Bassett Creek Watershed Management Commission Meeting Agenda
June 21, 2012

1. **CALL TO ORDER AND ROLL CALL**

2. **CITIZEN FORUM ON NON-AGENDA ITEMS:** *Citizens may address the Commission about any item not contained on the regular agenda. A maximum of 15 minutes is allowed for the Forum. If the full 15 minutes are not needed for the Forum, the Commission will continue with the agenda. The Commission will take no official action on items discussed at the Forum, with the exception of referral to staff or a Commissions Committee for a recommendation to be brought back to the Commission for discussion/action.*

3. **APPROVAL OF AGENDA**

4. **CONSENT AGENDA** – *Consent Agenda items are considered routine and will be enacted by one motion. There is no separate discussion of these items unless a Commissioner or citizen so requests, in which event the item will be removed from the Consent Agenda and placed on the regular Agenda.*
   A. Presentation of May 17, 2012, meeting minutes
   B. Presentation of Financial Statements
   C. Legal Counsel Communications

5. **ADMINISTRATION –** *A roll call vote will be taken on items listed below.*
   A. Presentation of Invoices for Payment Approval
      i. Kennedy & Graven – Legal Services through April 30, 2012
      ii. Barr Engineering – Engineering Services through June 1, 2012
      iii. Amy Herbert – May Secretarial Services
      iv. D'amico-ACE Catering – June 2012 Meeting Catering
      v. MMKR Certified Public Accountants- Final Bill - FY2011 Audit Work
   B. BCWMC's Draft 2013 Budget and Assessment

6. **NEW BUSINESS**
   A. Minor Plan Amendment, Project NL-2: Four Seasons Mall Water Quality Improvement Project
   B. Draft Feasibility Study for Project NL-2: Four Seasons Mall Water Quality Improvement Project
   C. Canadian Pacific Railway Bridge Replacement: City of Golden Valley

7. **OLD BUSINESS**
   A. Update on Administrator Selection Process
   B. Next Generation Watershed Management Plan *(see 6/14/2012 Barr Engineering memo)*
   C. Follow up report on riprap in channel below Medicine Lake outlet (*verbal*)

8. **COMMUNICATIONS**
   A. Chair
   B. Commissioners
   C. Committees
   D. Engineer: Update on BWSR Biennial Budget Review

9. **ADJOURNMENT**

Bassett Creek Watershed Management Commission
Minutes of the Meeting of May 17, 2012

1. CALL TO ORDER

The Bassett Creek Watershed Management Commission (BCWMC) was called to order at 11:33 a.m., on Thursday, May 17, 2012, at Golden Valley City Hall by Chair Black.

2. CITIZEN FORUM ON NON-AGENDA ITEMS

No citizen input was presented.

3. CONSENT AGENDA

Chair Black requested the removal from the Consent Agenda item 3C – 2011 Water Quality Monitoring Activities – because the Commission Engineer that there are action items on the issue. Chair Black also requested the removal from the Consent Agenda the Counsel Communications. Commissioner Hoschka requested the removal of Consent Agenda item 3D – Policy Manual revisions – so that there could be discussion about it. Chair Black requested the addition to the Consent Agenda the BCWMC / Golden Valley 2012 Agreement for Channel Maintenance and the addition of the 2012 Plymouth Street Reconstruction Project.

Commissioner Elder moved to approve the meeting agenda as amended. Commissioner Hoshal seconded the motion. The motion carried unanimously with seven votes in favor [Cities of Minneapolis and Robbinsdale absent from vote]. Commissioner Millner moved to approve the Consent Agenda as amended. Commissioner Hoshal seconded the motion. The motion carried unanimously with seven votes in favor [Cities of Minneapolis and Robbinsdale absent from vote].

The following items were approved as part of the Consent Agenda: The BCWMC/ Golden Valley 2012 Agreement for Channel Maintenance; the 2012 Plymouth Street Reconstruction Project; the April 19, 2012, meeting minutes; and the May financial report. The general and construction account balances reported in the May 2012 Financial Report are as follows:

Checking Account Balance	**$755,985.24**
TOTAL GENERAL FUND BALANCE	**$755,985.24**
TOTAL ON-HAND CONSTRUCTION CASH & INVESTMENTS	**$2,481,771.00**
CIP Projects Levied – Budget Remaining	**($869.60)**
Closed Projects Remaining Balance	**$662,591.82**
2012 Anticipated Tax Levy Revenue	**$998,000.00**
Anticipated Closed Project Balance	**$335,408.18**

4. ROLL CALL

ROLL CALL

Crystal	**Commissioner Dan Johnson**	**Counsel**	**Charlie LeFevere**
Golden Valley	**Commissioner Stacy Hoschka, Treasurer**	**Engineer**	**Karen Chandler**
Medicine Lake	**Commissioner Ted Hoshal, Secretary**	**Recorder**	**Amy Herbert**
Minneapolis	***Not represented***		
Minnetonka	**Commissioner Jacob Millner**		
New Hope	**Commissioner John Elder**		
Plymouth	**Commissioner Ginny Black, Chair**		
Robbinsdale	***Not represented***		
St. Louis Park	**Commissioner Jim de Lambert, Vice Chair**		

Also present: ***Commissioner Michael Welch, Minneapolis, arrived after roll call.***
Laura Adler, BCWMC Technical Advisory Committee, City of St. Louis Park
Derek Asche, BCWMC Technical Advisory Committee, City of Plymouth
Christopher Gise, Golden Valley resident
Linda Loomis, Golden Valley resident
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
Liz Stout, BCWMC Technical Advisory Committee, City of Minnetonka

5. ADMINISTRATION

5A. Presentation of Invoices for Payment Approval. The Commission discussed its practice of paying invoices by roll call and decided that if its Bylaws permit, it would conduct payment of invoices via the Consent Agenda starting next month. The Commission agreed to ask its legal counsel to review the Commission Bylaws.

i. **Kennedy & Graven – Legal Services through March 31, 2012 – invoice for the amount of $1,132.17.**

ii. **Barr Engineering Company – Engineering Services through April 27, 2012 – invoice for the amount of $25,762.61.**

iii. **Amy Herbert – April Secretarial Services – invoice for the amount of $2,403.48.**

iv. D'amico - ACE Catering – May BCWMC meeting catering – invoice for the amount of $342.74.

v. MMKR – Audit Work through March 31, 2012 – invoice for the amount of $3,600.

[*Charlie LeFevere, Legal counsel, arrives.*]

Commissioner de Lambert moved to approve payment of all of the invoices. Commissioner Elder seconded the motion. By call of roll the motion carried unanimously with seven votes in favor [Cities of Minneapolis and Robbinsdale absent from vote].

4B. Approval of BCWMC's Annual Report. Commissioner de Lambert moved to approve the BCWMC's annual report of its 2011 activities. Commissioner Elder seconded the motion. The motion carried unanimously with seven votes in favor [Cities of Minneapolis and Robbinsdale absent from vote].

4C. Contract with the Metropolitan Council for participating in CAMP 2012. Commissioner Hoschka moved approval of the contract. Commissioner Johnson seconded the motion. The motion carried unanimously with seven votes in favor [Cities of Minneapolis and Robbinsdale absent from vote].

4D. 2011 Water Quality Monitoring Activities [*Previously Consent Agenda item 5B*]. Ms. Chandler indicated that in consideration of the time and in order to keep the meeting moving forward in a timely manner, she is just bringing up the issues that that need action now and she reminded the Commission that the data on the 2011 water quality monitoring activities is included in the meeting packet.

She said that the Commission Engineer recommends that the Commission contact the Minnesota Department of Natural Resources (MN DNR) to ask that it introduces purple loosestrife-eating beetles at Crane Lake and at Westwood Lake.

Ms. Chandler discussed the chloride concentrations in Crane Lake and presented three actions that the Commission could take:

1. **Monitor Crane Lake in 2014 and if the lake shows impairment for chloride then determine management measures to reduce chloride levels in Crane Lake;**
2. **Submit historical Crane Lake data and the 2011 water quality monitoring report to the Minnesota Pollution Control Agency (MPCA) and request that Crane Lake be included in the Twin Cities Metro-Area Chloride Management Plan to be completed by the MPCA in 2014; or,**
3. **Submit historical Crane Lake data and the 2011 water quality monitoring report to the Minnesota Pollution Control Agency (MPCA); monitor chloride concentrations in Crane Lake, four times per year, or once each season, for 2012 and 2013. If the 2012 and 2013 chloride data indicate that the lake is impaired, Crane Lake would be added to the EPA 303d list of impaired waters. Also request that Crane Lake be included in the TCMA Chloride Management Plan.**

Chair Black brought up the state's 10-year chloride plan that will be prepared in February 2013 and commented that if the Commission wanted to try to be part of that plan then monitoring would need to be conducted now but if the Commission wanted to wait to be part of the state's next 10-year chloride plan then monitoring wouldn't need to happen now. The Commission discussed the fact that chloride Best Management Practices (BMPs) are the same BMPs throughout the metro area. Ms. Stout said that she did not see any urgency for the monitoring and said that she thought that it could be done in conjunction with the monitoring already scheduled for 2014. The Commission discussed this year's budget for monitoring and the costs of additional monitoring. Ms. Chandler said that the monitoring would cost approximately $3,000 per year. She brought up options for paying for additional 2012 monitoring through the surveys and studies budget. Chair Black asked the Commission Engineer to get clarification on whether the monitoring

would need to be four times a year for one year or for two years.

Several commissioners spoke in favor of the first option presented by Ms. Chandler, which is monitoring Crane Lake in 2014. Commissioner Millner moved to pursue option number one, monitor Crane Lake in 2014 and if results show the lake is impaired for chloride then determine management measures to reduce chloride levels in Crane Lake. Commissioner de Lambert seconded the motion. The motion carried unanimously with seven votes in favor. Commissioner Welch of the City of Minneapolis abstained from the vote and stated that his reason was because he was not present for the whole discussion. [City of Robbinsdale absent from vote].

6. NEW BUSINESS

A. **Discussion with Doug Snyder, Executive Director/Administrator of the Mississippi Watershed Management Organization. Mr. Snyder called into the Commission meeting via conference phone and fielded Commission questions about possible work arrangements between the BCWMC and the Mississippi Watershed Management Organization (MWMO) for the provision of administrator services to the Commission. Mr. Snyder described the structure of the MWMO staff, offered three options for a services arrangement between the MWMO and the BCWMC for administrator duties, informed the Commission about what information he would still need to know in order to be able to move forward in the development of more specifics in the three options, and answered Commission and TAC questions.**

   After ending the call with Mr. Snyder, the Commission discussed options to pursue. Commissioner Welch said that he thinks it is appropriate for the Administrative Services Committee to facilitate a prioritization of services that the Commission is looking for and to define the roles and responsibilities of the Administrator role. Mr. LeFevere noted that he had mentioned earlier that he thinks that an assistant City Manager would fit the role that the Commission is trying to fill. Mr. LeFevere suggested that the Commission take the job description of an Assistant City Manager and provide it to Mr. Snyder as an example of the experience and qualifications that the Commission is looking for in its Administrative Services search.

   Chair Black said that the Administrative Services Committee will set up a meeting and inform the Commission of the meeting time and date so that anyone interested can participate. She said that a Survey Monkey survey will be distributed to the Commission to gather feedback on the Commission's priorities for the Administrator responsibilities. Chair Black said that the Administrative Services Committee will discuss the survey feedback and the other information communicated by the Commission to-date and will come back to the Commission with a proposal at the Commission's June meeting. The Commission agreed to Chair Black's recommendations.

B. **Policy Manual Revisions. Commissioner Hoschka asked for details on the action that the Commission is being asked to take regarding the policy manual revisions. Chair Black said that the Commission is being asked to approve and adopt the policy manual revisions recommended by staff. Mr. LeFevere noted that the marked up version in the packet is not the latest version of the edits and said that the final edits could be brought in front of the Commission next month.**

   Mr. Oliver said that part of the Commission's conversation when it was reviewing the policy manual was that a flow chart should be created to show the process of CIP implementation. He reminded the Commission that Golden Valley has offered to work to create that flow chart but the topic hasn't been

on a TAC agenda. Chair Black said that she and Derek Asche have been drafting one as well. Mr. Oliver said that it would be beneficial for the flow chart of the process to be in alignment with the policy manual. Chair Black said that the final revisions should go to the TAC for the discussion about the flow chart and that the policy manual should be reviewed to see if there is an implementation section in it. Ms. Chandler said that she was concerned that the policy manual has been floating around without anyone taking ownership of it and making changes.

Chair Black directed staff to take the final revisions to the TAC for the development of a flow chart and asked staff to make sure that the policy manual doesn't already have a CIP implementation section or if it does, then the TAC should make sure that it aligns with the developed flow chart.

7. OLD BUSINESS

A. Minnesota Board of Water and Soil Resources (BWSR) Biennial Budget Review. Ms. Chandler said that she attended the information session about the BWSR Biennial Budget Review (BBR). She explained that the BBR is both a process and a submittal that the Commission would make. Ms. Chandler reported that the process has already started. She likened the BBR to a grant application process but said that the BBR has less work involved in the process. Ms. Chandler said that for the submittal due at the end of June BWSR would be looking for projects that the Commission will do in 2014 and 2015. She said that BWSR will be taking the information and using it to make its request to the Governor and the Legislature for funding for the Clean Water Legacy grants.

Commissioner Welch moved that the Commission Engineer, relying on the Commission's most recent CIP, prepare a response to BWSR's request for Biennial Budget Review information. Commissioner Elder seconded the motion. <u>The motion carried with eight votes in favor</u> [City of Robbinsdale absent from vote].

B. Next Generation Watershed Management Plan. Chair Black announced that the Plan Steering Committee will meet on Monday, May 21st at 4:30 p.m. in the Council Conference Room at Golden Valley City Hall.

C. Task Cost Estimates for Activities Discussed at the March BCWMC Meeting. Chair Black said that the CIP-related tasks listed in the April 11, 2012, memo about the tasks would be better referred to the Plan Steering Committee. Mr. Oliver suggested moving forward with the work and getting it done. Commissioner Welch asked if there is still budget left in the Next Generation Plan to cover the costs estimated for this work. Ms. Chandler said yes, there are still funds in that budget unallocated. Commissioner Welch moved to approve the Commission Engineer's work recommendations as listed in item one of the April 11th memo. Commissioner de Lambert seconded the motion. Commissioner Welch noted that his friendly motion includes the direction that the cost of the work comes out of the Next Generation Plan budget. Chair Black made the friendly amendment that task d, "CIP flow chart" is not included in the work because she has already worked with Derek Asche to create one. <u>The motion carried with eight votes in favor</u> [City of Robbinsdale absent from vote]. Commissioner Welch agreed and said that if some of the work has already been done then it would seem that costs would be saved.

The Commission took no action on the Commissioner Engineer recommendations about the Budget document and Chair Black said that the Commission will move ahead with its current budget document.

[Commissioner Elder departs the meeting.]

D. Capstone Project. Commissioner Welch recommended that the commissioners read the University of

Minnesota students' capstone project, "The Bassett Creek Stream Restoration Project: is restoration necessary?" Mr. Oliver noted that the creators of the project have graduated already from the University of Minnesota.

[Commissioner Millner departs the meeting.]

E. April 5, 2012, TAC memo, item 2, Member Cities' Post-Construction Best Management Practices Requirements (and Review Triggers) and Potential Changes to Water Quality Policies Pertaining to Nutrient Loading Increases and Water Quality Banking/ Trading Program. Mr. Asche reported that the issue brought to the TAC was the gap with land alteration projects and the trigger for watershed review. He explained the recommended revision proposed by Commissioner Welch, which would revise the threshold for watershed review. Mr. Asche said that the TAC discussed what the cities are doing regarding project reviews. He stated that a lot of the cities have thresholds for review at or below the 50 cubic yards and 5,000 square feet of vegetation proposed by Commissioner Welch. Mr. Asche explained that the referenced city triggers are for erosion control but not post-construction storm water management, which is where the gap likely lies.

Mr. Asche said that the TAC thought that the Commission is on the right track with its capital projects in regard to Medicine Lake, Sweeney Lake, and Wirth Lake and is on track to meet its goals. He said it doesn't mean that the gap in post-construction storm water management at a smaller level is okay, but it does mean that Medicine, Sweeney and Wirth Lake are on pace for good things in terms of the TMDL process.

Mr. Asche continued by discussing the type of projects that would be reviewed under a 50 cubic yards and 5,000 square feet of vegetation review trigger. He said that the projects would include single family home development, maybe some large remodeling projects with landscaping projects included, and some small developments of one to four lots. Mr. Asche wondered how much impact those types of projects are having on water quality in relation to how much work it would take to permit and review the projects. He added that it would be very difficult to demonstrate that the small projects are meeting water quality requirements because they are so small scale. He said the projects wouldn't really be able to be monitored and the data wouldn't be very reliable because it is small scale.

Mr. Asche said that the TAC did not think that the Commission regulating at such a small scale would be an important step in meeting water quality goals. Mr. Asche said that the TAC discussed the City regulations and how they fit in with the watershed's requirements. He reported that the TAC's recommendation is that the Commission leave its regulations as-is based on progress being made on water quality goals for Medicine Lake, Sweeney Lake, and Wirth Lake and with regard to the difficulty with regulating at such a small level and the fact that there doesn't appear to be staff to handle the work of regulating at such a small level, and lastly a lot of the cities already take the regulations down to a pretty low level as it sits today.

Commissioner Welch responded that his suggestion was driven by the fact that recently three projects that came into the Commission for review and, in each of the cases, the projects weren't getting water quality improvements because they didn't trigger the threshold for Commission review. He said that he believes that land users who are causing pollution are not being regulated to minimize pollution; meanwhile, all watershed taxpayers are paying for projects to try to balance it out. Commissioner Welch said that he believes there is an equity issue there. He said that he doesn't have a specific response but he thinks it will come up again in the planning process. Commissioner Welch said that he would like to see a counter-proposal that would show how the burden of improving water quality in the watershed could be more equitably distributed. He said that he sees no reason not to develop some

concepts that would help inform the planning process to achieve some goals.

Ms. Chandler said that there were two main things that the TAC was addressing. She said that one was the idea of going down to the smaller level of triggers and the other was applying the Commission's non-degradation requirement to new development and linear projects instead of just to redevelopment projects. Ms. Chandler commented that this is a big issue and may need more discussion in order to move forward but noted that there isn't much time left in today's meeting.

Commissioner Welch asked if the Commission wants to take a next step. He said that the Commission has a recommendation from the TAC and that he agrees with the last two recommendations but not the first. Mr. Asche said that the City of Plymouth works with four different watersheds on these issues and the City's standards have to comply with all four and all four do it differently. He said it is difficult to coordinate with the developers and homeowners. Mr. Asche said that as a staff person that deals with this every day the best thing that could happen is for a conversation to happen on what makes sense. He said that there was conversation at the TAC meeting about lining up regulations like matching up wetland rules with BWSR regulations and the Wetland Conservation Act, lining up storm water rules with the Minnesota Pollution Conservation Agency, so that the rules are consistent no matter what watershed you are in. He said that the conversation has to be between watersheds and not just between a watershed and the cities.

Mr. Oliver commented that what the Commission is doing is working and the watershed is trending positive for water quality. He said that there can be ongoing conversation about this but also if something isn't broken then it doesn't need fixing.

The Commission discussed options for moving forward on this issue. Chair Black suggested that the members of the TAC pull together the regulations of the different watersheds. Commissioner Hoschka suggested that someone also pull together anecdotal information on where problems have arisen due to the discrepancies in the regulations between watersheds. Commissioner Welch said that he isn't trying to put this responsibility on the TAC and he is willing to work to pull something together.

[Commissioner Hoschka departs the meeting.]

Mr. Asche said that he has pulled together onto one sheet the different requirements and also has general information out of the city's surface water management plan. Chair Black asked him to e-mail it to Ms. Herbert who could then distribute it to the Commission. Commissioner Welch said that he would go back to find the information on those three projects and will take the discussion of the projects out of the minutes and compile the information into one document and will send it to Ms. Herbert.

Ms. Chandler asked if the Commission is directing the TAC to meet about the issues discussed today. Commissioner Welch said that he doesn't think that the TAC needs to meet about this issue. The Commission decided that the TAC would next meet in September.

F. Follow-up report on the rip-rap in the channel below the Medicine Lake Outlet. Ms. Chandler said that the Commission Engineer has been in contact with the Metropolitan Council. She said that the Met Council says they are okay with the pipe being uncovered or barely covered due to the low flow going through the pipe. She said that the parties are still coordinating a time to talk together. Chair Black directed that an update on the issue be added to the Commission's June agenda.

G. Follow-up concerns raised by Ms. Anderson regarding foam in Bassett Creek. Mr. Oliver said that Ms. Anderson has not yet contacted him.

8. COMMUNICATIONS

Chair: None

Commissioners:

1. **Commissioner Welch said that he has met with the member of the Bryn Mawr Association to update him on the Commission projects.**
2. **Commissioner Hoshal informed the Commission that it will be represented at this Saturday's Golden Valley Days.**
3. **Commissioner Hoshal inquired about the incoming invoices for the watershed education partnerships. The Commission let him know that the partners usually send invoices at the end of the fiscal year.**
4. **Chair Black announced that the Budget Committee will be meeting tomorrow morning, May 18th, at 8:00 a.m. in the Council Conference room at Golden Valley City Hall.**
5. **Chair Black noted that she responded to the Bottineau Transitway Project that she would be the contact for the Commission.**

Committees: None

Counsel Communications: No Counsel Communications.

Engineer Communications: No Engineer Communications.

9. ADJOURNMENT

The meeting adjourned at 2:09 p.m.

_____ _____

Chair **Date** **Amy Herbert, Recorder** **Date**

_____

Secretary **Date**

4B.

Bassett Creek Watershed Management Commission General Account
General Fund (Administration) Financial Report
Fiscal Year: February 1, 2012 through January 31, 2013
MEETING DATE: June 21, 2012

BEGINNING BALANCE	**8-May-12**			**755,985.24**
ADD:				
General Fund Revenue:				
	Interest (Bank Charges)		13.11	
	2012-13 Assessments:			
	Have not received St Louis Park Assessment			
	Permits:			
	McGough Constr	Breck School	3,000.00	
	ISD 284	Kimberly Lane School	3,000.00	
	EMR	CP Rail Bridge	1,000.00	
	Robbinsdale School	Sandburg Parking Lot	3,000.00	
	Reimbursed Construction Costs		2,122.40	
		Total Revenue and Transfers In		**12,135.51**
DEDUCT:				
Checks:				
	2440 ACE Drop-Off Caterin	Meeting Expense	189.61	
	2441 MMKR	Final Audit Fee	950.00	
	2442 Kennedy & Graven	April Legal Service	1,606.30	
	2443 Barr Engineering	May Services	29,916.76	
	2444 Amy Herbert	May Services	2,659.48	
		Total Checks		35,322.15
Outstanding from previous month:				
	Meadowbrook School	2009 Exp-Grant	992.08	
		Total Expenses		**35,322.15**
ENDING BALANCE	**13-Jun-12**			**732,798.60**

	2012/2013 BUDGET	CURRENT MONTH	YTD 2012/2013	BALANCE
OTHER GENERAL FUND REVENUE				
INTEREST (BANK CHARGES)			(8.34)	
ASSESSEMENTS	461,045		443,742.00	17,303.00
PERMIT REVENUE	48,000	10,000.00	22,800.00	25,200.00
REVENUE TOTAL	509,045	10,000.00	466,533.66	42,503.00
EXPENDITURES				
ENGINEERING				
ADMINISTRATION	120,000	9,721.00	41,106.30	78,893.70
PLAT REVIEW	60,000	4,670.00	17,999.39	42,000.61
COMMISSION MEETINGS	14,250	522.00	3,832.82	10,417.18
SURVEYS & STUDIES	10,000	0.00	0.00	10,000.00
WATER QUALITY/MONITORING	20,000	696.00	3,285.50	16,714.50
WATER QUANTITY	11,000	764.61	2,615.94	8,384.06
WATERSHED INSPECTIONS	7,000	702.63	1,320.63	5,679.37
ANNUAL FLOOD CONTROL INSPECTIONS	9,000	0.00	638.00	8,362.00
REVIEW MUNICIPAL PLANS	2,000	0.00	0.00	2,000.00
ENGINEERING TOTAL	253,250	17,076.24	70,798.58	182,451.42
PLANNING				
WATERSHED-WIDE SP-SWMM MODEL	70,000	5,084.50	9,759.00	60,241.00
WATERSHED-WIDE P8 WATER QUALITY MODEL	135,000	3,177.00	13,519.00	121,481.00
NEXT GENERATION PLAN	40,000	826.50	4,962.00	35,038.00
PLANNING TOTAL	245,000	9,088.00	28,240.00	216,760.00
ADMINISTRATOR	50,000	0.00	0.00	50,000.00
LEGAL COSTS	18,500	1,434.40	3,528.23	14,971.77
AUDIT, INSURANCE & BONDING	15,225	0.00	8,150.00	7,075.00
FINANCIAL MANAGEMENT	3,045	950.00	950.00	2,095.00
MEETING EXPENSES	2,750	189.61	1,527.33	1,222.67
SECRETARIAL SERVICES	40,000	2,997.00	11,076.94	28,923.06
PUBLICATIONS/ANNUAL REPORT	2,000	797.50	2,449.50	(449.50)
WEBSITE	2,500	0.00	0.00	2,500.00
PUBLIC COMMUNICATIONS	3,000	0.00	0.00	3,000.00
WOMP	10,000	667.00	797.50	9,202.50
EDUCATION AND PUBLIC OUTREACH	5,775	0.00	4,019.94	1,755.06
WATERSHED EDUCATION PARTNERSHIPS	13,000	0.00	0.00	13,000.00
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	724,045	33,199.75	131,538.02	592,506.98

BCWMC Construction Account
Fiscal Year: February 1, 2012 through January 31, 2013 **(UNAUDITED)**
June 2012 Financial Report

Cash Balance 5/08/12			
Cash		1,471,789.72	
Investments:			
	Federal National Mtg Assn - Purchased 4/23/12 - Due 4/23/2015 - .912%(callable 04/23/13 .25%)	1,009,981.28	
	Total Cash & Investments		2,481,771.00
Add:			
	Interest Revenue (Bank Charges)	48.19	
	BWSR Grant - Golden Valley		
	Total Revenue		48.19
Less:	CIP Projects Levied - Current Expenses - TABLE A	(2,122.40)	
	Proposed & Future CIP Projects to Be Levied - Current Expenses - TABLE B	0.00	
	Total Current Expenses		(2,122.40)
	Total Cash & Investments On Hand 06/13/12		**2,479,696.79**

Total Cash & Investments On Hand	2,479,696.79
CIP Projects Levied - Budget Remaining - **TABLE A**	(3,142,240.42)
Closed Projects Remaining Balance	**(662,543.63)**
2012 Anticipated Tax Levy Revenue - **TABLE C**	998,000.00
Anticipated Closed Project Balance	**335,456.37**
2013 Proposed & Future CIP Project Amount to be Levied - **TABLE B**	196,000.00

TABLE A - CIP PROJECTS LEVIED

	Approved Budget	Current Expenses	2012 YTD Expenses	**INCEPTION** To Date Expenses	Remaining Budget
Twin Lake-expected completion 2006	140,000.00	0.00	0.00	5,724.35	134,275.65
West Medicine Lake Park Pond	1,100,000.00	0.00	0.00	744,633.58	355,366.42
Plymouth Creek Channel Restoration (2010)	965,200.00	0.00	42,393.59	928,569.11	36,630.89
Main Stem Crystal to Regent (2010)	636,100.00	0.00	526.50	259,002.52	377,097.48
Wisc Ave/Duluth Street-Crystal (2011 CR)	580,200.00	469.00	8,248.88	52,162.35	528,037.65
North Branch-Crystal (2011 CR-NB)	834,900.00	507.50	507.50	42,475.36	792,424.64
Plymouth Pond NB-07(NL-2)	0.00	560.00	1,732.72	10,426.09	(10,426.09)
Wirth Lake Outlet Modification (WTH-4)(2012)	180,000.00	0.00	1,049.00	26,278.34	153,721.66
Main Stem Irving Ave to GV Road (2012 CR)	856,000.00	585.90	4,061.45	77,429.42	778,570.58
Schaper Pond Enhancement Feasibility (SL-1)	37,000.00	0.00	825.97	40,458.46	(3,458.46)
	5,329,400.00	2,122.40	59,345.61	2,187,159.58	3,142,240.42

TABLE B - PROPOSED & FUTURE CIP PROJECTS TO BE LEVIED

	Approved Budget - To Be Levied	Current Expenses	2012 YTD Expenses	**INCEPTION** To Date Expenses	Remaining Budget
2013					
Lakeview Park Pond (2013)	196,000.00	0.00	0.00	2,113.50	193,886.50
2013 Project Totals	196,000.00	0.00	0.00	2,113.50	193,886.50
Total Proposed & Future CIP Projects to be Levied	196,000.00	0.00	0.00	2,113.50	193,886.50

TABLE C - TAX LEVY REVENUES

	County Levy	**Abatements / Adjustments**	**Adjusted Levy**	**Current Received**	**Year to Date Received**	**Inception to Date Received**	**Balance to be Collected**	BCWMO Levy
2012 Tax Levy	998,000.00		998,000.00			0.00	998,000.00	998,000.00
2011 Tax Levy	863,268.83	(2,871.91)	860,396.92			850,946.51	9,450.41	862,400.00
2010 Tax Levy	935,298.91	(4,927.05)	930,371.86			927,004.63	3,367.23	935,000.00
2009 Tax Levy	800,841.30	(8,054.68)	792,786.62			792,142.93	643.69	800,000.00
2008 Tax Levy	908,128.08	(4,357.22)	903,770.86			903,546.00	224.86	907,250.00
2007 Tax Levy	190,601.74	(657.93)	189,943.81			189,939.15	4.66	190,000.00
2006 Tax Levy	531,095.47	(2,736.30)	528,359.17			528,512.20	(153.03)	519,000.00
				0.00			**1,011,537.82**	

BCWMC Construction Account
Fiscal Year: February 1, 2012 through January 31, 2013 **(UNAUDITED)**
June 2012 Financial Report

OTHER PROJECTS:

	Approved Budget	Current Expenses / (Revenue)	2012 YTD Expenses / (Revenue)	INCEPTION To Date Expenses / (Revenue)	Remaining Budget
TMDL Studies					
TMDL Studies	125,000.00	0.00	0.00	102,756.15	22,243.85
Sweeney TMDL	119,000.00	0.00	0.00	212,222.86	
Less: MPCA Grant Revenue		0.00	0.00	(163,870.64)	70,647.78
TOTAL TMDL Studies	244,000.00	0.00	0.00	151,108.37	92,891.63
Annual Flood Control Projects:					
Flood Control Emergency Maintenance	500,000.00	0.00	0.00	0.00	500,000.00
Flood Control Long-Term Maintenance	548,373.00	0.00	0.00	13,566.33	534,806.67
Sweeney Lake Outlet (2012 FC-1)	250,000.00	0.00	0.00	11,648.15	238,351.85
Annual Water Quality					
Channel Maintenance Fund	225,000.00	0.00	0.00	41,818.10	183,181.90
Total Other Projects	1,767,373.00	0.00	0.00	218,140.95	1,549,232.05

Cash Balance 5/08/12		**1,305,978.20**
Add:		
MPCA Grant-Sweeney Lk		0.00
Less:		
Current (Expenses)/Revenue		0.00
Ending Cash Balance	**06/13/12**	**1,305,978.20**

Bassett Creek Construction Project Details

6/14/2012

CIP Projects Levied

	Total CIP Projects Levied	Twin Lake	West Medicine Lake Park Pond (2008-1)	2010 Plymouth Creek Channel Restoration (CR)	2010 Main Stem Crystal to Regent (CR)	2011 Wisc Ave (Duluth Str)-Crystal (GV)	2011 North Branch - Crystal (CR-NB)	2011 Plymouth Pond NB-07 (NL-2)	2012 Wirth Lake Outlet Modification (WTH-4)
Original Budget	**5,329,400**	**140,000**	**1,100,000**	**965,200**	**636,100**	**580,200**	**834,900**		**180,000**
Expenditures:									
Feb 2004 - Jan 2005	**1,983.50**	1,983.50							
Feb 2005 - Jan 2006	**1,716.70**	1,716.70							
Feb 2006 - Jan 2007	**2,164.95**	375.70	1,789.25						
Feb 2007 - Jan 2008	**1,871.70**	36.00	1,835.70						
Feb 2008 - Jan 2009	**39,346.36**		18,392.11	20,954.25					
Feb 2009 - Jan 2010	**23,188.45**	1,612.45	687.00	9,319.95	11,569.05				
Feb 2010 - Jan 2011	**835,966.15**		721,929.52	30,887.00	11,590.80	34,803.97	31,522.86	602.00	2,910.00
Feb 2011 - Jan 2012	**1,221,571.16**			825,014.32	235,316.17	9,109.50	10,445.00	8,086.37	22,319.34
Feb 2012 - Jan 2013	**59,350.61**			42,393.59	526.50	8,248.88	507.50	1,737.72	1,049.00
Total Expenditures:	**2,187,159.58**	**5,724.35**	**744,633.58**	**928,569.11**	**259,002.52**	**52,162.35**	**42,475.36**	**10,426.09**	**26,278.34**
Project Balance	**3,142,240.42**	**134,275.65**	**355,366.42**	**36,630.89**	**377,097.48**	**528,037.65**	**792,424.64**	**(10,426.09)**	**153,721.66**

	Total CIP Projects Levied	Twin Lake	West Medicine Lake Park Pond (2008-1)	2010 Plymouth Creek Channel Restoration (CR)	2010 Main Stem Crystal to Regent (CR)	2011 Wisc Ave (Duluth Str)-Crystal (GV)	2011 North Branch - Crystal (CR-NB)	2011 Plymouth Pond NB-07 (NL-2)	2012 Wirth Lake Outlet Modification (WTH-4)
Project Totals By Vendor									
Barr Engineering	**307,457.13**	3,758.10	7,004.91	42,743.60	25,808.00	47,352.20	31,297.71	9,451.99	24,053.19
Kennedy & Graven	**14,633.75**	1,966.25	1,427.15	2,120.10	2,435.25	792.65	792.65	974.10	2,225.15
City of Golden Valley	**222,788.32**				222,788.32				
City of Plymouth	**1,597,345.38**		736,201.52	861,143.86					
Com of Trans									
S E H									
Misc									
2.5% Admin Transfer	**44,935.00**			22,561.55	7,970.95	4,017.50	10,385.00		
Total Expenditures	**2,187,159.58**	**5,724.35**	**744,633.58**	**928,569.11**	**259,002.52**	**52,162.35**	**42,475.36**	**10,426.09**	**26,278.34**

	Total CIP Projects Levied	Twin Lake	West Medicine Lake Park Pond (2008-1)	2010 Plymouth Creek Channel Restoration (CR)	2010 Main Stem Crystal to Regent (CR)	2011 Wisc Ave (Duluth Str)-Crystal (GV)	2011 North Branch - Crystal (CR-NB)	2011 Plymouth Pond NB-07 (NL-2)	2012 Wirth Lake Outlet Modification (WTH-4)
Levy/Grant Details									
2009/2010 Levy	**935,000**			902,462	32,538				
2010/2011 Levy	**862,400**				286,300	160,700	415,400		
2011/2012 Levy	**775,000**								175,000
Construction Fund Balance	**904,000**			62,738	2,262	419,500	419,500		
BWSR Grant- BCWMO	**652,500**			212,250	147,750				75,000
Total Levy/Grants	**4,128,900**			1,177,450	468,850	580,200	834,900		250,000
BWSR Grants Received				191,025	132,975				67,500

Bassett Creek Construction Project Details

	2012 Main Stem Irving Ave to GV Road (2012CR)	2012 Schaper Pond Enhancement Feasibility (SL-1)	Proposed & Future CIP Projects (to be Levied) Total Proposed & Future CIP Projects (to be Levied)	2013 Lakeview Park Pond (ML-8)
Original Budget	**856,000**	**37,000**	**196,000**	**196,000**
Expenditures:				
Feb 2004 - Jan 2005			**637.50**	637.50
Feb 2005 - Jan 2006				
Feb 2006 - Jan 2007				
Feb 2007 - Jan 2008				
Feb 2008 - Jan 2009				
Feb 2009 - Jan 2010				
Feb 2010 - Jan 2011	1,720.00			
Feb 2011 - Jan 2012	71,647.97	39,632.49	**1,476.00**	1,476.00
Feb 2012 - Jan 2013	4,061.45	825.97		
Total Expenditures:	**77,429.42**	**40,458.46**	**2,113.50**	**2,113.50**
Project Balance	**778,570.58**	**(3,458.46)**	**193,886.50**	**193,886.50**

	2012 Main Stem Irving Ave to GV Road (2012CR)	2012 Schaper Pond Enhancement Feasibility (SL-1)	Total Proposed & Future CIP Projects (to be Levied)	2013 Lakeview Park Pond (ML-8)
Project Totals By Vendor				
Barr Engineering	75,567.17	40,420.26	**2,068.50**	2,068.50
Kennedy & Graven	1,862.25	38.20	**45.00**	45.00
City of Golden Valley				
City of Plymouth				
Com of Trans				
S E H				
Misc				
2.5% Admin Transfer				
Total Expenditures	**77,429.42**	**40,458.46**	**2,113.50**	**2,113.50**

	2012 Main Stem Irving Ave to GV Road (2012CR)	2012 Schaper Pond Enhancement Feasibility (SL-1)	Total Proposed & Future CIP Projects (to be Levied)	2013 Lakeview Park Pond (ML-8)
Levy/Grant Details				
2009/2010 Levy				
2010/2011 Levy				
2011/2012 Levy	600,000		**196,000**	196,000
Construction Fund Balance				
BWSR Grant- BCWMO	217,500			
Total Levy/Grants	817,500		**196,000**	196,000
BWSR Grants Received	108,750			

Bassett Creek Construction Project Details

		Other Projects							
		Total Other Projects	TMDL Studies	Sweeney Lake TMDL	Flood Control Emergency Maintenance	Flood Control Long-Term Maintenance	2012 Sweeney Lake Outlet (FC-1)	Channel Maintenance	Totals - All Projects
Original Budget		**1,717,373.00**	**125,000.00**	**119,000.00**	**500,000.00**	**773,373.00**		**200,000.00**	**7,242,773.00**
						(250,000.00)	**250,000.00**		
	MPCA Grant	**163,870.64**		163,870.64					163,870.64
	From GF	**50,000.00**				25,000.00		25,000.00	50,000.00
Expenditures:									
Feb 2004 - Jan 2005									2,621.00
Feb 2005 - Jan 2006		**6,949.19**				3,954.44		2,994.75	8,665.89
Feb 2006 - Jan 2007		**10,249.09**	637.20			9,611.89			12,414.04
Feb 2007 - Jan 2008		**113,141.44**	23,486.95	89,654.49					115,013.14
Feb 2008 - Jan 2009		**117,455.33**	31,590.12	47,041.86				38,823.35	156,801.69
Feb 2009 - Jan 2010		**76,184.64**	31,868.63	44,316.01					99,373.09
Feb 2010 - Jan 2011		**45,375.25**	15,005.25	25,920.00			4,450.00		881,341.40
Feb 2011 - Jan 2012		**12,656.65**	168.00	5,290.50			7,198.15		1,235,703.81
Feb 2012 - Jan 2013									59,350.61
Total Expenditures:		**382,011.59**	**102,756.15**	**212,222.86**		**13,566.33**	**11,648.15**	**41,818.10**	**2,571,284.67**
Project Balance		**1,549,232.05**	**22,243.85**	**70,647.78**	**500,000.00**	**534,806.67**	**238,351.85**	**183,181.90**	**4,885,358.97**

	Total Other Projects	TMDL Studies	Sweeney Lake TMDL	Flood Control Emergency Maintenance	Flood Control Long-Term Maintenance	2012 Sweeney Lake Outlet (FC-1)	Channel Maintenance	Totals - All Projects
Project Totals By Vendor								
Barr Engineering	**214,564.19**	99,879.70	94,948.17		9,549.32	10,187.00		524,089.82
Kennedy & Graven	**5,907.54**	1,164.30	2,902.59		24.75	1,461.15	354.75	20,586.29
City of Golden Valley	**2,640.00**						2,640.00	225,428.32
City of Plymouth	**38,823.35**						38,823.35	1,636,168.73
Com of Trans	**3,992.26**				3,992.26			3,992.26
S E H	**101,598.10**		101,598.10					101,598.10
Misc	**14,486.15**	1,712.15	12,774.00					14,486.15
2.5% Admin Transfer								44,935.00
Total Expenditures	**382,011.59**	**102,756.15**	**212,222.86**		**13,566.33**	**11,648.15**	**41,818.10**	**2,571,284.67**

		Total Other Projects	TMDL Studies	Sweeney Lake TMDL	Flood Control Emergency Maintenance	Flood Control Long-Term Maintenance	2012 Sweeney Lake Outlet (FC-1)	Channel Maintenance	Totals - All Projects
Levy/Grant Details	**MPCA Grant**	**163,870.64**		**163,870.64**					
2009/2010 Levy									935,000
2010/2011 Levy	From GF	**50,000.00**				25,000		25,000	912,400
2011/2012 Levy									971,000
Construction Fund Balance									904,000
BWSR Grant- BCWMO									652,500
Total Levy/Grants		**213,870.64**		163,870.64		25,000		25,000	4,374,900
BWSR Grants Received									

Proposed 2013 Operating Budget
Bassett Creek Watershed Management Commission - June 13, 2012

Item	2010 Actual	2011 Actual	2012 Adopted Budget	2012 Estimated Budget	2013 Proposed Budget
ENGINEERING					
Technical Services	119,832	127,840	120,000	125,000	120,000
Plat Reviews (funded by permit fees) 2012-48,000	53,128	50,971	60,000	60,000	60,000
Commission and TAC Meetings	12,316	9,919	14,250	15,000	14,250
Surveys and Studies	17,899	21,411	10,000	10,000	10,000
Water Quality / Monitoring	24,489	29,957	20,000	20,000	40,000
Water Quantity	8,264	8,532	11,000	11,000	11,000
Inspections					
Watershed Inspections	10,842	4,827	7,000	7,000	7,000
Project Inspections	5,714	2,291	9,000	9,000	15,000 (1)
Municipal Plan Review	7,927	0	2,000	2,000	2,000 (2)
Subtotal Engineering	**$260,411**	**$255,748**	**$253,250**	**$259,000**	**$279,250**
PLANNING					
Watershed-wide XP-SWMM Model			70,000	70,000	0
Watershed-wide P8 Water Quality Model			135,000	135,000	0
Next Generation Plan			40,000	40,000	40,000
Subtotal Planning	**$0**	**$0**	**$245,000**	**$245,000**	**$40,000**
Administrator	30,297	24,099	50,000	50,000	100,000
Legal	17,331	16,953	18,500	18,500	18,500
Financial Management	3,054	3,100	3,045	3,045	3,045
Audit, Insurance & Bond	13,328	12,771	15,225	15,225	15,225
Meeting Catering Expenses	4,609	3,940	2,750	2,750	2,750
Secretarial Services	42,578	39,303	40,000	40,000	40,000
Public Outreach					
Publications / Annual Report	5,169	2,410	2,000	2,000	2,000
Website	1,031	214	2,500	2,500	2,500
Watershed Outlet Monitoring Program (WOMP)	6,818	9,106	10,000	10,000	10,000
Demonstration/Education Grants	3,140	0	0	0	0 (3)
Watershed Education Partnerships	16,150	19,055	13,000	13,000	15,000 (4)
Education and Public Outreach	2,911	0	5,775	5,775	14,775 (5)
Public Communications	692	1,443	3,000	3,000	3,000
Erosion/Sediment (Channel Maintenance)	25,000	25,000	25,000	25,000	25,000 (6)
Long-Term Maint. (Flood Control Project)	25,000	25,000	25,000	25,000	25,000 (7)
Subtotal Other	**$197,108**	**$182,394**	**$215,795**	**$215,795**	**$276,795**
TMDL Studies	10,000	$0	$10,000	10,000	$10,000
Subtotal TMDL Studies	**$10,000**	**$0**	**$10,000**	**10,000**	**$10,000**
GRAND TOTAL	**$467,519**	**$438,142**	**$724,045**	**$729,795**	**$606,045**

Financial Information	
Audited fiscal year fund balance at January 31, 2012	392,707
Expected income from assessments in 2012	461,045
Transfer from Long-term Maintenance Fund for XP SWMM Model*	70,000
Transfer from Long-term Maintenance Fund for P8 Model*	135,000
Expected interest income in 2012	0
Expected income from project review fees	48,000
Estimated funds available for fiscal year 2012	1,106,752
Estimated expenditures for fiscal year 2012	729,795
Estimated fund balance as of January 31, 2013	**376,957**
-	
2013 Budget	
Proposed 2013 Capital Projects	1,000,000
Proposed 2013 Operating Budget	606,045
Proposed total 2013 Budget	1,606,045
2013 Assessments and Fees	
2013 Operating Budget	606,045
Estimated 2013 permit fees (80% of permit expenditures)	48,000
Transfer from Long-term Maintenance Fund for XP SWMM Model	0
Transfer from Long-term Maintenance Fund for PB Model	0
Transfer from Long-term Maintenance Fund for Project Inspections	15,000
Use of TMDL Studies Fund	0
Assessment proposed for 2013 Operating Budget	**543,045**
Proposed Budget Reserve on January 31, 2013	**0**

(1) Budget item "Project Inspections" are flood control maintenance project and will be paid out of the Long-Teerm Maintance fund (Flood Control Project)
(2) Review municipal local plan amendments and adjoining WMO amendments
(3) Grant program for demonstrations and education
(4) 2013 budget - CAMP ($5,500) River Watch ($2,000) Watershed Partners ($3,500) Metro Blooms ($2,000) Blue Thumb ($2,000).
In 2011, WMWA projects and administration were combined into line item 34 -Education and Public Outreach.
(5) 2013 budget includes brochures, factsheets, display materials, education articles and WMWA administration and projects.
(6) Will be transferred to Channel Maintenance Fund.
(7) Will be transferred to Long-Term Maintenance Fund.

Item	2010 Actual	2011 Actual	2012 Adopted Budget	2012 Estimated Budget	2013 Proposed Budget
Revenue:					
Member Contributions	414,150	434,151	461,045	461,045	543,045
Permit Fees	22,000	35,300	48,000	48,000	48,000
Property Taxes	933,527	850,947	998,000	998,000	1,000,000

Bassett Creek Watershed Management Commission
Proposed 2013 Assessment
June 2012

	Community	For Taxes Payable in 2013 Net Tax Capacity *	2013 Percent of Valuation	Current Area Watershed in Acres	Percent of Area	Average Percent	2011 Assessment $434,151	2012 Assessment $461,045	Proposed 2013 Assessment $543,045	
54	Crystal	$6,765,157	5.56	1,264	5.09	5.32	$23,433	$24,941	$28,915	15.93%
28	Golden Valley	$28,618,722	23.53	6,615	26.63	25.08	$109,230	$115,080	$136,177	18.33%
79	Medicine Lake	$871,870	0.72	199	0.80	0.76	$3,301	$3,484	$4,121	18.28%
1	Minneapolis	$8,369,231	6.88	1,690	6.80	6.84	$31,375	$32,661	$37,151	13.75%
34	Minnetonka	$8,020,340	6.59	1,108	4.46	5.53	$22,558	$24,920	$30,012	20.43%
86	New Hope	$6,929,451	5.70	1,252	5.04	5.37	$23,840	$25,533	$29,151	14.17%
40	Plymouth	$54,265,680	44.61	11,618	46.77	45.69	$196,201	$209,101	$248,103	18.65%
44	Robbinsdale	$2,315,719	1.90	345	1.39	1.65	$7,672	$8,022	$8,939	11.44%
46	St. Louis Park	$5,491,385	4.51	752	3.03	3.77	$16,541	$17,303	$20,476	18.34%
	TOTAL	**$121,647,555**	**100.00**	**24,843**	**100.00**	**100.00**	$434,150	$461,045	$543,045	17.79%

Bassett Creek Recording Administrator

From: Ginny Black [ginny.black@q.com]
Sent: Tuesday, June 12, 2012 9:40 PM
To: Bassett Creek Recording Administrator
Subject: Re: Draft Budget Memo

Please forward this to the budget committee.

Thanks.
g

From: "Karen Chandler" <KChandler@barr.com>
To: "Ginny Black" <ginny.black@q.com>
Cc: "Jim Herbert" <JHerbert@barr.com>
Sent: Tuesday, June 12, 2012 9:32:53 AM
Subject: RE: Draft Budget Memo

Hi Ginny,
A Barr coworker with many years of experience working with WOMP stations (Chris Bonick), provided me with the following cost estimate to operate the Bassett Creek WOMP station:

Bassett Creek WOMP Station - Estimate for Annual Cost	
Tasks	**Cost**
Administrative (i.e. meetings, communications, etc.)	$ 1,000.00
Station Maintenance/Calibration	$ 4,000.00
Storm Sampling (Including Prep and Delivery)	$ 8,000.00
Base Flow Sampling (Including Prep and Delivery)	$ 6,000.00
Flow Measurements/Rating Curve	$ 4,000.00
Data Management	$ 2,000.00
TOTAL	**$ 25,000.00**

As I noted in an earlier email, the Met Council's current grant contribution is $4000 per year; this may increase to $5000 in 2013. With the Met Council grant contribution, the BCWMC costs would be $20,000 - $21,000 per year.

Karen

From: Ginny Black [mailto:ginny.black@q.com]
Sent: Tuesday, June 12, 2012 6:54 AM
To: Karen Chandler
Subject: Re: Draft Budget Memo

Karen,

Were you able to check on the cost of the WOMP program if Barr did all of the tasks under this item?

g

From: "Karen Chandler" <KChandler@barr.com>
To: "ginny black" <ginny.black@q.com>
Sent: Monday, June 11, 2012 9:00:39 AM
Subject: RE: Draft Budget Memo

Hi Ginny,
I thought there was an attachment to your email, which I assumed was the edited budget document, but now I see there wasn't an attachment. Sorry for the confusion (I'll blame it on my tablet, which shows there's an attachment, when there really isn't one).
Karen

From: Karen Chandler
Sent: Saturday, June 09, 2012 1:51 PM
To: ginny.black@q.com
Subject: Re: Draft Budget Memo

I'll look over your edits on Monday!

Sent from my Android phone using TouchDown (www.nitrodesk.com)

-----Original Message-----
From: Ginny Black [ginny.black@q.com]
Received: Saturday, 09 Jun 2012, 10:00am
To: Karen Chandler [KChandler@barr.com]
CC: Bassett Creek Recording Administrator [bcra@barr.com]
Subject: Re: Draft Budget Memo

Karen,

Thanks for your comments. I really appreciate your taking the time to go throught this so throughly.

I accepted most of your comments. Some I changed based on the conversation with the budget committee.

I have also made some comments below. They are in red so you can see them easily.

Again, thanks for the comments. Hope you have a great weekend.

g

From: "Karen Chandler" <KChandler@barr.com>
To: "Ginny Black" <ginny.black@q.com>
Cc: "Bassett Creek Recording Administrator" <bcra@barr.com>
Sent: Friday, June 8, 2012 6:01:47 PM
Subject: RE: Draft Budget Memo

Hi Ginny,

Attached are my proposed edits to the budget memo – they are shown in tracked changes, so you can accept them (or not) as you see fit.

I also offer the following comments/questions for your consideration:

- Under Plat Reviews (line 7), we had originally proposed a $5,000 increase in the budget (to $65,000), based on our experience this year that the number of project reviews has increased and our belief that the number of project reviews will continue to increase next year. However, I would like to know what the member cities think will happen next year – how do things look for Plymouth in 2013? If the member cities think there will be more project reviews in 2013, the Commission may want to consider increasing the budget for the plat review item. I am leaving this the same as the Budget committee recommended. I will check with Plymouth staff on this issue. The economy is such a mixed bag, that it is hard to tell what will happen here.
- Under Surveys and Studies (line 9), would you please confirm the correct budget amount? The draft memo showed a $20,000 budget, but the budget table showed a $10,000 budget. I revised the memo to align with the budget table. The $20,000 would be the correct amount I will correct the memo. Thanks for the catch.
- Under Municipal Plan Reviews (line 15), I could see that your intent was to set up a fund that could be carried over every year, so that you could accrue funds to cover the future costs of reviewing a number of revised local water management plans. Typically, it's my understanding that annual budgets do not carry over. This is correct. I believe the Commission would need to set up a separate fund (e.g., similar to the flood control project long term maintenance fund) to do this (I believe this is correct, the budget committee is recommending that a temporary fund be set up. It is a policy recommendation that the full Commission will need to weigh in on.) – the Commission would need to confirm this with Sue Virnig (Sue is looking at the proposed budget. I will confirm this with her). I revised the memo to reflect what the budget item has covered since the completion and approval of the member cities' local water management plans – review of city plan amendments and adjoining WMO plan amendments. (I made modifications to your suggestions based on the budget committees recommendations))
- Under WOMP (line 32), my proposed edits reflect the upcoming termination of the WOMP contract between MPRB and the Met Council. However, the costs for continuing the operation of the WOMP station in 2013 (without MPRB assistance) are not known. My 5/22/2012 email to the Executive Committee identified the options that the BCWMC may wish to consider regarding the WOMP station:
    - Discontinue monitoring Bassett Creek through WOMP.
    - Continue monitoring Bassett Creek through WOMP by partnering with another agency (e.g., city staff, Three Rivers Park District staff, Hennepin Conservation District staff, Mississippi WMO staff) to perform the monitoring
    - Continue monitoring Bassett Creek through WOMP with BCWMC staff performing the monitoring.

  I received a follow-up email from Ted Hoshal, suggesting a fourth option – possibly working with the folks at the University of Minnesota St. Anthony Falls Laboratory or Water Resources Center (if they are interested). Assuming the Commission is interested in continuing with the WOMP for Bassett Creek, this could have ramifications for the BCWMC's 2013 budget. I wasn't aware of Ted's suggestion. It is very interesting idea. My experience with working with the U of MN is that they are more expensive than anyone else. But it may be worth checking out anyway. I have also had this conversation with Doug Snyder and the Mississippi WMO may be able to this. He is checking with his staff. I will shoot him an e-mail to see if they have determined if their staff can perform this function.

Thanks for asking me to review the document. If you have any questions or comments, please contact me.

Karen

Karen Chandler, PE

Senior Water Resources Engineer
Minneapolis office: 952.832.2813
kchandler@barr.com
www.barr.com

From: Ginny Black [mailto:ginny.black@q.com]
Sent: Wednesday, June 06, 2012 6:54 AM
To: Bassett Creek Recording Administrator; Karen Chandler
Subject: Draft Budget Memo

Amy and Karen,

Attached is the draft of the Annual Budget Memo. I stress "draft". Your help in editing it would be greatly appreciated!

G

Bassett Creek Watershed Management Commission
2013 Budget and Levy
June 2012

The Joint and Cooperative Agreement establishing the Bassett Creek Water Management Commission (BCWMC) sets forth the procedure required to adopt the annual budget. Article VIII, Subdivision 3, provides that each member agrees to contribute each year to a general fund to be used for administrative purposes and certain operating expenses. Half of the annual contribution of each member is based on assessed valuation of property within the watershed and the other half on the ratio of area of each member within the watershed to the total area of the Bassett Creek watershed. Subdivision 5 of Article VIII further provides: "On or before July 1 of each year, the Board shall adopt a detailed budget for the ensuing year and decide upon the total amount necessary for the general fund." Budget approval requires a two-thirds vote (six Commissioners). Further, the Secretary "shall certify the budget on or before July 1 to the clerk of each member governmental unit, together with a statement of the proportion of the budget to be provided by each member." Each of the nine members then has until August 1 to file an objection to the budget.

The 2013 budget was prepared by the BCWMO Budget Committee consisting of the four Commissioners of the Executive Committee and one watershed resident as appointed by the Commission.

The BCWMC's most recent Watershed Management Plan was approved by the Minnesota Board of Water and Soil Resources on August 25, 2004, and adopted by the BCWMC on September 16, 2004. That plan includes a capital projects budget, which is funded by ad valorem taxes and has been amended to include channel restoration and other projects. Commission activities have focused on implementation of the *Watershed Management Plan*.

The proposed 2013 budget was adopted by nine commissioners voting in favor of the budget at the BCWMC meeting on June 21, 2012. The proposed 2013 budget is enclosed. Specific items in the budget are discussed below.

- **Engineering** services are budgeted at $279,250 in 2013. Many of the individual items have remained the same from the 2012 budget. The following paragraphs summarize each of the Engineering budget items.

  - Technical Services (line 6) - this item covers the day-to-day technical operations, such as preparing for the Commission and TAC meetings, performing preliminary site reviews and correspondence, and communications with the Commissioners, watershed communities, developers, agencies, and other entities. The proposed 2013 budget is $120,000, the same as the 2012 budget.
  - Plat Reviews (line 7) – This item covers the cost of reviewing plats submitted to the Commission for review. These costs are largely offset by a permit fee instituted by the Commission at its December 15, 2005, meeting, and effective January 1, 2006, and reviewed annually and revised as needed. The proposed 2013 budget is $60,000, the same as the 2012 budget.
  - Commission and TAC Meetings (line 8) - this item covers the cost for the engineer to attend 12 monthly Commission meetings and six bimonthly TAC meetings. The proposed 2013 budget is $14,250, the same as the 2012 budget.
  - Surveys and Studies (line 9) - the proposed budget for 2013 is $10,000. The intent of this budget item is to cover the costs of conducting special studies, and addressing unanticipated issues, questions, etc. that can arise during the year. This item is the same as the 2012 budget.
  - Water Quality/Monitoring (line 10) -the proposed 2013 budget is $40,000. This budget item includes detailed lake monitoring of the lakes within the watershed, on a four-year monitoring cycle, and biotic index monitoring on Bassett Creek on a once-every-three-year monitoring cycle. This item also includes funding to allow the engineer to respond to requests from the BCWMC, watershed cities, or other regulatory agencies to review water quality information and studies, and to address water quality questions from residents. In 2013 the Commission is proposing to monitor Northwood Lake and North and South Rice Lakes.
  - Water Quantity (line 11) - the proposed 2013 budget is $11,000, the same as the 2012 budget. This item covers the work associated with the BCWMC's lake and stream gauging program. The readings have proved valuable to member communities for planning future development and as documentation of the response of surface water

bodies to above normal and below normal precipitation. The program also includes periodic surveys of benchmarks to ensure consistency with past readings.

- The 2013 lake gauging program will consist of measuring water levels on Medicine Lake, Sweeney Lake, Parkers Lake, Westwood Lake, Crane Lake (Ridgedale Pond), and Northwood Lake. The Bassett Creek Park Pond and Wirth Park storage areas will also be included for monitoring. Two readings per month will be taken during the period April 1, 2013 through September 30, 2013. One reading per month will be taken during the period October 1, 2013 through March 31, 2014.
- The 2013 stream gauging program will consist of periodically reading stages, or gauging the stream, at the new tunnel entrance, at the Theodore Wirth Park/T.H. 55 outlet structure, at Highway 100 (main stem), at Wisconsin Avenue, at Sweeney Lake, at Medicine Lake outlet, at Winnetka Avenue (north branch), at 26th Avenue (Plymouth Creek fish barrier), and at other selected locations during periods of high flow.

- Inspections (line 12) - there are two separate budget items under this task:

a. *Watershed Erosion Control Inspections (line 13)* - The proposed 2013 budget is $7,000, the same as the 2012 budget. This item covers the BCWMC's construction site erosion control inspection program. The inspections have been valuable for correcting erosion and sediment control practices which are not in conformance with BCWMC policies. The inspections also verify that sites are developed in accordance with approved plans. The program consists of inspecting active construction sites in the watershed once every month. Erosion control inspections will begin April 2013 and extend through October 2013. Selected sites may be inspected on two-week intervals to verify that requested erosion control modifications have been completed. Critical work such as wetland or creek crossings and work adjacent to lakes and sensitive wetlands are inspected as necessary. The new conduit inlet in Minneapolis will also be inspected for accumulation of debris. BCWMC staff coordinates the inspections with respective contacts from each city. Following each inspection, a letter listing the construction projects and the improvements needed for effective erosion control will be sent to the inspection department at each city.

b. *Annual Flood Control Project Inspections (line 14)* - this item covers the BCWMC's annual inspection of the flood control project features completed by the Commission between 1974 and 1996. The objective of the inspection program is to find and address erosion, settlement, sedimentation, and structural issues. In accordance with the Bassett Creek Flood Control Project Operation and Maintenance Manual (except as noted), the following project features require annual inspection:

Minneapolis:
- Conduit (Double Box Culvert) – inspect double box culvert every five years (2004, 2009, 2014, 2019 …)
- Deep Tunnel – dewater and inspect tunnel every 20 years. This inspection was performed during 2008; the next inspection will be 2028
- Old Tunnel (not included in BCWMC inspection program)
- Open Channel

Golden Valley
- Highway 55 Control Structure & Ponding Area
- Golden Valley Country Club Embankment (Box Culvert, Overflow Weir, and downstream channel)
- Noble Avenue Crossing
- Regent Avenue Crossing
- Westbrook Road Crossing
- Wisconsin Avenue Crossing
- Minnaqua Drive Bridge Removal

Crystal
- Box Culvert and Channel Improvements (Markwood Area)
- Edgewood Embankment with Ponding
- Highway 100/Bassett Creek Park Pond
- 32nd Avenue Crossing
- Brunswick Avenue Crossing
- 34th Avenue Crossing
- Douglas Drive Crossing
- Georgia Avenue Crossing
- 36th-Hampshire Avenue Crossing
- Channel Improvements

Plymouth
- Medicine Lake Outlet Structure
- Plymouth Fish Barrier

In addition to inspection of the above projects, the Commission proposes to conduct a sediment survey of Bassett Creek Park Pond. The proposed 2013 budget is $15,000, $6,000 more than the 2012 budget.

- Municipal Plan Review (line 15) – for 2013, the budget for this item is $2000 to review amendments to member cities' local water management plans and amendments to adjacent WMO plans, for conformance with the BCWMC Watershed Management Plan. In addition, State Law requires the Commission to update its Water Management Plan every 10-years. The Commission has started that process. Once complete member Cities must update their plans to be in conformance with the Commission's Plan. To buffer the increase in funds needed to review member cities *Watershed Management* plans, the Administrative Services Committee recommends that the Commission start a fund to be used exclusively for those reviews.

- **Planning**
  - Watershed Modeling (lines 18-19) - these tasks will be completed in 2012, so this budget is zero for 2013.

- Next Generation Plan (line 20) the budget for this item is $40,000 the same as the 2012 budget. This task is the budget required to conduct the 10-year update to the Commissions Water Management Plan. This is generally a 2-3 year process, so continues in 2013.
  - Administrator (line 22) - In 2010 the Commission, for the first time, contracted for administrative services to assist the Commission in developing the budget, agendas, coordinating capital improvement projects, be the first point of contact for developers and local, state and federal agencies. The Administrator left the Commission in September 2011 for a position that offered health benefits. The Commission's experience with the Administrator reinforced the Commission's view that an Administrator is needed to perform the services listed above as well as other activities such as the development of the *Watershed Management Plan*. The Commission is actively looking at options and believes that the budget for this activity needs to increase from $50,000 in 2012 to $100,000 in 2013.
  - Legal (line 23) - the proposed 2013 budget is $18,500, the same as the 2012 budget. This item covers routine legal services including attending commission meetings, reviewing agendas, and contracts.
  - Financial Management (line 24) - the proposed 2013 budget is $3,045, the same as the 2012 budget. This item covers services provided by the BCWMC Deputy Treasurer at the City of Golden Valley.
  - Audit, Insurance, Bond (line 25) - the proposed 2013 budget is $15,224, the same as the 2012 budget. This item covers the cost of the annual audit, required by state law, plus liability insurance and bonding.
  - Meeting catering expenses (line 26) **-** the proposed 2013 budget is $2,750, the same as the 2012 budget. This item covers the cost of the monthly meetings.
  - Secretarial Services (line 27) - the proposed 2013 budget is $40,000, the same as the 2012 budget. This item covers secretarial services, including scheduling and public noticing meetings of the commission and its subcommittees, mailings, copying, travel, attending the monthly commission meetings and taking care of the details of the meeting, working with the chair and commission staff to prepare the agenda for the monthly meeting.
  - Public Outreach (line 28) - there are two budget items under this task:
    a. *Publications/Annual Report (line29)* – the proposed 2013 budget is $2,000, the same as the 2012 budget. This item covers costs for preparing the BCWMC's annual report.
    b. *Website (line 30)* – the proposed 2013 budget is $2,500, the same as the 2012 budget. This item covers costs for maintaining, updating, and making improvements to the BCWMC Website.
  - WOMP (line 31) - $10,000 is budgeted for 2013, which is intended to cover the BCWMC's costs related to the Watershed Outlet Monitoring Program (WOMP) station on Bassett Creek. Through WOMP, monitoring of Bassett Creek has occurred since 2000. The Minneapolis Park and Recreation Board (MPRB) has been running the WOMP station for the last several years, in a cooperative effort with Metropolitan Council Environmental Services. In this role, the MPRB has been handling the sample and data collection tasks, while MCES performs maintenance, and BCWMC staff provides assistance with the rating curve. Recently, the MPRB notified the BCWMO it will be terminating its WOMP station contract with the Metropolitan Council on June 25, 2012. Metropolitan Council staff is willing to continue the monitoring through 2012 as a short-term solution.

    In previous years, the BCWMC has budgeted $10,000 annually to operate the WOMP station. This budget included reimbursing MPRB approximately $5,000 for operating costs not covered by Met Council funds or staff, and approximately $5,000 for BCWMC staff to coordinate with MCES, perform streamflow measurements, and

revise the rating curve. The Metropolitan Council staff is increasing their contribution to $5,000 for 2013, bringing the total budget for this item to $15,000 for 2013.

However, the Commission will need to contract with another entity to provide the service previously provided by the MPRB. An e-mail from Barr Engineering staff has estimated that if they performed the additional services the annual cost to the Commission would be $25,000 to $26,000 for 2013.The current budget does not reflect the $11,000 cost increase. The chair has requested an estimate from the Mississippi WMO but has not received an estimate at this time.

- Demonstration/Education Grants (line 32) – this item has no budget at this time. This item is the BCWMC grant program, which is managed by the Education Committee.
- Watershed Education Partnerships (line 33) - this budget item includes participation in the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP), the Hennepin Conservation District River Watch Program, Metro WaterShed Partners, the Blue Thumb program, and the Metro Blooms Rain Garden program. In response to budget constraints, this budget item was decreased by $6,000 for 2012. The 2013 proposed budget increases this item by $2,000 to $15,000.
- Education and Public Outreach (line 34) - this budget item has been increase to $14,775 for 2013. This budget item was $4,000 in 2010. It was decreased to $0 in 2011 in response to budget constraints and increased to $5,775 in 2012. This budget item includes expenses for registration fees for city events; develop maps for city events, brochures, fact sheets, native seed packets, and the Joint Education and Public Outreach Committee administrative costs.
- Public Communications (line 35) – this budget item includes public notices for commission and committee meetings. The 2013 budget for this item is $3,000, unchanged from the 2012 budget.
- Erosion/Sediment (Channel Maintenance) (line 36) - these funds are for creek and stream bank erosion repair and sediment removal projects that are not funded as a channel restoration project through the BCWMC's Capital Improvement Program. The BCWMC Watershed Management Plan (Section 7.2.2) calls for the BCWMC to use the Creek and Streambank Trunk System Maintenance, Repair and Sediment Removal Fund to finance the:
  - Maintenance and repairs needed to restore a creek or streambank area to the designed flow rate.
  - Work needed to restore a creek or streambank area that has either resulted in damage to a structure, or where structural damage is imminent, based on an assessment of benefits.
  - Portion of a project that provides BCWMC benefits, including reduced potential for flooding, mitigation of water quality impairment, or minimizing the potential for water quality impairment.
  - BCWMC's share of maintenance projects to be applied for by the cities that have a regional benefit, or to partially fund smaller, localized projects that cities wish to undertake.

  The proposed budget for this item has remained at $25,000 for many years. No increase is proposed for 2013.
- Long-Term Maintenance (Flood Control Project) (line 37) **-** the proposed 2013 budget is $25,000. These funds are used to repair and maintain structures associated with the BCWMC Flood Control Project. The BCWMC Watershed Management Plan calls for annual assessments of $25,000 to the fund, and for the fund balance to be maintained at (but not exceed) $1 million. The current fund balance is $534,806.

- **TMDLs** (line 40) **-** the proposed 2013 budget for this item is $10,000. The TMDL budget was set up to fund the BCWMC's costs for participating in the Medicine Lake, Sweeney Lake, and Wirth Lake Total Maximum Daily Load (TMDL) studies for these lakes have been completed, remaining impaired waters in the watershed include Northwood Lake and Bassett Creek (Parkers Lake is also listed as impaired for mercury). The Minnesota Pollution Control Agency staff has told the Chair that the Agency will not be back to this watershed for 10 years to complete these TMDLS. For 2012, this budget item was $10,000 and included developing the report format for reporting on TMDL implementation activities. For 2013, this item includes preparing a progress report for the Medicine Lake, Sweeney Lake, and Wirth Lake TMDL implementation plans.
- **Capital Improvement Projects**— covers the capital costs of the project identified in the capital improvement projects table. These costs are assessed annually by the county based on the request of the Commission. For 2013, the capital improvement project funding includes $943,000 for project NL-2 (Dredge Pond NB-07, Northwood Lake watershed) and $57,000 for portion of project ML-8 (Lakeview Park Pond).

DRAFT

June 22, 2012

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

Re: Minor Plan Amendment for the 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 proposed minor plan amendment is regarding project NL-2 in Table 12-2 of the BCWMC Plan (as modified by previous amendments). Table 12-2 is the BCWMC's Capital Improvement Program (CIP). Table 12-2 shows project NL-2 as "Dredge Pond NB-07 (Option 2 in Northwood Lake Plan)," with an estimated project cost $943,000 and scheduled for 2013. The goal of this project is to reduce phosphorus loadings to Northwood Lake (an impaired water) by 73 pounds/year.

The BCWMC Plan requires that the BCWMC go through the minor plan amendment process for any project listed in Table 12-2 (CIP table, attached) with a project cost greater than $500,000.

The BCWMC reviewed the draft feasibility study for the project (Four Seasons Mall Water Quality Improvement Feasibility Report (DRAFT)) at their June 21, 2012 Commission meeting. The feasibility study included two scenarios; the Commission selected Scenario 1 as their preferred alternative. Under Scenario 1, the combination of ponding and stream restoration would reduce phosphorus loadings by an estimated 85 – 108 pounds/year. The lower amount of phosphorus reduction would be expected if the pond on the Four Seasons Mall property cannot be constructed.

In accordance with MN Rules 8410.0140, copies of this proposed plan amendment are also being sent to the member 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 and Soil Resources (BWSR) within 45 days of your receipt of this amendment. Assuming you receive this minor plan amendment on June 22, 2012, the 45-day review period will end on August 6, 2012. Although the BCWMC Plan provides for a 75-day review period for Hennepin County, we anticipate receiving Hennepin County Board approval of the minor plan amendment at their August 21, 2012 county board meeting.

After BWSR approval of the minor plan amendment, BCWMC will adopt the amendment, hold a public hearing, order the project, and certify a tax levy request to Hennepin County on September 20, 2012.

Thank you for your action on this proposed amendment. We look forward to the approval of this minor plan amendment by BWSR. Please call either Charlie LeFevere, Esq., the BCWMC's legal

representative, at (612) 337-9215, or Karen Chandler, P.E., the BCWMC's engineer, at (952) 832-2813 if you have any questions.

Sincerely,

Virginia Black
Chair, Bassett Creek Watershed Management Commission

Enclosures
CIP Table 12-2 in the BCWMC Plan

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 – Mr. Nick Proulx
Minnesota Pollution Control Agency – Mr. David L. Johnson
Minnesota Department of Health – Mr. Art Persons
Minnesota Department of Agriculture – Mr. Rob Sip
Metropolitan Council – Ms. Judy Sventek
Minnesota Department of Transportation – Mr. Nick Tiedeken
Bassett Creek Watershed Management Commission
Minneapolis Park & Recreation Board – Debra Pilger, Director, Environmental, Equipment and Volunteer Services

resourceful. naturally.
engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Company
Subject: Item 6A – Minor Plan Amendment, Project NL-2
BCWMC June 21, 2012 Meeting Agenda
Date: June 14, 2012
Project: 23/27-0051 2010 623

6A. Minor Plan Amendment, Project NL-2

Recommendations:

1. Authorize Commission engineer to submit minor plan amendment for review.
2. Authorize Commission Engineer to provide maximum levy amount to Hennepin County Environmental Services staff.
3. Authorize Commission staff to provide public notice for July 19 public meeting on minor plan amendment.

Background

The BCWMC's CIP for 2013 includes $943,000 for project NL-2 in Plymouth (Dredge Pond NB-07, Northwood Lake Watershed). The goal of this project is to reduce phosphorus loadings to Northwood Lake (an impaired water) by 73 pounds/year. This project was originally identified and recommended in the Commission's 1996 *Northwood Lake Watershed and Lake Management Plan*. At that time, the project was envisioned to be a dredging project to create a water quality treatment pond in the location of an existing wetland. Table 12-2 (the capital improvement program) in the BCWMC's *Watershed Management Plan* (Plan) includes this project. At their March 15, 2012 meeting, the Commission approved a cooperative agreement with the City of Plymouth to complete a feasibility study for this project. Because of issues associated with converting the existing wetland to a stormwater pond, and to take advantage of possible synergies with future redevelopment at the adjacent Four Seasons Mall site, the scope of the feasibility study included looking into alternative stormwater improvement options (see agenda item 6B).

In response to comments from Hennepin County, the BCWMC Plan includes a requirement that the BCWMC go through the minor plan amendment process for any project listed in Table 12-2 (CIP table, attached) with a project cost greater than $500,000. If not for this requirement in the BCWMC Plan, the BCWMC would not be required to obtain a minor plan amendment to proceed with this project because it is already included in the BCWMC's BWSR-approved Table 12-2. Attached is a

draft letter to the Minnesota Board of Water and Soil Resources (BWSR) regarding the proposed minor plan amendment.

Minor Plan Amendment and Project Schedule

The following proposed schedule is based on 1) the recently revised statute regarding the plan review and approval process, and 2) the Commission's process for ordering CIP projects and certifying the tax levy. Steps completed are noted.

Schedule	Task
June 21, 2012 Commission meeting	At regular meeting, the BCWMC: • Hears presentation of draft feasibility study and provides direction regarding preferred scenario for project. • Authorizes staff to provide maximum levy amount to Hennepin County Environmental Services staff. • Directs staff to submit minor plan amendment • Directs staff to provide notices for July 19 public meeting on minor plan amendment
June 22, 2012	• Submit minor plan amendment • Provide maximum levy amount to Hennepin County Environmental Services staff
July 19, 2012 BCWMC meeting:	At regular meeting, the BCWMC: • Holds a public meeting regarding the minor plan amendment (two public notices required: 14 days and 7 days prior to meeting) • Hears presentation of final feasibility study (if there are revisions) • Directs staff to provide notice for September 20 public hearing to order project. • Directs staff to prepare cooperative agreement for project.
August 6, 2012	45-day review period ends for BWSR to act on whether plan amendment is minor or not.
August 21, 2012	Hennepin County Board meeting: • Anticipated County Board "approval" of minor plan amendment (project NL-2) • County Board sets maximum levy for project
September 20, 2012 Commission meeting	At regular meeting, the BCWMC: • Adopts minor plan amendment • Holds public hearing to order project (45–day notice required per JPA) • Orders project (resolution) • Certifies levy to Hennepin County • Approves cooperative agreement for project.

City of Plymouth

Adding Quality to Life

June 11, 2012

Ms. Ginny Black, Chair
Bassett Creek Watershed Management Commission
c/o Barr Engineering Company
4700 West 77th Street
Minneapolis, MN 55435-4803

SUBJECT: DRAFT FEASIBILITY STUDY
FOUR SEASONS MALL WATER QUALITY IMPROVEMENT PROJECT
CITY PROJECT NO. 11022

Dear Chair Black:

On March 15, 2012 the Bassett Creek Watershed Management Commission (Commission) approved a cooperative agreement to complete a feasibility study for the Four Seasons Mall/NB07/NL-2 project. The Commission's Capital Improvement Program (CIP) includes $943,000 in 2013 for dredging Pond NB-07 within the Northwood Lake Sub-watershed to reduce phosphorus loading to Northwood Lake by 14%. This project is also in the City of Plymouth CIP from 2012-2014 with design anticipated in 2012-2013 and construction identified for the winter of 2013-2014.

The attached DRAFT Four Seasons Mall Water Quality Improvement Feasibility Report documents the review of several water quality improvement options and provides two scenarios to meet or exceed the Commission's water quality goals. Both scenarios include a cooperative partnership with redevelopment of the Four Seasons Mall property, however, Scenario 1 can be modified to removing ponding on the Four Seasons Mall property and still meet the Commission's goals (Table 1). Pond NB-07 was reviewed for a stormwater improvement; however, based on wetland mitigation costs and excessive water volume this strategy was deemed cost prohibitive.

Table 1. Scenario removal and cost estimate.

Scenario	Total TP removed (lb/yr)	Estimated Cost
1- Ponding & Stream Restoration	108	$939,831.00
1a- Without Four Seasons Pond	85	$651,718.68
2- Alum Injection	143	$1,205,826.00

The City of Plymouth is requesting the Commission review and comment on the feasibility study and make a motion to provide direction on the preferred scenario. Additionally, the City of Plymouth requests the Commission initiate the Plan Amendment process (if necessary) and provide this draft feasibility study as well as a maximum 2013 levy amount to Hennepin County.

Thank you for your consideration on this project. Please feel free to contact me directly if you have any questions.

Sincerely,

Derek Asche

Derek Asche
Water Resources Manager

enc: DRAFT Four Seasons Mall Water Quality Improvement Feasibility Report

Four Seasons Mall Water Quality Improvement Feasibility Report (DRAFT)

Wenck File #1756-05

Prepared for:

CITY OF PLYMOUTH, MN
3400 Plymouth Boulevard
Plymouth, MN 55447-1482

Prepared by:

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Center
P.O. Box 249
Maple Plain, Minnesota 55359-0249
(763) 479-4200

June 2012

Table of Contents

Table of Contents (Cont.)

TABLES

FIGURES

Table of Contents (Cont.)

APPENDICES

1.0 Background and Purpose

1.1 INTRODUCTION

The City of Plymouth and the Bassett Creek Watershed Management Commission (BCWMC) commissioned the development of this Feasibility Study to select an approach for water quality improvements for the North Branch subwatershed south of County Road 9 and west of Northwood Lake. The goal of the project is to evaluate a suite of Best Management Practices (BMPs) and/or capital projects to reduce total suspended solids and phosphorus loading with a target load reduction of 73 pounds of phosphorus.

Several potential options were identified including:

A. Regional water quality ponding improvements within basin NB07 including wetland mitigation
B. Water quality ponding improvements on the City of New Hope's outlot east of Highway 169
C. Alum treatment, including the possibility of an alum dosing plant, near pond NB07
D. Wetland restoration and habitat improvement under Minnesota Rule 8420.0420 Subp. 9.
E. Stream restoration from Lancaster Lane to the west
F. Flow restriction at the outlet of Pond NB07 to improve the water quality function of the pond
G. A partnership with the Four Seasons Mall Property to develop improvements that the BCWMC goals and development requirements of the City as well as identify additional areas that may increase pollutant reductions.

The ultimate goal of the project is to develop a project or a suite of projects to reduce 73 pounds/year or more of phosphorus loading to Northwood Lake. To that end, Wenck Associates, Inc. reviewed these projects to assess their cost and feasibility. Wenck also reviewed the entire watershed for additional opportunities that may be collectively implemented to meet the project goal of reducing watershed loading by 73 pounds/year.

1.2 PURPOSE

The purpose of this Feasibility Study is to identify the cost and feasibility of a suite of BMPs in the North Branch subwatershed in Plymouth, MN that drains to Northwood's Lake in New Hope, MN. The overall goal of the project is to reduce total phosphorus loading from the North Branch subwatershed in Plymouth by 73 pounds.

2.0 Description of the Study Area

2.1 PROJECT AREA

The project area is located in the North Branch Subwatershed south of County Road 9 and west of Highway 169 (Figure 2.1). The project area is further bordered by 36th Avenue on the south and by Lost Lake on the west including Pilgrim Lane Elementary School and Park and a City park located on 40th Avenue and Pilgrim Lane. The North Branch of Bassett Creek flows to the east of the mall and eventually discharges to the wetland located to the south of the mall. A tributary to the creek flows through the City Park before discharging to the creek before entering the wetlands to the south of the mall.

The portion of the subwatershed north of County Road 9 was researched to provide accurate drainage to the Four Seasons Mall. However, the area north of County Road 9 was not part of this evaluation for possible stormwater improvement locations.

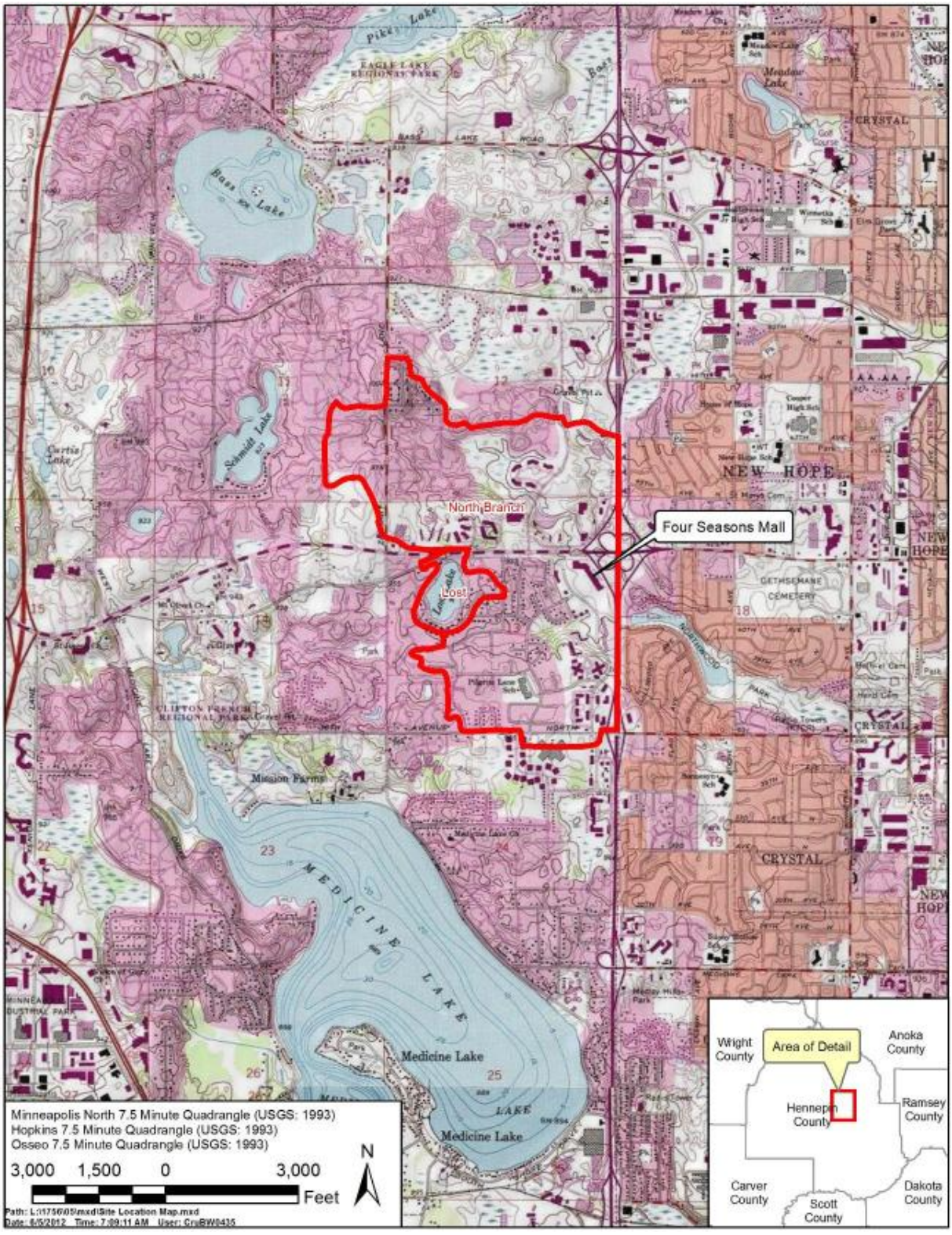


Figure 2.1. Site Location Map

2.2 SOILS

The Hennepin County Soil Survey identified the hydric soil groups in the project area as predominantly B soils with some B/D and C soils in the southwest (Figure 2.2). Hydric soil group B is composed of soil series Angus and Lester, which are classified as well drained soils. Infiltration rates associated with soils groups B, D, and C soils According to the *Minnesota Stormwater Manual (*MPCA, 2008) are shown in Table 2.1. The proposed stormwater ponds are located in these soils.

The soils associated with the wetlands (Section 2.4) are classified as Houghton, Klossner and Glencoe and are considered poorly drained soils.

Table 2.1. Hydrologic Soil Group Infiltration Rates.

Hydrologic Soil Group	Infiltration Rate (inches/hour)	Soil Textures	Corresponding Unified Soil Classification
B	0.6	Silt loam	**SM** - Silty sands, silty gravelly sands
	0.3	Loam	**MH** – Micaceous silts, diatomaceous silts, volcanic ash
C	0.2	Sandy clay loam	**ML** - Silts, very fine sands, silty or clayey fine sands
D	<0.2	Clay loam, silty clay loam, sandy clay, silty clay or clay	**GC** – Clayey gravels, clayey sandy gravels **SC** – Clayey sands, clayey gravelly sands **CL** – Low plasticity clays, sandy or silty clays **OL** – Organic silts and clays of low plasticity **CH** – Highly plastic clays and sandy clays **OH** – Organic silts and clays of high plasticity

Source: *Minnesota Stormwater Manual,* MPCA (2008).

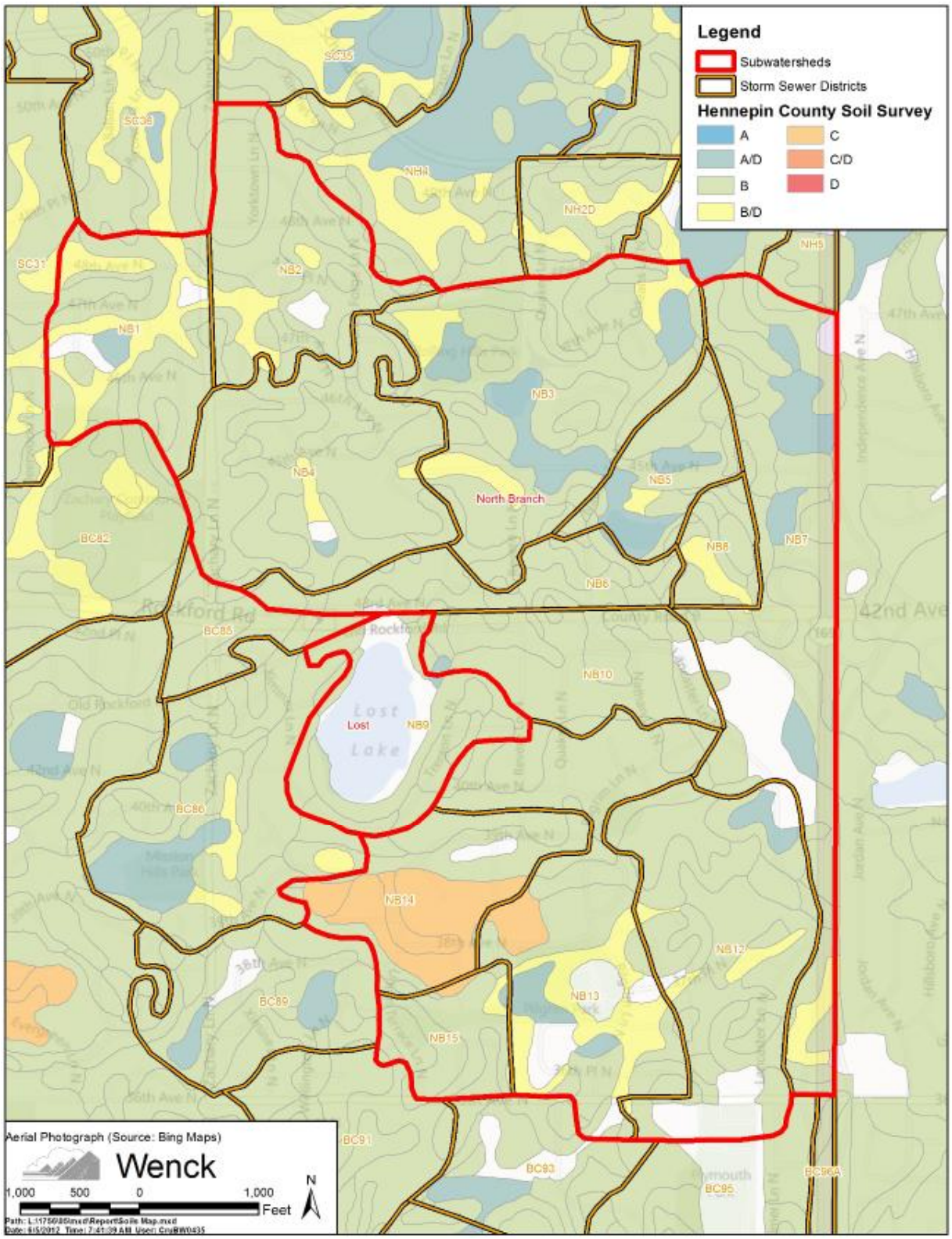


Figure 2.2. SSURGO Soils Inventory for Hennepin County in the Project Area.

2.3 LAND USE

The Metropolitan Council (METC) 2010 land use in the project area is predominantly residential with the remainder commercial, institutional, and parks and recreation (Figure 2.3). The residential land use is mostly single family homes to the west of the mall and multifamily homes to the south and southwest. The project area is bordered on the east by a major highway (Hwy 169) and a large commercial area to the north. A Redevelopment Study of the Four Seasons Mall area was completed in 2011 by the City of Plymouth.

2.4 WETLAND DELINEATION

A wetland delineation report completed by Arrowhead Environmental Consulting (AEC) in 2011 identified five wetland basins in the project area (Figure 2.4). Wetlands 1 and 4 were also identified on the National Wetland Inventory (NWI) map. None of the wetlands are identified on the Minnesota Department of Natural Resources (MNDR) Public Water Inventory (PWI) map.

Refer to the Wetland Delineation Report (AEC, 2011) in Appendix A for additional details regarding the wetlands in the project area.

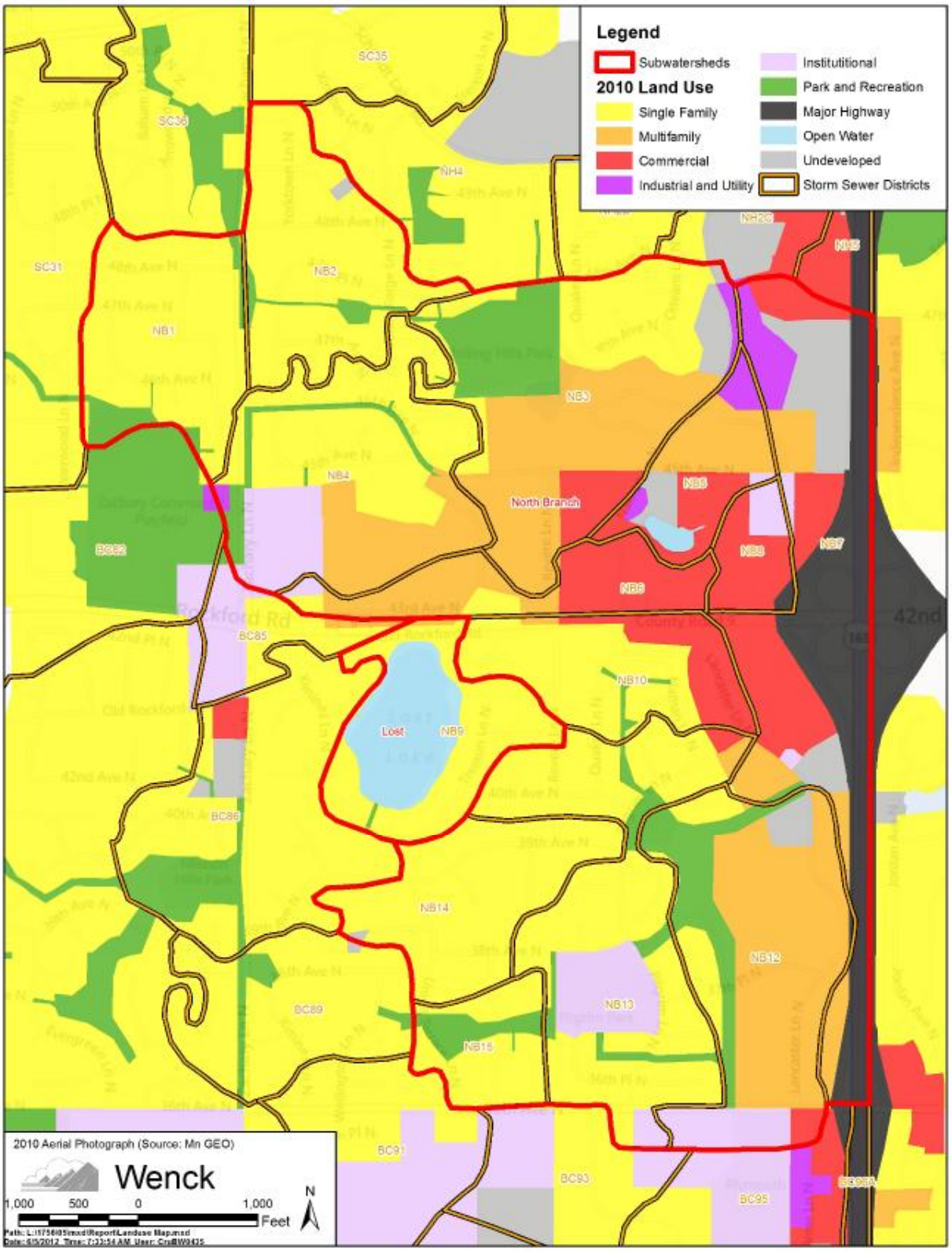


Figure 2.3. Land Use Delineation in the Project Area.

Figure 2.4. Wetland Delineation within the Project Area.

3.0 Project Identification

3.1 INITIAL PROJECT IDENTIFICATION

An initial list of projects was developed by reviewing watershed open space, land ownership, local soils, groundwater elevations, and other site specific conditions to guide the types of projects that are feasible for the area. A major constraint in the study area is space availability and land ownership. These constraints limited the areas of interest for ponding and filtration practices to open area parks located within the subwatershed, and the Four Seasons mall area itself. The initial projects identified in the first phase are shown in Figure 3.1 and briefly described as follows:

1. *Pilgrim Park Neighborhood Stormwater Pond* – Construct a stormwater pond with an iron enhanced filtration bench in the neighborhood park adjacent to Union Terrace Lane. The total treatment area for this project is 23 acres.

2. *Pilgrim Lane Elementary Stormwater Pond* – Construct a stormwater pond with an iron enhanced filtration bench in the green space available at the Pilgrim Elementary School.

3. *40th Avenue Park Stormwater Pond* – Construct a stormwater pond with an iron enhanced filtration bench in the wooded area behind the park adjacent. The total treatment area for this project is targeted as 129 acres.

4. *Four Seasons Mall Stormwater Treatment Pond* – Construct a stormwater pond with an iron enhanced filtration bench in the Parking lot at the Four Seasons Mall. The total treatment area for this project is targeted as 23 acres.

5. *Channel Restoration* – Restore the seasonal stream flowing south-north from 37th Pl North and then west east towards Lancaster Lane.

6. *Alum Injection Facility at the Four Season Mall Site* – Construct an underground storage unit that will contain a large percentage of the stormwater from the southern watershed and run it through an alum injection and primary clarification process.

7. *Four Seasons Mall Wetland Conversion* – Convert delineated wetland #1 to function as a regional stormwater pond. The total treatment area for this project is targeted as 81 acres.

Figure 3.1. Initial Project Identification Inventory.

The next step was to perform a site investigation of all of the potential projects. A second objective during the site visit was to get a better understanding of the flow patterns between the subwatersheds in the project area. A major unknown prior to site investigations was the connectivity of subwatersheds north of Rockford Road to the Four Seasons Mall area. This step was critical to identify the volume of water moving through the Four Seasons Mall area.

The following sections describe the data that was obtained during the site surveys that were completed on 4/20/2012 and 4/24/2012.

3.1.1 Four Seasons Mall and Local Green Space Site Survey

Topographic and other site specific data was collected in areas considered for ponding/filtration projects. All four ponding/filtration project sites identified have reasonable space and existing infrastructure to implement ponding/infiltration strategies. The Pilgrim Park area, Pilgrim Elementary area, and Four Seasons Mall area have relatively flat terrain and easy access to the existing stormwater infrastructure. The open area at the 40th Avenue park location is elevated from the street limiting the ponding capability there. However the area behind the park is heavily wooded but has plenty of space for a pond to be installed that could intercept flows from 114 acres of the subwatershed. There is a channel through the wooded area that starts at a stormwater pipe outfall and winds behind the 40th Ave. Park eventually discharging to the Four Seasons Mall wetland and then to Northwoods Lake.

3.1.2 Flow Path Determination

It was important to determine the flow paths of all of the sewersheds within the subwatershed in order to accurately determine the annual and event volumes that would be experienced at each site. One major unknown at the beginning of the project was how the flows from the Northern portion of the watershed (north of Rockford Road) were related to the Four Seasons Mall Wetland area (delineated wetland No. 1). As built stormsewer information was reviewed and a survey was conducted to collect topographic and storm sewer outlet data in and around the Roadside ditch just north of Rockford Road to determine the connectivity of the Northern portion of the watershed to the southern portion (Figure 3.2). During this survey it was determined that there is a connection from north to south through a 24” RCP pipe running north-south under Rockford Road (Figure 3.3). This was an important factor when considering a regional pond conversion of the wetland at the Four Seasons Mall.

The flow directions within the subwatershed indicating how the sewersheds are interconnected based on this overview of information and site survey are shown in Figure 3.4.

Figure 3.2. Rockford Road roadside ditch.
Facing east from storm sewer outlet toward the connecting culvert directing flow towards the Four Seasons Mall.

Figure 3.3. 24 inch reinforced concrete pipe.
Pipe leads flow from ditch to Four Seasons Mall delineated wetland area.

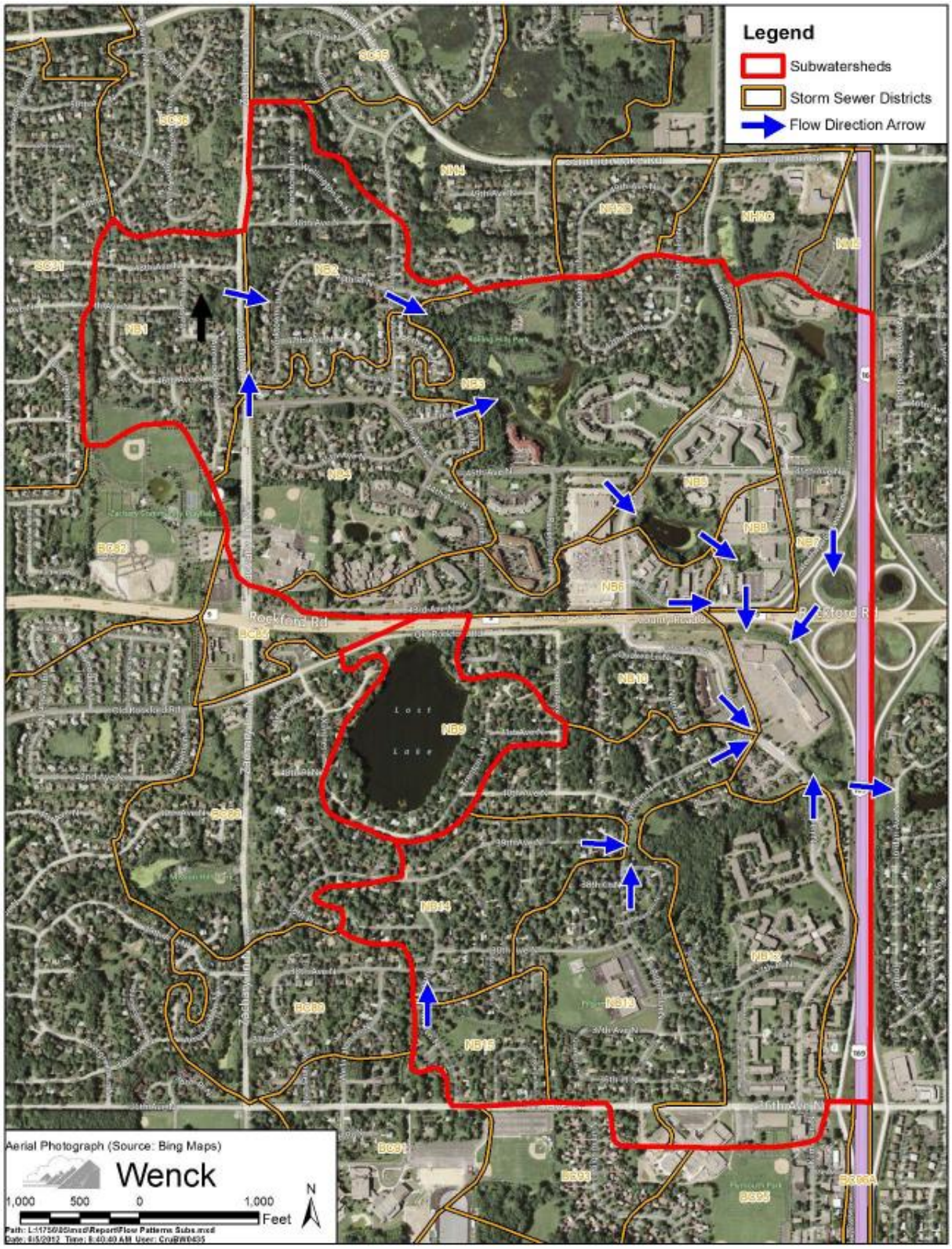


Figure 3.4. Subwatershed Flow Directions Identified.

3.1.3 Channel Degradation Investigation

A series of channels flow west to east through city-owned wooded land between Pilgrim Lane and Lancaster Lane. These channels discharge into the Lancaster Lane wetland (delineated wetland number 4) and then into Northwood Lake and the North Branch of Bassett Creek (see Figure 3.5). The Right Channel appears to be the primary channel, and conveys runoff from the adjacent commercial and residential areas, including runoff discharged from a 12" outfall from the Nathan Lane North cul-de-sac. The wooded area is lower than the adjacent development to the north and west, and the Center and Left Channels flow along the foot of a slope, conveying mainly overland flow. The three channels converge in the vicinity of a 12" outfall from the Orleans Lane North cul-de-sac.

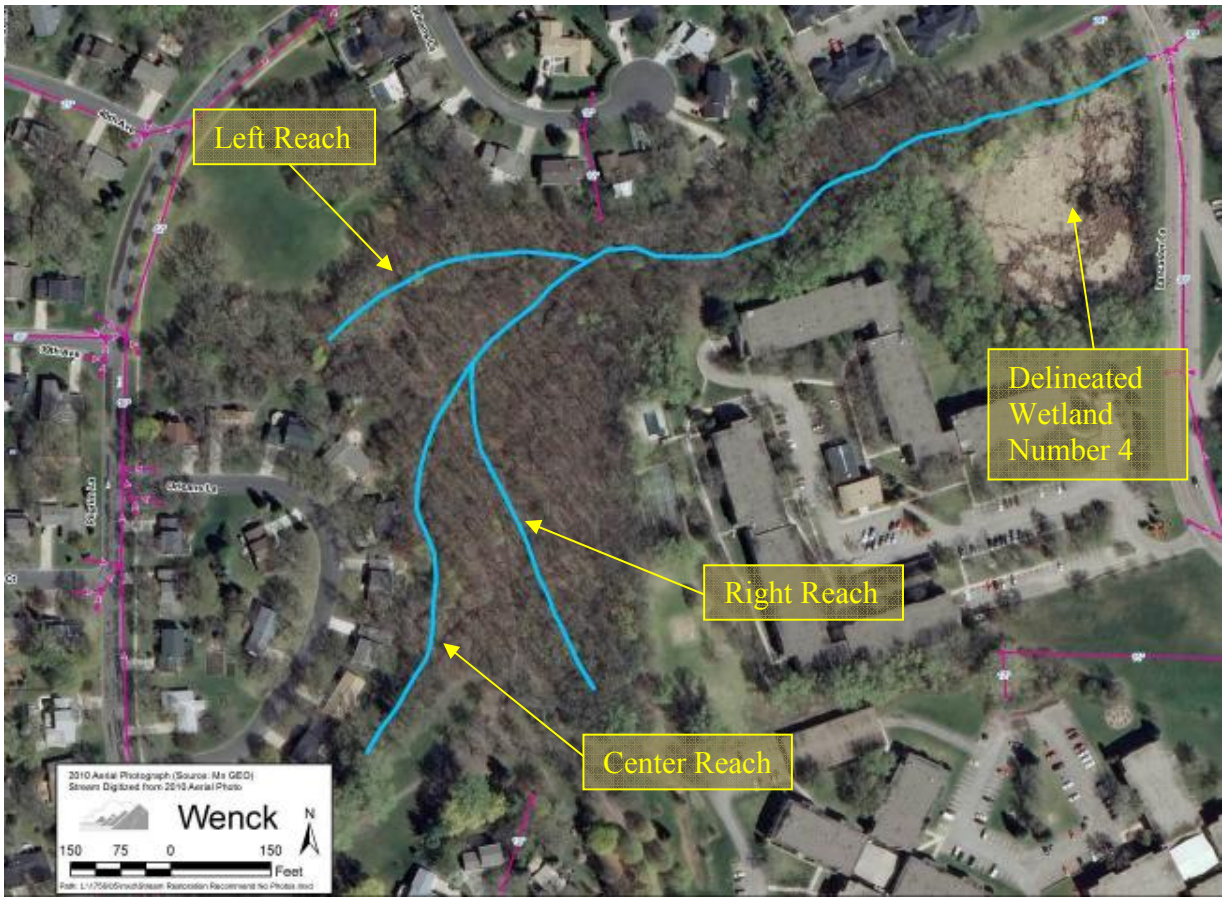


Figure 3.5. Channel Stabilization Investigation Reaches.

We conducted a visual inspection of these channels to evaluate conditions and identify the nature and extent of any channel degradation and its probable cause(s). All three channels are experiencing erosion and mass wasting. The Right Channel is downcutting and undercutting. The channel is slightly meandered, with degradation of the outer banks and exposed and washed out tree roots. The other two channels are more stable, with areas of spot erosion. The 12" outfall from the Nathan Lane North cul-de-sac is broken, and the drainage swale to the Center Channel

is scoured and unstable. The channel downstream of a 24" culvert under a trail crossing on the Center Channel is scoured and downcut.

There is a significant accumulation of sediment in the Lancaster wetland where flow from the channel slows down and spreads out into the wetland. The outlet structure is partially buried and obstructed by woody debris. There is also a sediment delta at the 30" outfall from Lancaster Lane.

A significant factor in this soil loss is likely the heavy canopy, which shades out the growth of bank-stabilizing woody and herbaceous vegetation. Flashy stormwater flows erode the unstable, exposed banks, resulting in headcutting and undercutting.

3.2 PROJECTS ELIMINATED FROM CONSIDERATION

As discussed above, several projects were initially identified and explored based on City owned open space and location in the watershed. Based on discussions with the City of Plymouth, these projects were eliminated because it was determined that implementation was unlikely to occur or potentially objectionable to the City. Following is a brief description of those projects and the reasons for their elimination.

3.2.1 Pilgrim Lane Elementary School Pond

Pilgrim Lane Elementary School (Figure 3.1) has a fair amount of open space that could be used for ponding to treat stormwater coming from the developed area to the southeast. However, the school is currently vacant and the ultimate fate and use of the school and the surrounding land is uncertain and it is unlikely that the School Board would be willing to agree to stormwater practices with such high uncertainty. Based on this understanding, the Pilgrim Park Elementary School pond was eliminated from consideration.

3.2.2 Pilgrim Park Pond

Another pond location considered in the watershed was Pilgrim Park located off of Union Terrace Lake just west of Pilgrim Park Elementary School. Based on discussions with the City of Plymouth, this green space was highly utilized by local residents and would be considered a considerable loss to the City. Based on this discussion, the Pilgrim Park Pond project was eliminated from consideration.

3.2.3 Four Seasons Mall Wetland Conversion

The wetland at the Four Seasons Mall (delineated wetland number 1) was initially determined as a potential stormwater improvement strategy for the watershed. However, due to the amount of water currently flowing to this wetland (both north and south portions of the subwatershed) mitigation costs associated with wetland conversion (approximately $1.50 to $2.00 per acre of wetland disturbed) this project was deemed cost prohibitive.

3.2.4 Infiltration

Based on the soils survey information presented in Section 2.2 and site visits there is assumed that possible groundwater influence and less than optimal soil conditions will limit the effectiveness of infiltration practices. Therefore, all of the projects (with the exception of the alum treatment project) suggested herein will be focused on ponding and filtration practices.

4.0 Hydrologic and Water Quality Modeling

Hydrologic and Water quality models were developed and used to estimate the magnitude of event storm volumes, to determine base total phosphorus loading, and to determine the effectiveness of the suggested BMPs. HydroCad™ and P8 models were developed for sewersheds NB-10, NB-12, NB-13, NB-14, and NB-15 using standard Natural Resources Conservation Services (NRCS) hydrology methods. HydroCad was used to estimate event storm volumes. P8 was used to estimate annual total phosphorus loading.

4.1 CURVE NUMBER ESTIMATION

Curve numbers are estimated within each subwatershed based on land uses and soils. Soils and land use data described in Sections 2.2 and 2.3 were used in the curve number. A composite curve number was estimated for each watershed by using the weighted average (see Table 4.1) Time of concentration shown in Table 4.1 is estimated based on the existing land uses designations, the sewershed delineation, and stormsewer information.

Table 4.1. Watershed Data for Existing Conditions.

Subwatershed	Area (acre)	Composite Curve Number	Time of Concentration (min)
NB-10	23	83	15
NB-12	87	79	40
NB-13	54	71	55
NB-14	52	73	26
NB-15	23	68	23

4.2 IMPERVIOUS FRACTION

P8 calculates runoff separately for pervious and impervious areas. Therefore, it is necessary to determine the impervious fraction of each watershed. The TR-55 (SCS, 1986) provides some direction as to appropriate impervious fractions for a given land use and hydrologic soil group. For the Four Seasons Mall area model it is assumed that all of the impervious areas are directly connected to a storm water conveyance system. A composite impervious fraction that represents the each sewershed was estimated. Table 4.2 shows the impervious fraction estimated based on each land use type.

Table 4.2. Impervious Fraction Estimates for Existing Conditions.

Subwatershed	Impervious Fraction
NB-10	40%
NB-12	45%
NB-13	35%
NB-14	30%
NB-15	24%

4.3 P8 WATER QUALITY COMPONENT

As described above the sample water quality component concentrations were derived from the National Urban Runoff Program (NURP) studies performed by the United States Environmental Protection Agency (USEPA) in 1986. The default NURP 50th percentile particle file was used to estimate watershed pollutant loading.

4.4 RAINFALL AND TEMPERATURE

Rainfall frequencies and depths used in the HydroCad modeling are provided in Table 4.3. Rainfall depths were obtained from the *Hydrology Guide for Minnesota* (USDA 1966). 10-year 24-hour rainfall is estimated to be 4.1 inches using the *Hydrology Guide for Minnesota, USDA 1966.*

Table 4.3. Precipitation Depth by Event Frequency.

Frequency	**Precipitation Depth (inches)**
2-year (50% annual chance)	2.7
10-year (10%)	4.1
100-year (1%)	5.9

Rainfall and temperature data used in the P8 model were obtained for the period of January 1, 1999 to December 24, 2010 from the Minneapolis/St. Paul International Airport observation location. The resolution of the data obtained from this site is accumulated daily precipitation (inches) and average daily maximum and minimum temperature (degrees Fahrenheit). The temperature data requirements for P8 are satisfied with daily resolution; however, P8 requires that the precipitation to have hourly resolution. Hourly data was estimated for the daily precipitation obtained from the airport site by using a SCS 24-hour type 2 distribution as described in Mays, 2005.

5.0 Concept Design and Engineering Cost Estimates

5.1 SCENARIO DEVELOPMENT

Once the initial project screening was completed, the final list of projects to evaluate was broken into two scenarios. These projects were selected based on input from the City of Plymouth and the City of New Hope and were considered the most feasible projects in the watershed for reaching the goal of 73 ponds removal of phosphorus. The projects were also presented to regulators for an initial review.

The first scenario includes more passive stormwater treatment including ponds with iron enhanced sand filter outlets and stream stabilization. The second scenario includes active treatment of stormwater using aluminum sulfate (alum) injection and a clarifier connected to the sanitary sewer. Following is a detailed description of each component of the two scenarios along with preliminary design and engineering cost estimates.

5.2 WATERSHED PONDING AND STREAM RESTORATION (SCENARIO 1)

Scenario 1 includes two ponds located at strategic points in the watershed. These ponds were selected based on location in the watershed and land ownership. Both ponds will incorporate iron enhanced filter benches in order to capture more of the dissolved fraction of total phosphorus. A typical cross section depicting the general layout of a pond with an iron enhanced filter bench is shown in Figure 5.1.

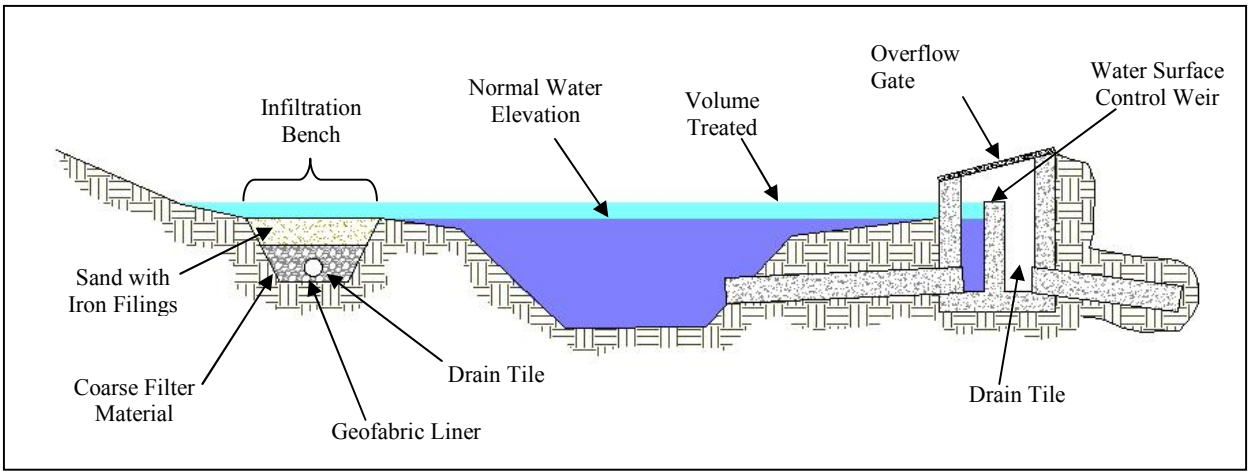


Figure 5.1. Schematic of a Stormwater Pond with an Iron Enhanced Filter Bench.

A second component of Scenario 1 is stream restoration and stabilization of the channel east of Pilgrim Lane. Channel stabilization activities include but are not limited to installing brush bundles, boulder toe protection, riprap plunge pool and riffle structures, cross vanes, tree removal and seeding.

5.2.1 40th Ave. Pond with Iron Enhanced Sand Filtration

This project consists of replacing the existing pipe leading into the channel running behind the park with a 42 inch reinforced concrete pipe (RCP) to intercept runoff from storm sewersheds NB-15 (22.92 acres), NB-14 (52 acres), and the NB-13 south of 39th Avenue (effective area shown in Figure 5.2). The runoff from the pipe will enter into the existing channel and then into a newly constructed pond fitted with a 10 foot wide iron enhanced sand filter bench at elevation 920. The outlet of the pond will be controlled by a weir at elevation 921 embedded into a 108 inch diameter overflow structure with a crest elevation of 922.5 foot. A 48 inch RCP will serve as the mechanism for the normal water level to be controlled by the weir. Additionally a 48 inch RCP will discharge from the overflow structure back in to the existing stream. The stream immediately downstream of the pond will be protected by a riprap lined plunge pool. Figure 5.3 shows the work plan/conceptual design of the 40th avenue pond project.

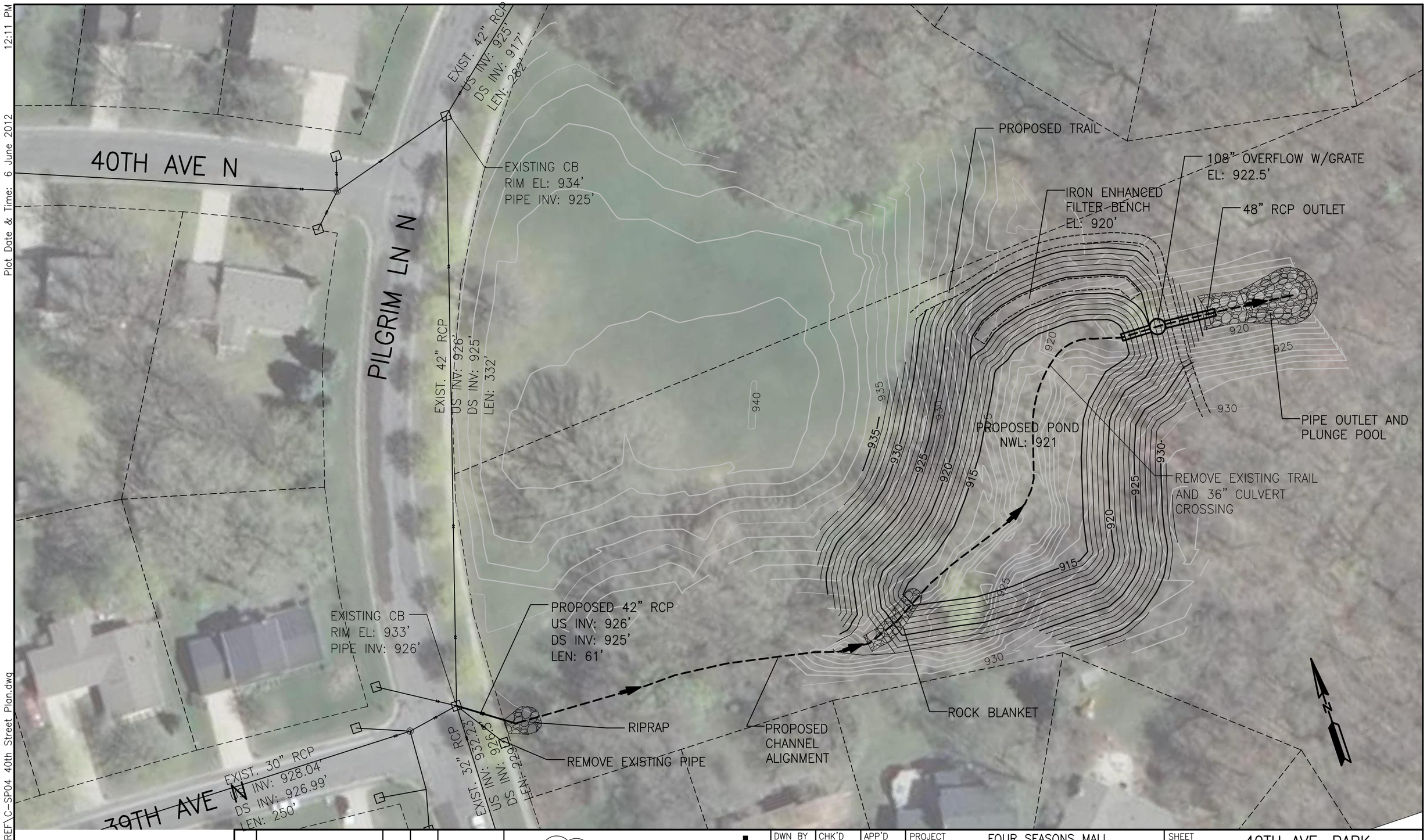
The estimated cut volume for this design is 8,109 cubic yards of material of which 200 cubic yards could be reused as fill to construct the berm at the outlet assuming that the soils are conducive to this type of fill. This area is very dense with tree cover, so tree removal is a large component of the constructing this pond. Once construction activities are completed the perimeter of the affected area will be seeded and mulched and trees will be planted to assist in the aesthetics of the park. Additionally a new foot trail will be constructed around the pond to enable residents to access the city trail along the main creek system.

5.2.2 Four Seasons Mall Pond with Iron Enhanced Sand Filtration

This project consists of installing a catch basin, flow splitter in line with the existing stormwater at the intersection of Pilgrim Lane and Lancaster Lane. The splitter will direct flows coming from the north along Lancaster Lane (12 acres of residential area from sewershed NB-10) into a proposed pond located on the Four Seasons Mall Property. The existing parking lot drainage system is assumed to flow from the northwest side of the parking area towards the wetland (delineated wetland number 1, see Figure 2.4). As part of this project it is assumed that all of the impervious area from the Four Seasons Mall Property will be directed to the pond. The effective drainage area of 23 acres is shown in Figure 5.2.

An iron enhanced filter bench will be integrated with the pond outlet system at elevation 889 feet. The normal water level in the pond will be controlled by a concrete weir installed in a 108 inch overflow structure. The weir elevation is proposed to be at elevation 890 feet. The overflow crest is proposed to be set at 891 feet. The total cut volume for this design is 4,194 cubic yards. Figure 5.4 shows the work plan/conceptual design for this project.

Figure 5.2. Effective Areas for Scenario 1 BMPs.



Plot Date & Time: 6 June 2012 12:11 PM

M:\1756\05\REF\C-SP04 40th Street Plan.dwg

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

© Wenck Associates, Inc.
Consulting Engineers

Wenck
Web Site: www.wenck.com
1800 PIONEER CREEK CENTER (763) 479-4200
MAPLE PLAIN, MN 55359 (763) 479-4242

DWN BY	CHK'D	APP'D
BWC		

DWG DATE 6/4/2012

SCALE 1"=50'

PROJECT FOUR SEASONS MALL STORMWATER IMPROVEMENTS

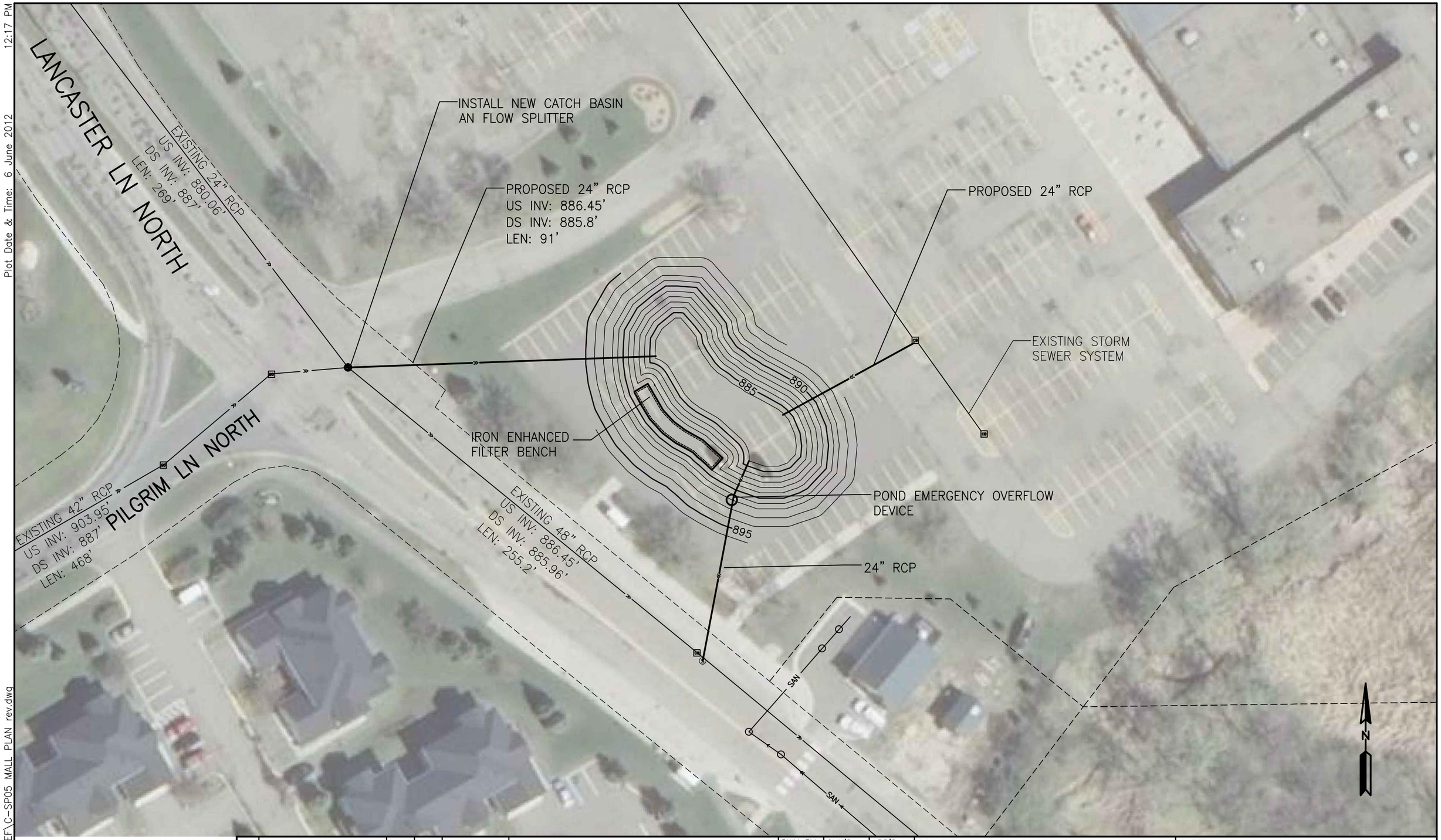
CLIENT CITY OF PLYMOUTH, MN

SHEET TITLE 40TH AVE. PARK CONCEPT PLAN

PROJECT NO. 1756-05

SHEET NO. FIGURE 5.3

REV NO.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

© Wenck Associates, Inc.
Consulting Engineers

Wenck
Web Site: www.wenck.com
1800 PIONEER CREEK CENTER (763) 479-4200
MAPLE PLAIN, MN 55359 (763) 479-4242

DWN BY	CHK'D	APP'D
BWC		

DWG DATE 4/23/2012

SCALE 1"=50'

PROJECT FOUR SEASONS MALL STORMWATER IMPROVEMENTS

CLIENT CITY OF PLYMOUTH, MN

SHEET TITLE FOUR SEASONS MALL POND CONCEPT PLAN

PROJECT NO.	SHEET NO.	REV NO.
1756-05	FIGURE 5.4	

Plot Date & Time: 6 June 2012 12:17 PM

M:\1756\05\REF\C-SP05 MALL PLAN rev.dwg

5.2.3 Stream Channel Restoration and Stabilization

Stabilization of streambanks would reduce the transport of sediment-attached phosphorus from these channels to Northwood Lake. In addition, there are numerous locations along the Center Channel where residents are dumping leaves and grass clippings on the streambanks. These property owners should be educated about the impacts of those actions and encouraged to discontinue those practices.

One of the primary causes of channel degradation is the heavy tree canopy that shades the banks and prevents the growth of stabilizing long-rooted herbaceous and woody vegetation. Trees in the channel corridors should be thinned to open the canopy, and a 30 foot wide buffer established on each side of the channel.

There are approximately 2,375 linear feet of channel that would benefit from some type of improvement (Figure 5.5). Just less than 1,000 feet of channel is in relatively good condition and would benefit from simple tree and brush thinning, minor regrading, and planting a 30 foot wide buffer with mulched seed and native woody vegetation. An additional 500 feet of bank could be seeded and protected until vegetation establishment with an erosion control blanket on the slopes and mulch and woody vegetation in the buffer. About 325 linear feet has experienced some erosion and mass wasting which may continue if not stabilized. A treatment of tree thinning, brush bundles stacked on the streambanks, and native vegetation in a 30 foot buffer would be sufficient to stabilize the banks and filter overland runoff. Finally, about 570 linear feet appears to be actively eroding, and a boulder toe should be considered to provide stability, along with a native buffer. This includes areas downstream of culverts and outfalls as well as the streambank downstream of the proposed 47th Avenue Pond outlet.

Some segments of these channels are sloped at 0.05 or greater, and are headcutting. Each of the channels would benefit from installation of rock vane grade controls, at least one for every 2-3 feet of elevation change. Where there are steeper slopes and more headcutting, grade controls at every one foot elevation change should be considered.

Some of the recommended work would be suitable for city forces (tree thinning and brush removal) or completion by Tree Trust or Minnesota Conservation Corps crews. Many of these crew leaders have experience felling trees and using the removed limbs and branches to form and install brush bundles. The Minnesota Conservation Corps has received funding in the last few years from the Minnesota Clean Water, Land and Legacy Amendment, and awards grants to public partners in the form of crew days. A cost-effective way of accomplishing the stream Restoration work would be to complete work such as grading, boulder toes and grade control structures by public contract, and the less equipment-intense work by Tree Trust or MCC crews guided by knowledgeable engineers and crew leaders.

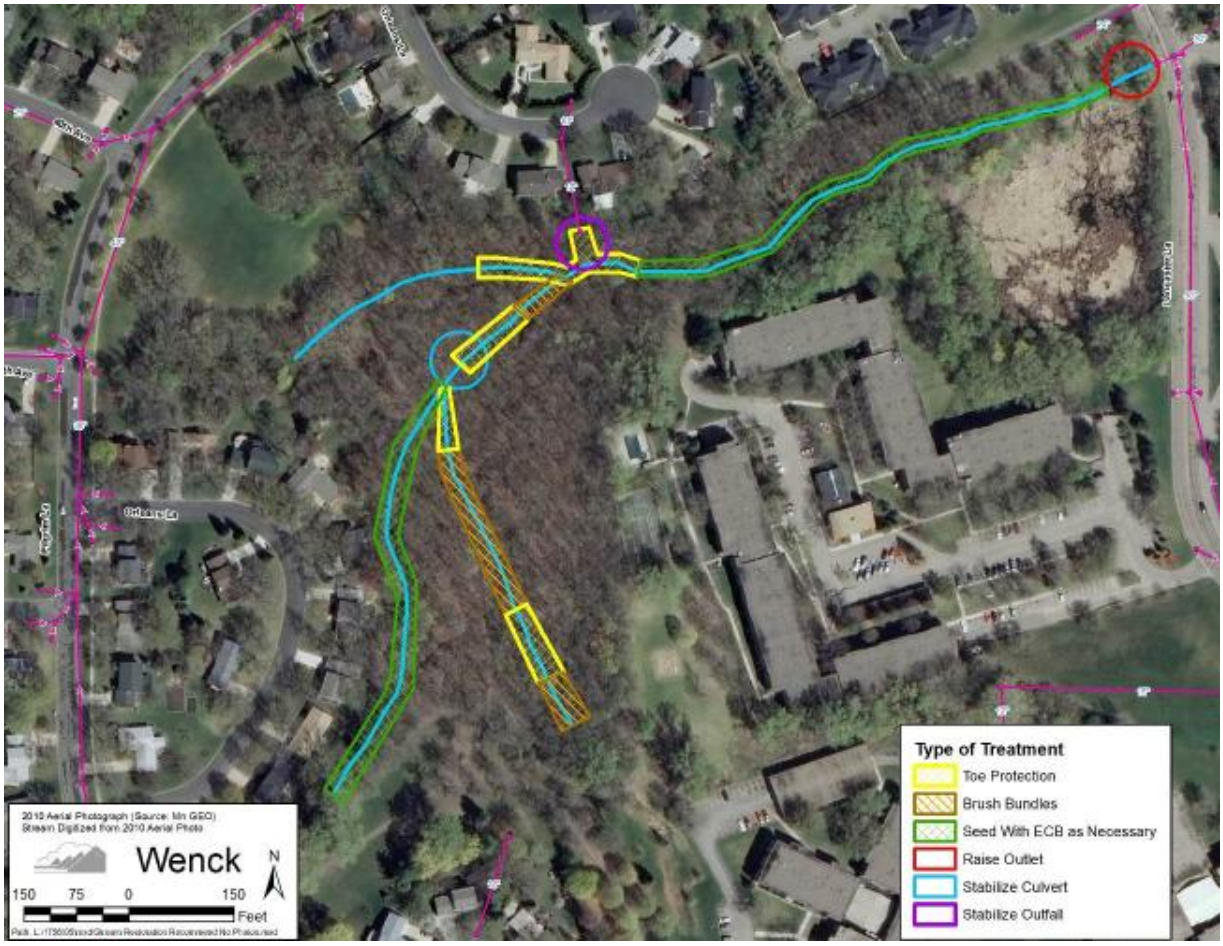


Figure 5.5. Conceptual work plan for the stream restoration project.

5.2.4 Removal Efficiency and Estimated Cost

The estimated cost and total phosphorus removal efficiency associated with the projects described in this section are shown in Table 5.1. A more detailed breakdown of the individual project costs are shown in Appendix B, Tables B1 to B3. 30 year life cycle costs are estimated based on an annual inflation rate of 2.3% and an annual discount rate of 3.5%. Assumed life cycle costs for each project are shown in Appendix B, Table B5.

Table 5.1. Project Estimated Cost and Phosphorus Removal Efficiency.

Project	Treatment Area (acres)	Annual Load (lbs-TP/year)	Removal Efficiency	Total 30 year Life Cycle Cost
40th Street Pond	114	80	74%	$421,104
Four Seasons Mall Pond	23	31	74%	$326,997
Stream Restoration	15	26	100%	$320,566
Total	152	137	79%	$1,068,667

5.3 STORMWATER COLLECTION AND ALUM INJECTION (SCENARIO 2)

Scenario 2 includes collection of stormwater into an underground storage vault at the Four Seasons Mall site and then active treatment using alum. Stormwater from the 1 inch runoff event will be collected into underground storage chambers and then pumped to a clarifier. A one inch runoff event corresponds to 90% of the storms that occur in the metro area. Stormwater will be injected with alum prior to entering the clarifier. Alum floc will be settled to the bottom of the clarifier which is connected to the sanitary sewer. The treatment of stormwater with alum can achieve up to an 80% removal of total phosphorus and has the added advantage of removing dissolved phosphorus. Stormwater ponds typically only address particulate phosphorus, however the addition of iron enhance sand filtration at the pond outlet adds dissolved phosphorus removal.

Alum injection facilities require a considerable amount of annual maintenance including annual chemical and electrical costs, metering adjustments, and pump maintenance.

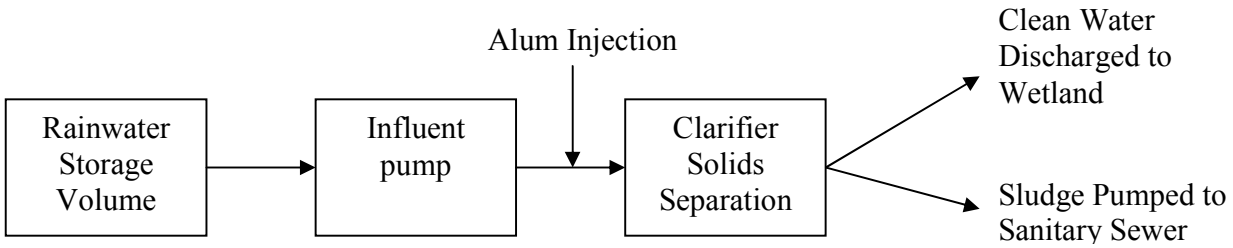
Figure 5.6 shows the effective treatment area for this scenario. Figure 5.7 shows the work plan/conceptual design for this scenario.

5.3.1 Underground Stormwater Storage

Because stormwater is episodic in nature, it must be stored prior to treatment with alum. The 1 inch runoff volume from sewersheds NB-10, NB-12, NB-13, NB-14, NB-15, and all of the impervious area at the Four Seasons Mall site is estimated to be 0.84 acre-ft. This can be stored using five 96 inch corrugated metal pipe culverts as storage units. The work involved with these units requires removal of pavement, sidewalk and curb both in the parking lot and in the street. Another component of the work involved with this scenario would be the installation of a new catch basin that will be retrofit with a SAFL Baffle and used as pretreatment for large solids into the storage vaults.

5.3.2 Chemical Treatment System

In general the chemical treatment train for the alum injection stormwater treatment system is described by the process flow diagram shown below.



Water will be pumped from the stormwater storage chambers to the clarifier through an influent pump station. The influent lift station consists of a precast concrete, 8-foot-diameter, 15-foot-deep structure, located near the stormwater storage system. The pump requirements include two pumps, operated in Lead/Lag (2 cfs or900 gpm) and operated by level float switches. The forcemain to the clarifier would be 10 inch PVC pipe.

Before reaching the Clarifier Alum will be injected to the influent. The injections system includes a storage tank and a feed pump that has a start/stop mechanism based on run status of the influent lift station pumps. The estimated alum dosing rate is 10 ppm (but this needs to be verified by jar testing at project startup). The monthly chemical usage is to be determined with initial tests but is assumed to cost around $5,000 per year including delivery to the site. The storage tank size necessary for the site is a 300 gal (this can be modified as needed based on jar testing results).

The solids from the clarifier are handled in a dry pit, precast concrete structure. Flocculated material effluent is pumped from the system to the MCES sanitary sewer located south and west on Lancaster Road.

5.3.3 Removal Efficiency and Estimated Cost

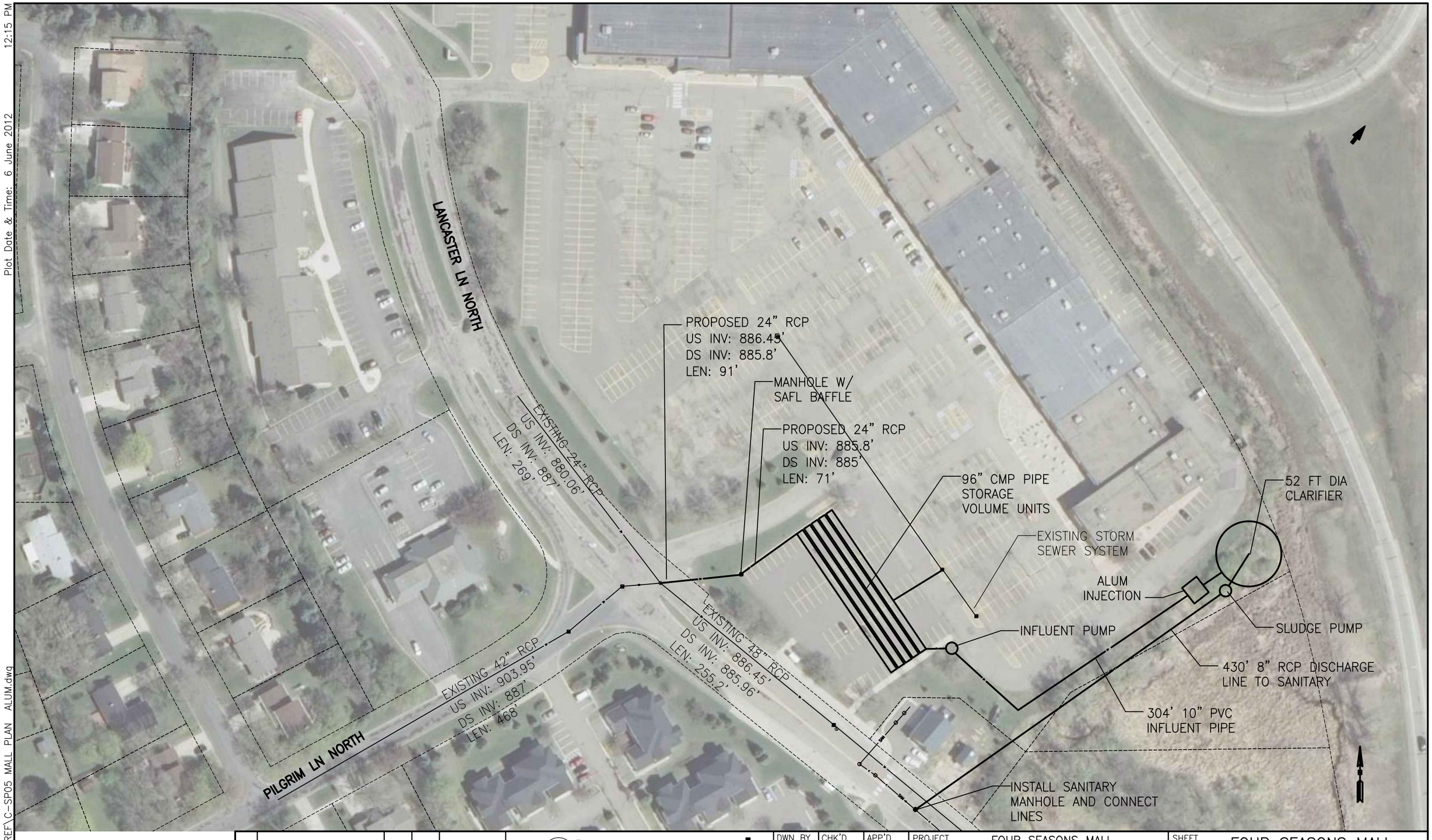
The estimated cost and total phosphorus removal efficiency associated with the projects described in this section are provided shown in Table 5.1. A more detailed breakdown of the individual project costs are shown in Appendix B, Tables B1 to B3. Thirty-year life cycle costs are shown in Table 5.2. These are estimated based on an annual inflation rate of 2.3% and an annual discount rate of 3.5%. Assumed life cycle costs for each project are shown in Appendix B, Table B5.

Table 5.2. Thirty-year Life Cycle Costs

Project	Treatment Area (acres)	Annual Load (lbs-TP/year)	Removal Efficiency	Total 30 year Life Cycle Cost
Alum Injection System	204	199	72%*	$1,853,345
Total	204	199	72%	$1,853,345

*Removal efficiency is less than stated 80% for Alum treatment since we are only targeting the 1 inch volume storm events assuming that 90% of the annual storm events are less than 1 inches.

Figure 5.6. Effective areas for scenario 2 BMPs.



Plot Date & Time: 6 June 2012 12:15 PM

M:\1756\05\REF\C-SP05 MALL PLAN ALUM.dwg

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

© Wenck Associates, Inc.
Consulting Engineers

Wenck
Web Site: www.wenck.com
1800 PIONEER CREEK CENTER (763) 479-4200
MAPLE PLAIN, MN 55359 (763) 479-4242

DWN BY	CHK'D	APP'D
BWC		

DWG DATE 4/23/2012

SCALE 1"=100'

PROJECT FOUR SEASONS MALL STORMWATER IMPROVEMENTS

CLIENT CITY OF PLYMOUTH, MN

SHEET TITLE FOUR SEASONS MALL ALUM INJECTION

PROJECT NO. 1756-05

SHEET NO. FIGURE 5.7

REV NO.

6.0 Regulatory Requirements

6.1 WATERSHED PONDING AND STREAM RESTORATION (SCENARIO 1)

Scenario 1 represents more passive treatment in the watershed and includes two ponds located at strategic points in the watershed. These ponds were selected based on location in the watershed and land ownership. A second component of this scenario is stream restoration and stabilization of the channel east of Pilgrim Lane.

The proposed project is located in the Bassett Creek Watershed Management Organization (BCWMO). The BCWMO requires all construction projects that with greater than 10,000 square feet or more than 200 cubic yards of cut or fill to apply for a permit.

6.2 STORMWATER COLLECTION AND ALUM INJECTION (SCENARIO 2)

Scenario 2 includes collection stormwater into underground storage at the Four Seasons Mall site and then active treatment using alum. Stormwater from the 1 inch runoff event will be collected into underground storage chamber and then pumped to a clarifier. Stormwater will be injected with alum prior to entering the clarifier. Alum floc will be settled to the bottom of the clarifier which is connected to the sanitary sewer.

The proposed project is located in the Bassett Creek Watershed Management Organization (BCWMO). The BCWMO requires all construction projects that with greater than 10,000 square feet or more than 200 cubic yards of cut or fill to apply for a permit.

The proposed project includes discharge to the sanitary sewer system. A Sanitary Sewer Extension Permit is required by the Minnesota Pollution Control Agency (MPCA) to connect to the sanitary sewer. Before the MPCA approves of the sewer connection, the permit must first be approved by the Metropolitan Council Environmental Services (MCES).

Since the Alum Injection is considered a stormwater BMP, the requirements are set forth in the MS4 and a National Pollution Discharge Elimination System/Surface Water Discharger (NPDES/SDS) permit would not be required. If the City of Plymouth does not wish to incorporate the Alum Injection BMP into the MS4, an individual NPDES/SDS permit is required.

7.0 Conclusion

Seven projects were initially chosen as potential candidates for reaching a goal of 73 lb/year removal of phosphorus from the North Branch subwatershed in Plymouth, MN. This list was refined into two scenarios through field investigations and coordination between the City of Plymouth and the agencies. The scenarios presented in this Feasibility study are watershed ponding and stream restoration (scenario 1) and stormwater collection and alum injection (scenario 2).

Both scenarios are effective at reaching the 73 lb/year removal goal. Scenario 1 removes a total of 108 lbs of phosphorus per year and has a total present day value construction cost estimate of $939,831. The 30-year lifecycle cost for scenario 1 is $1,068,667. Scenario 2 removes a total of 143 pounds of phosphorus per year and has a present day value cost estimate of $1,205,826. The 30-year lifecycle cost of scenario 2 is estimated to be $1,853,345. Lifecycle costs are based on a 2.3% inflation rate and a 3.5% discount rate. The costs are associated with things like general maintenance to outlet structures, replacement of equipment, site inspections, and other general operations and maintenance. Table 7.1 summarizes the performance and cost information for both scenarios. Table B5 in Appendix B itemizes the various lifecycle costs and their frequency of occurrence over the 30 year span for each project.

Table 7.1. Scenario removal and cost summary

Scenario	Total TP Removed (lbs/year)	Present Value Construction Cost Estimate	30-year lifecycle cost estimate
1 - Watershed ponding and stream restoration	108	$939,831	$1,068,667
2 - Stormwater collection and alum injection	143	$1,205,826	$1,853,345

8.0 References

Arrowhead Environmental Consulting (AEC). 2011. Four Seasons Mall Wetland Delineation Report. Arrowhead Environmental Consulting, Mound, MN.

Mays, L.W. 2005. Water Resources Engineering. John Wiley & Sons, Hoboken, NJ.

Minnesota Pollution Control Agency (MPCA). 2008. Minnesota Stormwater Manual. Version 2, MPCA, St. Paul, MN.

U.S. Department of Agriculture (USDA). 1966. Hydrology Guide for Minnesota. U.S. Department of Agriculture, Soil Conservation Service, St. Paul, Minnesota.

U.S. Department of Agriculture (USDA). 1986. Urban Hydrology for Small Watersheds (TR-55). <http://www.cpesc.org/reference/tr55.pdf>

Appendix A
Wetland Delineation Report

Four Seasons Mall – Plymouth, MN

Wetland Delineation Report For:

Derek Asche
Water Resources Manager
City of Plymouth
3400 Plymouth Boulevard
Plymouth, MN 55447

arrowhead
environmental
consulting

Wetland Consulting Services
Performed by:
Ben Carlson, WDC (#1125)

AEC Project # 2011-019

June 9, 2011

Arrowhead Environmental Consulting
2909 Meadow Lane
Mound, MN 55364

TABLE OF CONTENTS

Project Overview

On May 16 and 19, 2011 Arrowhead Environmental Consulting (AEC) performed a wetland delineation for the Four Seasons Mall project located in Plymouth, MN.

- Five wetland basins were delineated within the project boundary; Wetland 1 is a Fresh (Wet) Meadow/Shallow Marsh (Type 2/3) wetland within the northeastern portion of the project, Wetlands 2 and 2A are Seasonally Flooded Basins (Type 1) in the very southern portion of the project, Wetland 3 is a Fresh (Wet) Meadow (Type 2) in the south-central portion of the project, and Wetland 4 is a Shallow Marsh (Type 3) in the east-central portion of the project.

- The SE portion of Wetland 1 is indicated on the NWI map as a PEMCd wetland, Wetlands 2 and 2A are not indicated on the NWI map, Wetland 3 is not indicated on the NWI map, Wetland 4 is indicated on the NWI map as a PEMC/PEMF wetland.

- None of the delineated wetlands are indicated on the Minnesota Department of Natural Resources Public Water Inventory Map (PWI).

- Wetland 1 is mapped in the Angus, Hamel, Houghton, and Lester soil series, Wetlands 2 and 2A are mapped in the Glencoe soil series, Wetland 3 is mapped in the Glencoe soil series, and Wetland 4 is mapped in the Hamel and Klossner soil series.

- Wetland 1 is dominated by reed canary grass, cattail and sedge species, with scattered willows; Wetlands 2 and 2A are dominated by Kentucky bluegrass, fowl bluegrass, giant manna grass, and standing water; Wetland 3 is dominated by hummock sedge, reed canary grass, giant goldenrod, and Canada thistle; Wetland 4 is dominated by reed canary grass, sedge species, and cattail..

- The wetland boundaries were generally placed along the vegetative transition from hydrophytic to non-hydrophytic vegetation (which correlated to a rise in topography), the shift from hydric to non-hydric soils, and the presence or lack of hydrology indicators.

Introduction

The Four Seasons Mall delineation is located SW of the intersection of Highway 169 and Rockford road (along Lancaster Lane). The legal description of the project location is: A part of the E ½ of Section 13, T118N, R22W, Hennepin County, Plymouth, Minnesota. The project is a total of 48 acres (are of investigation).

Methods

AEC utilized the *1987 US Army Corps of Engineers Wetlands Delineation Manual* and *Midwest Regional Supplement* to perform the wetland delineation. A United States Geological Survey (USGS) Map (Osseo Quad) (Figure 1), the Minnesota Department of Natural Resources (MN DNR) Public Water Inventory (PWI) Map (Figure 2), the Hennepin County Soil Survey Map (Figure 3), and the National Wetland Inventory (NWI) Map (Figure 4) were reviewed prior to the site visit and used in the delineation process. The delineated wetland boundaries (GPS located) are indicated on Figure 5 and are overlaid on a 2010 aerial image. AEC used the routine delineation method.

Wetland classification followed methods described by the USACOE - St. Paul District; Eggers and Reed "Wetland Plants and Plant Communities of MN and WI". The Circular 39 and Cowardin et al. classifications are given as well. The indicator status of plants was determined using the National List of Plant Species That Occur in Wetlands – Region 3 (Sabine 1999). In accordance with the Midwest Regional Supplement, the + and – have been removed from the vegetation indicator status.

Pink pinflags were used to delineate the wetlands and were numbered sequentially; flagging was hung from adjacent vegetation to aid in location of the pinflags. Sample points were taken to document the vegetation, soils, and hydrology indicators within representative upland and wetland locations.

Results

Office Results

The SE portion of Wetland 1 is indicated on the NWI map as a PEMCd wetland. Wetlands 2 and 2A are not indicated on the NWI map. Wetland 3 is not indicated on the NWI map. Wetland 4 is indicated on the NWI map as a PEMC/PEMF wetland. Wetland 1 is mapped in the Angus, Hamel, Houghton, and Lester soil series. Wetlands 2 and 2A are mapped in the Glencoe soil series. Wetland 3 is mapped in the Glencoe soil series, and Wetland 4 is mapped in the Hamel and Klossner soil series. The Glencoe, Klossner, Hamel and Houghton soil series are classified as hydric soils (SCS Hydric Soils of the United States). None of the delineated wetlands are indicated on the Minnesota Department of Natural Resources Public Water Inventory Map (PWI).

Field Results

Wetland 1

AEC classified Wetland 1 as a Fresh (Wet) Meadow/Shallow Marsh (Type 2/3, PEME/PEMF) wetland. Wetland 1 is dominated by reed canary grass (*Phalaris*

arundinacea), narrow leaved cattail (*Typha angustifolia*), sedge (*Carex*) species, with scattered willow species (sandbar and crack willow, *Salix exigua* and *Salix fragilis* respectively). The adjacent upland area is dominated by smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and dandelion (*Taraxacum officinale*).

The western and northern portion of Wetland 1 is a shallow drainage swale (generally 30-40' in width) that flows to the SE and discharges into the shallow marsh portion of Wetland 1. The boundary for Wetland 1 varied significantly with portions exhibiting a broad transition while other areas exhibited rather steep slopes, the wetland edge was place approximately 12-18" above the current water line which generally correlated to a shift in the vegetation (from hydrophytic to non-hydrophytic). The wetland soil borings met the A2 (Histic Epipedon) and F3 (Depleted Matrix) hydric soil indicators and water was generally observed within 6" of the soil surface (with saturation to the surface). The upland soil borings did not meet any hydric soil indicators with no saturation observed (the upland sample points appeared to be fill material for the adjacent road embankments).

Wetlands 2/2A

AEC classified Wetlands 2 and 2A as a Seasonally Flooded Basins (Type 1, PEMA) wetlands. Wetlands 2 and 2A are divided by a bike trail but are connected by a culvert. Wetlands 2/2A are dominated by mostly open water with Kentucky bluegrass, fowl bluegrass (*Poa palustris*), and giant manna grass (*Glyceria grandis*). The adjacent upland area is dominated by Kentucky blue grass, dandelion, and white clover (*Trifolium repens*).

Wetlands 2/2A are small depressional basins that are likely inundated during spring time snow melt and after significant precipitation events. The boundary for Wetlands 2/2A exhibited moderate slopes, the wetland edge was placed approximately 6" above the current water line. The wetland soil borings met the F3 (Depleted Matrix) hydric soil indicator and standing water was observed. The upland soil borings did not meet a hydric soil indicator; water was observed at 12" below the soil surface.

Wetland 3

AEC classified Wetland 3 as a Fresh (Wet) Meadow (Type 2, PEMB) wetland. Wetland 3 is dominated by sedge species (Hummock sedge, *Carex stricta*), reed canary grass, giant goldenrod (*Solidago gigantea*), and Canada thistle (*Cirsium arvense*). The adjacent upland area is dominated by Kentucky blue grass, dandelion, and Canada thistle.

The boundary for Wetland 3 exhibited moderate slopes; the wetland edge was placed along the transition from hydrophytic vegetation to non-hydrophytic vegetation and where the soil was no longer saturated to the surface. The wetland soil boring met the A12 (thick dark surface) hydric soil indicator and water was observed at 8" below the soil surface (with saturation to the surface). The upland soil boring did not meet a hydric soil indicator and saturation was observed at 8" below the soil surface.

Wetland 4
AEC classified Wetland 4 as a Shallow Marsh (Type 3, PEMC/PEMF) wetland. Wetland 4 is dominated by sedge species, reed canary grass, and cattail. The adjacent upland area is dominated by common buckthorn (*Rhamnus cathartica*) and basswood (*Tilia americana*).

The boundary for Wetland 4 exhibited rather steep slopes; the wetland edge was placed along an abrupt rise in elevation that correlated to a shift in the vegetation. The wetland soil boring met the A2 (Histic Epipedon) hydric soil indicator and water was observed at 1" below the soil surface (with saturation to the surface). The upland soil boring did not meet a hydric soil indicator and no saturation was observed.

Throughout the forested area down-slope from Wetland 3 (and west of Wetland 4) AEC noted a number of highly eroded drainage channels (see Photo Log). These drainage channels convey water to Wetland 4 during spring time snow melt and after significant precipitation events. The forested area adjacent to the drainage ditches is dominated by basswood, common buckthorn, and green ash (*Fraxinus pennsylvanica*). A soil boring within the ditch indicated non-hydric soils as is typical in this setting. Flowing water was observed at the time of sampling however, flowage is likely temporary. These drainage ditch areas do not meet jurisdictional wetland criteria.

Discussion

Five wetland basins and were delineated within the project bounds. Areas delineated as wetland met the three criteria required for a wetland delineation; dominance of hydrophytic vegetation, presence of hydric soil, and (at a minimum) one primary hydrology indicator or two secondary hydrology indicators under normal conditions.

In order to be official the wetland delineation must be reviewed and approved by the Local Government Unit (LGU) and potentially other agencies (Local, State, Federal). Any work within or adjacent to a wetland will require Wetland Conservation Act (WCA) permits (and potentially other permits). Please consult with AEC if you plan on filling, draining, excavating wetlands within your project location.

If you have any questions regarding this report or any questions about our services please feel free to contact Ben Carlson at any time (612-237-5996).

Thank you,

Ben Carlson

Ben Carlson, WDC
Ecologist/Owner
Arrowhead Environmental Consulting

Data Sources:
USGS Quadrangle Map – Osseo 7.5-Minute Quadrangle, Minnesota, U.S.A.

Minnesota Department of Natural Resources Protected Waters Inventory Map, Hennepin County 1983 (Revised 1996 data from the Mn DNR Data Deli, online).

Soil Survey of Hennepin County. U.S.D.A. Data obtained from the NRCS/SSURGO website.

United States Fish and Wildlife Service National Wetland Inventory Map – Hopkins Quadrangle. 1991. (Taken from May 1980 aerial photographs).

Aerial Photos were obtained the Land Management Information Center website (2010).

Literature Referenced/Technical Documents:
Environmental Laboratory. 1987. *1987 U.S. Army Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Engineer Research and Development Center. 2007. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*. US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Eggers, Steve D. and Donald M. Reed. 1997. *Wetland Plants and Plant Communities of Minnesota and Wisconsin*. US Army Corps of Engineers, St. Paul District. 263pp, unclassified.

Shaw, S.P., and C.G. Fredine. 1956. *Wetlands of the United States*. U.S. Fish and Wildlife Service, Circular 39. 67pp.

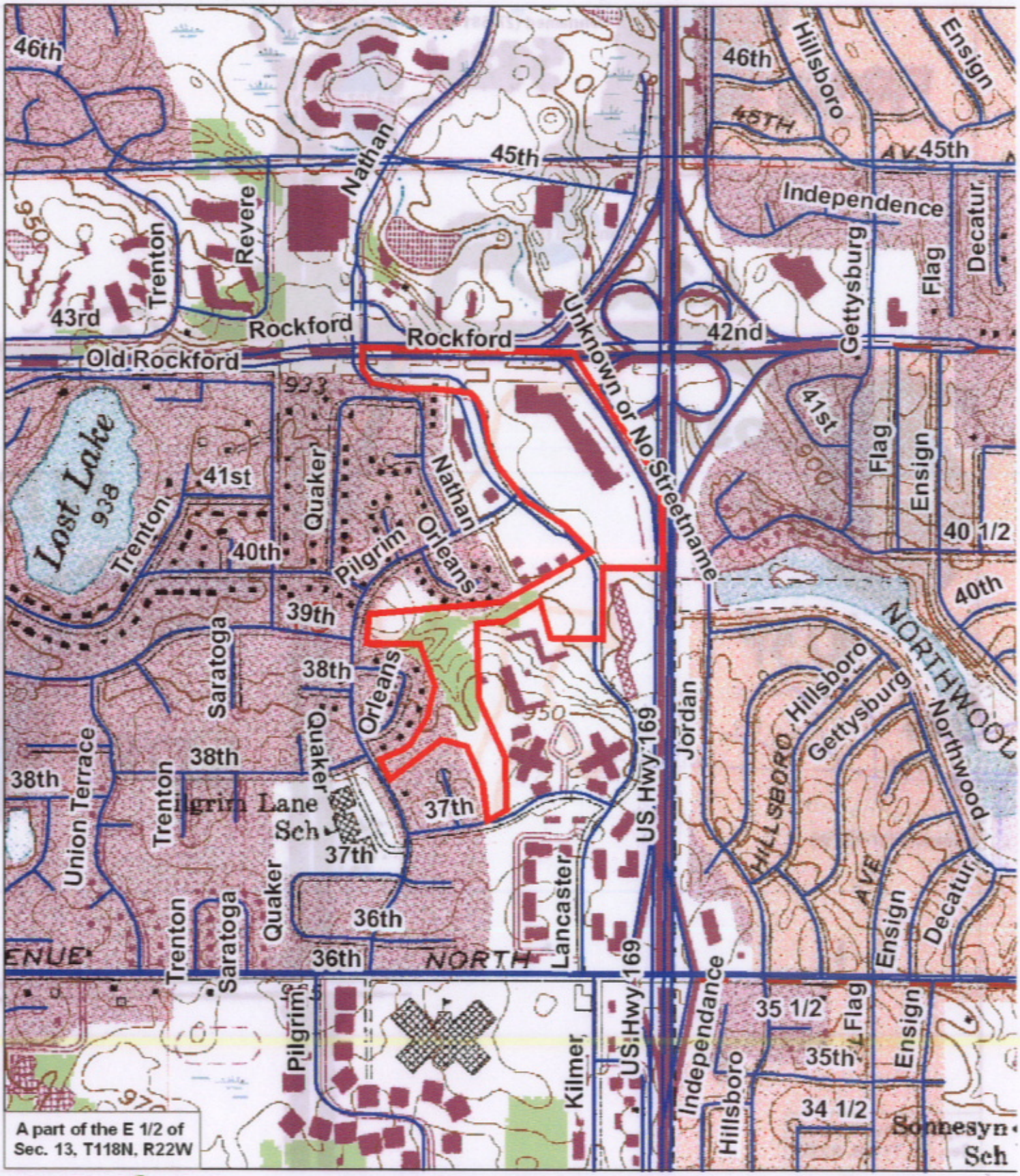
Cowardin, L.M., V. Carter, F.C. Golet, and R.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, FWS/OBS-79/31. 103pp.

Sabine, B. J. 1999. *National List of Plant Species that Occur in Wetlands: Region 3 – North Central (Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Wisconsin).* Resource Management Group, Inc. 77pp.

USDA Soil Conservation Service, Washington, D.C., Misc. 2006. *Field indicators of Hydric Soils in the United States.* A guide for Identifying and Delineating Hydric Soils, Version 6.0

National Technical Committee for Hydric Soils. 1991. *Hydric Soils of the United States.* USDA Soil Conservation Service, Washington, D.C., Misc. Publication Number 1491. 1991.

Figures



Map of Project Location

Overlaid on USGS Topo Map

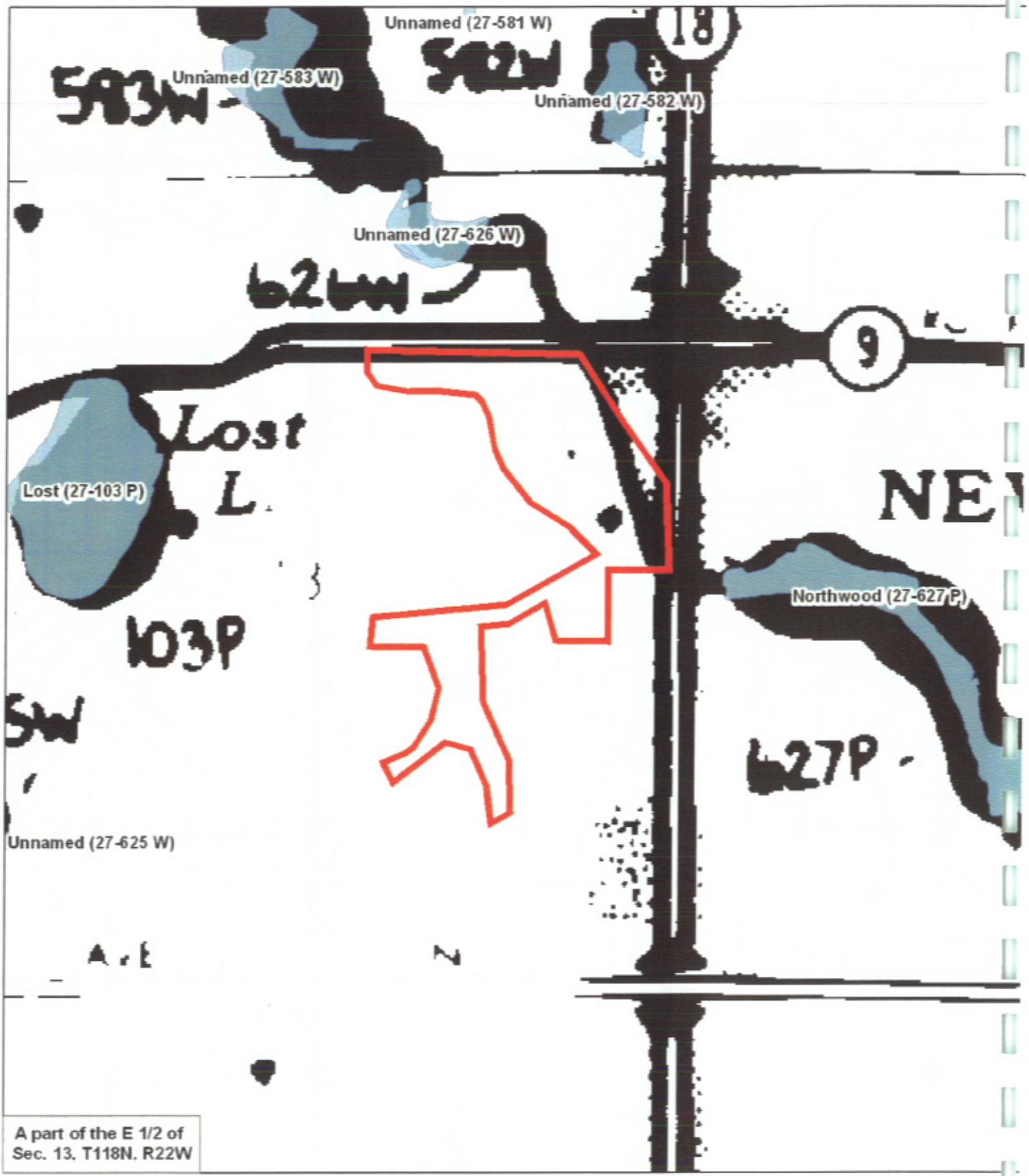
Approximate Parcel Boundary

0 625 1,250 2,500 Feet

arrowhead environmental consulting

Figure 1

Four Seasons
Hwy 169 & Rockford
Plymouth, MN



A part of the E 1/2 of
Sec. 13, T118N, R22W

arrowhead
environmental
consulting

Map of Project Location

Overlaid on MN DNR PWI Map

Approximate Parcel Boundary

0 625 1,250 2,500 Feet

Figure 1

Four Seasons
Hwy 169 & Rockford
Plymouth, M

Hennepin County Soil Survey

Overlaid on 2010 Aerial Image

Approximate Parcel Boundary | Non-Hydric | Hydric

0 250 500 1,000 Feet

arrowhead environmental consulting

Figure 3

Four Seasons
Hwy 169 & Rockford
Plymouth, MN

arrowhead
environmental
consulting

National Wetland Inventory Map

Overlaid on 2010 Aerial Image

Approximate Parcel Boundary

0 250 500 1,000 Feet

Figure 4

Four Seasons
Hwy 169 & Rockford
Plymouth, M

Wetland Delineation Map

Overlaid on 2010 Aerial Image

arrowhead environmental consulting

Approximate Parcel Boundary | GPS Boundary | Sample Point

0 250 500 1,000 Feet

Figure 5

Four Seasons
Hwy 169 & Rockford
Plymouth, MN

Supporting Data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-1 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: | Long: | Datum:
Soil Map Unit Name: Urban Land | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetlan**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5')			
1 *Phalaris arundinacea*	50	Y	FACW
2 *Typha angustifolia*	20	Y	OBL
3 *Carex stricta*	30	Y	OBL
4			
5			
6			
7			
8			
9			
10			
	100 = Total Cover		
Woody vine stratum (Plot size: 15')			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	50	x 1 =	50
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		150 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1-1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 4/2	100					Clay loam	
6-16	10GY 6/1	95	7.5YR 4/6	5	C	M	Clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- X Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	X	No	___	Depth (inches): 6
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-1 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave
Slope (%): 5 | Lat: | Long: | Datum:
Soil Map Unit Name: Urban Land | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	**Is the sampled area within a wetlan** N
Hydric soil present? N	If yes, optional wetland site ID:
Wetland hydrology present? N	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5')			
1 *Bromus inermis*	90	Y	UPL
2 *Poa pratensis*	10	N	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	100 = Total Cover		
Woody vine stratum (Plot size: 15')			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet
Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	90	x 5 =	450
Column totals	100 (A)		480 (B)

Prevalence Index = B/A = 4.80

Hydrophytic Vegetation Indicators:
___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1-1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/2	100					Clay loam	
8-18	10YR 4/4	100					Clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Fill material for road embankment

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-2 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Houghton | NWI Classification: PEMCd
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Wetland hydrology present? Y

Is the sampled area within a wetlan Y
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30')			
1 *Fraxinus pennsylvanica*	20	Y	FACW
2 *Salix nigra*	20	Y	OBL
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: 5')			
1 *Carex lacustris*	60	Y	OBL
2 *Typha angustifolia*	20	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	80	= Total Cover	
Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across all Strata: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	100	x 1 =	100
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	120 (A)		140 (B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1-2 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	N 2.5/0	100					Sapric (Oa)	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No	___	Depth (inches):	1
Water table present?	Yes	X	No	___	Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-2 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave
Slope (%): 5 | Lat: | Long: | Datum:
Soil Map Unit Name: Urban Land | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Wetland hydrology present?	N
Is the sampled area within a wetland?	N
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1 *Fraxinus pennsylvanica*	40	Y	FACW
2 *Salix nigra*	30	Y	OBL
3			
4			
5			
	70	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1 *Rhamnus frangula*	5	Y	FAC
2			
3			
4			
5			
	5	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Geranium maculatum*	20	Y	FACU
2 *Taraxacum officinale*	5	N	FACU
3 *Poa pratensis*	10	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	35	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across all Strata: 5 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column totals	110 (A)		255 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Canopy from Fraxinus and Salix in vegetation plot

SOIL

Sampling Point: 1-2 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR 3/2	100					Loam	
18-22	10YR 4/4	100					Clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Fill material for road embankment

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes ___	No X	Depth (inches): ___		
Water table present?	Yes ___	No X	Depth (inches): ___		
Saturation present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___		

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-3 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: | Long: | Datum:
Soil Map Unit Name: Houghton | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetlan**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: 5')			
1 *Phalaris arundinacea*	80	Y	FACW
2 *Solidago gigantea*	20	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1-3 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10YR 3/2	98	10YR 4/4	2	C	M	Clay loam	
7-18	10YR 4/2	95	10YR 6/4	5	C	M	Sandy Clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	X	No	___	Depth (inches): 12
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011

Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 1-3 Up

Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W

Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: | Long: | Datum:

Soil Map Unit Name: Lester | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	**Is the sampled area within a wetlan** N
Hydric soil present? N	If yes, optional wetland site ID:
Wetland hydrology present? N	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5')			
1 *Bromus inermis*	85	Y	UPL
2 *Solidago canadensis*	15	N	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	100 = Total Cover		
Woody vine stratum (Plot size: 15')			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	85	x 5 =	425
Column totals	100 (A)		485 (B)

Prevalence Index = B/A = 4.85

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1-3 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/2	100					Sandy Clay loam	
10-15	10YR 4/3	98	10YR 5/4	2	C	M	Sandy Clay loam	Gravels
15-18	10YR 5/3	100					Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Fill material for road embankment

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes ___	No X	Depth (inches): ___	**Wetland hydrology present?**	N
Water table present?	Yes ___	No X	Depth (inches): ___		
Saturation present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___		

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2-1 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Glencoe | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	If yes, optional wetland site ID:
Wetland hydrology present? Y	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Poa pratensis*	10	Y	FAC
2 *Glyceria grandis*	5	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	15	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	15 (A)		35 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 2-1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 5/2	95	10YR 3/4	5	C	M	Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No	___	Depth (inches):	2
Water table present?	Yes	X	No	___	Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2-1 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Glencoe | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	Is the sampled area within a wetlan N
Hydric soil present? N	If yes, optional wetland site ID:
Wetland hydrology present? N	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5')			
1 *Trifolium arvense*	25	Y	UPL
2 *Taraxacum officinale*	25	Y	FACU
3 *Poa pratensis*	50	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	100 = Total Cover		
Woody vine stratum (Plot size: 15')			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	25	x 4 =	100
UPL species	25	x 5 =	125
Column totals	100 (A)		375 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 2-1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 3/2	100					Sandy Loam	
4-16	10YR 4/4	100					Loamy Sand	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	X	No	___	Depth (inches):	10
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Temporary saturation due to elevated precipitation

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2A-1 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Glencoe | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Wetland hydrology present? Y

Is the sampled area within a wetlan Y
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus pennsylvanica*	30	Y	FACW
2			
3			
4			
5			
	30 = Total Cover		
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5')			
1 *Poa palustris*	40	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	40 = Total Cover		
Woody vine stratum (Plot size: 15')			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	70 (A)		140 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

__ Rapid test for hydrophytic vegetation
X Dominance test is >50%
X Prevalence index is ≤3.0*
__ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
__ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 2A-1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 5/2	95	10YR 3/4	5	C	M	Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No	___	Depth (inches):	1
Water table present?	Yes	X	No	___	Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 2A-1 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Glencoe | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N
Hydric soil present? Y
Wetland hydrology present? Y
Is the sampled area within a wetlan N
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Tilia americana*	30	Y	FACU
2			
3			
4			
5			
	30	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Poa pratensis*	100	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet
Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	130 (A)		420 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:
___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 2A-1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/2	100					Loam	
8-14	10YR 5/2	95	10YR 3/4	5	C	M	Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	X	No	___	Depth (inches):	12
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Temporary saturation due to elevated precipitation

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 3-1 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Glencoe | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Wetland hydrology present? Y

Is the sampled area within a wetlan Y
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Phalaris arundinacea*	30	Y	FACW
2 *Carex stricta*	40	Y	OBL
3 *Solidago gigantea*	20	Y	FACW
4 *Cirsium arvense*	10	N	FACU
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	40	x 1 =	40
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 3-1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-20	10YR 2/1	100					Loam	
20-26	10YR 5/2	95	10YR 3/4	5	C	M	Clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	X	No	___	Depth (inches):	8
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/16/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 3-1 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Angus | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	Is the sampled area within a wetlan N
Hydric soil present? N	If yes, optional wetland site ID:
Wetland hydrology present? Y	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Cirsium arvense*	20	Y	FACU
2 *Taraxacum officinale*	10	N	FACU
3 *Poa pratensis*	70	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	100 (A)		330 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 3-1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-20	10YR 2/1	100					Loam	
20-28	10YR 3/2	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	X	No	___	Depth (inches):	16
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	8

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Temporary saturation due to elevated precipitation

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/19/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 4-1 Wet
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: | Long: | Datum:
Soil Map Unit Name: Klossner | NWI Classification: PEMC
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y
Hydric soil present? Y
Wetland hydrology present? Y
Is the sampled area within a wetlan Y
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30')			
1 *Fraxinus pennsylvanica*	30	Y	FACW
2			
3			
4			
5			
	30	= Total Cover	
Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: 5')			
1 *Phalaris arundinacea*	10	Y	FACW
2 *Typha angustifolia*	30	Y	OBL
3 *Carex hystericina*	10	Y	OBL
4			
5			
6			
7			
8			
9			
10			
	50	= Total Cover	
Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across all Strata: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet
Total % Cover of:

OBL species	40	x 1 =	40
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	80 (A)		120 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:
___ Rapid test for hydrophytic vegetation
X Dominance test is >50%
X Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 4-1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	N 2.5/0	100					Sapric (Oa)	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No	___	Depth (inches):	1
Water table present?	Yes	X	No	___	Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/19/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: 4-1 Up
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex
Slope (%): 3 | Lat: | Long: | Datum:
Soil Map Unit Name: Lester | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetlan**	N
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30')			
1 *Fraxinus pennsylvanica*	20	Y	FACW
2 *Tilia americana*	20	Y	FACU
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size: 15')			
1 *Rhamnus cathartica*	20	Y	FAC
2			
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size: 5')			
1 *Cirsium vulgare*	5	Y	FACU
2 *Taraxacum officinale*	5	Y	FACU
3 *Cirsium arvense*	5	Y	FACU
4 *Rhamnus cathartica*	20	Y	FAC
5 *Phalaris arundinacea*	10	Y	FACW
6			
7			
8			
9			
10			
	45	= Total Cover	
Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across all Strata: 8 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	40	x 3 =	120
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column totals	105 (A)		320 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 4-1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-20	10YR 3/1	100					Loam	
20-28	10YR 2/1	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Four Seasons Mall | City/County: Plymouth/Hennepin | Sampling Date: 5/19/2011
Applicant/Owner: City of Plymouth | State: MN | Sampling Point: SP-A
Investigator(s): BPC (WDC #1125) | Section, Township, Range: Sec. 13, T118N, R22W
Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: | Long: | Datum:
Soil Map Unit Name: Lester | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y
Hydric soil present? N
Wetland hydrology present? Y

Is the sampled area within a wetlan N
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus pennsylvanica*	40	Y	FACW
2 *Tilia americana*	30	Y	FACU
3			
4			
5			
	70	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1 *Rhamnus cathartica*	40	Y	FAC
2			
3			
4			
5			
	40	= Total Cover	

Herb stratum (Plot size: 5')			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	

Woody vine stratum (Plot size: 15')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	110 (A)		320 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

__ Rapid test for hydrophytic vegetation
X Dominance test is >50%
X Prevalence index is ≤3.0*
__ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
__ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-30	10YR 4/3	50					Coarse Sand	Mixed soils
0-30	10YR 5/3	50					Coarse Sand	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Mixed fluvial soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No	___	Depth (inches):	2
Water table present?	Yes	X	No	___	Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Eroded drainage ditch temporarily flooded

Soil Texture and Feature Guide

TEXTURES

LS *Loamy Sand*

SL *Sandy Loam*

Loam *Loam*

SiL *Silt Loam*

SCL *Sandy Clay Loam*

CL *Clay Loam*

SiCL *Silty Clay Loam*

SC *Sandy Clay*

Clay *Clay*

SiC *Silty Clay*

An "F" modifier in front of any sandy soil texture abbreviation ("S") represents "Fine" ie. FSL or FLS.

FEATURES

F	*few*	**VF**	*very fine*	**F**	*faint*
C	*common*	**F**	*fine*	**D**	*distinct*
M	*many*	**M**	*medium*	**P**	*prominent*
		C	*coarse*		
		VC	*very coarse*		

IOSM *Iron Oxide Soft Masses*

ORC *Oxidized Root Channels*

DPL *Depletions*

Photo 1: View of Wetland 1 edge at transect 1-1 location facing west.

Photo 2: View of Wetland 1 facing northwest from transect 1-1 location.

Photo 3: View of Wetland 1 facing east from the northwestern edge.

Photo 4: View of Wetland 1 edge at transect 1-2 location facing south.

Photo 5: View of Wetland 1 edge at transect 1-3 location facing west.

Photo 6: View of Wetland 2 facing northeast.

Photo 7: View of Wetland 2A facing southwest.

Photo 8: View of Wetland 3 edge at transect location facing east.

Photo 9: View of Wetland 4 edge at transect location facing south.

Photo 10: View of SP-A (drainage channel) facing west.

Appendix B
Cost Estimates

Table B1: Estimated Fees for the 40th Ave. pond project

Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization	LS	1	$10,500.00	$10,500.00
Clearing and Grubbing	Acre	2.0	$5,000.00	$10,000.00
Erosion Control	LS	1	$15,000.00	$15,000.00
Common Excavation On site (assumes reuse of onsite matl.)	CY	200	$6.00	$1,200.00
Common Excavation Off site	CY	7,909	$20.00	$158,180.00
Class II Riprap	CY	200	$125.00	$25,000.00
48" RCP	LF	40	$120.00	$4,800.00
42" RCP	LF	40	$120.00	$4,800.00
84" DIA Outlet Control Structure	EA	1	$7,500.00	$7,500.00
48" RCP FES w/TG	EA	1	$2,000	$2,000.00
42" RCP FES w/TG	EA	1	$2,000	$2,000.00
Connection to Storm Sewer MH	EA	1	$800.00	$800.00
Removal of old Pipe	LF	40	$5.00	$200.00
Geotextile Fabric	SY	1,400.0	$3.00	$4,200.00
Clean Sand	CY	60.0	$35.00	$2,100.00
Coarse filter material	CY	40	$45.00	$1,800.00
Iron Fillings	T	1.5	$800.00	$1,200.00
Drain tile	LF	150.0	$8.00	$1,200.00
Remove Sidewalk	SF	150.0	$2.00	$300.00
Replace Sidewalk	SF	150.0	$7.00	$1,050.00
Upland perimeter seeding and mulching	Acre	1.0	$2,000.00	$2,000.00
Trees	EA	5.0	$500.00	$2,500.00
Traffic Control	LS	1.0	$1,500.00	$1,500.00
Aggregate Base Class V	TON	30.0	$20.00	$600.00
Salvage existing Topsoil	LS	1.0	$2,500.00	$2,500.00
Site Cleanup	LS	1.0	$2,500.00	$2,500.00
Construction Cost Estimate				$265,430.00
Contingency (20 %Construction Cost)				$53,086.00
Total Construction Cost				$318,516.00
Construction Management Services (5%)				$15,925.80
Design Fee (15 %)				$47,777.40
Preliminary Cost Estimate				**$382,219.20**

Table B2: Estimated Fees for the Four Seasons Mall pond project

Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization	LS	1	$10,000.00	$10,000.00
Excavation	CY	4,194	$15.00	$62,910.00
24" RCP	LF	100.0	$120.00	$12,000.00
24" RCP	LF	200.0	$120.00	$24,000.00
24" RCP	LF	122.0	$120.00	$14,640.00
Class II Riprap	CY	13	$90.00	$1,170.00
Pond Outlet Structure	EA	1	$1,800.00	$1,800.00
Manhole/Flow Splitter Installation	LS	1	$15,000.00	$15,000.00
Connect Existing SS Lines to MH	EA	3	$800.00	$2,400.00
Connect New SS Lines to MHs	EA	3	$800.00	$2,400.00
Pavement Removal	SY	3,572.0	$3.00	$10,716.00
Pavement Replacement	SY	500.0	$25.00	$12,500.00
Sidewalk Removal	SF	300.0	$2.00	$600.00
Sidewalk Replacement	SF	300.0	$7.00	$2,100.00
Curb Removal	LF	60.0	$5.00	$300.00
Curb Replacement	LF	60.0	$20.00	$1,200.00
Traffic Control	LS	1.0	$2,000.00	$2,000.00
Traffic Detour	LS	1.0	$3,500.00	$3,500.00
Geotextile Fabric	SY	64.0	$3.00	$192.00
Clean Sand	CY	20.0	$35.00	$700.00
Iron Fillings	TON	1.5	$800.00	$1,200.00
Coarse filter material	CY	10	$45.00	$450.00
Drain tile	LF	100.0	$8.00	$800.00
Erosion Control	LS	1	$15,000.00	$15,000.00
Site Cleanup	LS	1.0	$2,500.00	$2,500.00
Construction Cost Estimate				$200,078.00
Contingency (20 %Construction Cost)				$40,015.60
Total Construction Cost				$240,093.60
Construction Management Services (5%)				$12,004.68
Design Fee (15 %)				$36,014.04
Preliminary Cost Estimate				**$288,112.32**

Table B3: Center channel portion of the channel restoration project cost estimate

Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization/Demobilization, ESC, misc. removals	EA	1	$10,000.00	$10,000.00
Clear and grub brush & small trees	LF	3,700	$5.00	$18,500.00
Tree removal >20"	EA	90.0	$200.00	$18,000.00
Reslope and minor grading	LF	3,700.0	$2.00	$7,400.00
Brush bundles (100 LF)	LF	200.0	$17.00	$3,400.00
Seed & ECB (500 LF)	SY	1,110	$5.00	$5,550.00
Native seed and mulch	Acre	3	$4,000.00	$10,000.00
Toe protection (370 LF)	TON	186	$100.00	$18,630.00
Cross vane 10' (10)	CY	49	$300.00	$14,700.00
12" FES	EA	1	$1,000.00	$1,000.00
Plunge pool 12" riprap	CY	8.0	$100.00	$800.00
Plunge pool 12" geotextile	SY	6.0	$2.50	$15.00
24" FES	EA	1.0	$1,200.00	$1,200.00
Plunge pool 24" riprap	CY	12.0	$100.00	$1,200.00
Plunge pool 24" geotextile	SY	7.0	$2.50	$17.50
Shrubs	EA	150.0	$35.00	$5,250.00
Construction Cost Estimate				$115,662.50
Contingency (20 %Construction Cost)				$23,132.50
Total Construction Cost				$138,795.00
Construction Management Services (5%)				$6,939.75
Design Fee (15 %)				$20,819.25
Total Cost Estimate				**$166,554.00**

Table B3 (Continued): Right channel portion of the channel restoration project cost estimate

Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization/Demobilization, ESC	EA	1	$10,000.00	$10,000.00
Clear and grub brush & small trees	LF	1,050	$5.00	$5,250.00
Tree removal >20"	EA	30.0	$200.00	$6,000.00
Reslope and minor grading	LF	1,050.0	$5.00	$5,250.00
Brush bundles (225 LF)	LF	450.0	$17.00	$7,650.00
Native seed and mulch	Acre	1	$4,000.00	$2,400.00
Toe protection (200 LF)	TON	138	$100.00	$13,800.00
Cross vane 10' (12)	CY	59	$300.00	$17,640.00
Shrubs	EA	100	$35.00	$3,500.00
Construction Cost Estimate				$71,490.00
Contingency (20 %Construction Cost)				$14,298.00
Total Construction Cost				$85,788.00
Construction Management Services (5%)				$4,289.40
Design Fee (15 %)				$12,868.20
Engineer's Cost Estimate				**$102,945.60**

Table B4: Estimated Fees for the Alum Injection System

Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization	LS	1	$12,000	$12,000
Pond Excavation	CY	9,852.0	$15	$147,780
Clarifier Excavation and Backfill	CY	1,000	$15	$15,000
Controlled Fill	CY	6,169	$5	$30,845
Pavement Removal	SY	2,958	$3	$8,874
Erosion Control	LS	1	$15,000	$15,000
Install New Manhole	LS	1	$2,600	$2,600
SAFL Baffle	EA	1	$3,500	$3,500
24" RCP	LF	124	$120	$14,880
Connection to Storm Sewer MH	EA	1	$800	$800
Connection to Sanitary Sewer	EA	2	$1,000	$2,000
Install Sanitary Manhole	EA	1	$3,000	$3,000
CMP Storage Units	LF	950	$150	$142,500
Removal of Pavement	SY	250	$3	$750
New Pavement	SY	250	$25	$6,250
Remove Sidewalk	SF	150	$2	$300
Replace Sidewalk	SF	150	$7	$1,050
Remove Curb	LF	30	$5	$150
Replace Curb	LF	30	$20	$600
Clarifier Concrete	CY	213	$600	$128,000
Clarifier Internals	FT-DIA	52	$2,000	$105,000
4" PVC Sludge Pipe	LF	460	$40	$18,000
10" PVC Influent Pipe	LF	410	$65	$27,000
14" PVC Effluent Pipe	LF	25	$75	$2,000
Influent Pump	EA	2	$20,000	$40,000
Influent Lift Station	LS	1	$10,000	$10,000
Sludge Pump	LS	2	$5,000	$10,000
Sludge Pump Structure	LS	1	$30,000	$30,000
Alum Treatment Building	SF	120	$75	$9,000
Chemical Feed System	LS	1	$10,000	$10,000
Electric and Controls	LS	1	$30,000	$30,000
Traffic Control	LS	1	$2,000	$2,000

Table B4 (continued): Estimated Fees for the Alum Injection System

Item	Unit	Quantity	Unit Cost	Total Cost
Traffic Detour	LS	1	$3,500	$3,500
Site Restoration	LS	1	$5,000	$5,000
Construction Cost Estimate				$837,379.00
Contingency (20 %Construction Cost)				$167,475.80
Total Construction Cost				$1,004,854.80
Construction Management Services (5%)				$50,242.74
Design Fee (15 %)				$150,728.22
Preliminary Cost Estimate				**$1,205,825.76**

Table B5: Items considered for 30 year life cycle costs

Project	Item/action	Frequency	Associated Present Value Cost
40th Ave. Pond	General O&M/Site Visits	Annually	$500
	Repair/retrofit Outlet Structure	Once every 10 years	$6,000
	Remove Sediment from Pond	Once every 30 years	$17,000
Four Seasons Mall Pond	General O&M/Site Visits	Annually	$500
	Repair/retrofit Outlet Structure	Once every 10 years	$6,000
	Remove Sediment from Pond	Once every 30 years	$17,000
Channel Restoration	General O&M/Site Visits	Annually	$900
	Repair/retrofit Outlet Structure	Once every 10 years	$6,000
	Maintain fallen debris and obstructions	Once every 30 years	$20,000
Alum System	Apply Chemicals	Annually	$5,000
	General Clarifier Maintenance	Annually	$25,000
	Electricity for Pumps	Annually	$2,000
	Strength Charge for Discharge to Sanitary	Annually	$10,000
	Replace Influent and Sludge Pumps	Once every 10 years	$40,000
	Replace Clarifier Internals	Once every 20 years	$105,000
	Replace Chemical Feed System	Once every 20 years	$10,000
	Repairs to Storage Structure and SAFL Baffle	Once every 10 years	$10,000
	Remove Sediment from Storage Area	Once every 30 years	$17,000

resourceful. naturally.
engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission

From: Barr Engineering Company

Subject: Item 6C – Canadian Pacific Railway Bridge Replacement – Golden Valley
BCWMC June 21, 2012 Meeting Agenda

Date: June 13, 2012

Project: 23270051 2012 239

6C. Canadian Pacific Railway Bridge Replacement: Golden Valley

Summary

Proposed Work: Bridge Replacement
Basis for Review at Commission Meeting: Work in floodplain
Change in Impervious Surface: None
Recommendation: Conditional approval

General Background & Comments

Canadian Pacific Railway must replace the bridge crossing Bassett Creek, located between North Plymouth Avenue and Highway 55 in the Theodore Wirth Golf Course. The proposed work includes demolishing the existing bridge and replacing it with a new bridge in the same location as the existing bridge. Construction activities will also require construction of a temporary platform in the creek to place a construction crane. The bridge is in the Bassett Creek Main Stem watershed. The project includes approximately 0.14 acres of clearing and grading, and results in no change of impervious area. The earliest anticipated start of construction is the end of July.

Floodplain

The 100-year flood elevation is 826 at the bridge. The floodplain will not be filled as part of this project. The applicant states that the low chord of the proposed bridge will be one foot lower than the low chord elevation of the existing bridge (elevation to be confirmed). The applicant also states the temporary platform located in the floodplain will be constructed in such a way that it can be removed during high flow conditions.

Wetlands

There are no wetlands located within the project area. The City of Golden Valley is the Local Government Unit (LGU) responsible for review of the project for conformance to the MN Wetland Conservation Act.

Stormwater Management

The site is in the Bassett Creek Main Stem watershed. There will be no change in the stormwater management of the site as a result of this project.

Water Quality Management

There is currently no water quality treatment for site runoff. Since there is no increase in impervious surface as a result of this project, incorporation of water quality treatment BMPs is not required for this site.

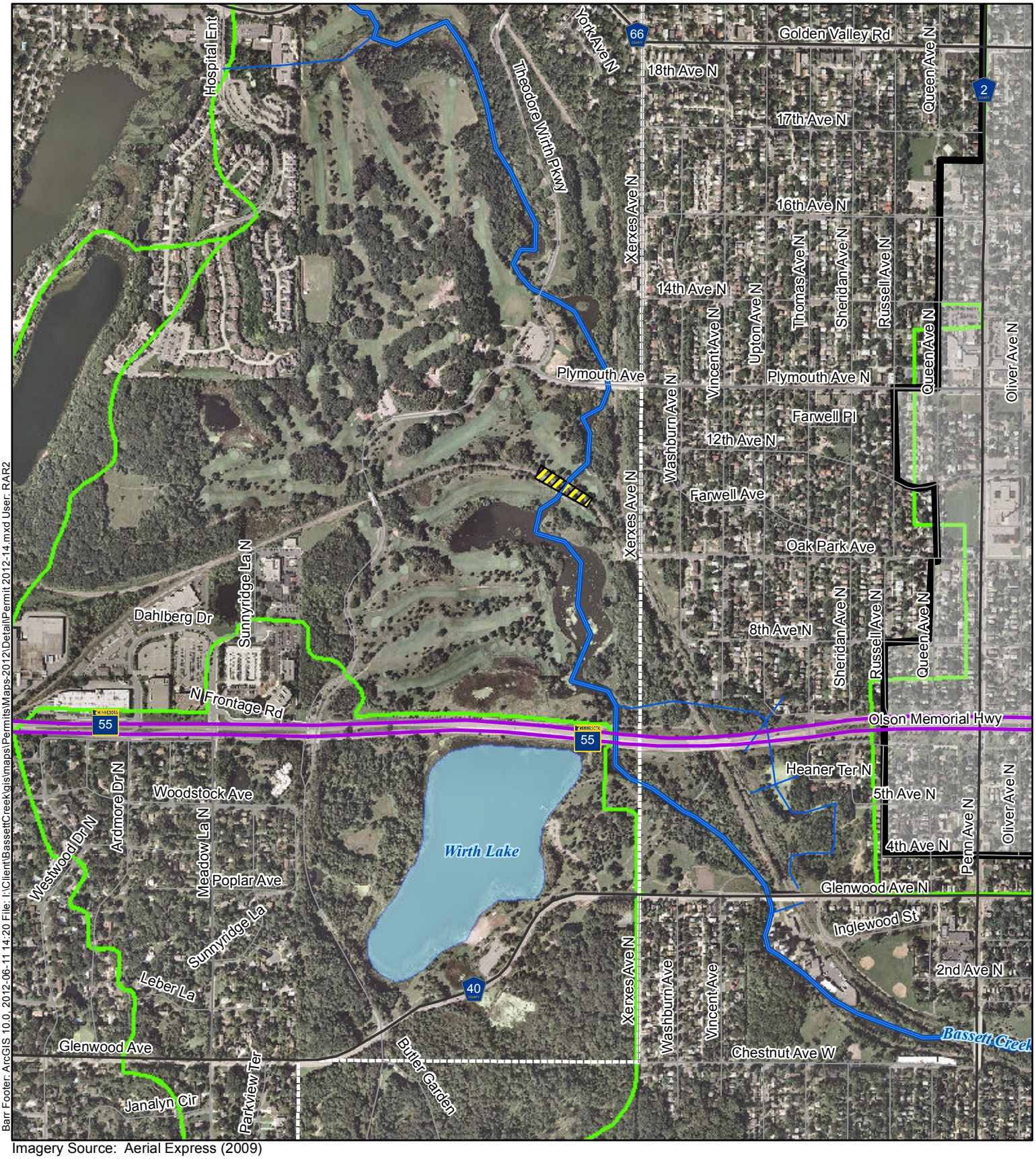
Erosion and Sediment Control

Temporary erosion control features include silt fence surrounding the area to be graded. The applicant states that the piling will be directly driven into the bed of Bassett Creek, and since the piers are pre-cast, there is expected to be minimal sediment released to Bassett Creek.

Recommendation

Conditional approval based on following comments:

1. Applicant must show that the low chord of the bridge provides one foot of freeboard above the floodplain elevation, if possible, or that the lowering of the bridge low chord will not affect Bassett Creek flood elevations.
2. A note should be added to the plans stating the existing wood timbers should be demolished by means and methods to prevent the release of creosote, or other wood preservative, to the creek.
3. Silt fence wooden post spacing should be no greater than 4 feet (Section 5.2, page 35, CP Rail Standard Practice Circular)
4. The following notes should be added to the erosion control comments:
    - Soils tracked from the site must be cleaned daily (or more frequently, as necessary) from paved roadway surfaces throughout the duration of construction.
    - Temporary or permanent mulch must be uniformly applied by mechanical or hydraulic means and stabilized by disc-anchoring or use of hydraulic soil stabilizers.
    - Provide a temporary vegetation cover consisting of a suitable, fast-growing, dense grass-seed mix spread at 1.5 times the usual rate per acre. If temporary cover is to remain in place beyond the present growing season, two-thirds of the seed mix shall be composed of perennial grasses.



Barr Footer: ArcGIS 10.0, 2012-06-11 14:20 File: I:\Client\BassettCreek\gis\maps\Permits\Maps-2012\Detail\Permit 2012-14.mxd User: RAR2

Imagery Source: Aerial Express (2009)

- Permit Location
- Bassett Creek
- WMC Boundary
- Major Subwatershed
- Municipality
- Parcel Line
- Stream

Feet

0 500 1,000 1,500

Bassett Creek Watershed Management Commission

LOCATION MAP
APPLICATION 2012-14
Canadian Pacific Railway
Bridge Replacement
Golden Valley, MN

Bassett Creek Watershed Management Commission

POSITION DESCRIPTION

Position Title: Administrator

Reports to: Bassett Creek Board of Commissioners

Classification: Exempt

Date: June 2012

PRIMARY OBJECTIVE:

The Administrator serves as principal administrator for the Bassett Creek Watershed Management Commission to ensure implementation of the watershed policies, standards, projects, programs and regulations as set forth by the BCWMC Board of Commissioners in the watershed management plan, joint and cooperative agreement, bylaws, and MN State Statutes and Rules.

MAJOR AREAS OF ACCOUNTABILITY/ESSENTIAL JOB FUNCTIONS:

Administers, interprets, and explains policies, rules, regulations, and laws to organizations and individuals under authority of the commission or applicable legislation. Reviews and analyzes legislation, laws, and public policy and recommends changes to promote and support interests of the watershed.

- Monitors regulated activities, interprets, clarifies and ensures compliance with laws
- Periodically testifies before control or review board, local units of government, or at legislature as needed to represent the organization

Directs and coordinates organization's financial and budget activities to fund operations, maximize investments, and increase efficiency. Directs and monitors expenditures of program and project funds. Establishes and monitors internal control procedures. Prepares, reviews, and submits reports concerning activities, expenses, budget, government statutes and rulings, and other items affecting business or program services.

- Evaluates findings of investigations, surveys, and studies to formulate policies and techniques and recommend improvements for personnel actions, programs, or business services in order to operate efficiently
- Directs and coordinates activities of business involved with buying and selling investment products and financial services
- Develops, plans, organizes, and administers policies and procedures for the organization to ensure administrative and operational objectives are met.
- Confers with board members, organization officials, and staff members to establish policies and formulate plans for the organization.
- Analyzes operations to evaluate performance of organization and staff and to determine areas of cost reduction and program improvement.

Consults with staff and others in government, business, and private organizations to discuss issues, coordinate activities, and resolve problems. Implements corrective action plans to solve problems. Conducts or directs investigations or hearings to resolve complaints and violations of laws.

Plans, promotes, organizes, coordinates and maintains cooperative working relationships among public, staff, and agency participants

Promotes the objectives of organization before the public, associations, government agencies, or community groups. Delivers speeches, writes articles, and presents information for organization at meetings or conventions to promote services, exchange ideas, and accomplish objectives.

Directs studies and research, and prepares reports and other publications relating to operational trends and program objectives and accomplishments. Prepares reports as required by watershed law and the BCWMC Board of Commissioners.

Negotiates contracts and/or and agreements with federal, state agencies and other organizations and prepares budget for funding and implementation of programs. Negotiates contracts with suppliers, distributors, and service providers to ensure that services are obtained in a cost effective manner.

Keeps informed of current issues that other agencies, LGUs and special interest groups are dealing with related to organization's program areas. Keeps staff informed of updated information on policies, research, and trends through written and verbal communication to ensure that the organization's programs are efficiently coordinated.

Ensures that expertise in water and natural resources planning, and facilitation, mediation and communication skills are developed and maintained by conducting research, continuing education, and attending training programs as approved within budgetary guidelines.

Performs special projects and other responsibilities as apparent or assigned.

ACCOUNTABILITIES FOR SUPERVISION

Participates in decisions related to the selection of personnel.

Orients new employees to organizational policies and procedures. Clearly communicates job duties and responsibilities, so that individuals may proceed with certainty in the performance of their duties.

Personally conducts or oversees training for new employees to ensure established procedures are clearly understood and followed.

Monitors the work performance of assigned personnel on a continual basis, conducts effective performance appraisals, and takes corrective action whenever necessary.

Creates a working climate in which assigned personnel are motivated to develop their skills and abilities and demonstrates by personal example the desired standards of conduct and work performance.

Administers organization policies in a fair and equitable manner with regard to discipline, tardiness, absenteeism or insubordination and fully documents all incidents and actions taken.

Responsibility for Supervision:
- Office Administrator/Staff

KNOWLEDGE, SKILLS AND AB ILITIES:

Experience:
Minimum of seven (7) years of related experience including research, public education, management, negotiations, construction site supervision, budget development and management, watershed-based planning, urban environmental planning, development of storm water management systems, preservation/restoration of urban ecosystems, grant writing and other funding strategies.

Education:
Master's Degree in Public Administration, Landscape Architecture, Natural Resource Management, Urban Planning, Business Administration or a related field and coursework with an ecological or environmental focus. An equivalent combination of relevant education and experience/professional licenses may be considered.

Additional Skills Required:
- Able to display excellent verbal, written, organizational, and interpersonal communication skills.
- Knowledge of public process in government, urban resource management and environmental issues, storm water management practices, program management techniques, public education/public information, design and graphics, dispute resolution, and group dynamics and interactions.
- Able to negotiate, identify and resolve conflicts, analyze technical reports, and to develop/coordinate/facilitate work teams and individuals.
- Able to work successfully with considerable independence.
- Able to make immediate decisions and responses.

License:
By date of hire, must possess and maintain a valid Drivers License.

The above is intended to describe the general content of and requirements for the performance of this job. It is not to be construed as an exhaustive statement of duties, responsibilities or requirements and does not imply a contract.

Not necessary, but you may want some of this in the posting.

Nature and Scope of Position:
This position reports to the Board of Commissioners. The Executive Committee of the Board provides general guidance, adjusts priorities, work plan and changes to the position description.

Communication is maintained by frequent informal communications with the Board, scheduled Board meetings, written reporting, periodic review of work plans, annual performance review, or by request of the Board of Commissioners. The incumbent is responsible to keep the Board informed of implementation decisions through frequent oral reports or, as needed, with written reports.

Normal office setting with some fieldwork (e.g. construction sites, wetlands, or habitat restoration sites) is required for this position. The incumbent must be available to work some evenings and weekends. The incumbent may adjust work schedules to accomplish the organization's needs.

The incumbent has freedom to act within the framework of existing BCWMC policies, rules, and procedures.

Key problem solving areas of this position related to the need to evaluate, plan, and coordinate processes of local, regional, state, and federal units of government and apply them to the policy-making of the BCWMC. Because of the diversity of federal, state, regional, and local agencies dealing with water and related land management in the BCWMC, it is likely the program or policy directions taken in support of a given action will impact upon programs and policies of several of the other agencies. Strong communication links with all groups are critical. The incumbent must use knowledge of existing management programs to tailor solutions to existing resources problems and work with all affected LGUs, agencies, Not-for-Profits, and individuals to achieve a solution. Where problems are unique or require a change of BCWMC policy, the incumbent will request direction from the Board.

resourceful. naturally.
engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 7B – Next Generation Watershed Management Plan
BCWMC June 21, 2012 Meeting Agenda
Date: June 14, 2012
Project: 23270051 2012 403

7B. Next Generation Watershed Management Plan

Recommendations:

a. Discuss and suggest revisions to proposed plan steps and schedule (attached); consider approving plan steps and schedule.

b. Discuss whether and when (i.e., July 19 Commission meeting) to complete a self-assessment and direct staff and/or others to perform the work (see discussion below).

c. Authorize engineer to distribute letter to plan reviewers notifying them that the planning process is starting and requesting information from them (see attached draft letter).

d. Authorize Amy Herbert to coordinate the arrangements for the future Plan Steering Committee meetings at 4:30 p.m. on the Monday following the Commission meeting; this includes securing the meeting room, notifying the committee members and Commission, and providing public notice of the meetings.

Background

The Next Generation Plan Steering Committee—Ginny Black, Wayne Sicora, Jim de Lambert, and Karen Chandler— plus Linda Loomis, met on May 21, 2012. Items discussed by the Steering Committee and its recommendations included:

- Public input process – the committee discussed the process used by Shingle Creek Watershed Management Commission (SCWMC) for their plan update and the process used by the City of Golden Valley for their Envision Golden Valley project. SCWMC commissioners presented information about the WMO and the SCWMC plan to city commissions; city commissions were considered part of the planning stakeholder group. SCWMC held "train-the-trainer" sessions for the commissioners before they were to present to the city commissions. It was noted that some of

the SCWMC commissioners were not as comfortable as others with giving the presentations, even with the training. The Envision project was a very grass-roots 18-month effort that involved residents giving input and being trained as volunteer facilitators for different parts of the process.

Suggestions for the BCWMC planning process included:

- "Front-end load" the public input process early in the planning process.
- Create a dedicated "next generation plan" site on the BCWMC website and update it frequently.
- Decide what the BCWMC needs to do versus what it wants to do for a great public input/outreach process

The Plan Steering Committee set aside further discussion of the public input process so they could devote more time to discussing the overall planning process and schedule (see below). When the BCWMC decides the public input process it wishes to use, the BCWMC will need to obtain BWSR approval of the process and then send a letter to all of the stakeholders informing them about the process.

- Proposed plan steps and schedule – the committee discussed the plan steps and schedule documents prepared by Wayne Sicora, which were based on his experience with the SCWMC planning process. The committee noted some revisions to the proposed plan steps and schedule, and directed Karen Chandler to make the revisions and provide them to the Commission for discussion at the June 21, 2012 meeting (see attached).
- Specific plan steps – the committee discussed completing two of the early plan steps:
  - Self-assessment – the committee recommended that Commission and TAC participate in the self-assessment, and that it be in the form of a facilitated discussion at the July 19 Commission meeting. The discussion would focus around the following:
    - What the current BCWMC Plan said the BCWMC would do
    - What the BCWMC did/accomplished
    - What the BCWMC wished they had accomplished
    - What the BCWMC wants to accomplish
    - Where has the BCWMC been, where is it going, and where does it want to go?

    Linda Loomis suggested that she and Karen Chandler facilitate the self-assessment discussion. The committee noted that some materials would need to be prepared and provided for the self-assessment discussion.
  - Notification letter – the Committee directed Karen Chandler to talk to BWSR staff regarding the appropriateness of sending the notification letter to the plan reviewers now

rather than later. Assuming BWSR staff felt it appropriate, the committee directed Karen Chandler to prepare the draft letter to plan reviewers notifying them that the planning process is starting and requesting information from them, and to include this draft letter in the June 21 Commission meeting packet (see attached draft letter).

- Future Plan Steering Committee meetings – the committee recommended that they meet every month, at 4:30 PM on the Monday following the Commission meeting. The next three meetings would then be:
    - June 25
    - July 23
    - August 20

  Public notice must be provided for every Plan Steering Committee meeting.

Next Generation Watershed Management Plan – Proposed Plan Steps and Schedule

The plan steps and Commission actions listed below are also shown on the attached proposed schedule.

Plan Steps and Commission Actions	
1	Self-assessment • Exercise at commission meeting, "Five things you want to accomplish" • Summary of Responses to TAC Next Generation Issue Questionnaire 2010.11.03
2	Visioning • Review BCWMC's achievements, prepare gaps analysis, review WMO/members roles and responsibilities, create/refine vision – this is one of the "taking stock" and preliminary work steps. Although not required in either the current or new/proposed 8410, the new/proposed 8410 rules state "the success of implementing the previous plan…must be summarized and considered in identifying priority issues" which points to at least a self-assessment. This step is similar to the "big picture" tasks in the Shingle Creek process.
3	Notify plan stakeholders • Notify plan stakeholders of plan initiation and request information – New and current 8410 requirement. Current 8410 rules require that the WMO request information from the plan review authorities (local, regional and state). The proposed 8410 rules would require that the WMO request this information at a particular time in the planning process (before initial planning meeting), and that the WMO allow 60 days for the stakeholders to respond.
4	Kickoff • Officially kick off development of the Next Generation Plan. At the meeting, review a work plan and schedule; and review information submitted to the Commission as part of the 60-day notice period from review agencies and the member cities and begin identifying water-resource issues and goals to be addressed in the Next Generation Plan. This information will assist in the development of a Gaps Analysis and help in the Assessment of Issues. • Plan Development Simplified: i. How have we done? ii. What do we have? iii. What do we want (to achieve)? iv. How will we achieve it?
5	Gaps Analysis • Perform gaps analysis, review WMO/member city roles and responsibilities, create/refine vision. • Cover issues relating to funding and financial stability, regulatory rules and standards, data availability, progress evaluation for TMDL implementation plans, load reduction and other BMPs, and maintaining the existing 100-year flood profile. How "non-bricks and mortar" CIP projects can be funded and implemented. Joel Settles, Hennepin County Environmental Services, should be invited to participate in discussions on this topic. •

Plan Steps and Commission Actions	
6	Assess and prioritize issues • This information will be used later at the Citizens Advisory Committee and Policy Makers Meetings (see Other Meetings & Topics table below). • Initial Planning Meeting to identify and prioritize issues. This meeting includes all plan stakeholders. The proposed 8410 rules would require that the BCWMC hold an initial planning meeting, after notification of plan stakeholders (see Step 3). According to the proposed 8410 rules, the purpose of this meeting is to receive, review and discuss input, and the WMO must provide two weeks' notice of the meeting. This implies that you would need to allow enough time to review and summarize the information received in Step 3 so you can present it at the meeting.
7	Establish goals 1. The Commission and the TAC have spent some meetings undertaking a self-assessment, some visioning, and some identification of gaps and issues. The next step is to take this "big picture" analysis and to start identifying possible goals and actions for 2014-2023. These initial goal statements will then be presented to the general public for review and comment during the subsequent next month or two. 2. Review goals from the previous watershed management plans: a. Maintain the existing 100-year flood profile throughout the watershed; b. Protect and improve water quality based on practical use; c. Strive to provide water quality that supports recreation, fish and wildlife based on practical use; d. Establish an education and public outreach program; e. Protect and improve groundwater quality and promote groundwater recharge; f. Protect and improve wetlands; g. Reduce erosion and sedimentation. 3. Identify prioritization principles: a. Control flooding; b. Improve public information and education; c. Protect wetlands; d. Improve water quality in lakes, streams, and rivers; e. Improve fish and wildlife habitat; f. Restore wetlands; g. Research and encourage development strategies that minimize impervious surface and encourage infiltration; h. Research and encourage innovative and sustainable maintenance and improvement practices. 4. Identify possible water management goals for 2014-2023; a. Water Quantity i. Maintain the existing 100-year flood profile throughout the watershed; ii. Determine ecological low flows for Bassett Creek; iii. Develop a sustainable water budget for the watershed and an action plan for management activities necessary for its achievement; b. Water Quality i. Implement load reduction actions sufficient to achieve de-listing of water bodies currently listed on the MPCA's impaired waters (303d) list.

Plan Steps and Commission Actions	
	ii. Improve water clarity in the balance of the lakes by 10% over the average of the previous ten years; iii. Improve at least 30% of Bassett Creek to meet a possible future corridor study standards and/or future TMDL requirements; iv. Maintain nondegradation of all waterbodies compared to 2010 conditions; v. Conduct an intensive BMP assessment for at least 25% of that part of the watershed that developed prior to Commission rules in 1994, and achieve 25% of the recommended load reduction within 10 years of the analysis. c. Groundwater i. Work with the appropriate state agencies to incorporate groundwater assessment into the sustainable water budget analysis for the watershed. d. Wetlands i. Maintain the existing functions and values of wetlands identified as high-priority; ii. Improve functions and values of wetlands as feasible based on the sustainable water budget study; e. Commission Operations and Programming i. Identify and operate within a sustainable funding level that is affordable to member cities; ii. Review funding of capital improvement and other implementation projects (e.g., tax levy, cost share, flood control project funds); iii. Operate a public education and outreach program that meets the NPDES Phase II education requirements for the member cities; iv. Operate a monitoring program sufficient to characterize water quantity, water quality, and biotic integrity in the watersheds and to evaluate progress toward meeting TMDL goals; v. Maintain updated hydrologic and hydraulic models for the watershed; vi. Maintain updated water quality models for the watershed vii. Maintain rules and standards for development and redevelopment that are consistent with local and regional TMDLs, federal guidelines, source water and wellhead protection requirements, sustainable water yields, nondegradation, and ecosystem management goals; viii. Serve as a technical resource for member cities. ix. Research projects on innovative and cost-effective stormwater management practices and technologies; x. Coordinate water resources management between the Commission and the member cities.
8	Review water quality monitoring data & water quality modeling results
9	Develop monitoring plan • Reference MN Rules 8410.0100 Implementation Program Subp. 5. Data collection programs
10	Review Rules and Standards

Plan Steps and Commission Actions	
11	Develop education & outreach plan • Education Committee to develop a draft Education and Outreach Plan. The plan will continue to be refined and the final draft will be forwarded to the cities and the citizens' advisory representatives for their review and input.
12	Develop implementation plan • Upon Commission final review of rules, begin developing implementation plan
13	Establish self-evaluation process
14	Discuss plan organization & look
15	Complete draft plan
16	Approve final draft Sept. 17, 2013 • Commission review of final draft plan; authorize 60-day review period;
17	60-day review period • First formal review of draft Plan; • 60 day city and agency review period, collate and respond to comments;
18	Public hearing February 20, 2014 • Public hearing on draft Plan – to be held no sooner than 14 days after the 60-day review period and at least 10 days after distribution of the response to comments.
19	Revise Plan per response to comments & submit Plan for final review/approval
20	BWSR Plan approval by August 25, 2014 • Second/final formal review of Plan & BWSR approval – 3 steps: v. Submit plan for second/final review & BWSR approval; vi. Attend/present at BWSR subcommittee meeting – 1 – 2 months after submittal; vii. BWSR Board approval of plan – within 90 days after submittal; • The first key date is the plan expiration date, which is 10 years from the date BWSR approved the current BCWMC Plan: August 25, 2014.
21	Adopt plan after BWSR Board approval September 18, 2014

The TAC meetings and topics listed below are also shown on the attached proposed schedule.

TAC Meetings & Topics	
1	Assess and Prioritize Issues
2	Review Commission Goals
3	Review Water Quality & Modeling • List the types of monitoring data the TMDLs identified as necessary in the long-term to best understand lake water quality, improvement strategies and progress toward water quality goals. • The TAC will meet to review water quality monitoring results, the various TMDL Implementation Plans, and guidance from the MPCA regarding evaluating progress towards meeting TMDL requirements and return with recommendations regarding monitoring and other activities to consider for the coming 10 years.
4	Review Rules & Standards • Start the discussion on the rules and standards review. o Size of Projects and Applicability to Redevelopment Projects: ▪ Linear Projects; o Consistency with Other Standards: ▪ Lake and Stream TMDLs; ▪ Draft NPDES Minnesota General Permit; ▪ MPCA's Minimal Impact Design Standards (MIDS); ▪ Infiltration in Drinking Water Supply Management Areas (DWSMAs); ▪ Soil Management; ▪ Inspection of Infiltration/Filtration Facilities; ▪ Abstraction Requirements; o Development of a long-term maintenance plan
5	Implementation Plan • TAC to discuss principles of a ten year monitoring plan. Review potential new standards, emerging contaminants, TMDL progress monitoring, and potential requirements relating to regional TMDLs and NPDES permitting. Recommend BCWMC Staff prepare a monitoring plan that details the specific purpose of each type of monitoring, the frequency, and cost of such monitoring, which will tie the monitoring to specific next generation plan goals. This monitoring policy data will be used to generate a table of recommended specific monitoring actions by year. It is expected that the table will be revisited in future years to take into account changing requirements. • Consider creating an additional spreadsheet of monitoring activities done by others to reduce redundancy and to identify the sites where monitoring occurs.
6	Education & Outreach Plan • Education Committee to develop a draft Education and Outreach Plan. The plan will continue to be refined and the final draft will be forwarded to the cities and the citizens' advisory representatives for their review and input. • Identified goals, strategies, and priority areas for education and outreach.

TAC Meetings & Topics	
7	Review Comments & Responses
8	Review Final Plan Revisions

The other meetings and topics listed below are also shown on the attached proposed schedule.

Other Meetings & Topics	
1	City Councils - initial input
2	Citizen Advisory Committee – initial input optional *Citizens Advisory Committee (CAC) – Public input process* Comprised of…. Prepare presentation and background materials to share with the CAC and ask each city to schedule a date at which this information can be presented. Topics of the presentation could be: 1. What is a watershed, and what does the Commission do? 2. What is a watershed management plan and how does it relate to city planning and projects? 3. What activities has the watershed been undertaking and what are the accomplishments of the past 10 years? 4. What are the preliminary problems and issues identified by the Commission and TAC? What other problems and issues does the CAC see? 5. What are the preliminary goals identified by the Commission and TAC? What other goals does the CAC see? 6. What issues, goals, and activities does the CAC see as most important? There is a lot of background to cover to bring the CAC up to speed on the watershed so they can make informed input into the plan.
3	City Managers/staff review *Policymaker's Meeting* City Managers and Commission TAC representatives meet early to learn about the Next Generation Watershed Management Plan and to discuss various policy issues. The group reviews the division of responsibilities between the Commission and the member cities; and receives an overview of the Commission's activities and accomplishments in the past ten years. The group reviews the Gaps Analysis of preliminary problems and issues and the preliminary Next Generation Goals identified by the Commission and the TAC. Discuss the Joint Powers Agreement (JPA)—does the JPA need revision as part of the Next Generation Plan? If so, when should this occur (later in 2013)? Discuss communication between the Council and Commission; are there improvements to be made? <u>Draft Agenda</u> 1. Refresher on watershed roles and responsibilities; 2. Overview of activities and accomplishments in the past 10 years; 3. Preliminary problems and issues identified by Commission and TAC; 4. Preliminary goals identified by Commission and TAC; 5. Policy issues; a. Roles and responsibilities of watershed vs. city b. Financial policies c. Operational budget funding d. Capital project cost policy e. Citizens Advisory Committee f. Joint Powers Agreement

Other Meetings & Topics	
4	Citizen Advisory – education & outreach, implementation • CAC meetings to gather input on draft CIP and implementation plan, and education and outreach plan.
5	Lake Association/Other – Education &outreach, implementation • Establish a Lake Association Summit
6	City Councils – draft plan
7	Citizen Advisory Committee – draft plan • Final, joint CAC meeting to provide public input on draft Plan. • CAC meeting would be a joint meeting of one or two CAC representatives from each city. The meeting will be an opportunity for the representatives to discuss each city's input and as a group prioritize implementation activities. The meeting, which would be held in late April 2014, would be led by the Commission's consultant who is writing the Plan.

Bassett Creek Watershed Management Commission Next Generation Watershed Management Plan--Proposed Schedule

	Plan Steps and Commission Actions	Notes	2012												2013												2014											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	Self-assessment										X																											
2	Visioning											X																										
3	Notify plan stakeholders	60d response																																			
4	Kickoff												X																									
5	Gap analysis													X																								
6	Assess and prioritize issues														X																						
7	Establish goals															X																					
8	Review water quality & modeling																	X																			
9	Develop monitoring plan																	X																			
10	Review Rules and Standards																		X																		
11	Develop education & outreach plan																			X																	
12	Develop implementation plans																				X																
13	Establish self-evaluation process																				X																
14	Discuss plan organization & look											X																									
15	Complete draft plan																				X																
16	Approve final draft Sept. 17, 2013																					X															
17	60-day review period																																				
18	Public hearing February 20, 2014	+ 14d from 60d																										X									
19	Revise Plan and submit for final review																											X									
22	BWSR Plan approval August 25, 2014	90d																																X			
23	Adopt plan September 18, 2014																																		X		

	TAC Meetings & Topics		2012												2013												2014											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	Assess and Prioritize Issues												X																									
2	Review Commission Goals														X																							
3	Review Water Quality & Modeling																X																				
4	Review Rules & Standards																		X																		
5	Implementation Plan																		X		X																
6	Education & Outreach Plan																				X																
7	Review Comments & Responses																											X									
8	Review Final Plan Revisions																												X								

	Other Meetings & Topics		2012												2013												2014											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	City Councils - initial input																																					
2	Citizen Advisory Comm – initial input																																					
3	City Managers/staff review																																					
4	Citizen Advisory-educ & outreach, impl																																					
5	Lake Assn/Other - E&O, impl																																					
6	City Councils-draft plan																																					
7	Citizen Advisory-draft plan																																					

Indicates an ongoing activity. **X** Indicates action to be taken.

DRAFT

June XX, 2012

Member Cities
Hennepin County Environmental Services
Hennepin Conservation District
Metropolitan Council
Minnesota Board of Water and Soil Resources
State Review Agencies
Minnesota Department of Transportation
Minneapolis Park & Recreation Board

Re: Bassett Creek Watershed Management Commission's 2014 Watershed Management Plan

Dear Future Watershed Management Plan Reviewers:

The Bassett Creek Watershed Management Commission (BCWMC or Commission) is in the early stages of updating its watershed management plan. State law requires that watershed management plans be updated every 10 years; the BCWMC's current plan expires in August 2014. The BCWMC's goal is to complete the draft plan by fall of 2013, and then to submit the draft plan for review to the member cities, review agencies and the public.

The watershed management plan sets the goals, policies and strategies for managing the lakes, streams and wetlands in the Bassett Creek watershed. State law and rule govern the watershed planning process. The Minnesota Board of Water and Soil Resources' (BWSR) authority includes approving the plan and overseeing the planning process.

With this letter, the Commission requests the following information from you:

- Priority issues and your expectations for BCWMC involvement in these issues
- Summaries of relevant water management goals
- Pertinent water resource information
- Official controls and programs (as applicable)

The Commission respectfully requests that you provide this information within 60 days of receipt of this letter (August XX, 2012). The information you provide will help the Commission identify the issues and goals that should be addressed in the updated plan. The Commission will hold a plan kickoff meeting after they have received and reviewed the requested information. You will receive a separate notification inviting you to this future kickoff meeting.

Thank you for your time and assistance in providing this requested information. If you have any questions, please contact Karen Chandler, the BCWMC's engineer, at kchandler@barr.com or 952-832-2813.

Sincerely,

Virginia K. Black
Chair, Bassett Creek Watershed Management Commission

Attachment – Distribution List

Member Cities:

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

Hennepin County:

Hennepin County – Mr. Joel Settles

Hennepin Conservation District – Ms. Stacey Lijewski

Metropolitan Council:

Metropolitan Council – Ms. Judy Sventek

Minnesota Board of Water and Soil Resources:

Minnesota Board of Water and Soil Resources – Mr. Brad Wozney

State Review Agencies:

Minnesota Department of Natural Resources – Mr. Nick Proulx

Minnesota Pollution Control Agency – Mr. David L. Johnson

Minnesota Department of Health – Mr. Art Persons

Minnesota Department of Agriculture – Mr. Rob Sip

Minnesota Department of Transportation:

Minnesota Department of Transportation – Mr. Nick Tiedeken

Minneapolis Park & Recreation Board:

Minneapolis Park & Recreation Board – Debra Pilger, Director, Environmental, Equipment and Volunteer Services

Bassett Creek Watershed Management Commission 2012 Administrative Calendar

January 2012	*February 2012*	*March 2012*	*April 2012*
MEETING – JANUARY 19 • **January 5** – TAC meeting, 1:30 p.m. • January 31 - End of Fiscal Year • Direct auditor to prepare audit report • Terms end for Crystal, Golden Valley, and Medicine Lake • Resolution to appoint official depositories; • Discuss CIP projects' admin expenses reimbursement	**MEETING – FEBRUARY 16** • **February 14** – Admin Cmttee meeting; 8:00 a.m. • BCWMC Organizational meeting – elect officers; Discuss BCWMC mission and goals; Discuss 2011 Commission – TAC liaisons • Assessment payments from member-cities due February 1	**MEETING – MARCH 15** • **March 7** –TAC mtg, 1:30 p.m. • **March 22 –** Plymouth Env. Quality Fair • **March 29 –** BCWMC Special Mtg – Next Generation Plan	**MEETING – APRIL 19** • **April 5** – TAC mtg, 1:30 p.m. • **April 13-14** – Plymouth Yard/Garden Expo • Audit Report to State Auditor
May 2012	***June 2012***	***July 2012***	***August 2012***
MEETING – MAY 17 • Review Draft Budget; Final Annual Report presented for approval and submitted to BWSR and member cities	**MEETING – JUNE 21** • Budget must be approved by Commission by July 1 to meet 30-day city review; Budget must be received by member cities by July 1 for 30-day review	**MEETING – JULY 19** • LMCIT annual invoice; Receive first half of ad valorem tax (early July);	**MEETING – AUGUST 16**
September 2012	***October 2012***	***November 2012***	***December 2012***
MEETING / PUBLIC MEETING–SEPTEMBER 20 • **September 6** – TAC meeting, 1:30 p.m. • Public Meeting on NL-2:Four Seasons Mall Water Quality Project • Submit maximum levy ad valorem tax request to Hennepin County	**MEETING – OCTOBER 18** • Prepare letters re: deadline to receive applications for the Channel Maintenance Fund during next year's construction season	**MEETING– WEDNESDAY, NOVEMBER 15**	**MEETING – DECEMBER 20** • Prepare resolution to transfer 2012 funds from admin acct. to TMDL, Long-term maint., and channel erosion accounts.

Bassett Creek Watershed Management Commission – June 2012 Web site: www.bassettcreekwmo.org

Monthly Meeting

Meetings are held at 11:30 am, every third Thursday of the month (except the November meeting is on Wednesday, Nov. 15) at the City of Golden Valley City Hall, Council Conference Room (2nd floor), 7800 Golden Valley Road, Golden Valley, MN 55427

Commissioner	Alternate Commissioner	Technical Advisory Committee Member
Crystal – 2015		
Daniel Johnson 5801 29th Ave. N., Crystal 55422 763-541-9006 danjohnson57@hotmail.com	**Vacant**	**Tom Mathisen** 4141 Douglas Dr. North, Crystal 55422 763-531-1160 763-531-1188 (fax) tmathisen@ci.crystal.mn.us
Golden Valley – 2015		
Stacy Hoschka, Treasurer 6400 Golden Valley Road Golden Valley, MN 55427 763-529-4723 Harwell.hoschka@gmail.com	**David Hanson** 1030 Angelo Dr., Golden Valley 55422 763-588-1478 davewhanson@gmail.com	**Jeannine Clancy** Director of Public Works City of Golden Valley 7800 Golden Valley Road, GV 55427 763-593-8035 763-593-3988 (fax) jclancy@goldenvalleymn.gov **Jeff Oliver (alternate)** City Engineer, City of GV 763-593-8034 763-593-3988 (fax) joliver@goldenvalleymn.gov **Eric Eckman (alternate)** Public Works Specialist, City of GV 763-593-8084 763-593-3988 (fax) eeckman@goldenvalleymn.gov
Medicine Lake – 2015		
Ted Hoshal, Secretary 6960 Madison Ave. W., Ste 2 Minneapolis, MN 55427-3627 763-541-1140 763-541-0223 (fax) dthoshal@luma-gard.com	**John O'Toole** 181 Peninsula Road Medicine Lake, MN 55441-4113	
Minneapolis – 2013		
Michael Welch 212 Thomas Avenue S. Minneapolis, MN 55405 612-385-6885 mjewelch@gmail.com	**Lisa Goddard** 214 Logan Avenue North Minneapolis, MN 55405 612-374-2481 (home) 763-475-0010 763-475-2429 (fax) lgoddard@srfconsulting.com	**Lois Eberhart** Water Resources Administrator Room 300 City of Lakes Building 309 Second Ave. S. Minneapolis, MN 55401-2268 612-673-3260 612-673-2048 (fax) Lois.eberhart@ci.minneapolis.mn.us
Minnetonka – 2013		
Jacob Millner 2300 Nottingham Court Minnetonka, MN 55305 jbmillner@gmail.com	**Tony Wagner** 1804 Traymore Road Minnetonka, MN 55305 twagner@eminnetonka.com	**Lee Gustafson,** 14600 Minnetonka Blvd. Minnetonka, MN 55345 952-939-8239 952-939-8244 (fax) lgustafson@eminnetonka.com **Liz Stout,** 14600 Minnetonka Blvd. Minnetonka, MN 55345 952-939-8233 952-939-8244 (fax) lstout@eminnetonka.com
New Hope – 2013		
John Elder City of New Hope, 4401 Xylon Ave. N. New Hope, MN 55428 763-531-5100 jelder@ci.new-hope.mn.us	**Vacant**	**Guy Johnson** Dir. Of Public Works, City of New Hope 5500 Intl. Pkwy., New Hope 55428 763-592-6766 763-533-7650 (fax) gjohnson@ci.new-hope.mn.us **Chris Long**, Bonestroo Chris.long@bonestroo.com
Plymouth – 2014		
Ginny Black, Chair Plymouth City Hall 3400 Plymouth Blvd., Plymouth 55447 763-509-5004 Ginny.black@q.com	**Judy Johnson** Plymouth City Hall 3400 Plymouth Blvd., Plymouth, MN 55447 763-509-5001 jjohnson@plymouthmn.gov	**Derek Asche** 3400 Plymouth Blvd., Plymouth, MN 55447 763-509-5526 dasche@ci.plymouth.mn.us

Bassett Creek Water Management Commission – June 2012
Web site: www.bassettcreekwmo.org

Commissioner	Alternate Commissioner	Technical Advisory Committee Member
Robbinsdale – 2014		
Wayne Sicora 3706 Abbott Ave. North Robbinsdale, MN 55422 763-522-8165 Wayne.sicora@gmail.com	**Vacant**	**Richard McCoy *** City of Robbinsdale 4100 Lakeview Ave. N. Robbinsdale, MN 55422 763-531-1260 763-531-7344 (fax) rmccoy@ci.robbinsdale.mn.us
St. Louis Park – 2014		
Jim de Lambert, Vice Chair 9257 West 22nd Lane St. Louis Park, MN 55426 763-489-3150 jimd@liesch.com	**Justin Riss** 3732 Pennsylvania Avenue South St. Louis Park, MN 55426 612-242-6611 justinriss@yahoo.com	**Laura Adler, Engrg. Program Coor. *** City of St. Louis Park 5005 Minnetonka Boulevard St. Louis Park, MN 55416 952-924-2690 952-924-2663 (fax) ladler@stlouispark.org **Jim Vaughan, Envl. Coor. * (alternate)** City of St. Louis Park 5005 Minnetonka Boulevard St. Louis Park, MN 55416 952-924-2699 952-924-2663 (fax)

Deputy Treasurer: Susan Virnig, * Financial Director, 7800 Golden Valley Road, Golden Valley 55427; 763-593-8010 (Fax: 763-593-3969). E-mail: SVirnig@goldenvalleymn.gov

Counsel: Charlie LeFevere, * Kennedy & Graven, 470 U.S. Bank Plaza, 200 South Sixth Street, Minneapolis, 55402; 612-337-9215 (Fax: 612-337-9310); general firm number: 612-338-1177. E-mail: clefevere@kennedy-graven.com

Engineer: Karen Chandler, 952-832-2813, E-mail: kchandler@barr.com; Len Kremer, 952-832-2781, E-mail: lkremer@barr.com; Jim Herbert, 952-832-2784, E-mail: jherbert@barr.com, * Barr Engineering Company, 4700 West 77th Street, Minneapolis 55435-4803; (Fax: 952-832-2601).

Recorder: Amy Herbert, * Barr Engineering Company, 4700 W 77th Street, Minneapolis 55435-4803; 952-832-2652 (Fax: 952-832-2601). E-mail: bcra@barr.com

Administrative Personnel (Municipalities)

Crystal
Tom Mathisen, City Engineer
Anne Norris, City Manager
Chrissy Serres, City Clerk
4141 North Douglas Drive 763-531-1000 (general)
Crystal 55422 763-531-1188 (fax)

Golden Valley
Jeannine Clancy 763-593-8035
Director of Public Works 763-593-3988 (engrg. fax)
Tom Burt, City Manager ** 763-593-8002
Jeff Oliver, City Engineer 763-593-8034
Sue Virnig, City Clerk 763-593-8010
7800 Golden Valley Road 763-593-8109 (admin. fax)
Golden Valley 55427 763-593-8000 (general)

Medicine Lake
Mary Anne Young, Mayor
145 Peninsula Rd. 55441 763-544-3285
Nancy Pauly, City Clerk (nancy.pauly@gmail.com)
10609 South Shore Drive
Medicine Lake 55441 763-542-9701

Minneapolis
Steven Kotke, Director of Public Works and City Engineer
350 South 5th Street, Room 203 612-673-2443
Casey J. Carl, City Clerk 612-673-2216
350 S 5th St, Room 304 612-673-3812 (fax)
(All Minneapolis 55415) 612-673-3000 (general)

St. Louis Park
Mike Rardin 952-924-2551
Director of Public Works 952-924-2663 (fax)
Tom Harmening, City Manager **
Scott Brink, City Engineer
Nancy Stroth, City Clerk
5005 Minnetonka Blvd 952-924-2500 (general)
St. Louis Park 55416 952-924-2170 (fax)

Minnetonka
Lee Gustafson, Director of Engineering 952-939-8239
John Gunyou, City Manager
David Maeda, City Clerk (dmaeda@eminnetonka.com)
14600 Minnetonka Blvd 952-939-8200 (general)
Minnetonka 55345 952-939-8244 (fax)

New Hope
Guy Johnson, Director of Public Works
5500 International Prkwy 763-592-6766
Kirk McDonald, Interim City Mgr ** 763-531-5119
Valerie Leone, City Clerk (vleone@ci.new-hope.mn.us)
4401 Xylon Avenue North 763-531-5100 (general)
New Hope 55428 763-531-5136 (fax)

Plymouth
Doran Cote, Director of Public Works
Laurie Ahrens, City Manager
Sandra Engdahl, City Clerk
3400 Plymouth Boulevard 763-509-5000 (general)
Plymouth 55447 763-509-5060 (fax)

Robbinsdale
Marcia Glick, City Manager
Richard McCoy, City Engineer
Tom Marshall, City Clerk 763-531-1252
4100 Lakeview Avenue N. 763-537-4534 (general)
Robbinsdale 55422 763-537-7344 (fax)