure appeared satisfactory.
- b. A few large trees and other debris have accumulated on the upstream end of the culverts impeding flow through the culverts.
- c. Extensive erosion observed along the creek banks between Brunswick and 32nd Avenue with exposed soil vertical banks 4 – 6 feet high. Thus exposing root masses and allowing trees to fall into the creek that can and do get lodged in-front of the culverts.
- d. Approximately 6-inches of sediment have accumulated in the lower downstream ends of the two culverts.
- e. Handrails are rusty and need painting as noted in previous inspections.
- f. Some erosion observed at upstream right bank as notes in previous inspections.
- g. 36" R.C.P. entering manhole over easterly culvert is missing grout where it is connected to the manhole. Soil around the pipe is exposed. In the 2007 inspection, ground water was observed flowing into the manhole from under the pipe.

Recommended Action

- Remove trees, sediment and debris at upstream end of culverts.
- Repair connection of 36-inch pipe into manhole.
- Monitor and consider stabilizing the stream banks between Brunswick and 32nd Ave. to prevent possible problems in the future.
- Sand, prime and paint box culvert hand rails, as necessary (not urgent)

12. Bassett Creek Park Pond and Outlet (Constructed 1995)

- a. The overall condition of the outlet pipes appears in satisfactory condition, there are some small boulders in the pipes as indicated in previous inspections.

Note: references to "right" and "left" are with respect to facing downstream.

- b. There is a large amount of sediment that has accumulated in the North West corner of the pond where the creek enters. This has been noted in previous inspections; brush and vegetation is now growing in these areas on the sediment deltas.
- c. The western half of the pond appears very shallow, as last year.
- d. Flared end section outlet is covered in riprap and debris.
- e. A depression was noted on top of the eastern culvert, behind the curb.

Recommended Action

- Survey existing pond bottom so it can be compared to the original design to determine the amount of accumulated sediment and consider future maintenance dredging project.
- In future inspections monitor size of depression on top of the eastern culvert.

13. Detention Pond and Outlet

- a. The overall condition of the outlet structure is in satisfactory.
- b. The pond is in good condition.
- c. Brush is located around the outlet.

Recommended Action

- None

Crystal/Golden Valley Features

Inspection Date: November 25, 2009

Personnel: Jake Burggraff (Barr), Whitney Eriksson (Barr)

1. HWY 100 Double Box Culverts.

- a. The control inlet structure condition appeared satisfactory.
- b. The large cracks and transition joint damage as noted in previous inspections were repaired by Mn/DOT in 2007. The repairs still remain in good shape with just a few hairline cracks in them and should continue to be monitored.
- c. As in previous inspections, accumulated sediment (approximately 12 to 18 inches deep) was noted at the downstream end of the north easterly culvert and has remained about the same since last year's inspection.
- d. The outlet portion of the structure appeared in satisfactory condition some of the pea rock in between the box culvert sections has washed away.
- e. Sediment delta forming in creek about 60 feet downstream of culverts changing creek alignment and backing up low base flows.
- f. On the downstream end of the culverts, rocks are eroding away in the space between the two culverts.

Recommended Action:

- Remove silt from down stream end of north easterly culvert.
- Continue to monitor sediment downstream of culverts.

Note: references to "right" and "left" are with respect to facing downstream.

Minneapolis Features

Inspection Date: November 18, 2009

Personnel: Jake Burggraff (Barr), Whitney Eriksson (Barr)

1. Inlet Structure

- a. The overall condition of the inlet structure appeared satisfactory but the high water backed up at the inlet prevented inspection of the lower area.
- b. The overall condition of the fence and railing appeared satisfactory.
- c. Minor cracks were found in the concrete, especially where handrail posts were embedded.
- d. Approximately 30 inches of silt in front of structure with lots of debris. The debris was backing up the water in the creek all the way to the Irving Avenue Bridge making inspection of the riprap channel not feasible, similar to the conditions found 2008 inspection.
- e. The School Board is storing roofing material directly over the top of the inlet structure that will be in the way for City crews to access the structure for cleaning.
- f. A sediment pile is forming on the upstream south side that has vegetation growing on it.

Recommended Action:

- Remove accumulates debris from in-front of the inlet structure to limit possible back-up in the spring.

2. Debris Barrier

- a. The debris barrier has some debris upstream.

Recommended Action:

- Clear debris from upstream of the debris barrier. Remove debris from site and do not place along the shore.

3. New Tunnel: Phase 3 Tunnel-Double Box Culvert, (Constructed 1992) [5-year inspection schedule]

Inspection Date: November 19, 2009

Inspection Personnel: Jim Herbert (Barr), Jake Burggraff (Barr), Rich Ver Strate, Mike Weeber (Mpls), Will Schutte (Mpls).

Surface Attendants: Irv Woodson (Mpls), John Engstrom(Mpls), Matt Stonich (Mpls)

- a. The double box culvert was inspected by Barr Engineering and City of Minneapolis staff. Kevin Danen, P.E. City of Minneapolis coordinated overall planning. Access assistance and surface attendants were provided by City of Minneapolis staff. Fall protection was provided in accordance to OSHA requirements and included tripod and winch at entry and at each intermediate access manhole. Surface attendants monitored inspection at surface of access manhole and at manholes along box culvert. Barr and Minneapolis staff completed the confined space entry permit prior to inspection. Oxygen and combustible gas was monitored during the entire inspection by

Note: references to “right” and “left” are with respect to facing downstream.

- b. Inspection began at 9:55 a.m. at box culvert inlet (Sta 172+24). Crew walked downstream along the right box of double box culvert to the edge of drop structure (Sta 116+72.5). Crew turned around and walked upstream along left box culvert from drop structure to box culvert inlet (Sta 172+24). Inspection was completed at 3:20 p.m. The double box culvert transition to single box culvert occurred at Sta 119+88. (Note right and left with respect to facing downstream.)
- c. Several hairline shrinkage cracks were observed throughout the culvert sections. Seepage and accumulation of leachate deposits was noted at some of the cracks. The shrinkage cracks are most likely construction related and occurred shortly after construction of the double box culvert.
- d. Diagonal cracks and concrete deterioration was observed at several shear keys. These cracks and deterioration were also observed during the 2004 inspection and most likely occurred during initial settlement.
- e. Gaps have developed ≈ 1 to $1\frac{1}{2}$ inches wide at approximately 70% of the shear keys (joints. Ruler typically extended 1.6 feet through wall at joints. Loss of backfill material was not noted through gaps. Black membrane (5' wide butyl rubber membrane) appeared to protect joints at outside of structure to prevent loss of material. Gaps probably due to shrinkage. Joint filler (1/2" thick bitumastic bond breaker) has deteriorated at several joints.
- f. New access vaults were installed at Station 128+50 (single box) and Station 119+50 (double box) as part of Twins Stadium construction. The access vault at Station 125+10 was abandoned.
- g. A 3-inch hole was observed through the box culvert concrete crown at Station 123+19 (right box). The hole appeared to be due to soil borings during construction of Twins Stadium that passed through the concrete crown. The hole should be patched.
- h. Deteriorated/eroded concrete was observed along the base slab at various locations. Generally the eroded areas were located along existing joints, were less than 2-inches deep and ranged in size from (1 ft x 1 ft) to (2 ft x 2 ft). One small scour hole at Station 164+50 (right box) was 3-4" deep. A (1 ft. x 4 ft. long x 1-2 in. deep) eroded area was observed along the base slab joint at Sta 141+00. A (1 ft x 6 ft long x 2 in. deep) eroded area was observed along the base slab joint at Sta 132+50.
- i. Exposed rebar was observed at RCP inlet between Shear Key 4 (Sta 166+00) and Shear Key 3 (Sta 168+00)

Recommendations

- a. BCWMC should prepare letter to Minnesota Ballpark Authority requesting it investigate and patch the 3-inch hole through the double box culvert to prevent potential loss of material.
 - b. Cracks and deficiencies noted in double box culvert do not require immediate attention and should be evaluated during the next 5-year inspection scheduled for 2014.
 - c. Double Box Culvert inspection notes should be sent to the City of Minneapolis and Corps of Engineers.
4. New Tunnel: Phase 1-Second Street Tunnel (Constructed 1979) and Phase 2-Third Avenue Tunnel and Drop Structure (Constructed 1990) were inspected February 20, 2008 when the Corps of Engineers lowered the middle pool. Portions of these features are submerged and are on a 20-year inspection schedule.] Note: See December 1, 2008 inspection report

Note: references to "right" and "left" are with respect to facing downstream.

March 9, 2010



Mr. Michael Welch
Bassett Creek Watershed Management Commission
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435

Re: Local Surface Water Management Plan - response to BCWMC comments
City of Robbinsdale
Bonestroo File No.: 000143-09004-0

Dear Mr. Welch:

Thank you for taking the time to review and provide comments on Robbinsdale's draft Local Surface Water Management Plan (LSWMP). This response letter will address comments provided in the staff review letter/checklist from Barr Engineering Company dated February 11, 2010. It is our understanding that the Bassett Creek Watershed Management Commission (BCWMC) will be recommending Robbinsdale's LSWMP for approval at their March 18, 2010 meeting, providing the City adequately addressed the Commission's comments in the February 11, 2010 review letter/checklist.

The Commission's comments from the February 11, 2010 review letter/checklist are identified in italics below, followed by the City responses to these comments. Specific pages from the LSWMP revised to address the Commissions comments are attached to this letter.

- Commission Comment 2: Issue 10 of Table 6.2 needs to identify the water quality basin construction project as BCWMC CIP project GR-2. Project GR-2 also needs to be added to Table 8.4 (Storm Water System Improvements Activities), with implementation proposed for in 2016. Section 8.8 (Financing) of the LSWMP needs to also discuss that the BCWMC is the source of funding for project GR-2 and that the BCWMC funding is provided through an ad valorem tax collected by Hennepin County.*

City Response: The LSWMP was revised to reference the water quality basin construction project as BCWMC CIP project GR-2 and was also added to Table 8.2. The funding source discussion regarding the ad valorem tax was provided in Section 8.8. See attached pages 36, 59, and 60.

- Commission Comment 3: The table does not include the following lakes/impairments:*
 - Wirth Lake (Golden Valley), which is impaired for nutrients/eutrophication and biological indicators.*

City Response: Robbinsdale is not hydraulically connected to Wirth Lake under normal hydrologic conditions and is not included in the proposed list of MS4's with waste load allocations (see June 22, 2009 Powerpoint presentation by Greg Wilson, Barr Engineering

Company). In addition, we received further clarification from the MPCA indicating that MS4's contributing to Bassett Creek upstream of Wirth Lake, such as Robbinsdale, will not be responsible for waste load allocation. Therefore, the City has not added Wirth Lake impairment to Table 2.5.

3. *Commission Comment 5: It is recommended that the types of water quality BMPs associated with the road reconstruction, the location of the CDS unit installations and the location(s) of the pond sediment removal be specified if known at this time.*

City Response: At this point, plans for future street reconstruction projects are not developed enough to identify types and locations of associated water quality BMPs. No specific pond sediment removal projects have been identified at this time.

4. *Commission Comment 7: It is recommended that the development of [the ordinance to address the propose application of pesticides, herbicides, and fertilizers] be included in the City's Official Control Implementation Actions (Table 8.1).*

City Response: The development of the ordinance to address the propose application of pesticides, herbicides, and fertilizers was included in Table 8.1. Tables 3.1 and 6.1 and Policy 14.6 were also updated to include reference to existing City Code Section 1145. See attached pages 22, 32, 52, and 54.

5. *Commission Comment 8: One or more of policies [3.2, 3.4, or 3.9] needs to be revised to state that there will be no increase in phosphorus load (non-degradation) for redevelopment projects that result in increased impervious surface.*

City Response: The following statement was added to Policy 3.9: "Redevelopment projects that propose to increase the existing impervious area by any amount shall provide water quality treatment for all areas of site disturbance in conformance with BCWMC standards, which states that all redevelopment projects that result in an increase in impervious area must implement BMPs to prevent an increase in phosphorus loading from the site (BCWMC Policy A, Section 4.2.2.4)." See attached page 47.

6. *Commission Comment 9: It is recommended that the development of [the ordinance to address wetland management, including wetland buffer standards, that are consistent with the requirements of BCWMC] be included in the City's Official Control Implementation Actions (Table 8.1).*

City Response: The development of an ordinance to address wetland management is already included in Table 8.1. Language regarding buffers requirements was added to this table. See attached page 54.

7. *Comment 10: The LSWMP needs to be revised to clarify the status of shoreland regulation in the city (e.g., how will the city enforce DNR shoreland protection regulations without a shoreland ordinance).*

City Response: Policy 12.2 has been added stating, "Robbinsdale will develop a shoreland ordinance consistent with the DNR Shoreland Protection Regulations and any additional shoreland regulations of the local WMC's". Table 8.1 has been updated to include the

development of a shoreland ordinance as an implementation item. This action would fall under Activity #18 on Table 8.4. See attached pages 51 and 54.

8. *Commission Comment 11: Appendix C needs to be revised to 1) include all of the types of projects that require Commission review and 2) clarify the Commission standards for nondegradation, infiltration/filtration, wet ponds, rate control, and floodplain alteration. Section 3.0 of the BCWMC's Requirements for Improvements and Development Proposals (July 17, 2008, as revised) lists the types of projects requiring BCWMC review.*

Commission Comment 11: It is recommended that the LSWMP include a policy describing permissible floodplain land uses or stating compliance with the BCWMC requirements and referencing those requirements.

Commission Comment 11: It is recommended that a similar policy [3.2] be included in the Water Quantity policies section of the LSWMP.

City Response: Appendix C (see attached) has been revised to 1) include all of the types of projects that require Commission review and 2) clarify the Commission standards for nondegradation, infiltration/filtration, wet ponds, rate control, and floodplain alteration. Section 3.0 of the BCWMC's Requirements for Improvements and Development Proposals (July 17, 2008, as revised) lists the types of projects requiring BCWMC review.

City Response: Policy 2.9 was added stating "Robbinsdale will enforce the permitted uses defined in City Code (Section 530.01 Floodplain Management District Ordinance)". See attached page 45.

City Response: The City acknowledges this comment, however Policy 3.2 is directed specifically at nondegradation and is most appropriate in the Water Quality Section (Section 7.4) of the LSWMP.

9. *Commission Comment 15: It is recommended that a policy with similar intent [to Policies 4.2 and 4.3] be included in the Water Quantity policy section of the LSWMP.*

City Response: The City acknowledges this comment, however feels as though the most appropriate section to address runoff volume reductions is in the Volume Management Section (Section 7.5) in the LSWMP.

10. *Commission Comment 18: The LSWMP does not address permitted land uses within the floodplain, or reference the policies of the BCWMC regarding this issue. The floodplain-related policies of the BCWMC are not referenced within the LSWMP.*

City Response: Permissible floodplain land uses are described in City Code Section 530.01 and Policy 2.9 was added stating "Robbinsdale will enforce the permitted uses defined in the Floodplain Management District of the City Code (Section 530.01 Floodplain Management District Ordinance)". See attached page 45.

11. *Commission Comment 20 and 21: It is recommended that the performance standards are summarized in Section 6.0 of the LSWMP.*

City Response: To address the intent of this comment, the following text has been added to Section 6.4: "In addition, the performance standards included in City Code addressing the six minimum control measures identified above can be found on the City's website (see Table 3.1 for Code Sections): <http://www.ci.robbinsdale.mn.us/citycode.shtml>". See attached page 41.

12. *Commission Comment 24: Section 6.3.2 and Appendix B adopt the wetland buffer standards as presented in the Comprehensive General Guidance Manual for MnRAM, version 3.0; however, the LSWMP does not identify specific buffer requirements for other water resources.*

City Response: All waterbodies within Robbinsdale are identified as wetlands on the NWI wetland map (Figure 2.4) and as such would be required to meet the wetland buffer standards in accordance with their respective management classifications.

13. *Commission Comment 34: Storm water flow directions are not specified in Figure 2.7 (which includes storm sewer data and storm sewersheds). It is recommended that flow directions be added to Figure 2.7.*

City Response: The storm water flow directions within the jurisdiction of the BCWMC have been added to Figure 2.7. See attached page 18.

We trust these responses will adequately address the comments presented in the Commission's review letter/checklist dated February 11, 2010. Again, thank you for your efforts in reviewing the City's LSWMP. Please contact me at 651-604-4801 if you have any questions regarding our responses.

Sincerely,

BONESTROO



Bradley P. Schleeter, PE
Project Manager

Attachments: LSWMP revised pages

cc: Richard McCoy, City of Robbinsdale
Karen Chandler, Barr Engineering Company



Barr Engineering Company
4700 West 77th Street • Minneapolis, MN 55435-4803
Phone: 952-832-2600 • Fax: 952-832-2601 • www.barr.com An EEO Employer

6H

Minneapolis, MN • Hibbing, MN • Duluth, MN • Ann Arbor, MI • Jefferson City, MO • Bismarck, ND

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Agenda Item 6H – City of Robbinsdale Local Surface Water Management Plan Approval
Date: March 11, 2010
Project: 23/27 051 2009 072

6H. City of Robbinsdale Local Surface Water Management Plan Approval

Recommended/requested Commission actions:

1. Adopt Resolution 10-03 approving City of Robbinsdale's Local Surface Water Management Plan

City of Robbinsdale Local Surface Water Management Plan (LSWMP) Approval

The Commission sent its comments on the draft City of Robbinsdale LSWMP in late February (memo dated February 11, 2010). The city's responses to the comments are contained in a letter from the city's consultant (Bonestroo) dated March 9, 2010 (letter is attached to this memo), along with the revised portions of the draft LSWMP.

Upon review of the responses, Commission staff found all of the responses and related LSWMP revisions to be satisfactory. Staff recommends that the Commission adopt Resolution 10-03 approving the City of Robbinsdale LSWMP.

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION

RESOLUTION NO. 10-04

A RESOLUTION APPROVING THE LOCAL PLAN PREPARED
BY THE CITY OF ROBBINSDALE

WHEREAS, the Bassett Creek Water Management Commission has been organized as a joint powers watershed management organization pursuant to the authority set forth in Minnesota Statutes, Section 103B.211, and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources, and

WHEREAS, the water management plan of the Commission and Minnesota Statutes require that local water management plans be prepared as required by Minnesota Statutes, Section 103B.235 and in accordance with Minnesota Rules, Chapter 8410, and

WHEREAS, the City of Robbinsdale has prepared and submitted to the Commission the City's local water management plan, and

WHEREAS, Minnesota Statutes, Section 103B.235, Subd. 3 authorizes the watershed management organization to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein,

NOW, THEREFORE, BE IT RESOLVED By the Bassett Creek Water Management Commission, as follows:

1. The Robbinsdale Local Surface Water Management Plan dated December 2009, as amended, is hereby approved.
2. This Commission has reviewed the plan and hereby determines that the plan has been prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules 8410.0160 and 8410.0170, and contains the requirements for local plans.
3. In accordance with Minnesota Statutes, Section 103B.235, Subd. 4, the Robbinsdale plan shall be adopted and implemented by the City within 120 days of this action, and the City shall amend its official controls in accordance with the plan within 180 days.

4. Pursuant to Minnesota Statutes, Section 103B.235, Subd. 5, and consistent with the Bassett Creek Water Management Plan, the City shall submit amendments to the local water management plan to this Commission for review and approval in accordance with State Statutes and Minnesota Rules.

Chair

Date

Attest:

Secretary

Date

BCWMC Education & Public Outreach Committee

Meeting Notes from March 5, 2010

Members present: Liz Thornton, Stu Stockhauss, Margie Vigoren, Ginny Black and Pauline Langsdorf

Education & Public Outreach Plan Development BWSR Workshop

Margie Vigoren has represented the BCWMC at these meetings. Two more meetings are planned. The workshop is designed for one representative from each of the Watershed Management Organization's (WMO's) in the west metro area. The WMO's that send representatives to the West Metro Watershed Alliance (WMWA), formerly called the Joint EPOC, have attended these workshops as well as a few other WMO's. They are in the process of developing guidelines to work through strategies which will be determined by each WMO's Education & Public Outreach Committee. Then this will be presented to their respective WMO.

WMWA Update

The February meeting of WMWA was snowed out in February. An oral report will be given of the March 9th meeting at the BCWMC March meeting. The WMWA April meeting will be April 13, 8:30 a.m., in Conference Room 2 at the Plymouth Creek Center, 14800 34th Ave. N. in Plymouth.

Rain Garden Workshops

BCWMC as part of WMWA financially supports rain garden workshops. Judie Anderson, of WMWA, has arranged for workshops at the following sites:

March 31, from 6:00-9:00 p.m. – Champlin Park High School

April 17, from 9:00-Noon - Robbinsdale (workshops A & B combined)

May 18 from 6:00-9:00 p.m. - Crystal (workshops A & B combined)

May 20 from 6:30-8:30 p.m. Plymouth, St. Barnabas Lutheran Church (part A workshop only)

Seeds Packets for 2010 Handouts

We decided that we would order 300 seed packets to handout at various events. Instead of the mix of native flower and native grasses we have used in the past we will change the mix to consist of just blackeyed susan and purple coneflower seeds. We feel this mix will be more successful as we expect the seeds to germinate better and as a result have higher success rate. Pauline will check into the cost of making this change. We want to have the seed packets in hand by our first public event in April.

Plymouth Yard and Garden EXPO – April 9 & 10

BCWMC will have our exhibits, brochure and seed packets at the Plymouth Yard and Garden EXPO on April 9 & 10. Friday, the 9th it is open from 6:00-9:00 p.m. and Saturday, the 10th it is open from 9:00 a.m. to 1:00 p.m.

Teacher Focus Group – Ongoing Discussion

We continued our discussion on our next steps following the input we received at the Teacher Focus Group we held in January. We decided in our review of their comments to decide which of the issues they raised are *easy to change*, are *doable*, are more difficult but possible and *those over which we have no impact*. We will continue with this evaluation at future meetings.

2011 Education & Public Outreach Budget

We will develop our first draft of the 2011 Education & Public Outreach budget at our April meeting.

Next Meeting

The next meeting of this committee is scheduled for Friday, April 2nd at 9:00 a.m.

Notes by Pauline Langsdorf

February 26, 2010
For immediate release.

Raingarden Workshops Scheduled in Northwest Metro Area

Four local watershed organizations - the Basset Creek, Elm Creek, Shingle Creek and West Mississippi Watershed Management Commissions - are partnering with Metro Blooms to offer low-cost raingarden workshops and design assistance in the northwestern metro area. Learn how to manage stormwater runoff by installing a raingarden using native plants that will improve water quality in our lakes, rivers and streams. Metro Blooms has offered raingarden workshops in the metro area since 2005 and more than 4,400 people have attended. Metro Blooms has more than 25 years of history promoting gardening to beautify communities and to heal and protect the environment. For more information and workshop details visit their website www.metroblooms.org.

2010 Raingarden Workshop Schedule

Register at metroblooms.org or call (651) 699-2426.

2010 Raingarden Workshop Part A Location

May 20, 2010 (6:30 – 8:30 p.m.) St. Barnabas Lutheran Church 15600 Old Rockford Road, Plymouth

The **Raingarden Workshop (Part A)** teaches landowners how to install a raingarden using native plants that don't require fertilizers or pesticides, and whose long roots help draw the water deep into the soil. **Rusty Schmidt**, a Minneapolis landscape ecologist, is the key presenter. After attending Part A, landowners can follow-up with the **Part B Raingarden Design Workshop**. In a two-hour small group format, they will receive professional advice about their raingardens from Metro Blooms Landscape Design Assistants and local Master Gardeners who are trained in landscape design and horticulture. For a list of Part B Workshop dates visit www.metroblooms.org.

2010 Raingarden Workshop & Design Studio Locations (Combines Both A & B Workshops)

March 31, 2010 (6:00-9:00 p.m.)	Champlin Park High School	6025 109th Avenue North, Champlin
April 17, 2010 (9:00 a.m.-Noon)	Robbinsdale Public Safety Building	4101 Hubbard Avenue N, Robbinsdale
May 18, 2010 (6:00-9:00 p.m.)	Crystal Community Center	4800 Douglas Drive N, Crystal

The **Raingarden Workshop & Design Studio** is a three-hour session that combines the content of the A and B workshops. Participants will learn about watershed management, stormwater runoff, and raingarden basics including design, installation and maintenance of raingardens using native plants. In the second half of the session participants will receive hands-on assistance in planning a raingarden project from Metro Blooms Landscape Design Assistants and local Master Gardeners who are trained in landscape design and horticulture.

Space is limited. Register with a credit card at metroblooms.org or send a \$10 check payable to Metro Blooms, PO Box 17099, Minneapolis, MN 55417. Specify workshop location and include your name, address, zip code, phone number and e-mail address. See more workshop listings at metroblooms.org.

--30--

Judie A. Anderson
Watershed Administrator
763.553.1144
judie@jass.biz

Z:\Shingle Creek\Education\Metro Blooms Raingardens\2010\Press Release.doc

Teacher focus group outcomes – Thurs., Jan. 14, 2002

BCWMO Education & Outreach Committee

Current water quality curriculum components:

Project WET
Grade 4 FOS kit (Hopkins)
River Watch

Barriers

Funding

Field trips taken as part of the curriculum must be paid for by the school (not the students)

Not understanding that “in kind” contributions can be used as matching funds for BCWMO grant

Curriculum is compartmentalized (not interdisciplinary)

Teacher training, testing and funding all focus on reading and math

Time:

- Class length

- Time to plan

- Time to understand and fill out grant application

- Standardized tests take up much of the time

- Limited time for developing a grant project, understanding and filling out the application

Testing

Concern for actually damaging a resource in the course of studying it with numbers of students

Student safety and supervision

Distance from a natural resource to study

Pressure to standardize curriculum

Students disconnected from nature

Class size

\$1,000 is not enough money to complete some of the desired goals (build a nature center, cover cost of program and transportation to take class to off-site learning center)

Reluctance or disinterest among colleagues

Opportunities

Do “real” work – where student water quality testing would be used in projects and/or decision-making

Introduce students to nature and habitat

Develop lessons applicable to the STEM curriculum and grant opportunities

Provide teacher training

Start after-school and community environmental learning/involvement programs

Provide funding to develop STEM curriculum

Develop nature study areas

Develop curriculum that incorporates engineering principles in water quality planning and projects

Strategies

Explore incorporating water quality engineering principles in the STEM curriculum and seek grant funding

Provide feedback of testing outcome from programs like River Watch

Increase grant funds (fewer grants with greater awards, or increase grant budget)
 Simplify the grant application and make it clear that “in kind” contributions count as matching funds
 Offer help in writing grants
 Meet with district curriculum specialists to explore water the possibility of incorporating water quality lessons
 Develop a STEM grant
 Meet with school boards – make a case for incorporating water quality lessons into curriculum
 Make a presentation at the MnSTA (Minnesota Science Teachers Association) conference to promote incorporating water quality lessons in science curricula
 Engage other stakeholders in sharing the cost and effort (e.g. lakeshore associations, scouts, faith communities, etc.)
 Hire a teacher to develop a Bassett Creek-specific water quality curriculum
 Review current K-12 science standards
 Develop a Bassett Creek educational packet, including:
 Topographical and boundary maps
 A watershed history
 Engineering lessons relating to watershed projects and plans

Next steps

Create a sample of a Bassett Creek educational packet
 Share the packet and other ideas and goals with district curriculum specialists
 Discuss sharing the work with the WMWA
 Review and revise the grant program to address concerns raised by the teachers

Teacher Participants

Dave Jackson	Birchview Elem. School	Wayzata District
Jim Brickwedde	Meadowbrook Elem. School	Hopkins District
Kent Johnson	Plymouth Middle School	Robbinsdale District
Elisa Helmke	Wayzata East Middle School	Wayzata District
Jon Ong	Cooper High School	Robbinsdale District
Kathy Kneeland	Armstrong High School	Robbinsdale District
Steve Merten	West Lutheran High School	Private School

To: BCWMC Commissioners

Re: Seed Packet Order for Various Events

From: BCWMC Education & Public Outreach Committee

Date: March 11, 2010

Background Information

The BCWMC has used a mix of native prairie flower and prairie grass seeds as handouts at various community and school events in recent years. The Education & Public Outreach committee included this item in their budget for 2010. We decided that we wanted to change the seed mixture for 2010 to include just black eyed susans and purple coneflower (both native plants). This is a mixture that doesn't require winter hardening of seeds and may result in more successful planting.

The cost of 300 seed packets is \$180, plus \$13.06 tax and an estimated shipping cost of \$10.00. Planting instructions will be printed on the seed package. The new package design will feature a picture of the two prairie flowers.

We will contract with JASS to print labels stating that the seeds are compliments of the Bassett Creek Watershed Commission and include our website at an estimated cost of \$25.

Recommendation

The BCWMC Education & Public Outreach Committee recommends approval of the purchase of 300 seed packets and labels at a cost not to exceed \$235.00. The cost is to be charged to the 2010 Education & Public Outreach budget.

February 10, 2010

To the Bassett Creek Watershed Education Committee,

Thank you once again for the grant money you are providing for the Minnaqua training. The DNR's Roland Sigurdson presented the curriculum on February 3 to five educators and City of Plymouth employees. Your generosity made it possible for those in attendance to receive training in the areas of aquatic habitats, Minnesota fish and water stewardship, among others. I look forward to using what I have learned to help my students better understand and appreciate Minnesota's wildlife and water resources. I will be sending you photos and a short update on the curriculum as we implement it.

The total cost of the training for educators within the Watershed was \$180 (\$120 to Birchview Elementary for a full day substitute and \$60 to the MN Dept. of Natural Resources for two Minnaqua curriculum guides). This is well short of the \$1000 granted by the Bassett Creek Watershed Education Committee.

Over the next month I will be working closely with City of Plymouth staff to implement one or two lessons from each chapter of the curriculum by the end of this school year. The focus on Water Stewardship will be on lessons three, four and five of chapter three. We will be putting together "kits" for each of the lessons that will include all of the manipulatives, props and reproducibles. There will be costs for the "kits" including the containers, lamination and supplies. We will make one set of kits for use at my school (Birchview Elementary) and a set for the City of Plymouth. *I would like to use some of the remaining grant money to cover the cost of the lessons.*

Once again, thank you for your generosity and your consideration as the Minnaqua lessons near implementation.

Sincerely,
Dave Jackson
Birchview Elementary
Wayzata School District
763-745-5380
dave.jackson@wayzata.k12.mn.us

AGREEMENT

THIS AGREEMENT is executed when signed by all parties and is made by and between the Bassett Creek Watershed Management Commission, a Minnesota joint powers organization (hereinafter "Commission") and David R. Jackson (hereinafter "Grantee").

1. BACKGROUND

- 1.1. The Commission has set aside in its annual budget funds for education and public awareness relating to surface water management and related environmental matters.
- 1.2. Grantee has applied to the Commission for funds to pay for educational services as described in the Scope of Services described on Attachment One to this Agreement.
- 1.3. The Commission is willing to fund the activities described in Attachment One in accordance with the terms of this Agreement.

2. SERVICES

- 2.1. Grantee will perform the services described in Attachment One (Grant Proposal) in accordance with the schedule set forth in Attachment One.
- 2.2. Following completion of the services described in Attachment One, Grantee will submit a final report to the Commission describing the activity, the outcome and results of the activity, how the outcome matched the goals and objectives described in the Grantee's application, and any anticipated continuing impacts from the activity. Along with the final report, Grantee shall submit the financial information described in part 3 of this Agreement.

3. FINANCIAL REPORT AND REIMBURSEMENT

- 3.1. Expenses listed in Attachment One will be reimbursable by the Commission up to the maximum amount of \$ 1,000.00 . Upon submission to the Commission of the final report described in Section 2.2, Grantee shall provide a list of all reimbursable expenses incurred and receipts or copies of receipts therefor.
- 3.2. Any property purchased with funds under this Agreement will become the property of the Commission unless the Commission declines to take possession of such property.
- 3.3. The Commission will reimburse the identified reimbursable expenses in accordance with Section 3.1 within 60 days of receipt of the final report and the required financial information.
- 3.4. The Commission will not be liable or responsible for payment for services or reimbursement for expenses other than those specified as reimbursable expenses in accordance with Section 3.1.

4. GENERAL TERMS

- 4.1. This Agreement will expire unless services are completed and a final report and financial information required by Sections 2.2 and 3.1 are received prior to July 1, 2010.
- 4.2. Grantee will act in all respects as an independent contractor under this Agreement and will be solely responsible for performance of services required hereunder as well as the means and manner of performance thereof. The Commission will not be an employer, partner, or co-venturer with Grantee for any purpose. Nothing herein authorizes Grantee to act as an agent or representative of the Commission for any purpose whatsoever.
- 4.3. The Grantee will assure that grant funds will be expended only for the training of teachers in schools located in the Bassett Creek Watershed or draw its student population from the Bassett Creek Watershed.

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

GRANTEE

By Virginia K. Black
Its Vice Chair
Date 1-21-10

By Dawn Jackson
Its Teacher Contact Birchview Elementary
Date 1-26-10

**Bassett Creek Watershed Management Commission (BCWMC)
Water Quality Education Grants Application**

Please print or type

Contact Name: Dave Jackson Organization: Birchview Elementary, Wayzata
School District
Mailing Address:
425 Ranchview Lane
Plymouth, MN 55447
Authorized Signature: David R. Jackson

Title: 5th Grade Teacher
Phone: 763-745-5380
Email: dave.jackson@wayzata.k12.mn.us
Amount Requested: \$1000.00 Date: 12-22-2009

Project Title: MinnAqua Training for Wayzata/Minnetonka educators

Please describe your proposal, specifying the activity or activities to be supported by the grant funds and detailing proposed expenses. Please be sure to address the following questions, using no more than two pages. You may attach other supporting documentation, such as photos (will not be returned).

Note: The BCWMC Grant Program Application Procedure and the Criteria information posted on the BCWMC Web site (<http://www.bassettcreekwmo.org>) provide details about the grant program and application qualifications.

**Bassett Creek Watershed Management Commission (BCWMC)
Water Quality Education Grants Application
MinnAqua for Wayzata and Minnetonka Public Schools**

The City of Plymouth and Wayzata Public Schools will host a MinnAqua Fishing: Get in the Habitat Educator Workshop on February 3, 2010. The target audience is 3rd-8th grade teachers from Wayzata and Minnetonka Public Schools. MinnAqua is a Minnesota focused and place based (MN Fish Habitat and Ecosystems) angling and aquatic education program of the MN DNR. Teachers will use MinnAqua in the classroom to augment their lessons on habitat, ecology and stewardship, making it meaningful to the students. Lessons may culminate in an outing to take the kids fishing, so that their lessons can be reinforced in the real world.

Each attendee will receive curricular materials including a Leaders Guide CD with (6 Chapters, 39 Lessons, 22 helpful Appendices, and accessible illustrations all on CD) and continuing education units (CEUs), 1 for each hour of instruction.

One stated benefit of the training will be activities to implement habitat and stewardship education in the classroom.

Timeline, and Budget- We have a workshop planned for February 3, at the Plymouth Creek Center. The City of Plymouth was able to get the facility free of charge and the training and CD's are free. Teachers will get substitute teachers for the day of training on a regular school day. The district will incur a charge of \$150- 175 per teacher.

MinnAqua needs to have 9 teachers for the class to be offered, possibly costing the district as much as \$1500. We are requesting a grant of \$1,000 to reimburse the district for the substitutes as incentive to allow the teachers to participate. Teachers may opt to pay \$30 to receive a paper copy of the Leaders Guide so that they can easily make copies of worksheets, and more easily peruse the materials.

Without the grant money, teachers may not have the incentive to take a day of school for the training, and training will be cancelled due to lack of interest.

The ideal is a workshop attended by 20 educators who use MinnAqua in the classroom. The students get excited about fishing, a close encounter with nature and a deeper understanding of their part in the ecosystem around them. The teachers will be excited and tell their peers about the value of the program, and share it with others, or encourage them to participate in a later workshop.

Roland Sigurdson, MinnAqua facilitator and Bassett Creek Watershed resident, shares his passion for fishing as no one else can. His love for the water is infectious. MinnAqua also has a newsletter that is right on target to keep the interest in the MinnAqua program peaked.

MinnAqua focuses on angling, and aquatic education. Ecology, habitat and stewardship lessons are embedded in every chapter of the guide. Chapter 3 - Water Stewardship will have the biggest concentration of stewardship activities, but it is important to remember that becoming a steward of the natural resources is a process that everyone goes through and many of us began that process during some type of introductory, recreational activity (i.e. fishing). If you need some supporting documentation, see <http://www.rbff.org/page.cfm?pageID=26> The Stewardship Market Research document.

Students will develop an understanding and appreciation of the outdoors and the importance of their positive impact on the water quality in their community. These new attitudes toward water quality will be observed during lesson introduction, discussions and real-world experiences.

E-mail the completed application and supporting materials to:

Ginny Black, BCWMC Commissioner

E-mail: ginny_bassettcreek@att.net

If you're unable to submit your application / materials electronically, mail them to:

Mail: Ginny Black, C/O Amy Herbert; Barr Engineering;
4700 West 77th Street; Minneapolis, MN 55435-4803

Bassett Creek Watershed Phase I 2010 Sampling Plans

Item 6E.

Minnesota Pollution Control Agency
March 4, 2010

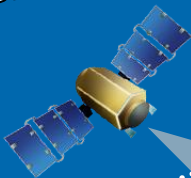
Why We're Meeting

- Display the Intensive Watershed Design
- Receive input on our scheduled locations
- Discuss and coordinate sampling efforts where possible

Local / Citizen Monitoring



Remote Sensing



Lake
Monitoring
by Watershed

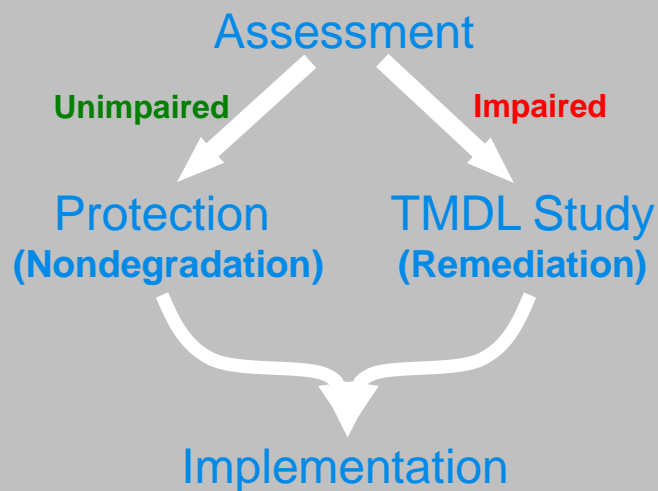
River/Stream
Monitoring
by Watershed

Load Monitoring
Network

Condition Monitoring

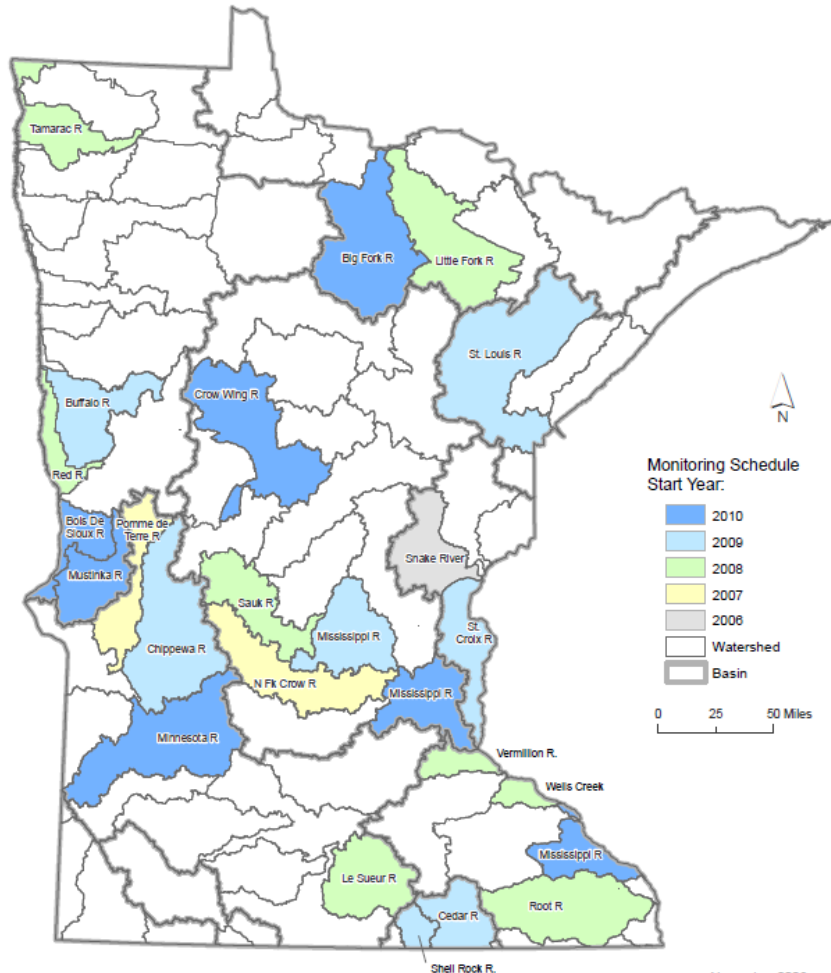
Agency Monitoring

Effectiveness Monitoring



Goals

Intensive Watershed Monitoring



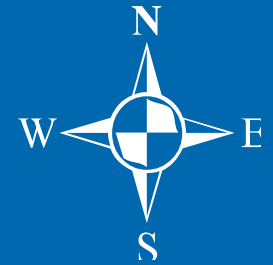
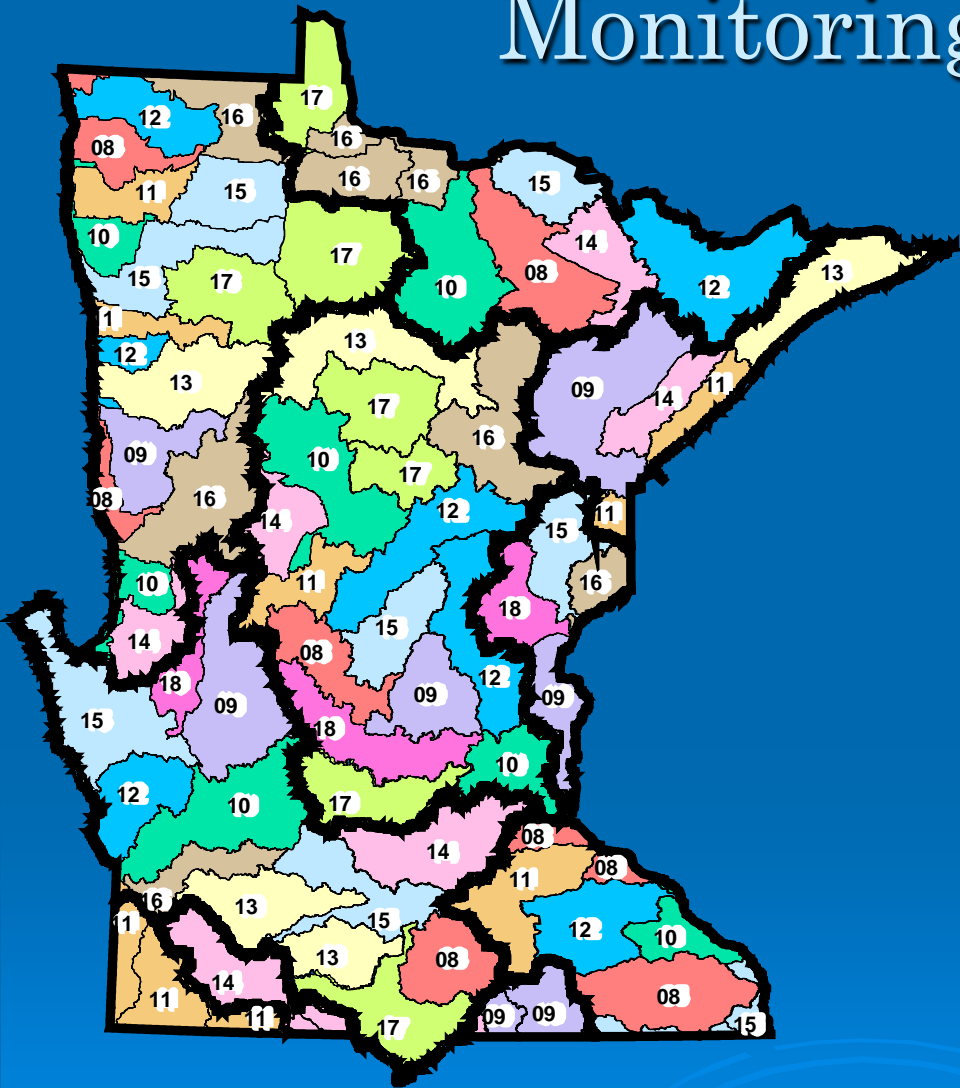
November 2009

- Monitor/assess waters on a 10-year cycle
- Integrate agency, citizen & local efforts
- Assess conditions (not just impairments)
- Identify stressors
- Inform TMDL/ protection strategy development
- Track trends

Intensive Watershed Monitoring 10 year Schedule

- Roll-out by major watershed (81)
- 1-2 watersheds/regional office/yr (Phase I)
- Custom monitoring at impaired watersheds (Phase II)
- Help plan PCA monitoring and TMDL work
- Help focus volunteer & partner monitoring work towards pour point sites

10 year Intensive Watershed Monitoring Schedule



Legend

- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018 *

**The 10 year schedule runs from 2008 to 2017. In 2018, the Snake, North Fork Crow and Pomme de Terre watersheds will be revisited; the first intensive watershed surveys on these watersheds were completed in 2006 and 2007.*



Minnesota Pollution
Control Agency

Intensive Watershed Monitoring

- **Phase I – 2010:** Identify impairments of streams and lakes within the 11 Digit HUC watersheds
- **Phase II – 2012?:** Investigate potential causes of impairments found during the Phase I study
Goal: to provide pre-TMDL support to regional offices and partners



Watershed Monitoring

Phase 1– first year

➤ Objectives:

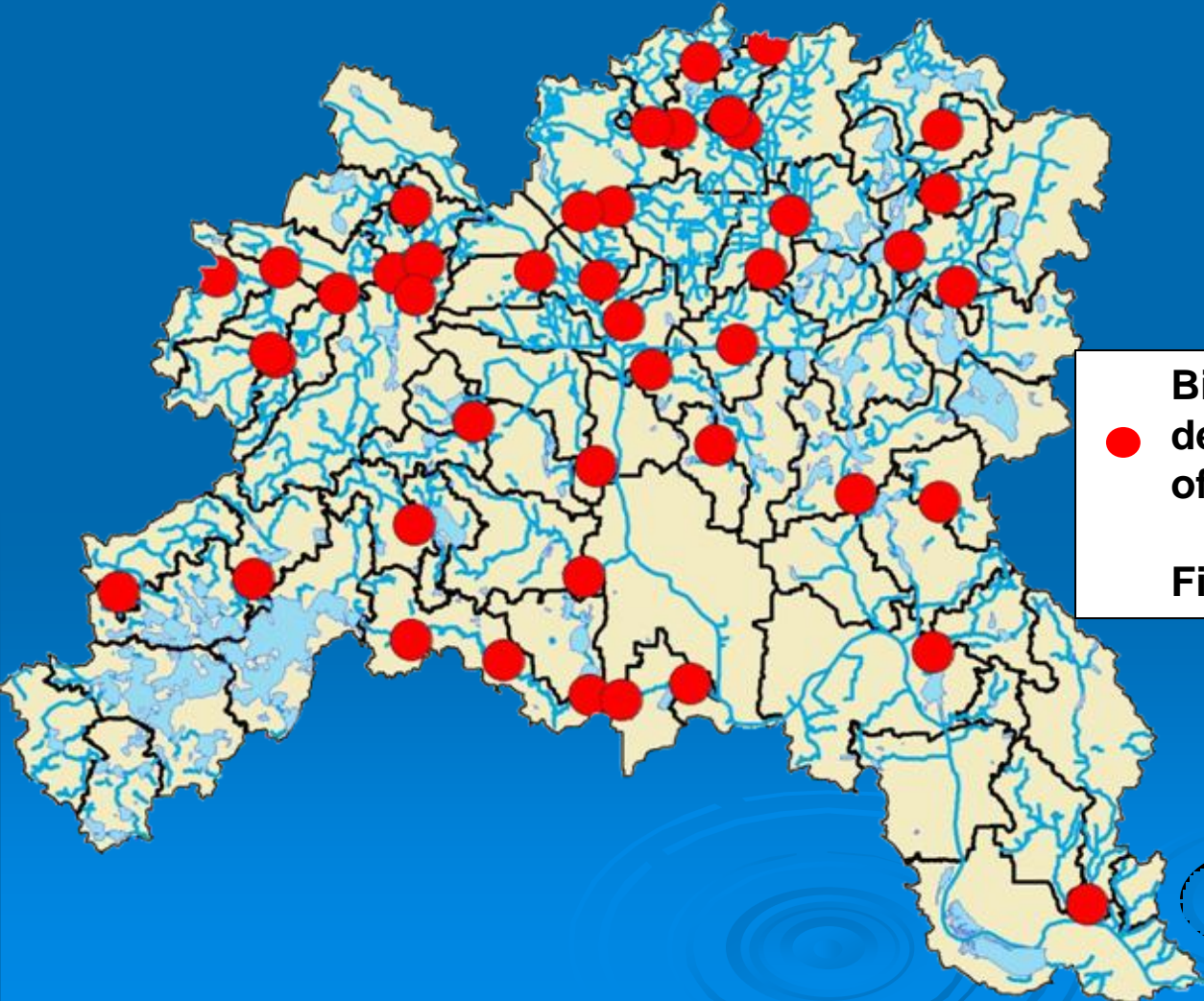
- Determine condition of the watersheds for all indicators
 - Aquatic life - fish & invertebrate communities, dissolved oxygen, turbidity
 - Aquatic recreation - bacteria
 - Aquatic consumption – Mercury & PCB's
- Locate watersheds with impairments
- Provide information for the stressor identification/TMDL development process
 - Shorten the delay between assessment and TMDLs
- Time trends in the future
 - Sample watershed every 10 years



Phase 1 Stream Site Selection Criteria

- Pour point method
 - Systematic sampling near the “mouth” at all watershed scales
- Road crossings for easy access
- 1 mile away from larger water bodies
 - Lakes
 - Larger rivers (>2 stream orders)
 - Wetland complexes
- Natural vs. Channelized
- Drainage Area
 - No sites if $\leq 5 \text{ mi}^2$
 - $\geq 40 \text{ mi}^2 = 2 \text{ sites}$, $\geq 80 \text{ mi}^2 = 3$, and so on....

Biological Sites



● Biological monitoring for
determination
of aquatic life use support (n = 41)

Fish, Inverts, 1x WQ

10x Sites



● 10X water monitoring for determination of aquatic recreation and aquatic life use support (n = 6)

Chemistry Sampling in 2010

Sampling 2X/month May-September



- pH
- conductivity
- temperature
- DO
- total phosphorus
- ammonia
- TSS
- TSVS
- transparency tube
- NO₂ + NO₃

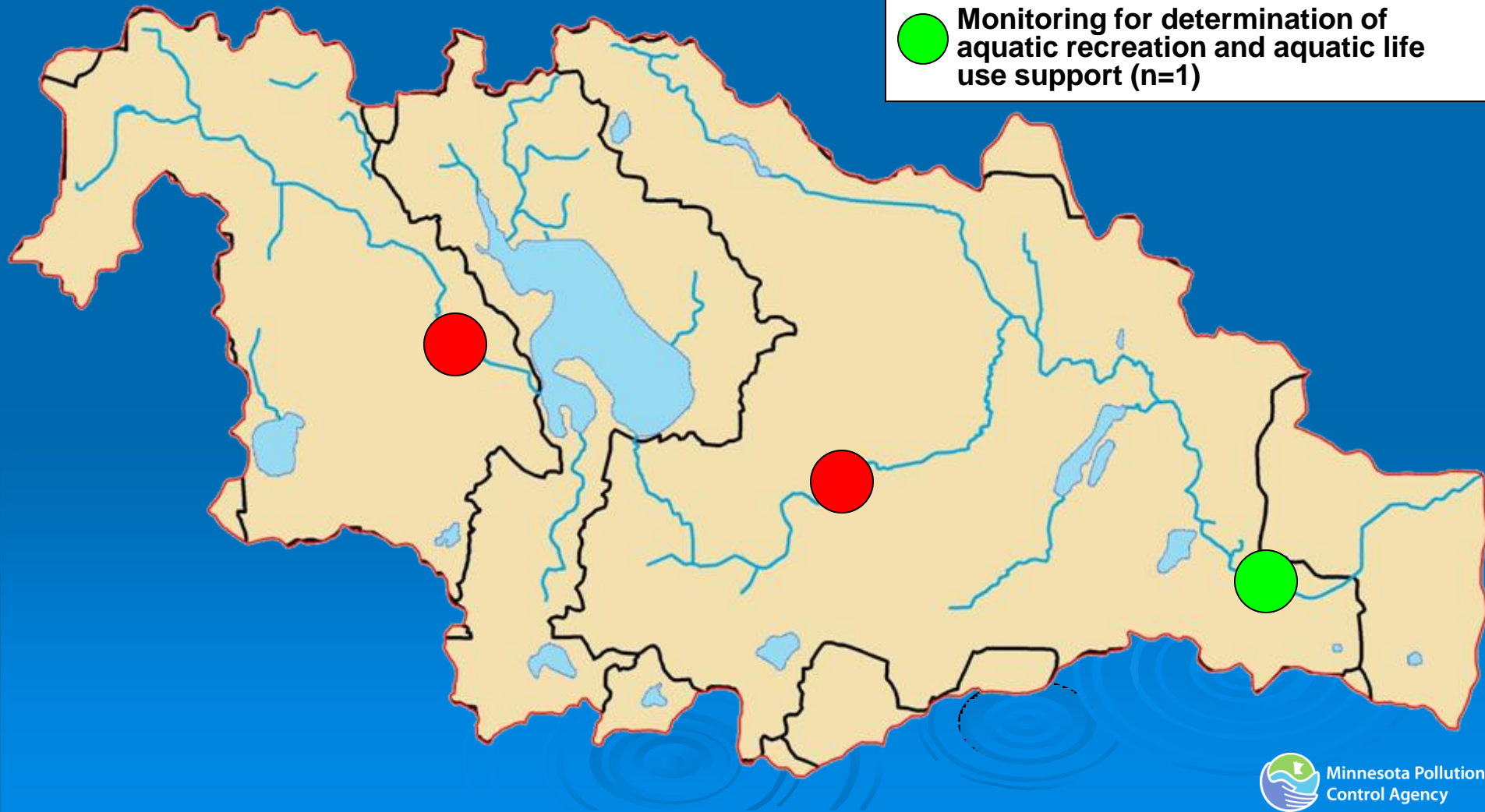
Sampling 2X/month June-August

- E. coli (3X/month in 2011)

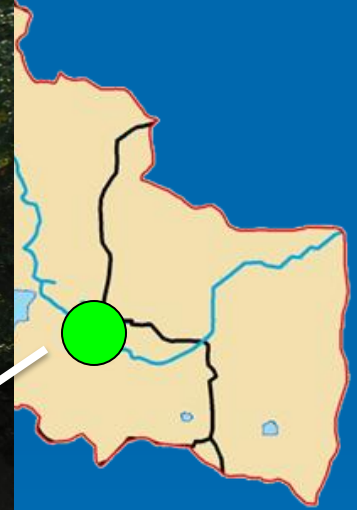


Bassett Creek Phase 1

-  Biological monitoring for determination of aquatic life use support (n=1)
-  Monitoring for determination of aquatic recreation and aquatic life use support (n=1)



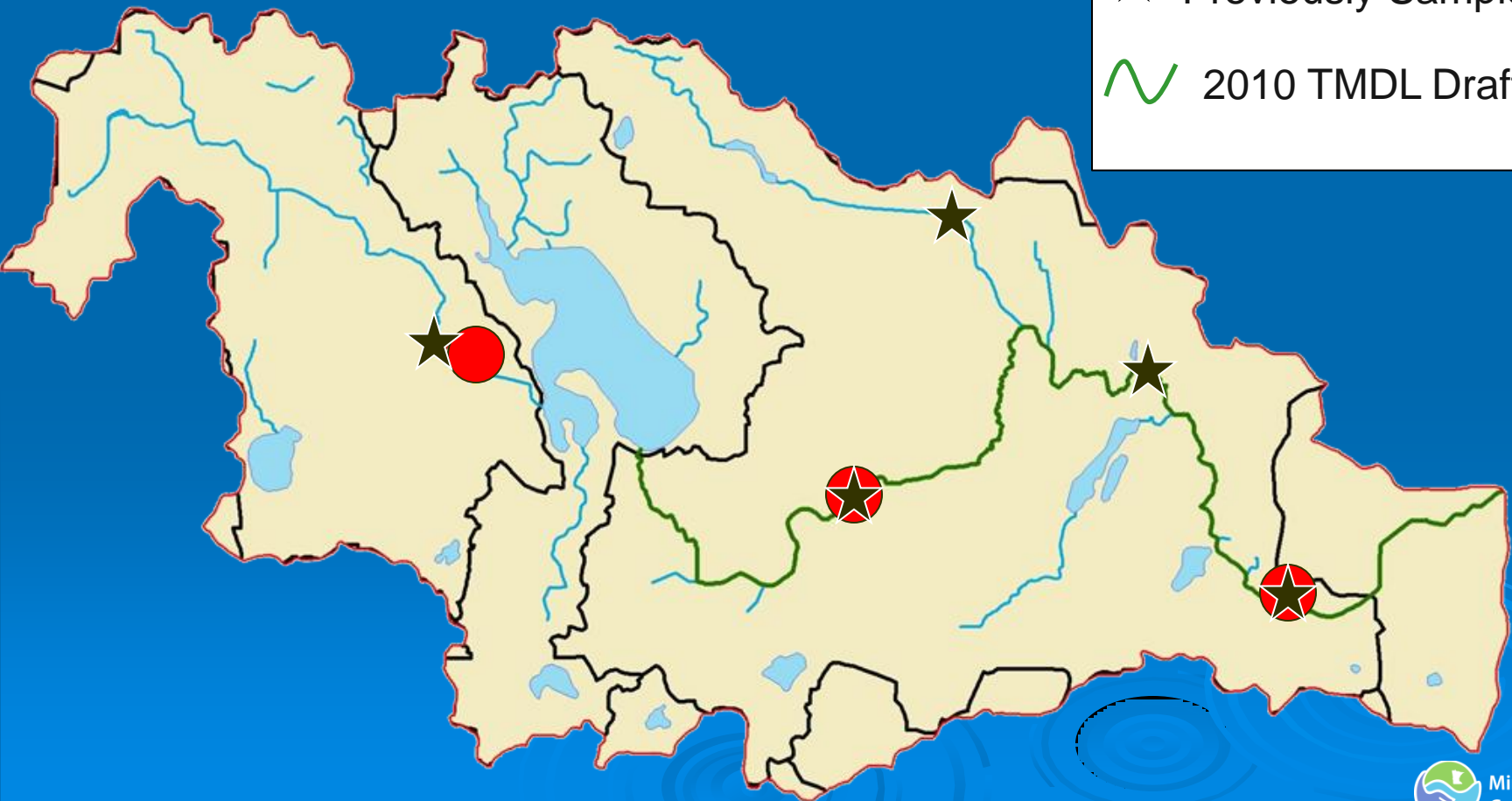
Bassett Creek Phase 1



**Bassett Creek
(00UM105)**

Bassett Creek

- Phase 1 Sites
- ★ Previously Sampled Sites
- ~ 2010 TMDL Draft



Sampling on Bassett Creek

Stream	Site Number	Years Sampled	Number of Species	Number of Darter Species	IBI
Bassett (Hwy 55)	08UM074	2008	11	2	TBD
Bassett (Dresden Ln)	97UM006	1997, 1998, 2008	8, 11, 9	1, 1, 1	41, 51, TBD
Bassett (Penn Ave)	00UM105	2000, 2008	6, 13	0, 1	24, TBD

- Old IBI threshold was 46
- New IBI scores coming soon

Timeline

➤ 2010

- Fish: June-August
- Inverts: August
- Water Chemistry: 2x/month May-September

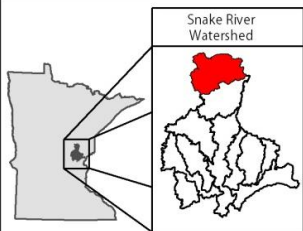
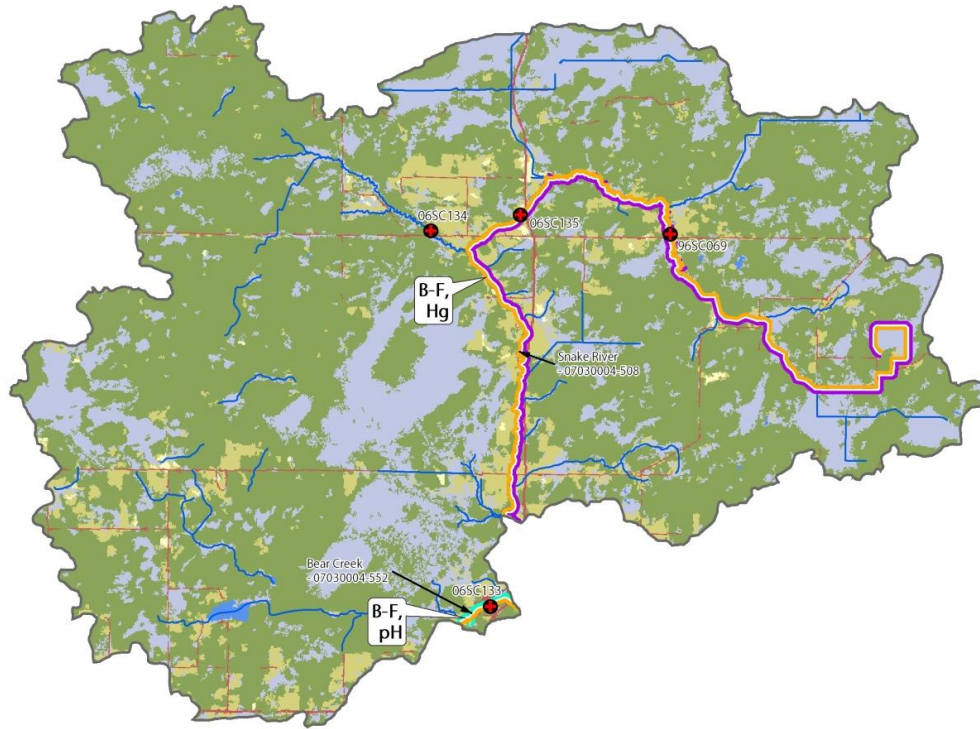
➤ 2011

- Fish and Invert data compiled
- Recap Meeting
- Report Written

➤ 2012

- Possible Phase 2

Watershed Conditions



* For maps of supporting waters, see the individual use class maps in this document.

Land Cover

- Open Water (0.2%)
- Developed (1.3%)
- Barren/Mining (0.0%)
- Forest/Shrub (66.7%)
- Rangeland (7.6%)
- Cropland (0.4%)
- Wetland (23.8%)

Monitoring Sites

- 2006 Intensive Watershed Monitoring Stations

Impairment Parameters

- B-F
- B-I
- DO
- FC
- NE
- T
- A, ACE, CL, PBT, pH
- Hg, PCB, PFOS
- LCWA, TM

Impairment Labels

- Ammonia - A
- Acetochlor - ACE
- Biological, Fish - B-F
- Biological, Invertebrates - B-I
- Biological, Fish and Invertebrates - B-FI
- Chloride - CL
- Dissolved Oxygen - DO
- Fecal Coliform and/or e. coli - FC
- Mercury - Hg
- Lack of Cold Water Assemblage - LCWA
- Nutrients/Eutrophication (lakes only) - NE
- Persistent Bioaccumulative Toxics - PBT
- Polychlorinated Biphenyls - PCB
- Perfluorooctane Sulfonate - PFOS
- pH - pH
- Turbidity - T
- Temperature - TM

Questions?

Mike Koschak

(651) 757-2504

michael.koschak@state.mn.us