Bassett Creek Watershed Management Commission

Regular Meeting
Thursday May 18, 2017
8:30 – 11:00 a.m.
Council Conference Room, Golden Valley City Hall, Golden Valley, MN
AGENDA

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**
   - A. Approval of Minutes – April 20, 2017 Commission Meeting
   - B. Approval of May 2017 Financial Report
   - C. Approval of Payment of Invoices
     - i. Keystone Waters, LLC – April Administrator Services
     - ii. Keystone Waters, LLC – April Meeting Materials Distribution Expenses
     - iii. Barr Engineering – April 2017 Engineering Services
     - iv. Triple D Espresso – May 2017 Meeting Refreshments
     - v. Wenck – April 2017 WOMP Monitoring
     - vi. Wenck –April Routine Lake Monitoring
     - vii. Lawn Chair Gardener – April 2017 Administrative Services
     - viii. Kennedy & Graven – March Legal Services
     - ix. HDR – Website Hosting and Assistance
     - x. PLM Lake & Land Management – Curly-leaf Pondweed Control, Medicine Lake
     - xi. MMKR – 2016 Audit
     - xii. Metro Conservation District – Children's Water Festival Contribution
   - D. Approval of BNSF Bridge 1.7 Project, Minneapolis
   - E. Approval of Golden Valley-Minneapolis Interceptor Rehabilitation Project
   - F. Approval of 10th Avenue North Culvert Replacement, Golden Valley
   - G. Approval of 2016 BCWMC Annual Report

5. **PUBLIC HEARING**
   - A. Receive Comments from Member Cities and the Public on Proposed Minor Amendment to 2015 Bassett Creek Watershed Management Plan
     - i. Receive Comments from Review Agencies
     - ii. Consider Extending Comment Period to June 28, 2017 per Hennepin County Request

6. **BUSINESS**
   - A. Consider Accepting Final Feasibility Report for Bassett Creek Park Pond/Winnetka Pond Dredging Project (BCP-2) and Choose Alternative to Implement
   - B. Set 2018 Maximum Levy and Direct Staff to Submit to Hennepin County

C. Review Recommendations from Technical Advisory Committee
    i. Consider Approval of Final XP-SWMM Phase II Report
    ii. Consider Adoption of New Floodplain Elevations
    iii. Consider Revising Water Quality Requirements for Linear Projects
D. Discuss Recommendations from Budget Committee on 2018 Operating Budget and Consider Purchasing Monitoring Equipment in 2017
E. Review Recommendations from Education Committee
    i. Consider Approval of Additions to 2018 Education Work Plan and Budget
    ii. Consider Approval of Amended Contract with Dawn Pape

7. COMMUNICATIONS

A. Administrator's Report
    i. Volunteers Needed for June 3rd Events
B. Chair
C. Commissioners
D. TAC Members
E. Committees
    i. APM/AIS Committee – Upcoming Meeting
F. Legal Counsel
G. Engineer

8. INFORMATION ONLY (Information online only)

A. CIP Project Updates: Now Available Online http://www.bassettcreekwmo.org/projects
B. Medicine Lake Curly-leaf Pondweed Treatment Report
C. WMWA March and April Meeting Minutes
D. WCA Notice of Decision, Plymouth

9. ADJOURNMENT

Upcoming Meetings & Events

- BCWMC APM/AIS Committee Meeting: Tuesday May 23, 8:30 a.m., Council Conference Rm, Golden Valley City Hall
- Woodland Restoration Event: Saturday June 3, 8:30 a.m. – 12:30 p.m., Westwood Hills Nature Center, St. Louis Park, volunteer pre-registration required: https://www.greatrivergreening.org/events/june-3-westwood-hills-nature-center/
- New Hope City Day: Saturday June 3, 9:00 a.m. – Noon, New Hope City Hall
- BCWMC Regular Meeting: Thursday June 15, 2017, 8:30 a.m., Golden Valley City Hall

Bassett Creek Watershed Management Commission

AGENDA MEMO
Date: May 11, 2016
To: BCWMC Commissioners
From: Laura Jester, Administrator
RE: Background Information for 5/18/17 BCWMC Meeting

1. **CALL TO ORDER and ROLL CALL**
2. **CITIZEN FORUM ON NON-AGENDA ITEMS**
3. **APPROVAL OF AGENDA – ACTION ITEM with attachment**

4. **CONSENT AGENDA**
   A. Approval of Minutes – April 20, 2017 Commission meeting- **ACTION ITEM with attachment**
   B. Approval of May 2017 Financial Report - **ACTION ITEM with attachment**
   C. Approval of Payment of Invoices **- ACTION ITEM with attachments (online) –** *I have reviewed the following invoices and recommend approval of payment.*
      i. Keystone Waters, LLC – April Administrator Services
      ii. Keystone Waters, LLC – April Meeting Materials Distribution Expenses
      iii. Barr Engineering – April 2017 Engineering Services
      iv. Triple D Espresso – May 2017 Meeting Refreshments
      v. Wenck – April 2017 WOMP Monitoring
      vi. Wenck –April Routine Lake Monitoring
      vii. Lawn Chair Gardener – April 2017 Administrative Services
      viii. Kennedy & Graven – March Legal Services
      ix. HDR – Website Hosting and Assistance
      x. PLM Lake & Land Management – Curly-leaf Pondweed Control, Medicine Lake
      xi. MMKR – 2016 Audit
      xii. Metro Conservation District – Children's Water Festival Contribution

   D. Approval of BNSF Bridge 1.7 Project, Minneapolis – **ACTION ITEM with attachment** - *The proposed project includes completing a project originally proposed in 1995 consisting of the removal of an existing BNSF bridge and filling the embankment above the existing culverts for Bassett Creek. Staff recommends approval of the project with recommendations on erosion and sediment control outlined in the memo.*

   E. Approval of Golden Valley – Minneapolis Interceptor Rehabilitation Project – **ACTION ITEM with attachment** - *The proposed project involves repairs to the existing sanitary interceptor sewer located in the Bassett Creek Main Stem subwatershed and resulting in 6.5 acres of disturbance (grading). Staff recommends approval of the project with recommendations included in the attached memo.*

   F. Approval 10th Avenue North Culvert Replacement, Golden Valley – **ACTION ITEM with attachment** – *The proposed project includes the removal of three existing corrugated steel pipes, installation of two reinforced concrete box culverts (8' x 6'), storm sewer replacement, reconstruction of roadway and sidewalk, and site grading. The project is located in the Bassett Creek Main Stem subwatershed and results in 1.25 acres of disturbance (grading), 0.53 acre of reconstructed impervious, and no new impervious surface. Staff recommends approval of the project with recommendations included in the attached memo*.

   G. Approval of 2016 BCWMC Annual Report – **ACTION ITEM with attachment** (full document online) – *According to Minnesota Rules Chapter 8410, the BCWMC is required to submit an annual report (due at the end of May) to the MN Board of Water and Soil Resources. Staff is happy to take recommendations for additions or revisions to the report. Staff recommends approval of the attached report (which still needs a*

few pieces of updated information and the addition of appendices) and direction to submit the report once finalized.

5. PUBLIC HEARING

A. Receive Comments from Member Cities and the Public on Proposed Minor Amendment to 2015 Bassett Creek Watershed Management Plan **– INFORMATION ITEM with attachment –** *At their meeting on March 16th the BCWMC set this public hearing date and directed staff to begin a request for a minor plan amendment to revise the Commission's CIP project list and schedule (attached online). During this hearing, the Commission should receive and record comments from cities or the public and/or answer questions about the proposed plan amendment.*

i. Receive Comments from Review Agencies – **INFORMATION ITEM with attachment** – *A 30-day comment period for agency review began on April 10th. The BCWMC received minor comments from the DNR and the Metropolitan Council. The BWSR and the Department of Agriculture indicated they had no comments on the proposed amendment (see comment letters and email correspondence attached).*

ii. Consider Extending Comment Period to June 28, 2017 per Hennepin County Request – **ACTION ITEM with attachment** – S*taff recommends granting the County's request to extend the comment period to June 28th in order to accommodate the County's review process and Board meeting schedule. Extending the timeline does not impact the implementation schedule of the CIP projects included in the proposed amendment.*

6. BUSINESS

A. Consider Accepting Final Feasibility Report for Bassett Creek Park Pond/Winnetka Pond Dredging Project (BCP-2) and Choose Alternative to Implement – **ACTION ITEM with attachment** (full document online) – *At their meeting in April, the Commission reviewed and discussed the first draft of the feasibility study for this project. The Commission agreed with the City of Crystal and the Commission Engineer's recommendation to set aside the dredging of Bassett Creek Park Pond due to the high project cost and apparently low pollutant removal results. The Commission agreed that the dredging of Winnetka Pond was a more viable project with lower costs and better pollutant removal results. The Commission Engineer will present the final feasibility report and recommendations for alternatives to implement. The Commission should accept the final report and choose an alternative to implement so that a maximum 2018 levy can be set (see item 6B.)*

B. Set 2018 Maximum Levy and Direct Staff to Submit to Hennepin County – **ACTION ITEM with attachment** – *A maximum 2018 levy amount for collection by Hennepin County on behalf of the Commission should be set at this meeting. Staff recommends a maximum levy of $1,346,815 which includes 2nd year costs for the Plymouth Creek Restoration Project and the Main Stem Erosion Repair Project along with the estimated cost of the Bassett Creek Park Pond Dredging Project. (See table attached.*) *The Commission can lower the levy request when it submits its final levy amount in September of this year, but it cannot request more than the maximum levy amount.*

C. Review Recommendations from Technical Advisory Committee - **ACTION ITEM with attachments** – *The TAC met on May 4th to discuss the XP-SWMM final report and results, along with performance standards for linear projects (as directed by the Commission). TAC recommendations on these items are included in the attached memo.*

i. Consider Approval of Final XP-SWMM Phase II Report – **ACTION ITEM with final report online**
ii. Consider Adoption of New Floodplain Elevations – **ACTION ITEM with attached technical memo**
iii. Consider Revising Water Quality Requirements for Linear Projects – **ACTION ITEM (see TAC memo)**

D. Discuss Recommendations from Budget Committee on 2018 Operating Budget and Consider Purchasing Monitoring Equipment in 2017 – **DISCUSSION/ACTION ITEM with attachment** – *The Budget Committee met on March 27th and April 24th to discuss the 2018 operating budget, proposed program areas and costs, revenue, and member city assessments. A report on their discussions and their recommendations is included in the attached memo with budget tables and notes on expense categories. Since their last meeting, staff further refined some figures within the monitoring budget which are also reflected in the attached tables. The Commission should discuss the proposed budget; action on a budget is not required until the June Commission meeting. The Budget Committee also recommends the Commission purchase up to $10,900 of monitoring equipment with the 2017 Surveys and Studies budget line for use on the Schaper Pond Effectiveness Monitoring Project in 2017 (eliminating the need for the Commission to rent equipment this year and which can then be used for stream monitoring starting next year).*

E. Review Recommendations from Education Committee - **ACTION ITEM with attachments** – *At their meeting in March, the Commission approved a 2017 education work plan and budget with the understanding that the Education Committee would continue to develop additional educational projects and programs. The gray boxes in the attached table show the additional proposed projects recommended by the committee and staff. If these projects are approved, the committee and staff also recommend an amendment to the contract with Dawn Pape to help implement these projects.*
   i. Consider Approval of Additions to 2018 Education Work Plan and Budget – **ACTION ITEM with attachment**
   ii. Consider Approval of Amended Contract with Dawn Pape – **ACTION ITEM with attachment**

7. COMMUNICATIONS

A. Administrator's Report – **INFORMATION ITEM with attachment**
   i. Volunteers Needed for June 3rd Events
B. Chair
C. Commissioners
D. TAC Members
E. Committees
   i. APM/AIS Committee - Upcoming Meeting
F. Legal Counsel
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Item 4A.
BCWMC 5-18-17

Bassett Creek Watershed Management Commission

DRAFT Minutes of Regular Meeting
Thursday April 20, 2017
8:30 a.m.
Golden Valley City Hall, Golden Valley MN

Commissioners and city staff present:

City	Commissioner	Alternate Commissioner	Technical Advisory Committee Members (City Staff)
Crystal	Guy Mueller	Tim Wodarski	Mark Ray
Golden Valley	Stacy Harwell (voting member second ½)	Jane McDonald Black (voting member first ½)	Tom Hoffman
Medicine Lake	Clint Carlson	Absent	Absent
Minneapolis	Michael Welch	NA	Absent
Minnetonka	Mike Fruen	Absent	Tom Dietrich
New Hope	Absent	Pat Crough	Megan Albert
Plymouth	Jim Prom	John Byrnes (voting member)	Derek Asche
Robbinsdale	Michael Scanlan	Absent	Richard McCoy
St. Louis Park	Jim de Lambert	Absent	Erick Francis

Staff and Others Present:	
Administrator	Laura Jester, Keystone Waters
Engineer	Karen Engineer Chandler, Barr Engineering
Recorder	Dawn Pape, Lawn Chair Gardener
Legal Counsel	Troy Gilchrist, Kennedy & Graven
Presenters/ Guests/Public	Chuck Schmidt, Crystal resident

1. CALL TO ORDER AND ROLL CALL

On Thursday April 20, 2017 at 8:30 a.m. in the Council Conference Room at Golden Valley City Hall (7800 Golden Valley Rd.), Chair de Lambert called to order the meeting of the Bassett Creek Watershed Management Commission (BCWMC) and asked for roll call to be taken. No cities were absent from the roll call.

2. CITIZEN FORUM ON NON-AGENDA ITEMS

None

3. APPROVAL OF AGENDA

Administrator Jester requested the addition of item 5D, the Citizen Assisted Monitoring Program (CAMP) Agreement with Met Council.

MOTION: Alt. Commission McDonald Black moved to approve the agenda as amended. Commissioner Welch seconded the motion. Upon a vote, the motion carried 9-0.

4. CONSENT AGENDA

MOTION: Commissioner Welch moved to approve the consent agenda. Alt. Commissioner McDonald Black seconded the motion. Upon a vote, the motion carried 9-0.

The following items were approved as part of the consent agenda: the March 16, 2017 Commission Meeting Minutes, the April 2017 Financial Report, the payment of invoices, approval not to waive monetary limits on municipal tort liability, and acceptance of the BCWMC fiscal year 2016 financial audit.

The general and construction account balances reported in the April 2017 Financial Report are as follows:

Checking Account Balance	$794,358.18
TOTAL GENERAL FUND BALANCE	$794,358.18
TOTAL CASH & INVESTMENTS ON-HAND (4/12/17)	$2,366,729.55
CIP Projects Levied – Budget Remaining	($4,494,990.84)
Closed Projects Remaining Balance	($2,128,261.29)
2012-2016 Anticipated Tax Levy Revenue	$9,476.76
2017 Anticipated Tax Levy Revenue	$1,303,600.00
Anticipated Closed Project Balance	($815,184.53)

Before the business of the meeting got underway, Chair de Lambert introduced the new alternate commissioner from the City of Crystal, Tim Wodarski, and Dawn Pape, who will be taking on some administrative duties such as taking minutes during meetings.

5. BUSINESS

A. Receive Presentation and Discuss Draft Feasibility Study for Bassett Creek Park Pond/Winnetka Pond Dredging Project (BCP-2)

[Commissioner Prom arrives.]

Commission Engineer Chandler presented the draft feasibility study for the Bassett Creek Park Pond/Winnetka Pond Dredging Project (BCP-2), slated for construction in 2018. She reported that the Commission ordered this study in July 2016. She noted that both ponds are located in the City of Crystal and both ponds are on the North Branch of Bassett Creek, so they are both "online" treatment ponds. Engineer Chandler noted that analysis of sediment in Bassett Creek Park Pond indicates that some of the sediment is contaminated and will require landfilling, which adds to the cost of the project. She noted that Winnetka Pond was probably only designed to be 2-ft. deep. She reminded the Commission that Winnetka Pond is on the trunk system and was identified as part of the flood control system, but is not technically part of the official BCWMC Flood Control Project.

Commissioner Welch asked if there was any direct discharge to Bassett Creek Park Pond. Engineer Chandler replied affirmatively and that there may be more contamination near those outfalls.

There was also discussion about the ponds being designated as public water v. public water wetland. Engineer Chandler clarified that the water body is a "public water" but the whole pond area is delineated as a wetland. Engineer Chandler reported on a technical stakeholder meeting with the MN Department of Natural Resources, U.S. Army Corps of Engineers, Minnesota Pollution Control Agency, Commissioner Mueller, Administrator Jester, and city staff to discuss permitting constraints. She noted the DNR is focused on staying out of delineated wetlands. In the case of Bassett Creek Park Pond, the deep area is considered non-wetland so it can be made deeper.

[Derek Asche arrives.]

Engineer Chandler described different add-ons and alternatives for Bassett Creek Park Pond including creating a forebay to capture sediment as it first enters the pond, further deepening the deep part of the pond (up to 10-feet) in order to harbor fish, and installing a native buffer all around the pond. For Winnetka Pond she noted that ownership of the pond is split between the city and owner of the apartment buildings so there are fewer opportunities to install a buffer or implement different alternatives. However, she noted that one appealing alternative for Winnetka Pond is to dredge it deeper than originally designed, to a depth of 4.2 feet, which will increase its pollutant removal abilities.

Engineer Chandler reported that the P8 model does not do a good job of estimating pollutant removals of the projects because the ponds are on the creek itself and the model doesn't include upstream bank erosion, nor scouring and re-suspension within the ponds themselves. However, she noted the Engineer analyzed flow velocities in Winnetka Pond and found that a large portion of sediment is susceptible to re-suspension. Engineer Chandler reported that the Engineer's professional judgment is that the current pond is likely only achieving 20% of what the P8 model predicts under existing conditions, so the additional annual total phosphorus removal is more likely to be approximately 49.6 lbs per year if Alternative 2 (deepening pond to 4.2 ft) is implemented.

Engineer Chandler reported that her recommendation is for the Commission to implement Winnetka Pond East Alternative 2. She noted that with the high cost of dredging Bassett Creek Park Pond and the complicated issues there, it is recommended to set this project aside until after 2024. She noted that in the meantime, the Commission should collect data on the North Branch of Bassett Creek, which could be used to recalibrate the P8 model, and allow the city to finalize its Bassett Creek Park improvement planning.

Chair de Lambert asked if there would be a cost reduction if the sediment could be disposed on-site. Engineer Chandler indicated yes, there would be a savings. Mark Ray with the City of Crystal indicated that possibly some

Winnetka Pond sediment could be used in a project at Bassett Creek Park where fill is needed.

Engineer Chandler stated that dredging Winnetka Pond also makes sense now because it's located upstream of Bassett Creek Park Pond and that the pond is so full of sediment that it's nearly interfering with the pond's flood storage.

There was a question about the possibility of not dredging either pond and thus not having a CIP project in 2018. Engineer Chandler noted that both ponds need to be dredged and the longer the wait, the more expensive it will be because more sediment will need to be removed.

There was discussion about inquiring with the Winnetka Apartments property owner about installing a native buffer around the pond. Mr. Ray responded that the apartment owner had not been approached but that he/she can be asked about that possibility.

Commissioner Welch wondered about wetland impacts and permitting issues. Engineer Chandler answered there were no wetland regulations when Winnetka Pond was constructed in the 1960s. She noted that wetland permitting would be easier if the project involves dredging only the accumulated sediment to return the project to its design condition, and that dredging to 4.2 ft. would be considered impacting a wetland. She noted that obtaining a permit is possible, but more of a hurdle.

Asked for her input, Administrator Jester commented that she agreed with the Commission Engineer's recommendation. She noted a buffer along Winnetka Pond would be beneficial, that now it is mostly mown grass to the edge which attracts many geese. Commission Engineer Chandler and Mr. Ray noted that installation of a buffer along the north side of the pond would cost approximately $45,000.

When asked for direction on action needed now, Engineer Chandler stated that this is a draft report and that she would add in the "professional judgment" numbers on pollutant removals in Winnetka Pond, add in the possibility of installing a buffer on the pond and investigate the savings resulting from the City of Crystal using excavated sediment in their Bassett Creek Park project.

Mr. Asche noted that the Commission invested heavily in the P8 model and it was developed for the purpose of comparing outcomes of projects. He noted that the study should include other benefits of the project, including pollinator habitat, increased dissolved oxygen, etc. There was discussion about the need for on-going maintenance, such as regular dredging of the pond like West Medicine Lake Pond, which is on Plymouth Creek. It was noted that maintenance is a city responsibility and the distinction between maintenance dredging and this larger CIP project should be identified in the feasibility report.

Commissioner Mueller stated his support for the Engineer's recommendation, but also noted that the Commission needs to look at different alternatives or it will become a dredging commission. He described the idea of a "grand bargain" in that during a future CIP project, the Commission dredges Bassett Creek Park Pond and installs a forebay that will be maintained by the city with regular dredging that should eliminate the need for a large CIP project to again dredge the pond in 30 years.

[Commissioner Stacy Harwell arrives and Alternative Commissioner Jane McDonald Black departs]

Commissioner Mueller continued, stating that he wonders whether the models are steering the Commission to something it cannot measure and that perhaps it's not the best way to compare projects. He noted that the model doesn't consider wetland functions and biological benefits and that controlling the source of the runoff (before it gets to ponds) should be considered. Commissioner Mueller recommended the creation of a task force to study the source of pollution that enters the ponds along the BCWMC Trunk System.

Commissioner Welch restated that cities are responsible for pond dredging and maintenance, not the Commission. He noted that these ponds are different in that they are part of the North Branch of Bassett Creek and part of the BCWMC Trunk System. He further noted that the 2015 BCWMC Watershed Management Plan

lays out studies, plans, and programs for reducing the source of pollution.

Mr. Asche inquired about impairments along the North Branch and indicated that the feasibility study and project focuses on phosphorus pollution but that there are other factors to consider including macroinvertebrate communities, dissolved oxygen levels, bacteria, etc. It was noted that the creek is only impaired for bacteria right now. Mr. Asche pointed out that he appreciates Commissioner Mueller's comments on looking at long-term ideas.

There was a discussion about removing geese around Winnetka Pond and how that might significantly reduce phosphorus and bacteria loads in the pond. Commissioner Prom mentioned how removing geese on Bass Lake improved water quality and was cost effective. Goose management should be added to feasibility study.

[Commissioner Welch departs.]

Chair de Lambert remarked that a good discussion was held and he was looking for a summary. He noted there seemed to be general consensus for the Engineer's recommendation.

Engineer Chandler recapped the discussion and noted that the following items would be added to the final feasibility study that would come to the Commission at their next meeting:

1. Include the professional judgement figures for pollutant removal from Winnetka Pond deepening
2. Work with City of Crystal on possibility of using dredged material on nearby park land
3. Inquire with the Winnetka Apartments owner/manager about installing a native buffer
4. Investigate the possibility and effects of goose management around Winnetka Pond
5. Consider wetland functions and additional benefits including pollinator habitat
6. Include distinction between this dredging project and city-maintained pond dredging projects and why this project is proposed as a Commission project

B. Receive Update on Curly-leaf Pondweed Control on Medicine Lake

i. Ratify Agreement with Three Rivers Park District for Cooperation of Curly-leaf Pondweed Control

ii. Ratify Contract with PLM Lake and Land Management for Curly-leaf Pondweed Treatment

Administrator Jester reported that she (with City of Plymouth's assistance) developed and disseminated a request for quotes from herbicide applicators and applied for a DNR herbicide application permit. She also coordinated with Three Rivers Park District to perform surveys of the curly-leaf pondweed before and after the herbicide treatment and to share in the cost of the treatment. She noted that since the treatment was needed before water temperatures reach 60 degrees, there wasn't time to get Commission approval of agreements with Three Rivers Park District and the contractor before work needed to be done. She requested Commission ratification of the executed agreements.

MOTION: Commissioner Carlson moved to ratify the agreement with Three Rivers Park District for cooperation of curly-leaf pondweed control and to ratify the contract with PLM Lake and Land Management for curly-leaf pondweed treatment. Commissioner Prom seconded the motion. Upon a vote, the motion carried 8-0. [The City of Minneapolis was absent from the vote.]

Commissioner Carlson inquired about historical curly-leaf pondweed control locations. Mr. Asche remarked that curly-leaf pondweed treatment locations are included in reports that are on the city's website. Commissioner Carlson commented that the City of Medicine Lake is appreciative of curly-leaf pondweed control.

C. Receive Correspondence from Former Commissioner Regarding Pending Environmental Bills.

Administrator Jester reported the Commission received an email from former Commissioner Stauner who is concerned about the Omnibus Environmental Bill that recently passed the Minnesota House of Representatives and the Minnesota State Senate. There was a lengthy discussion about whether the Commission should submit comments to the Governor before he acts on the bill and whether or not it was appropriate for the Commission to weigh in on political issues such as this. Some commissioners thought the Administrator should write a letter to the

Governor from the Commission while others indicated that the Commission should stay out of partisan politics and noted that individuals could contact politicians on their own without representing the Commission, specifically. There was further discussion on the particular provisions in the omnibus bill and whether or not they directly affected the Commission's work. Commissioners also discussed and considered sending a postcard rather than a letter and keeping the message non-political and simply in support of clean water.

MOTION: Commissioner Carlson moved to direct the Administrator to draft a simple, friendly, non-offensive, letter with history of Commission support of clean water. Commissioner Harwell seconded the motion. Upon a vote, the motion tied 4-4 and thus failed. [In favor: Commissioners Mueller, Harwell Carlson, Crough. Opposed: Commissioners, Scanlon, Byrnes, de Lambert, Fruen. City of Minneapolis was absent from the vote.]

[Commissioner Crough departs.]

MOTION: Commissioner Carlson moved to direct the Administrator to draft a postcard in support of clean water without the Commission logo for use by individuals. There was no second.

D. Consider Approval of CAMP (Citizen Assisted Monitoring Program) Agreement with Met Council

Administrator Jester reported that this is an annual agreement with Met Council to participate in the Citizen Assisted Monitoring Program. She noted that there are 7 BCWMC lakes in the program this year.

MOTION: Commissioner Scanlan moved to approve the CAMP agreement with the Met Council. Commissioner Prom seconded the motion. Upon a vote, the motion passed 7-0. [The cities of Minneapolis and New Hope were absent from the vote.]

6. COMMUNICATIONS

a. Administrator's Report

i. Update on Minor Plan Amendment

Administrator Jester reported that the minor amendment process was underway, including the 30-day comment period for agencies. She noted the public hearing would be held on May 18th at the beginning of the Commission meeting. She also noted the upcoming Westwood Nature Center event with Great River Greening, a cleanup in Bassett Creek Park in Minneapolis on April 22, and two upcoming committee meetings.

b. Chair

Chair de Lambert noted that the Westwood Nature Center event last year was very enjoyable and hoped the Commission could be involved again this year.

c. Commissioners

Commissioner Harwell provided Commissioners with Governor Dayton's phone number so individuals could give comments on the omnibus environmental bill. Commissioner Mueller announced that the there is also a cleanup at Bassett Creek Park in Crystal. Commissioner Carlson asked if the APM/AIS committee would be meeting in time to impact the 2018 budget. Commissioner Prom gave an update on the Agora development and noted that there is still no purchase agreement with Walmart. Engineer Chandler stated that Barr received a resubmittal of the Agora development plans in response to Commission comments. Mr. Ray reminded people that it is severe weather week with sirens planned for 1:45 p.m. and 6:45 p.m.

d. TAC Members - No comments

e. Committees

i. Report on March 27th Budget Committee Meeting – Committee is working through options and will present recommendations at the May Commission meeting

ii. Upcoming Education and Budget Committees Meetings – to be held also on April 24th at 1:00 p.m. and 8:00 a.m., respectively.

f. Legal Counsel

i. No comments.

g. Engineer

Engineer Chandler reported progress on the Schaper Pond project, noting the contractor reinstalled anchors and weights and the baffle is back in place. She noted that plants will be established this spring and that effectiveness monitoring will start next month.

7. **INFORMATION ONLY (Information online only)**
   - **a. CIP Project Updates: Now Available Online http://www.bassettcreekwmo.org/projects**
   - **b. Grant Tracking Summary and Spreadsheet**
   - **c. WMWA January and February Meeting Minutes**
   - **d. Impacts of Salt in the News**
     - **i. Star Tribune Article**
     - **ii. Channel 12 News Clip**
   - **e. WCA Notice of Decision, Golden Valley**
   - **f. WCA Notice of Decision, Plymouth Creek Restoration Project**

8. **ADJOURNMENT –** Chair de Lambert adjourned the meeting at 10:45 a.m.

_____ _____

Signature/Title Date Signature/Title Date

Item 4B.
BCWMC 5-18-17

Bassett Creek Watershed Management Commission General Account
General Fund (Administration) Financial Report **(UNAUDITED)**
Fiscal Year: February 1, 2017 through January 31, 2018
MEETING DATE: May 18, 2017

BEGINNING BALANCE		**12-Apr-17**			**794,358.18**
ADD:					
	General Fund Revenue:				
	Interest less Bank Fees			20.85	
	Permits:				
		TKDA	BCWMC 2017-09	1,700.00	
		INSPEC	BCWMC 2017-10	2,200.00	
		SUSAN/MARK MASON	BCWMC 2017-12	1,700.00	
		MET COUNCIL	BCWMC 2017-11	1,400.00	
		PHILIP CAMPBELL	BCWMC 2017-13	2,200.00	
	Reimbursed Construction Costs			13,990.45	
			Total Revenue and Transfers In		**23,211.30**
DEDUCT:					
	Checks:				
		2963 Barr Engineering	April Engineering	35,234.26	
		2964 HDR Engineering Inc	Website Services	525.99	
		2965 Kennedy & Graven	March Legal	2,547.66	
		2966 Keystone Waters LLC	Apr Admin/Mtg Materials	4,238.24	
		2967 Lawn Chair Gardener	Newsletter/Social Media	1,004.94	
		2968 Triple D Expresso	May Meeting	103.98	
		2969 Wenck Associates	Outlet Monitor/Lake Mor	4,514.38	
		2970 Meto Conservation Dist	Childrens Water Festival	350.00	
		2971 MMKR	Audit	6,400.00	
		2972 PLM Lake & Land Mana	Curly Leaf Treatment	19,350.45	
			Total Checks/Deductions		**74,269.90**
	Outstanding from previous month:				
		2953 Lawn Chair Gardener	Newsletter/Social Media	562.47	
		2958 Hamline University	2017 Membership	3,500.00	
ENDING BALANCE		**10-May-17**			**743,299.58**

Bassett Creek Watershed Management Commission General Account
General Fund (Administration) Financial Report **(UNAUDITED)**
Fiscal Year: February 1, 2017 through January 31, 2018
MEETING DATE: May 18, 2017

	2017 / 2018 BUDGET	CURRENT MONTH	YTD 2017 / 2018	BALANCE
OTHER GENERAL FUND REVENUE				
ASSESSEMENTS TO CITIES-PREPAID			0.00	
ASSESSEMENTS TO CITIES	500,000	0.00	500,001.00	(1.00)
PROJECT REVIEW FEES	60,000	9,200.00	24,800.00	35,200.00
WOMP REIMBURSEMENT	5,000	0.00	4,500.00	500.00
MET COUNCIL REIMBURSEMENTS-LRT PROJECTS	7,000	0.00	6,933.59	66.41
MET COUNCIL - METRO BLOOMS	0	0.00	17,272.51	(17,272.51)
TRANSFERS FROM LONG TERM FUND & CIP	38,072	0.00	0.00	38,072.00
REVENUE TOTAL	**610,072**	**9,200.00**	**553,507.10**	**56,564.90**
EXPENDITURES				
ENGINEERING & MONITORING				
TECHNICAL SERVICES	125,000	11,692.50	37,375.50	87,624.50
DEV/PROJECT REVIEWS	65,000	5,587.86	24,533.04	40,466.96
NON-FEE/PRELIM REVIEWS	15,000	1,537.77	4,822.71	10,177.29
COMMISSION AND TAC MEETINGS	14,000	918.00	4,024.00	9,976.00
SURVEYS & STUDIES	20,000	0.00	0.00	20,000.00
WATER QUALITY/MONITORING	74,300	3,376.67	15,463.25	58,836.75
WATER QUANTITY	11,500	875.11	2,178.19	9,321.81
WATERSHED INSPECTIONS -EROSION CONTROL	1,000	0.00	0.00	1,000.00
ANNUAL FLOOD CONTROL INSPECTIONS	12,000	0.00	0.00	12,000.00
REVIEW MUNICIPAL PLANS	8,000	0.00	0.00	8,000.00
WOMP	15,500	1,674.98	3,791.78	11,708.22
XP-SWMM MODEL UPDATES/REVIEWS	10,000	0.00	0.00	10,000.00
APM / AIS WORK	35,000	19,350.45	19,350.45	15,649.55
ENGINEERING & MONITORING TOTAL	**406,300**	**45,013.34**	**111,538.92**	**294,761.08**
ADMINISTRATION				
ADMINISTRATOR	67,200	3,885.00	16,405.00	50,795.00
LEGAL COSTS	18,500	2,487.96	5,552.56	12,947.44
AUDIT, INSURANCE & BONDING	15,500	6,400.00	9,500.00	6,000.00
FINANCIAL MANAGEMENT	3,200	0.00	40.76	3,159.24
MEETING EXPENSES	2,000	103.98	415.92	1,584.08
ADMINISTRATIVE SERVICES	18,000	1,358.18	2,797.89	15,202.11
ADMINISTRATION TOTAL	**124,400**	**14,235.12**	**34,712.13**	**89,687.87**
OUTREACH & EDUCATION				
PUBLICATIONS/ANNUAL REPORT	2,500	0.00	0.00	2,500.00
WEBSITE	4,400	525.99	525.99	3,874.01
PUBLIC COMMUNICATIONS	2,500	0.00	0.00	2,500.00
EDUCATION AND PUBLIC OUTREACH	20,000	0.00	10,207.29	9,792.71
WATERSHED EDUCATION PARTNERSHIPS	15,500	350.00	3,850.00	11,650.00
OUTREACH & EDUCATION TOTAL	**44,900**	**875.99**	**14,583.28**	**30,316.72**
MAINTENANCE FUNDS				
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
MAINTENANCE FUNDS TOTAL	**50,000**	**0.00**	**0.00**	**50,000.00**
TMDL WORK				
TMDL IMPLEMENTATION REPORTING	20,000	155.00	542.50	19,457.50
TMDL WORK TOTAL	**20,000**	**155.00**	**542.50**	**19,457.50**
TOTAL EXPENSES	**645,600**	**60,279.45**	**161,376.83**	**484,223.17**

BCWMC Construction Account
Fiscal Year: February 1, 2017 through January 31, 2018 **(UNAUDITED)**
May 2017 Financial Report

Cash Balance 04/12/2017				
Cash			1,374,729.55	
	Total Cash			1,374,729.55
	Ally Bk Midvale Utah C/D (9/25/2017 1.25%)		248,000.00	
	Capital One Bk-McLean VA C/D (9/25/2017 1.15%)		248,000.00	
	Capital One Bk-Glen Allen VA C/D (9/25/2017 1.15%)		248,000.00	
	Key Bk Natl Assn Ohio C/D (10/02/2017 1.15%)		248,000.00	
	Total Investments			992,000.00
	Total Cash & Investments			2,366,729.55
Add:				
	Interest Revenue (Bank Charges)		63.66	
	Total Revenue			63.66
Less:				
	CIP Projects Levied - Current Expenses - TABLE A		(1,622.70)	
	Proposed & Future CIP Projects to Be Levied - Current Expenses - TABLE B		(6,301.25)	
	Total Current Expenses			(7,923.95)
	Total Cash & Investments On Hand	**04/12/17**		**2,358,869.26**
	Total Cash & Investments On Hand	2,358,869.26		
	CIP Projects Levied - Budget Remaining - **TABLE A**	(4,493,368.14)		
	Closed Projects Remaining Balance	**(2,134,498.88)**		
	2012 - 2016 Anticipated Tax Levy Revenue - **TABLE C**	9,476.76		
	2017 Anticipated Tax Levy Revenue - TABLE C	1,303,600.00		
	Anticipated Closed Project Balance	**(821,422.12)**		
Proposed & Future CIP Project Amount to be Levied - **TABLE B**		0.00		

TABLE A - CIP PROJECTS LEVIED

			Approved Budget	Current Expenses	2017 YTD Expenses	**INCEPTION** To Date Expenses	Remaining Budget	Grant Funds Received
Lakeview Park Pond (ML-8) (2013)			196,000	0.00	0.00	11,589.50	184,410.50	
Four Seasons Mall Area Water Quality Proj (NL-2)			990,000	0.00	1,553.00	143,404.84	846,595.16	
2014								
Schaper Pond Enhance Feasibility/Project (SL-1)(SL-3)			612,000	1,243.00	2,326.50	305,589.95	306,410.05	
Briarwood / Dawnview Nature Area (BC-7)			250,000	0.00	0.00	250,000.00	0.00	
Twin Lake Alum Treatment Project (TW-2)			163,000	0.00	0.00	91,037.82	71,962.18	
2015								
Main Stem 10th to Duluth (CR2015)			1,503,000	0.00	0.00	946,447.15	556,552.85	
2016								
Honeywell Pond Expansion (BC-4)[1]			810,930	0.00	0.00	25,307.00	785,623.00	
Northwood Lake Pond (NL-1)[2]		822,140						
Budget Amendment		611,600	1,433,740	130.00	416.00	1,438,689.98	(4,949.98)	470,000.00
2017								
Main Stem Cedar Lk Rd-Dupont (2017CR-M)	2017 Levy	580,930	863,573	0.00	196.00	114,757.79	748,815.21	
	2018 Levy	282,643						
Plymouth Creek Restoration (CR-P)	2017 Levy	400,000	1,064,472	249.70	918.70	66,522.83	997,949.17	
	2018 Levy	664,472						
			7,886,715	1,622.70	5,410.20	3,393,346.86	4,493,368.14	

TABLE B - PROPOSED & FUTURE CIP PROJECTS TO BE LEVIED

	Approved Budget - To Be Levied	Current Expenses	2017 YTD Expenses	**INCEPTION** To Date Expenses	Remaining Budget
2018					
Bassett Creek Park & Winnetka Ponds Dredging (BCP-2)		6,301.25	23,375.52	54,694.57	(54,694.57)
2018 Project Totals	0	6,301.25	23,375.52	54,694.57	(54,694.57)
2019					
Bryn Mawr Meadows (BC-5)	0	0.00	0.00	5,282.80	(5,282.80)
2019 Project Totals	0	0.00	0.00	5,282.80	(5,282.80)
Total Proposed & Future CIP Projects to be Levied	0	6,301.25	23,375.52	59,977.37	(59,977.37)

BCWMC Construction Account
Fiscal Year: February 1, 2017 through January 31, 2018 **(UNAUDITED)**
May 2017 Financial Report

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
2017 Tax Levy	1,303,600.00		1,303,600.00	0.00			1,303,600.00	1,303,600.00
2016 Tax Levy	1,222,000.00	(6,075.91)	1,215,924.09	0.00		1,210,956.46	4,967.63	1,222,000.00
2015 Tax Levy	1,000,000.00	1,935.37	1,001,935.37	0.00		1,000,037.76	1,897.61	1,000,000.00
2014 Tax Levy	895,000.00	(7,436.49)	887,563.51	0.00		886,182.01	1,381.50	895,000.00
2013 Tax Levy	986,000.00	(10,440.29)	975,559.71	0.00		974,717.80	841.91	986,000.00
2012 Tax Levy	762,010.00	(7,488.24)	754,521.76	0.00		754,133.65	388.11	762,010.00
				0.00			**1,313,076.76**	

OTHER PROJECTS:

	Approved Budget	**Current Expenses / (Revenue)**	**2017 YTD Expenses / (Revenue)**	**INCEPTION To Date Expenses / (Revenue)**	**Remaining Budget**
TMDL Studies					
TMDL Studies	135,000.00	0.00	0.00	107,765.15	27,234.85
TOTAL TMDL Studies	135,000.00	0.00	0.00	107,765.15	27,234.85
Flood Control Long-Term					
Flood Control Long-Term Maintenance	673,373.00	6,066.50	11,707.00	317,537.41	
Less: State of MN - DNR Grants				(83,700.00)	
	673,373.00	6,066.50	11,707.00	233,837.41	439,535.59
Annual Flood Control Projects:					
Flood Control Emergency Maintenance	500,000.00	0.00	0.00	0.00	500,000.00
Annual Water Quality					
Channel Maintenance Fund	350,000.00	0.00	35,915.00	157,157.95	192,842.05
Total Other Projects	1,658,373.00	6,066.50	47,622.00	498,760.51	1,159,612.49

Cash Balance 04/12/2017		**1,063,177.94**
Add:		
Transfer from GF		0.00
Less:		
Current (Expenses)/Revenue		(6,066.50)
Ending Cash Balance	**04/12/17**	**1,057,111.44**
Additional Capital Needed		(102,501)

Bassett Creek Construction Project Details 5/10/2017

CIP Projects Levied

	Total CIP Projects Levied	2013 Lakeview Park Pond (ML-8)	2013 Four Seasons Mall Area Water Quality Project (NL-2)	2014 Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	2014 Briarwood / Dawnview Water Quality Improve Proj (BC-7)	2014 Twin Lake In-Lake Alum Treatment Project (TW-2)	2015 Main Stem - 10th Ave to Duluth (CR2015)	2016 Honeywell Pond Expansion (BC-4)	2016 Northwood Lake Pond (NL-1)	2017 Main Stem-Cedar Lk Rd to Dupont (2017 CR-M)	2017 Plymouth Creek Restoration (2017 CR-P)
Original Budget	**7,275,115**	**196,000**	**990,000**	**612,000**	**250,000**	**163,000**	**1,503,000**	**810,930**	**822,140**	**863,573**	**1,064,472**
Added to Budget	**611,600**								611,600		
Expenditures:											
Feb 2004 - Jan 2014	**269,971.68**	11,589.50	101,635.49	89,594.90	19,598.09	23,793.65	11,179.35	7,461.95	5,118.75		
Feb 2015-Jan 2016	**313,510.98**		25,866.35			432.00	93,862.65	6,442.53	94,823.44	42,671.88	49,412.13
Feb 2016-Jan 2017	**2,804,454.00**		14,350.00	213,668.55	230,401.91	66,812.17	841,405.15	11,402.52	1,338,331.79	71,889.91	16,192.00
Feb 2017-Jan 2018	**5,410.20**		1,553.00	2,326.50					416.00	196.00	918.70
Total Expenditures:	**3,393,346.86**	**11,589.50**	**143,404.84**	**305,589.95**	**250,000.00**	**91,037.82**	**946,447.15**	**25,307.00**	**1,438,689.98**	**114,757.79**	**66,522.83**
Project Balance	**4,493,368.14**	**184,410.50**	**846,595.16**	**306,410.05**		**71,962.18**	**556,552.85**	**785,623.00**	**(4,949.98)**	**748,815.21**	**997,949.17**

	Total CIP Projects Levied	2013 Lakeview Park Pond (ML-8)	2013 Four Seasons Mall Area Water Quality Project (NL-2)	2014 Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	2014 Briarwood / Dawnview Water Quality Improve Proj (BC-7)	2014 Twin Lake In-Lake Alum Treatment Project (TW-2)	2015 Main Stem - 10th Ave to Duluth (CR2015)	2016 Honeywell Pond Expansion (BC-4)	2016 Northwood Lake Pond (NL-1)	2017 Main Stem-Cedar Lk Rd to Dupont (2017 CR-M)	2017 Plymouth Creek Restoration (2017 CR-P)
Project Totals By Vendor											
Barr Engineering	**382,544.23**	6,338.95	44,573.54	77,578.00	13,089.74	15,712.00	15,825.00	13,157.98	17,966.00	111,939.39	66,363.63
Kennedy & Graven	**11,961.70**	1,200.55	2,471.95	993.40	1,038.35	1,058.65	2,223.75	796.00	1,701.45	318.40	159.20
City of Golden Valley	**1,414,281.03**			213,668.55	230,401.91	66,812.17	903,398.40				
City of Minneapolis											
City of Plymouth	**75,759.35**		75,759.35								
City of New Hope	**1,413,267.55**								1,413,267.55		
City of Crystal											
MPCA	**2,500.00**									2,500.00	
Blue Water Science	**3,900.00**					3,900.00					
Misc											
2.5% Admin Transfer	**83,378.02**	4,050.00	20,600.00	13,350.00	5,470.00	3,555.00	25,000.00	11,353.02			
Transfer to General Fun											
Total Expenditures	**3,387,591.88**	**11,589.50**	**143,404.84**	**305,589.95**	**250,000.00**	**91,037.82**	**946,447.15**	**25,307.00**	**1,432,935.00**	**114,757.79**	**66,522.83**

	Total CIP Projects Levied	2013 Lakeview Park Pond (ML-8)	2013 Four Seasons Mall Area Water Quality Project (NL-2)	2014 Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	2014 Briarwood / Dawnview Water Quality Improve Proj (BC-7)	2014 Twin Lake In-Lake Alum Treatment Project (TW-2)	2015 Main Stem - 10th Ave to Duluth (CR2015)	2016 Honeywell Pond Expansion (BC-4)	2016 Northwood Lake Pond (NL-1)	2017 Main Stem-Cedar Lk Rd to Dupont (2017 CR-M)	2017 Plymouth Creek Restoration (2017 CR-P)
Levy/Grant Details											
2010 -2014 Levies	**1,881,000**	162,000	824,000	534,000	218,800	142,200					
2014/2015 Levy	**1,000,000**						1,000,000				
2015-2016 Levy	**1,222,000**							810,930	411,070		
2016-2017 Levy	**1,303,600**								322,670	580,930	400,000
2017-2018 Levy											
Construction Fund Balance	**703,000**	34,000	166,000				503,000				
BWSR Grant- BCWMO	**470,000**								470,000		
DNR Grants-LT Maint											
Total Levy/Grants	**6,579,600**	196,000	990,000	534,000	218,800	142,200	1,503,000	810,930	1,203,740	580,930	400,000
BWSR Grants Received									200,000		
MPCA Grant-CWP (Total $300,000)									75,000.00		
									19,932.80		

Bassett Creek Construction Project Details

	Proposed & Future CIP Projects (to be Levied)				Other Projects					
	Total Proposed & Future CIP Projects (to be Levied)	2018 Bassett Cr Pk & Winnetka Ponds Dredging (2018 BCP-2)	2019 Bryn Mawr Meadows		Total Other Projects	TMDL Studies	Flood Control Emergency Maint	Flood Control Long-Term Maint	Channel Maint	Totals - All Projects
Original Budget					**1,278,373.00**	**105,000.00**	**500,000.00**	**748,373.00**	**175,000.00**	**8,553,488.00**
Added to Budget					**(250,000.00)**			(250,000.00)		**361,600.00**
				DNR Grant	**83,700.00**			83,700.00		83,700.00
				From GF	**380,000.00**	30,000.00		175,000.00	175,000.00	380,000.00
Expenditures:										
Feb 2004 - Jan 2014	**5,282.80**		5,282.80		**245,426.23**	107,765.15		43,195.48	94,465.60	520,680.71
Feb 2015-Jan 2016					**137,357.54**			110,580.19	26,777.35	450,868.52
Feb 2016-Jan 2017	**31,319.05**	31,319.05			**152,070.74**			152,070.74		2,987,843.79
Feb 2017-Jan 2018	**23,375.52**	23,375.52			**47,606.00**			11,691.00	35,915.00	76,391.72
Total Expenditures:	**59,977.37**	**54,694.57**	**5,282.80**		**582,460.51**	**107,765.15**		**317,537.41**	**157,157.95**	**4,035,784.74**
Project Balance	**(59,977.37)**	**(54,694.57)**	**(5,282.80)**		**1,159,612.49**	**27,234.85**	**500,000.00**	**439,535.59**	**192,842.05**	**5,593,003.26**

	Total Proposed & Future CIP Projects (to be Levied)	2018 Bassett Cr Pk & Winnetka Ponds Dredging (2018 BCP-2)	2019 Bryn Mawr Meadows	Total Other Projects	TMDL Studies	Flood Control Emergency Maint	Flood Control Long-Term Maint	Channel Maint	Totals - All Projects
Project Totals By Vendor									
Barr Engineering	**59,977.37**	54,694.57	5,282.80	**384,734.50**	104,888.70		279,845.80		827,256.10
Kennedy & Graven				**2,648.25**	1,164.30		1,099.35	384.60	14,609.95
City of Golden Valley				**55,287.50**				55,287.50	1,469,568.53
City of Minneapolis				**38,823.35**				38,823.35	38,823.35
City of Plymouth				**26,747.50**				26,747.50	102,506.85
City of New Hope									1,413,267.55
City of Crystal									
MPCA									2,500.00
Blue Water Science									3,900.00
Misc				**5,704.41**	1,712.15		3,992.26		5,704.41
2.5% Admin Transfer									83,378.02
Transfer to General Fun				**32,600.00**			32,600.00		32,600.00
Total Expenditures	**59,977.37**	**54,694.57**	**5,282.80**	**546,545.51**	**107,765.15**		**317,537.41**	**121,242.95**	**3,994,114.76**

	Total Proposed & Future CIP Projects (to be Levied)	2018 Bassett Cr Pk & Winnetka Ponds Dredging (2018 BCP-2)	2019 Bryn Mawr Meadows		Total Other Projects	TMDL Studies	Flood Control Emergency Maint	Flood Control Long-Term Maint	Channel Maint	Totals - All Projects
Levy/Grant Details										
2010 -2014 Levies				2010-2013		30,000		100,000	100,000	1,881,000
2014/2015 Levy				2014/2015	**50,000.00**			25,000	25,000	1,050,000
2015-2016 Levy				2015/2016						
2016-2017 Levy				2016/2017						
2017-2018 Levy				2017/2018						
Construction Fund Balance				2015/2016	**50,000.00**			25,000	25,000	753,000
BWSR Grant- BCWMO				2016/2017	**50,000.00**			25,000	25,000	520,000
DNR Grants-LT Maint				DNR Grant	**83,700.00**			83,700		
Total Levy/Grants					**463,700.00**	30,000		258,700	175,000	4,204,000

Item 4D.
BCWMC 5-18-17

resourceful. naturally.
engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item4D – BNSF Bridge 1.7 (L.S. 202) – Minneapolis, MN
BCWMC May 18, 2017 Meeting Agenda
Date: May 10, 2017
Project: 23270051 2017 2116

4D BNSF Bridge 1.7 (L.S. 202) – Minneapolis, MN BCWMC 2017-09

Summary:

Proposed Work: Removal of existing bridge and fill embankment above the existing culverts

Basis for Commission Review: Work in the floodplain

Impervious Surface Area: No change

Recommendation: Conditional Approval

General Background & Comments

This project was originally submitted to, and approved by the Commission in 1995 but never completed. The proposed project essentially includes completing the 1995 project consisting of the removal of an existing BNSF bridge and filling the embankment above the existing culverts for Bassett Creek. The project is located in the Bassett Creek Main Stem subwatershed. The proposed project results in 0.2 acres of disturbance and no change in impervious surface. The applicant has coordinated with the Commission Engineer to provide an acceptable design for completion of the 1995 project within the framework of the current BCWMC Requirements.

Floodplain

The current floodplain elevation at the Theodore Wirth Park inundation area is 826.0 feet NGVD29 (826.2 feet NAVD88). The proposed, but not yet adopted, XPSWMM (Atlas 14 precipitation) floodplain elevation at the Theodore Wirth Park inundation area is 226.5 feet NGVD29 (826.5 feet NAVD88). The plans indicate that a floodplain elevation of 826.5 feet NAVD88 was assumed by the applicant to simplify calculations, as this elevation corresponds to the top of the ballast. Assuming a floodplain elevation of 826.5 feet NAVD88, the applicant indicated that there will be a cut of 99 cubic yards in the floodplain and a fill of 213 cubic yards in the floodplain for a permanent net fill of 114 cubic yards of fill in the floodplain.

This project was previously approved in 1995 and evaluations of the hydraulics of the Bassett Creek system in this area indicate that the area is controlled by the various conveyances under and across Hwy. 55. The proposed completion of the 1995 project will not impact floodplain elevations, therefore additional floodplain mitigation is not required.

Wetlands

The project appears to involve work adjacent to wetlands. The City of Minneapolis is the LGU for administering the Minnesota Wetland Conservation Act of 1991.

Stormwater Management

The drainage patterns under existing and proposed conditions will remain the same; this project will not result in changes to land use or topography.

Water Quality Management

The project does not trigger water quality review or treatment to MIDS performance goals.

Erosion and Sediment Control

Since the project involves more than 200 cubic yards of fill, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include sediment control logs. Permanent erosion and sediment control features include seeding and erosion control blankets.

Recommendation

Conditional approval based on the following comments:

1. Vehicle tracking of sediment from the construction site must be minimized by installing rock construction entrances, rumble strips (mud mats), wood chips, wash racks, or equivalent systems at each site access. Rock construction entrances must have a minimum height of 6 inches above the adjacent roadway and a wash-off berm with a minimum height of 2 feet above the adjacent roadway and with maximum side slopes of 4:1. An allowable alternative to the wash-off berm is to install mud mats across the entire width of the rock construction entrance, over at least 50% of the length of the rock construction entrance, and centrally placed within the total length of the rock construction entrance.
2. The following erosion and sediment control comments must be added to the plans:
    a. Require that soils tracked from the site be removed from all paved surfaces within 24 hours of discovery throughout the duration of construction.
    b. Specify that all exposed soil areas must be stabilized as soon as possible, but in no case later than 14 days after the construction activity has temporarily or permanently ceased or within 7 days if the project is within 1 mile of a special or impaired water.
    c. Provide a temporary vegetative cover consisting of a suitable, fast-growing, dense grass-seed mix spread at a minimum at the MnDOT-specified 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.
3. Revised Drawings (paper copy and final electronic files) must be provided to the BCWMC Engineer for final review and approval.

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Imagery Source: Aerial Express (2009)

- Project Location
- Bassett Creek
- WMC Boundary
- Major Subwatershed
- Municipality
- Stream

N

Feet

0 300 600

Bassett Creek Watershed Management Commission

LOCATION MAP
APPLICATION 2017-09
BNSF Bridge 1.7 (L.S. 202)
Minneapolis, MN

Item 4E.
BCWMC 5-18-17

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engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 4E – Golden Valley-Minneapolis Interceptor Rehab – Golden Valley, MN
BCWMC May 18, 2017 Meeting Agenda
Date: May 10, 2017
Project: 23270051 2017 2118

4E Golden Valley-Minneapolis Interceptor Rehab – Golden Valley and Minneapolis, MN
BCWMC 2017-11

Summary:

Proposed Work: Repairs to the existing sanitary interceptor sewer

Basis for Commission Review: Work in the floodplain

Impervious Surface Area: No change

Recommendation: Conditional Approval

General Background & Comments

The proposed project involves repairs to the existing sanitary interceptor sewer including: temporary pumping, cast in place pipe (CIPP) lining, rehabilitation of existing maintenance holes (MH), abandonment of three existing maintenance holes (MH), and restoration of all disturbed areas. The project is located in the Bassett Creek Main Stem subwatershed and results in 6.5 acres of disturbance (grading). There may be some minor pavement patching along the project access paths, but there will be no new or fully reconstructed impervious surface.

Floodplain

The current floodplain elevation of Bassett Creek at Site 1 varies from 815.1 feet to 814.6 feet NGVD29 (815.3 feet to 814.8 feet NAVD88) from the upstream railroad crossing to the downstream railroad crossing, respectively. The updated, but not yet adopted, XPSWMM (Atlas 14 precipitation) floodplain elevation at Site 1 varies from 814.2 feet to 813.5 feet NGVD29 (814.4 feet to 813.7 feet NAVD88) from the upstream railroad crossing to the downstream railroad crossing, respectively.

The current floodplain elevation of Bassett Creek at Site 2 varies from 826 feet to 821.5 feet NGVD29 (826.2 feet to 821.7 feet NAVD88) from upstream of Hwy. 55 to downstream of Hwy. 55, respectively. The updated, but not yet adopted, XPSWMM (Atlas 14 precipitation) floodplain elevation at Site 2 varies from 826.3 feet to 821.5 feet NGVD29 (826.5 feet to 821.7 feet NAVD88) upstream of Hwy. 55 to downstream of Hwy. 55, respectively.

Based on the plans and communications with the applicant, there will be no permanent net fill placed within the Bassett Creek floodplain. Temporary stockpiles may be placed in the floodplain during excavation.

Wetlands

The project appears to involve work adjacent to wetlands. For portions of the project in Minneapolis, the City of Minneapolis is the LGU for administering the Minnesota Wetland Conservation Act of 1991. For portions of the project in Golden Valley, the City of Golden Valley is the LGU for administering the Minnesota Wetland Conservation Act of 1991.

Stormwater Management

The drainage patterns under existing and proposed conditions will remain the same; this project will not result in changes to land use or topography.

Water Quality Management

The project does not result in any new or fully reconstructed impervious surface and therefore does not trigger water quality review or treatment to MIDS performance goals.

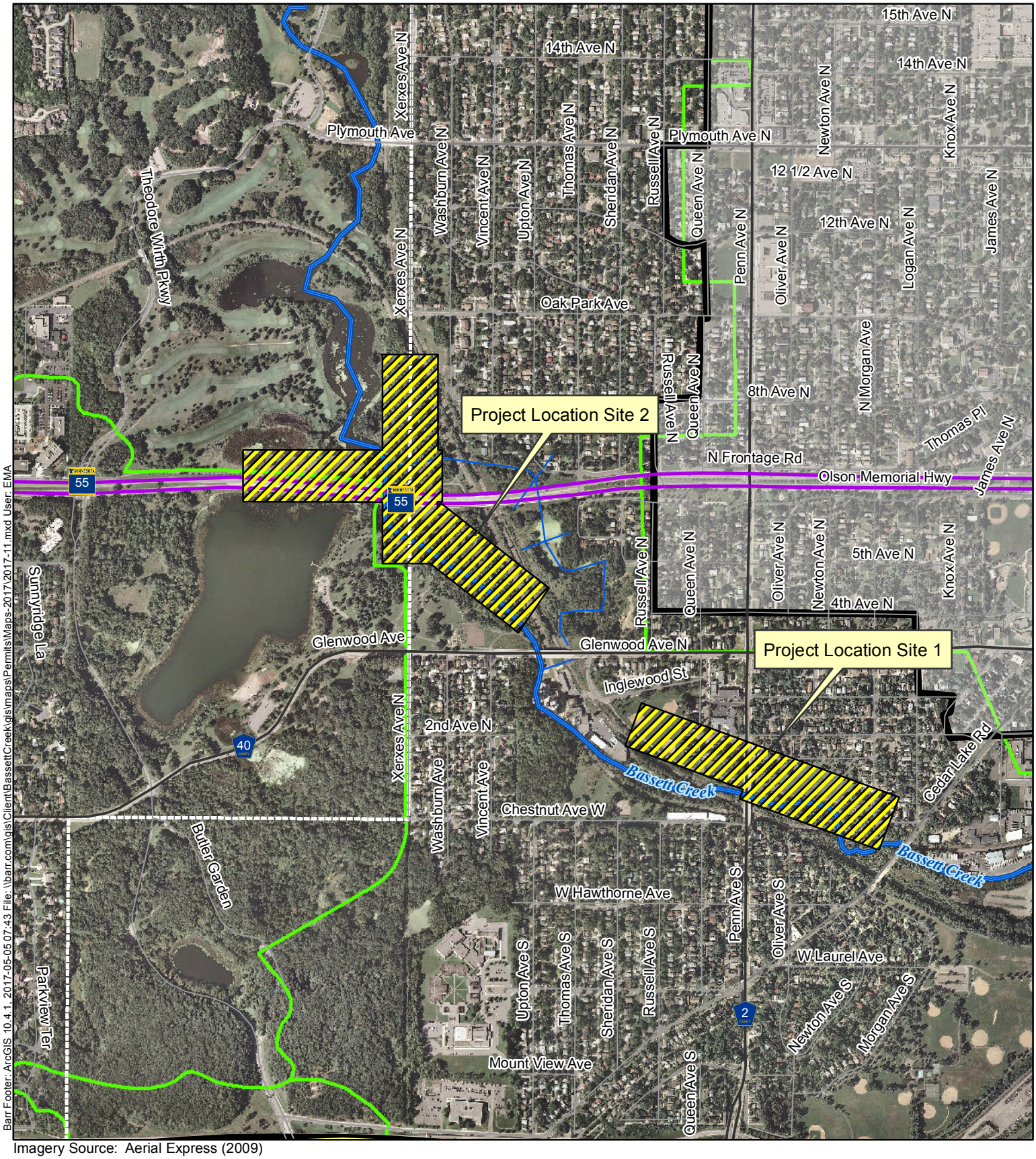
Erosion and Sediment Control

Since the area to be disturbed (graded) for the project is greater than 10,000 square feet, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include silt fence, storm drain inlet protection, and rock construction entrances. Permanent erosion and sediment control features include seeding and erosion control blankets.

Recommendation

Conditional approval based on the following comments:

1. The storm drain inlet protection, sediment control logs, and erosion control blanket locations must be shown on the erosion and sediment control plan.
2. Rock construction entrances must be revised to include a wash-off berm with a minimum height of 2 feet above the adjacent roadway and with maximum side slopes of 4:1.
3. Revised Drawings (paper copy and final electronic files) must be provided to the BCWMC Engineer for final review and approval.



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Imagery Source: Aerial Express (2009)

- Project Location
- Bassett Creek
- WMC Boundary
- Major Subwatershed
- Municipality
- Stream

Feet

0 1,000 2,000

LOCATION MAP
APPLICATION 2017-11
GV/MPLS Interceptor Rehabilitation
Golden Valley & Minneapolis, MN

Item 4F.
BCWMC 5-18-17

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engineering and environmental consultants

BARR

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 4F – 10th Avenue North Culvert Replacement – Golden Valley, MN
BCWMC May 18, 2017 Meeting Agenda
Date: May 10, 2017
Project: 23270051 2017 2119

4F 10th Avenue North Culvert Replacement – Golden Valley, MN BCWMC 2017-12

Summary:

Proposed Work: Removal of three existing corrugated metal pipe culverts and construction of two reinforced concrete box culverts (8' x 6')

Basis for Commission Review: Work in the floodplain, creek crossing

Impervious Surface Area: No change

Recommendation: Conditional Approval

General Background & Comments

The proposed project includes the removal of three existing corrugated steel pipes, installation of two reinforced concrete box culverts (8' x 6'), storm sewer replacement, reconstruction of the bituminous concrete roadway, reconstruction of concrete sidewalk, and site grading. The project is located in the Bassett Creek Main Stem subwatershed. The project results in 1.25 acres of disturbance (grading), 0.53 acre of reconstructed impervious, and no new impervious surface.

Floodplain

The current floodplain elevation of Bassett Creek at the 10th Avenue North culverts is 882.9.0 feet NGVD29 (883.1 ft. NAVD88) The updated, but not yet adopted, Phase 2 XPSWMM (Atlas 14 precipitation) floodplain elevation at the 10th Avenue North culverts varies from 884.8 feet NGVD29 (885.0 ft. NAVD88) to 883.9 feet NGVD29 (884.1 ft. NAVD88) from upstream of 10th Avenue North to downstream of 10th Avenue North, respectively.

The Commission provided the Phase 1 XP-SWMM model to the City for use in the evaluation of the 10th Avenue culvert crossing, as the Phase 2 XP-SWMM model was still in the process of being developed and calibrated. The Phase 1 XP-SWMM model was provided to demonstrate relative change in the (TP-40) 100-year flood elevation (e.g. no rise in the proposed conditions upstream and downstream of the proposed project).

The models provided by the applicant indicates that the proposed 100-year flood elevation immediately upstream of the 10th Avenue culvert crossing is expected to decrease by 0.1 feet, and there are no

expected increases in the 100-year flood elevation in the channel section downstream of the 10th Avenue culvert crossing. This meets Policy 38 in the 2015-2025 BCWMC Watershed Management Plan (Plan) that requires projects to maintain no increase in flood level at any point along the trunk system with "no increase in flood level" to be managed to a precision of 0.00 feet. This precision is based on directives from the Minnesota Department of Natural Resources (MnDNR) pertaining to no-rise certificates in Federal Emergency Management Agency (FEMA) floodplain "AE" zones (zones where there are published flood elevations).

Wetlands

The project appears to involve work adjacent to wetlands. The City of Golden Valley is the LGU for administering the Minnesota Wetland Conservation Act of 1991.

Stormwater Management

The drainage patterns under existing and proposed conditions will remain the same; this project will not result in changes to land use or topography.

Water Quality Management

The project results in 0.53 acre of reconstructed impervious surface and therefore does not trigger water quality review or treatment to MIDS performance goals.

Erosion and Sediment Control

Since the area to be graded for the project is greater than 10,000 square feet, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include silt fence, redundant rock berms, storm drain inlet protection, rock construction entrances, and rapid stabilization. Permanent erosion and sediment control features include seeding and erosion control blanket.

Recommendation

Conditional approval based on the following comments:

1. Rock construction entrances must include a wash-off berm with a minimum height of 2 feet above the adjacent roadway and with maximum side slopes of 4:1.
2. Revised Drawings (paper copy and final electronic files) must be provided to the BCWMC Engineer for final review and approval.

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Imagery Source: Aerial Express (2009)

- Project Location
- Bassett Creek
- WMC Boundary
- Major Subwatershed
- Municipality
- Stream

N

Feet

0 300 600

Bassett Creek Watershed Management Commission

LOCATION MAP
APPLICATION 2017-12
10th Ave N Culvert Replacement
Golden Valley, MN

Item 4G.
BCWMC 5-18-17
Full report online

Bassett Creek Watershed Management Commission

2016 Annual Report

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

May 2017

Bassett Creek Watershed Management Commission
2016 Annual Report

Table of Contents

List of Appendices

Cover photo: Northwood Lake, New Hope

Bassett Creek
Watershed Management Commission
Executive Summary: 2016 Annual Report

2016 Activities & Achievements

The BCWMC worked on the following activities in 2016 in order to fulfill its mission:
Stewardship of Water Resources to Protect and Enhance Our Communities.

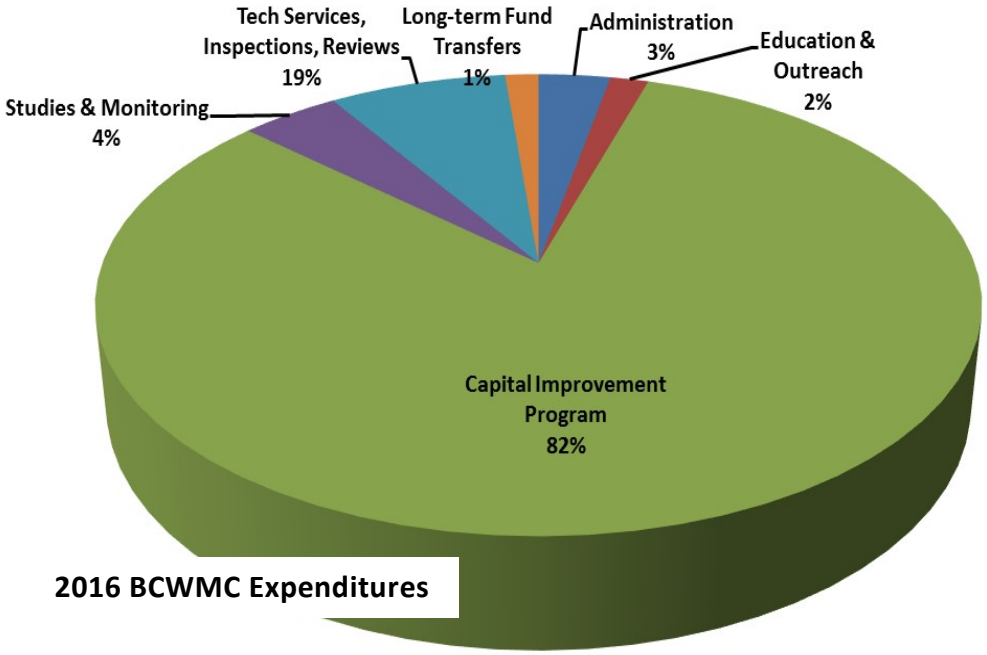
Major Projects (Capital Improvement Program)

The BCWMC continued to implement its capital improvements program. Information on all BCWMC projects (completed, on-going and proposed) can be found at www.bassettcreekwmo.org.

- NEARLY COMPLETE: The Northwood Lake Improvement Project in New Hope's Northwood Park was constructed in 2016 with finishing touches to be completed in 2017. The project includes an underground 160,000-gallon tank that will capture stormwater runoff so that it can be used to irrigate ballfields. Raingardens and a storm water pond were also constructed. The project was partially funded with city funds, a Clean Water Fund grant and a Clean Water Partnership Grant.
- NEARLY COMPLETE: The Honeywell Pond Expansion Project in Golden Valley was constructed to improve the pollution removal capacity of the pond, and was constructed in conjunction with the the Douglas Drive reconstruction project. The project includes a pumping station so storm water can be used for irrigation.
- COMPLETED PHASE I: The Main Stem Restoration Project 10th Ave. to Duluth St. in Golden Valley was largely completed in 2016 with stream bank shaping, placement of field stone rock and 12-inch bio-logs, and repair of storm sewer outlets. The establishment of vegetation along the streambanks will be completed in 2017 during phase II of the project.
- UNDERWAY: Feasibility studies were completed for the Plymouth Creek Restoration Project (Plymouth) and the Main Stem Erosion Repair Project (Minneapolis). These projects will be designed in 2017. A feasibility study for the Bassett Creek Park Pond Project got underway in 2016.

Budget

In FY 2016, the BCWMC spent approximately $628,000 on activities and programs and $2.8 million on capital projects. BCWMC income included $490,300 from member cities, $313,270 in State grants, $50,000 in reimbursements, and $53,400 in development review fees. Another $1.222 million was collected through a Hennepin County tax levy on watershed residents for the capital projects. For an itemization or more information on the BCWMC's 2016 expenditures, see the Year End Financial Report in Appendix A or the financial audit online.



2016 BCWMC Expenditures

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

Water Monitoring Activities

The BCWMC assessed the health of its lakes and streams through various monitoring activities including:

- Assessed the health of Northwood, Crane, and Medicine Lakes by collecting data on water quality, plankton, and aquatic plants (Appendix B)
- Participated in Metropolitan Council Environmental Services' Citizen-Assisted Monitoring Program (CAMP) for seven lakes
- Performed continuous stream monitoring on Bassett Creek, in cooperation with the Metropolitan Council Environmental Services

Find information about all the major BCWMC lakes & streams at:
www.bassetcreekwmo.org

Education & Outreach Activities

- Partnered with Metro Blooms on the Harrison Neighborhood Project to engage residents, train youth, and install water quality practices in Minneapolis' Near North neighborhood. Received $100,000 grant from the Met Council for this project which will continue into 2018.
- Assisted with project by photography and environmental students from Blake School of Minneapolis to learn about and develop virtual for four BCWMC projects. Virtual tours are posted on BCWMC project webpages.
- Participated with the West Metro Water Alliance, a consortium of watershed organizations and other partners that collaborate on education programming including programs in 4th grade classrooms, and development and promotion of the "Pledge to Plant" campaign.
- Provided watershed education to the public at the Plymouth Yard/Garden Expo, the Golden Valley Arts and Music Festival, and the Westwood Nature Center restoration event.
- Provided watershed map, native plant seed packets, and dog waste bag dispensers at watershed education events.
- Provided financial support to Metro Watershed Partners for their "Clean Water MN" media campaign, and the Children's Water Festival.
- Provided funding for Commissioner education for conference registrations.
- Developed and fabricated new educational display materials including banners, bean bag toss, and watershed map.
- Provided funding for the Hennepin County's River Watch - a program for high school students to collect benthic invertebrates to determine stream health.
- Hosted a watershed tour with stops at three project sites plus demonstrations of macroinvertebrate collections and winter maintenance equipment.

Item 5A.
BCWMC 5-18-17
CIP Table Revisions online

Bassett Creek Watershed Management Commission

NOTICE OF PUBLIC HEARING

Proposed Minor Plan Amendment to the

Bassett Creek Watershed Management Commission's

September 2015 Watershed Management Plan

NOTICE IS HEREBY GIVEN that the Bassett Creek Watershed Management Commission (BCWMC) will hold a public hearing during its regular monthly meeting on

Thursday, May 18, 2017 at 8:30 a.m.

at Golden Valley City Hall, 7800 Golden Valley Road, Golden Valley, Minnesota.

Interested persons are invited to attend. The purpose of the public hearing is to answer questions about the proposed minor plan amendment to the BCWMC's *September 2015 Watershed Management Plan* and to hear public testimony and comments of member cities regarding the proposed amendment. The proposed minor plan amendment involves revisions to the Capital Improvement Program (CIP):

- Revising Project ML-8 (originally in the *2004 Watershed Management Plan*) in the City of Golden Valley from the "Lakeview Park Pond Project" that was slated to improve water quality in Medicine Lake, to a flood damage reduction project in the same subwatershed of Medicine Lake. At their meeting in June 2013, the BCWMC received results of detailed analyses indicating that the Lakeview Park Pond Project was not feasible due to potential impacts on homes adjacent to the park. It was recommended that flooding issues adjacent to the park be resolved before water quality projects move forward. The BCWMC is proposing to convert the original Lakeview Park Pond Project to a flood damage reduction project to facilitate the purchase of flood-prone homes in the area and provide space for a water quality improvement project.

- Adding the Mt. Olivet Stream Restoration Project (ML-20) to the CIP. This project in the City of Plymouth will reduce erosion, total suspended solids, and phosphorous loading to Medicine Lake.

- Adding the Jevne Park Stormwater Pond Project (ML-21) to the CIP. This project in the City of Medicine Lake will increase the capacity of an existing pond and wetlands located in Jevne Park to collect and store stormwater runoff during heavy rainfall to improve the water quality of Medicine Lake.

Continued on next page

- Adding the Westwood Lake Water Quality Improvement Project (WST-2) to the CIP. This project in the City of St. Louis Park will be constructed to decrease and improve the quality of stormwater runoff in conjunction with the reconstruction of the Westwood Hills Nature Center building and parking lot.

- Adding the Parkers Lake Drainage Improvement Project (PL-7) to the CIP. This project in the City of Plymouth will reduce erosion, total suspended solids, and phosphorous loading to Parkers Lake.

- Revising and adding to Project BC-2/BC-8, the Sandburg Rd and Louisiana Avenue Water Quality Improvement and Flood Reduction Project to the Medicine Lake Road and Winnetka Avenue Long Term Flood Mitigation Plan Implementation Project (BC-2,3,8,10) in the cities of Golden Valley, Crystal, and New Hope. This new project will address much of the same flooding concerns as the previous project and will implement parts of the recently completed Medicine Lake Road and Winnetka Avenue Long Term Flood Mitigation Plan.

- Removing the Wirth Park Area Water Quality Improvement Project (BC-3) from the CIP. This project in the City of Golden Valley was slated to treat untreated stormwater runoff to reduce phosphorus and sediment pollution. This project was removed from the CIP because much of this area will be treated by practices to be installed by the Metropolitan Council through the construction of the Bottineau Blue Line Light Rail Project.

You can view all proposed changes to Capital Improvement Program (Table 5-3) of the *2015 Watershed Management Plan* and view fact sheet on all proposed additions to the CIP in the "latest news" section of the BCWMC website: http://www.bassettcreekwmo.org/.

A levy of an ad valorem property tax by Hennepin County on property within the Bassett Creek Watershed is the proposed method of payment for the costs of the CIP Projects.

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION

Laura Jester, Administrator

DEPARTMENT OF NATURAL RESOURCES

Item 5Ai.
BCWMC 5-18-17

Minnesota Department of Natural Resources
Ecological and Water Resources Division
Central Region Headquarters
1200 Warner Road, St Paul MN 55106

05/10/2017

Laura Jester, Administrator
Bassett Creek Watershed Management Commission
16145 Hillcrest Lane
Eden Prairie MN 55346

Re: Minor Plan Amendment: Bassett Creek Watershed Management Plan

The DNR appreciates the opportunity to review and comment on the Bassett Creek Watershed Management Commission's Minor Plan Amendment to the Capital Improvement Plan (CIP).

Area Hydrologist, Kate Drewry, has reviewed the revisions to the plan. The Plan Amendment adds several new projects to Bassett Creek's Capital Improvement Plan that are intended to provide flood mitigation and/or water quality improvements. We support these projects in concept, as they appear to be consistent with general DNR goals for healthy watersheds. Feasibility studies and preliminary design details are not yet available, but from the preliminary project descriptions it does not appear that any of these projects would trigger the need for a DNR Public Waters Work Permit. As preliminary designs are being developed and you have questions regarding potential impacts to MN public waters, Kate can be contacted at (651)259- 5753 or Kate.Drewry@state.mn.us .

Thank you for the opportunity to review and comment on the Bassett Creek Watershed Plan - CIP Amendment.

Sincerely,

Jeanne M. Daniels

Jeanne Daniels, District Manager
Jeanne.daniels@state.mn.us
651-259-5784

ec. Liz Harper, EWR
Kate Drewry, EWR
Steve Christopher, BWSR

April 27, 2017

Laura Jester, Administrator
Bassett Creek Watershed Management Commission
c/o 16145 Hillcrest Lane
Eden Prairie MN 55346

RE: Bassett Creek Watershed Management Commission (BCWMC) Minor Plan Amendment
(Metropolitan Council Review File no. 21306-2)

Dear Ms. Jester:

The Metropolitan Council (Council) has completed its review of the proposed BCWMC minor amendment to its 2015 Watershed Management Plan (Plan). The amendment consists of changes to the BCWMC 10-year CIP, and is consistent with Council policies and the 2040 Water Resources Policy Plan.

We appreciate BCWMC's interest in furthering the goals and policies of their Plan. The justifications for projects modified or added to the CIP align well with the Plan's gatekeeper criteria (policy 110) that projects will be considered for inclusion in the CIP if they meet one or more of the following criteria:

- Project is part of the BCWMC trunk system
- Project improves or protects water quality in a priority waterbody
- Project addresses an approved TMDL or watershed restoration and protection strategy (WRAPS)
- Project addresses flooding concern

The proposed changes to project ML-8 need to be reflected in the updated 10-year CIP, even though the project originally appeared in the 2004 Watershed Management Plan. This is a significant change from a water quality project to a flood reduction project.

We also wanted to note the proposal to remove the Wirth Park Area Water Quality Improvement Project (BC-3) from the CIP, because the area will be treated by practices to be installed by the Council during the construction of the Bottineau Blue Line Light Rail Project. We look forward to continuing to work with BCWMC to ensure these water quality practices meet the original intent of the BC-3 project.

Thank you for the opportunity to comment on this plan amendment. If you would like to discuss items addressed in this letter, please contact Emily Resseger at 651-602-1033.

Sincerely,

Sam Paske
Assistant General Manager, MCES, Environmental Quality Assurance Dept.

CC: Steve Christopher, Board of Water and Soil Resources
Katie Rodriguez, Metropolitan Council District 1
Jennifer Munt, Metropolitan Council District 3
Gail Dorfman, Metropolitan Council District 6
Gary L. Cunningham, Metropolitan Council District 7
Freya Thamman and Michael Larson, Metropolitan Council Sector Representatives
Raya Esmaeili, Metropolitan Council Reviews Coordinator
Emily Resseger, Water Resources Section

From: Christopher, Steve (BWSR)
To: Laura Jester
Subject: RE: BCWMC Minor Plan Amendment - 30 Day Review Period
Date: Tuesday, May 9, 2017 1:54:37 PM

Laura,
BWSR does not have any comments on the proposed minor amendment to the Bassett Creek Watershed Management Plan. Thank you for providing the opportunity for input.

Steve Christopher
Board Conservationist
MN Board of Water & Soil Resources (BWSR)
Direct: 651-296-2633
Cell: 651-249-7519

From: Berg, Jeffrey (MDA)
To: Laura.jester@keystonewaters.com
Cc: Christopher, Steve (BWSR)
Subject: Bassett Creek Watershed Management Commission - proposed minor amendments
Date: Wednesday, May 10, 2017 8:58:24 AM

Greetings Laura,

The MDA does not have any comments to the Bassett Creek Watershed Management Commission proposed minor amendments to its 2015 Watershed Management Plan.

Thanks for the opportunity to comment.

Jeff Berg
Water Policy Specialist
MN Department of Agriculture
Pesticide & Fertilizer Management Division
625 Robert Street North
St. Paul, MN 55155-2538
651 201 6338
Jeffrey.berg@state.mn.us

http://www.mda.state.mn.us/

MINNESOTA DEPARTMENT OF AGRICULTURE

Item 5Aii.
BCWMC 5-18-17

Hennepin County
Public Works

Environment and Energy Department
701 Fourth Avenue South, Suite 700
Minneapolis, Minnesota 55415-1842

612-348-3777, Phone
612-348-8532, Fax
hennepin.us/environment

May 3, 2017

Jim de Lambert
Bassett Creek Watershed Management Commission
c/o Laura Jester, Watershed Administrator
16145 Hillcrest Lane
Eden Prairie, MN 55346

Re: Minor Plan Amendment

Dear Mr. de Lambert:

I request that Hennepin County's review deadline for the proposed plan amendment be extended to June 28, 2017. The need for the extension is due to the County's 2017 meeting dates, formal review process and the lead time required to place the item on the County Board's meeting schedule. I have attached the schedule for Board action on the proposed amendment for your reference.

BAR for amendment approval and maximum levy submitted to Department Administration:	May 26
Department Administration reviews and forwards BAR to Public Works Administration:	June 1
Public Works Administration reviews and forwards BAR to County Administration:	June 6
BAR is communicated to Board on:	June 13
BAR in committee on:	June 20
Board action on amendment:	June 27

Sincerely,

Karen Galles
Supervisor, Land & Water Unit

Cc: Laura Jester, Watershed Administrator
Steve Christopher, BWSR

Item 6A.
BCWMC 5-18-17
Appendices Separate Document

Feasibility Report for Bassett Creek Park Pond and Winnetka Pond East Dredging Project

Crystal, Minnesota

May 2017

Prepared for
Bassett Creek Watershed Management Commission

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952.832.2600
Fax: 952.832.2601

Feasibility Report for Bassett Creek Park Pond and Winnetka Pond East Dredging Project

May 2017

Contents

List of Tables

List of Figures

List of Appendices

Certifications

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

Karen Chandler
PE #: 19252

May 11, 2017
Date

1.0 Executive summary

1.1 Background

The Bassett Creek Watershed Management Commission's (BCWMC) current Capital Improvement Program (CIP) (Table 5-3 in the 2015-2025 Bassett Creek Watershed Management Plan) includes project BCP-2 Bassett Creek Park Pond dredging. The BCWMC approved the 5-year (working) CIP at their March 17, 2016 meeting, and at their May 19, 2016 meeting, the BCWMC approved adding the Winnetka Pond dredging project to this feasibility study.

This study examines the feasibility of dredging accumulated sediment from Bassett Creek Park Pond and Winnetka Pond (see Figure 2-1). The project will improve water quality downstream by trapping sediment in the ponds, thus minimizing sediment passing downstream to Bassett Creek. The project will also provide other benefits. Based on the CIP (and if ordered), the project will be implemented in 2018. Funding for the project will be through an ad valorem tax levied by Hennepin County on behalf of the BCWMC.

1.2 Site conditions

Both ponds are located in the City of Crystal along the North Branch of Bassett Creek and are Minnesota Department of Natural Resources (MDNR) public waters—Bassett Creek Park Pond is MDNR #27064600P and Winnetka Pond is MDNR #27062900P. Bassett Creek Park Pond is located west of Highway 100 and north of 29th Avenue North (see Figure 2-2). Winnetka Pond is located east of Winnetka Avenue and north of 36th Avenue North (see Figure 2-3).

Bassett Creek Park Pond is located in Bassett Creek Park, which consists of open grassy fields used for sports and recreation, wooded uplands, and various wetland communities. Bassett Creek Park is surrounded by medium density residential area. Winnetka Pond is located south of the Winnetka Village Apartments and is partially surrounded by a narrow buffer of hardwood trees, and grasses with manicured lawn further upslope. Areas surrounding Winnetka Pond consist of commercial and industrial land with medium density residential land located further beyond.

Bassett Creek Park Pond and Winnetka Pond were field-delineated in October 2016 to identify the wetland extent of each pond. Wetland plant communities within each delineated pond were also identified. The delineation report is included as Appendix C. Wetlands delineated at Bassett Creek Park Pond totaled approximately 11.3 acres and were made up of five wetland communities: Shallow Open Water, Type 5; Shrub Swamp, Type 6; Shallow Marsh, Type 3; Floodplain Forest, Type 1L; and Deep Marsh, Type 4. Wetlands delineated at Winnetka Pond East totaled approximately 3.5 acres and were made up of two wetland communities: Shallow Open Water, Type 5 and Floodplain Forest, Type 1L.

1.3 Recommended project alternatives

Multiple alternatives were evaluated for removing sediment, improving water quality, and improving habitat along the North Branch of Bassett Creek within the project area. The measures considered for potential implementation include the following:

- Removing accumulated sediment to restore water quality treatment capability
- Removing native material to deepen the permanent pool of the ponds to provide additional water quality treatment or fish habitat
- Installing a native vegetative buffer to improve wildlife habitat and provide water quality treatment
- Installing a sediment forebay to isolate sediment deposition and improve ease of maintenance
- Managing goose populations

The recommended alternatives are discussed in Section 8.

1.4 Project impacts and estimated costs

Potential impacts from the dredging project are discussed in Section 6.0 and include permit requirements (e.g., Minnesota Department of Natural Resources public waters work permit), temporary impacts to wetlands, temporary trail closures and park impacts (at Bassett Creek Park), tree loss, and impacts to bat habitat. Of these, the most significant consideration for the project is the need to manage trail usage to maintain pedestrian safety and park use at Bassett Creek Park during the project. Continued coordination with the Crystal Parks and Recreation Department will be required during final design of the Bassett Creek Park Pond project to address this issue.

The proposed project will result in increased permanent pool volume and sediment storage volume in both ponds and, therefore, reduced sediment and phosphorus loading to the North Branch of Bassett Creek and all downstream water bodies, including the Mississippi River. Estimates of existing pollutant loading are presented in Section 6.0. P8 model results estimate the total reduction in pollutant loading as a result of deepening Bassett Creek Park Pond to 10 feet (alternative 2) would be 1,792 pounds per year of total suspended sediment and 7 pounds per year of total phosphorus. For deepening Winnetka Pond East to 6.0 feet (alternative 3), the model estimates the total reduction in pollutant loading would be 1,823 pounds per year of total suspended sediment and 7.1 pounds per year of total phosphorus. If both projects are implemented, the estimated treatment effectiveness of Bassett Creek Park Pond is reduced to 1,217 pounds per year of total suspended sediment and 4.7 pounds per year of total phosphorus.

The proposed native vegetated buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff. Although a native buffer would provide these water quality benefits, the amount of the load reductions cannot be quantified without more study. The buffer would also provide habitat for wildlife, provide food for pollinators, and deter geese.

The proposed goose management could help to reduce the bacteria (and phosphorus) loading to the North Branch of Bassett Creek. Although goose management measures could provide these water quality benefits, the amount of the load reductions cannot be quantified without more study.

The feasibility-level opinion of cost for implementing the 2018 Bassett Creek Park Pond alternative 2 (deepening to 10 feet) project, along with add-on 1 and add-on 2 (construction of a forebay and native vegetation buffer) is $1,818,000. This cost includes an estimated $1,137,000 in construction costs, $342,000 in construction contingency, and $342,000 in design, permitting, and construction observation costs (all costs rounded to the nearest $1,000). The costs result in a 30-year annualized cost of approximately $13,160 per pound of phosphorus reduction and approximately $51 per pound of TSS reduction.

The feasibility-level opinion of cost for implementing the Winnetka Pond East alternative 3 (deepening to 6.0 feet) project, along with add-on 1 and add-on 2 (construction of a native buffer and goose management) is $913,000. This cost includes an estimated $571,000 in construction costs, $173,000 in construction contingency, and $173,000 in design, permitting, and construction observation costs. The costs result in a 30-year annualized cost of approximately $6,960 per pound of phosphorus reduction and approximately $39 per pound of TSS reduction.

The cost per pound of phosphorus removed for these dredging projects using the current analysis is high compared to other BCWMC CIP projects—for example, the previous highest cost per pound of phosphorus removed for a BCWMC CIP project was $5,900 for the Northwood Lake Improvement Project (project NL-1). The high cost per pound of phosphorus removed for this project is likely due to several factors. The P8 model was developed at the watershed scale; this means that many of the watersheds are relatively large and the model may not be accurately reflecting the time it takes runoff to reach the ponds. This could be causing the model to over-predict flows and thus under-predict pollutant removals because the model is flushing more pollutants downstream and not allowing them to settle in the ponds. The P8 model does not account for pollutant load from the creek upstream of the ponds. For example, there are sections of the North Branch of Bassett Creek, upstream of Bassett Creek Park Pond, which have eroded banks that are contributing sediment and pollutants to the creek. This additional pollutant load is not included in the P8 model and the ponds are likely removing some of this additional load, providing a pollutant removal benefit that is not reflected in the modeling. This creek bank erosion could contribute an additional phosphorus load estimated between 3 and 92 pounds per year to Bassett Creek upstream of Bassett Creek Park Pond depending on the severity of the erosion. This additional potential phosphorus load represents 15 percent—450 percent of the P8 modeled phosphorus inflow to Bassett Creek Park Pond.

The P8 model also does not account for resuspension of the sediment accumulated in the ponds. Once sediment (and the associated pollutants) have settled in the pond, the P8 model assumes they remain trapped. Calculations to determine the velocity of water through the ponds indicate that in Winnetka Pond East under current conditions, the velocities are high enough to resuspend sediment particles up to medium silt size and carry them downstream. This means that the model is over-estimating the current performance of the pond. Based on the scour/resuspension analysis, the BCWMC Engineer's professional

judgment is that Winnetka Pond East under current conditions is removing only 20% of the total phosphorus predicted by the P8 model. Under current conditions, the P8 model estimates that the pond removes 55.7 pounds of total phosphorus per year. Applying the 20% effectiveness to the 55.7 pounds of phosphorus removal per year results in an estimate of 11.1 pounds of phosphorus removal per year under current conditions at Winnetka Pond East. The P8 model estimates for the Winnetka Pond East alternatives reasonably predict the total phosphorus removal provided by the pond. Therefore, another way to analyze the annual pollutant removal costs for total phosphorus is to compare the predicted phosphorus removals for the alternatives to the professional judgment phosphorus removal under current conditions. This results in lower costs per pound of phosphorus removal.

Constructing the Winnetka Pond East project to remove the accumulated sediment and deepen the pond would reduce the velocities through the pond, reducing the potential for resuspension and increasing the actual pollutant removal efficiency of the ponds.

For Bassett Creek Park Pond under current conditions, the calculations showed that the pond was not experiencing any scour or resuspension. However, approximately half of the pond surface area is located in an ineffective flow or shallow backwater area (north/northeast side of pond). As a result, the BCWMC Engineer's professional judgment is that the model may be overestimating by 50% the TP removal provided by the pond. Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 151.3 pounds of total phosphorus per year. Applying the 50% effectiveness to the 151.3 pounds of phosphorus removal per year results in an estimate of 75.7 pounds of phosphorus removal per year under current conditions. As none of the proposed alternatives address the ineffective flow area in the north of the pond, the predicted phosphorus removals for the Bassett Creek Park Pond alternatives would also be only 50% effective. The proposed conditions total phosphorus removals predicted by the P8 ranged from 155.5-158.3 pounds per year; applying the 50% effectiveness results in 77.8-79.2 pounds per year of phosphorus removal. This results in higher costs per pound of phosphorus removal.

In addition to providing pollutant removal benefits, removing accumulated sediment from Bassett Creek Park Pond and Winnetka Pond East is necessary to continue to provide flood storage in these areas along the trunk line of the North Branch of Bassett Creek. An area near the center of Winnetka Pond East just downstream of two inlets to the pond is fairly shallow due to sediment buildup. As additional sediment accumulates, the sediment will form an island near the center of the pond, thus reducing the flood storage available in the area. This could lead to additional flooding on other areas that would normally not be inundated. The sediment islands may deflect flow creating erosion along the banks and may also cause flow restrictions, resulting in additional flooding during smaller storm events. A similar situation will eventually occur at Bassett Creek Park Pond, though the island formation is not as dramatic at this time. Eventually some sediment will need to be removed to maintain flood storage capacity, regardless of the water quality benefit provided. Furthermore, when the flood control project at Bassett Creek Park Pond was designed and constructed, it assumed additional excavation volume to allow for sediment storage that would not interfere with providing the designed flood control benefits. Maintenance removal of the accumulated sediment is necessary to maintain functionality of the flood control project. The methodology and assumptions used for the cost estimates are discussed in Section 7.0, and the cost estimates for all alternatives considered for this study are provided in Table 7-1 and Table 7-2.

1.5 Recommendations

Because the modeling results do not show the expected pollutant removals from completing the projects, the BCWMC Engineer recommends completing first the Winnetka Pond East alternative 3 project (deepening to 6.0 feet), along with add-on 1 (native buffer) and add-on 2 (goose management), completing further investigation on Bassett Creek Park Pond, and ordering a project at this location in the future if it is determined to be feasible. This additional analysis on Bassett Creek Park Pond would allow time for the City of Crystal to complete its parks planning process at this location, which may result in identifying other feasible options for improvements at Bassett Creek Park Pond. The P8 model could be calibrated using City of Plymouth/Three Rivers Park District information and using BCWMC information that will be collected as part of a proposed 2018 monitoring program on the North Branch of Bassett Creek. After calibrating the model, the pollutant removal efficiencies for this project could be updated to more accurately predict the pollutant removals provided by the proposed project.

Removing accumulated sediment and deepening the permanent pool to 6.0 feet at Winnetka Pond East (alternative 3), creating a native buffer (add-on 1) and implementing goose management methods (add-on 2), will provide water quality improvement by (1) providing additional permanent pool storage for increased sedimentation, (2) minimizing downstream transport of sediment, (3) filtering pollutants such as phosphorus, sediment, and bacteria from stormwater runoff, and (4) reducing phosphorus and bacteria loads from geese. We recommend that the opinions of cost identified in this study be used to develop a levy request for the selected project and that the Winnetka Pond East project proceeds to the design and construction phase.

5.0 Potential improvements

This section provides a summary of the alternatives for dredging accumulated sediment and other improvements at Bassett Creek Park Pond (Section 5.1) and Winnetka Pond East (Section 5.2).

Each pond dredging location includes a baseline alternative and a second alternative for additional dredging, along with "add-ons." In determining the final scope of the project, either the baseline alternative or the second alternative would be selected. The add-ons are all independent and any or all of them could be added to the final project scope. Table 5-1 in the BCWMC Plan lists project costs eligible for BCWMC reimbursement and other project costs that will be considered for whole or partial reimbursement on a project-by-project basis. The BCWMC may consider some of the add-ons as "other project costs," which means those add-ons could involve contributions from the city, other stakeholders and/or MDNR to fund the work.

5.1 Analyzed alternatives at Bassett Creek Park Pond

When selecting alternatives for detailed design and construction, the BCWMC and the City of Crystal may select one of the alternatives, and any number of the add-ons, to best meet the overall project budget and goals. Furthermore, detailed design efforts may identify and include additional improvements that are not specifically included in this feasibility study. Figure 5-1 shows the location and a brief summary of each alternative and add-on.

5.1.1 Baseline alternative—remove accumulated sediment

The baseline alternative includes removal of the accumulated sediment in the main channel area of Bassett Creek Park Pond (the portion that was excavated during the 1995 Flood Control Project). This alternative would restore the permanent pool volume and water quality benefits to what was previously in place. This alternative would have the fewest permitting considerations because it would be considered a maintenance activity to restore the pond to an excavation that was already permitted by the MDNR and USACE. The project would also maintain the pond's flood control benefits by providing sediment storage (see discussion in Section 8.0).

5.1.2 Alternative 2—deepen southeast section

Alternative 2 would deepen the southeastern section of the pond to a maximum ten-foot depth. This area was approximately seven feet deep following the construction of the 1995 Flood Control Project. Increasing the depth would provide additional water quality treatment volume; it would also create a deeper section of the pond to promote fish habitat and increase the potential for fish to over-winter in the pond. City of Crystal staff have been in contact with the MDNR about the possibility of a partnership where the MDNR would install a new fishing pier and provide an aerator for the pond, if this deeper section is created. The project would also maintain the pond's flood control benefits by providing sediment storage (see discussion in Section 8.0).

This alternative would have additional permitting requirements because it would require excavating into native material in a MDNR public water wetland, which is also under jurisdiction of the USACE. Because

the original depth in this area was seven feet, the additional excavation would not likely change the wetland type in that area (areas are typically not considered wetland if they are deeper than six feet). However, there may still be permitting challenges with this alternative compared to the baseline alternative.

5.1.3 Add-on 1—create sediment forebay in northern section of pond

A method to improve the water quality treatment and reduce on-going maintenance costs is to create a sediment forebay. A sediment forebay is a small pool, separated from the main pond by a barrier such as a berm, where initial settling of heavier particulates can occur. Construction of a sediment forebay would allow the city to perform more frequent, smaller maintenance projects to remove sediment from only the forebay area and would prevent the larger scale sedimentation that has occurred over the past 20 years.

The BCWMC Engineer reviewed the Minnesota Stormwater Manual recommendations for sizing a sediment forebay. These recommendations are based on the watershed area tributary to the pond. Based on the drainage area to Bassett Creek Park Pond downstream of Winnetka Pond, a sediment forebay with a surface area of 0.85 acres with a depth of four to six feet is recommended.

Construction of an off-line sediment forebay is preferred so that maintenance projects do not impact wetlands or the MDNR public water. At this location, the primary inflows to the pond are not storm sewer pipes; it is flow from the North Branch of Bassett Creek. The creek elevation is low compared to the elevation of the surrounding park areas. Significant excavation would be required to construct a four to six foot deep sediment forebay. Due to the location of pedestrian trails surrounding the pond, two potential areas were identified for constructing an off-line sediment forebay: the peninsula at the north side of the pond and the volleyball court area. The peninsula area is not large enough to provide the recommended footprint for the sediment forebay and construction of the forebay would likely result in steep slopes adjacent to the pedestrian trail, posing a safety concern for residents and making future maintenance difficult. The volleyball courts are heavily used and cannot be moved or removed to facilitate construction of a sediment forebay. Due to site grades and site considerations, there are no feasible areas for construction of an off-line sediment forebay.

A sediment forebay within Bassett Creek Park Pond could be achieved by constructing an earthen berm or using rock gabion baskets to create a berm. The top of the berm would be located below the normal water level and would force water to slow and pool in the forebay area before spreading over the berm and into the remainder of the pond. Because the berm would be below the normal water level, it would not be visible above the water surface. This would increase sedimentation in the forebay and would trap more of the sediment in a smaller area that could be accessed relatively easily from the banks of the pond. The main area of the pond has sufficient space to construct an appropriately sized sediment forebay. Construction of the sediment forebay would involve a small increase in depth in the northern portion of the pond, and would require access to be provided for construction. This add-on would involve additional permitting considerations because it is work not previously permitted and would impact flows within the MDNR public water.

Two versions of this add-on are represented in the cost section. The first assumes that construction of the forebay will occur with either removing all accumulated sediment from the pond or with removing accumulated sediment and deepening the southeastern section of the pond. This version includes a small volume of additional excavation to achieve the ideal depth for a forebay and construction of a berm to separate the forebay from the pond. No additional erosion control or restoration is needed with this add-on. The second version assumes that only the forebay will be constructed. This version includes an excavation volume to achieve the ideal depth for a forebay (which includes excavation of accumulated sediment in the proposed forebay area), construction of a berm, erosion control, restoration, and mobilization.

5.1.4 Add-on 2—create native vegetation buffer around pond

Section 4.2.6 of the BCWMC Plan outlines the BCWMC policies related to wetland buffers. The policies include a requirement that cities develop buffer requirements for new or redevelopment projects installing more than 1 acre of new or reconstructed impervious surface. While this project will have relatively little impervious surface impact, it does involve a public water wetland. Therefore, an add-on to the project would be to designate and improve the vegetated buffer around the wetland. The width of the wetland buffer is typically based on the wetland classification, which is determined using a Minnesota Rapid Assessment Method (MNRAM) analysis. A MNRAM analysis was not performed as part of this feasibility study. However, based on general observations made during the wetland delineation and general knowledge of the site, it is expected that the wetland would be considered a Manage 1 wetland. If this were a redevelopment project, a 50-foot wide average, 30-foot wide minimum buffer width would be required. The buffer would be designated around the entire pond and would be improved and managed to promote growth of native plants.

The presence of a native vegetated buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff from park areas, preventing these pollutants from reaching the pond, thus improving the water quality of the pond. It would also provide habitat for wildlife, provide food for pollinators, and deter geese.

5.1.5 Add-on 3—dispose of Unregulated Fill material on-site

The City indicated that there may be potential to dispose of some of the Unregulated Fill material (material excavated from the southeastern portion of the pond) on-site. There is an area near Brunswick Avenue where the City is investigating restoring a natural hillside that had been cut to provide a road access which is no longer used. On-site disposal would reduce hauling and disposal costs by approximately $5 to $10/cubic yard of excavated material. The City estimates 1,200 cubic yards of excavated material from Bassett Creek Park Pond or Winnetka Pond could be disposed of at the site. This could reduce construction costs by $6,000 to $12,000. A more detailed analysis will need to be completed during final design to determine the amount of material that could be reused on-site and the dewatering requirements to provide fill for this area.

5.1.6 Add-on 4—construct new fishing pier at deepened southeast section (City/MDNR responsibility)

The City and the MDNR have been in discussions about the MDNR providing a new fishing pier at the southeastern portion of the pond, if this portion of the pond is deepened to ten feet (alternative 2). This would allow increased recreational use of the pond by local residents. Construction of this add-on may need to be funded entirely or in part by the city and/or MDNR, based on Table 5-1 in the BCWMC Plan. If so, construction of the fishing pier would be considered a city improvement associated with the project but not directly tied to the goals of the BCWMC (e.g. trails, pedestrian bridges, signage).

5.2 Analyzed alternatives at Winnetka Pond East

When selecting alternatives for detailed design and construction, the BCWMC and the City of Crystal may select one of the alternatives and one or more add-ons to best meet the overall project goals. Furthermore, detailed design efforts may identify and include additional improvements that are not specifically included in this feasibility study. Figure 5-2 shows the location and a brief summary of each alternative. For the baseline alternative, alternative 2, and alternative 3, the option is also available to dispose of some of the Unregulated Fill material at Bassett Creek Park Pond (add-on 3), for a potential cost savings of $6,000-$12,000 (see Section 5.1.5 for more information).

5.2.1 Baseline alternative—remove accumulated sediment

The baseline alternative includes removal of the accumulated sediment in the entire pond. This alternative would restore the permanent pool volume and water quality benefits to what was previously in place. The project would also maintain the pond's flood control benefits by providing sediment storage (see discussion in Section 8.0). MDNR or USACE permits were not issued for Winnetka Pond East (project pre-dates permitting); therefore, any project at this location would require a new permitting effort. However, as noted in Section 4.2, the USACE may consider the pond a "previously-authorized structure," which would simplify permitting. Typically, removal of accumulated sediment is permitted with some documentation, such as the available original construction drawings for the site.

5.2.2 Alternative 2—deepen entire pond to 4.2 feet

Alternative 2 would deepen the entire pond to 4.2 feet. This is an alternative in-between the baseline alternative and alternative 3 (maximum depth alternative). Increasing the depth to 4.2 feet should preserve the wetland characteristics of the current site—water depths greater than 6.6 feet change the wetland type from a shallow-water to a deep-water habitat (per the Minnesota Wetland Conservation Act). Deepening the pond to 4.2 feet would provide additional permanent pool volume and associated water quality improvements for additional sedimentation. The project would also maintain the pond's flood control benefits by providing sediment storage (see discussion in Section 8.0). This alternative would involve additional permitting considerations because it would require excavating into native material in a MDNR public water wetland, which is also under jurisdiction of the USACE.

5.2.3 Alternative 3—deepen entire pond to 6.0 feet

Alternative 3 would deepen the entire pond to 6.0 feet. This is the maximum possible depth that can be achieved while keeping the cost of the construction project and other associated fees within the $1,000,000 currently budgeted in the BCWMC CIP. Increasing the depth to 6.0 feet should also preserve the wetland characteristics of the current site (see Section 5.2.2). Deepening the pond to 6.0 feet would provide further additional permanent pool volume and associated water quality improvements for additional sedimentation. The project would also maintain the pond's flood control benefits by providing sediment storage (see discussion in Section 8.0). As for alternative 2, this alternative would involve additional permitting considerations because it would require excavating into native material in a MDNR public water wetland, which is also under jurisdiction of the USACE.

5.2.4 Add-on 1—create native vegetation buffer around pond

Section 4.2.6 of the BCWMC Plan outlines the BCWMC policies related to wetland buffers. The policies include a requirement that cities develop buffer requirements for new or redevelopment projects installing more than 1 acre of new or reconstructed impervious surface. While this project will have relatively little impervious surface impact, it does involve a public water wetland. Therefore, an add-on to the project would be to designate and improve the vegetated buffer around the wetland. The width of the wetland buffer is typically based on the wetland classification, which is determined using a MNRAM analysis. A MNRAM analysis was not performed as part of this feasibility study. However, based on general observations made during the wetland delineation and general knowledge of the site, it is expected that the wetland would be considered a Manage 1 wetland. If this were a redevelopment project, a 50-foot wide average, 30-foot wide minimum buffer width would be required around the entire pond

For this project, the proposed native vegetation buffer would cover the land adjacent to the pond that is not currently covered by heavy tree/shrub growth, rather than around the entire pond. The buffer would be designated, improved and managed to promote growth of native plants.

The presence of a native vegetated buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff from land adjacent to the pond, preventing these pollutants from reaching the pond, thus improving the water quality of the pond. It would also provide habitat for wildlife, provide food for pollinators, and deter geese.

The City of Crystal has limited property rights over the area of the pond—the pond spans two parcels, one owned by the City and one not owned by the City does not (the pond is located at the Winnetka Village Apartments complex, not in a park or larger city parcel). Therefore, the city can maintain the pond but cannot make changes outside the pond footprint. The apartment property owner would need to agree to the creation of the native buffer. Further, either the City (through an agreement with the apartment property owner) or the apartment property owner would need to agree to maintain the buffer (estimated at approximately $1,700/year). City staff are reaching out to the apartment property owner regarding their willingness to maintain the buffer, as buffer maintenance costs could be offset by cost savings due to reduced mowing.

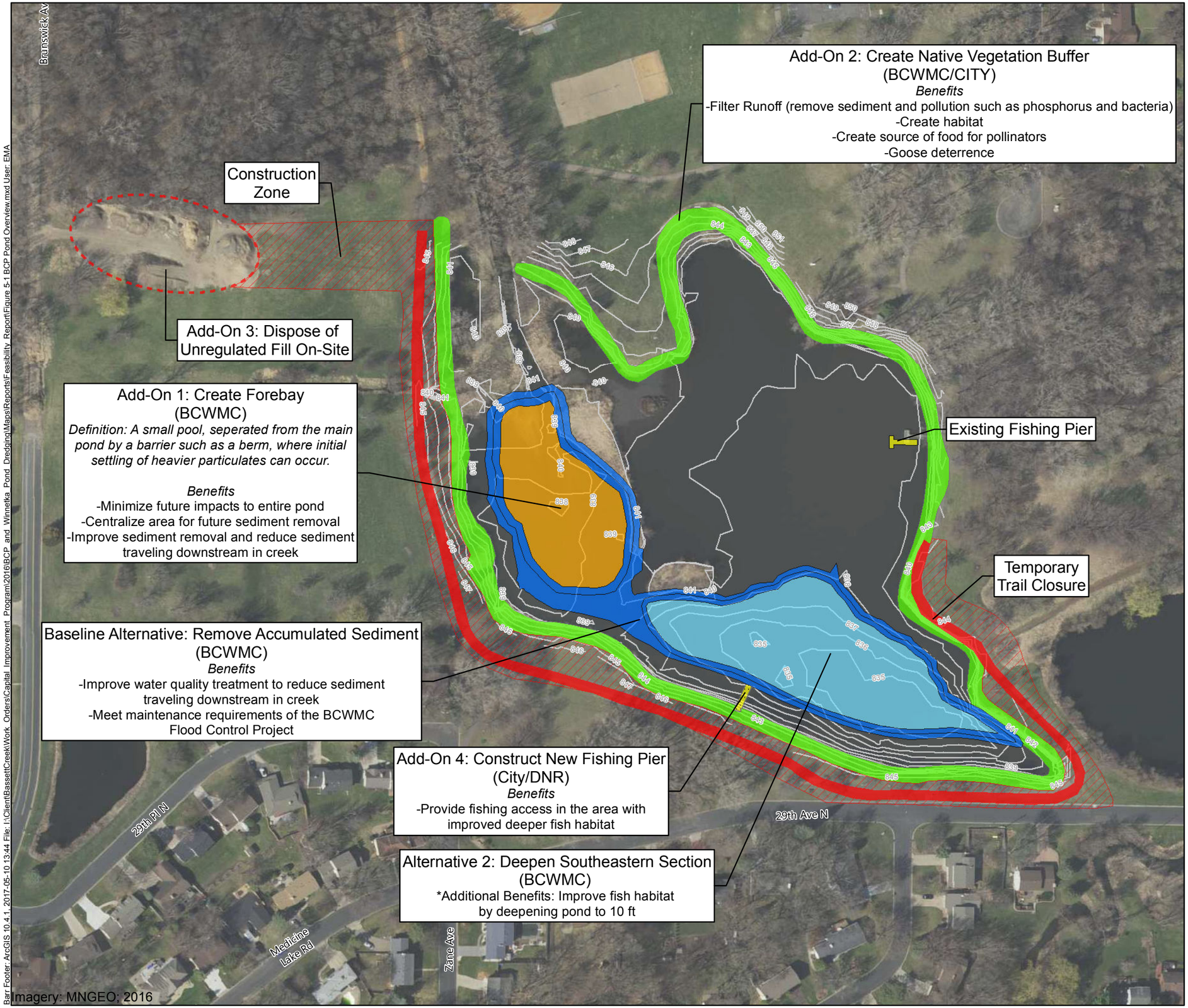
5.2.5 Add-on 2—goose management

The MPCA lists the North Branch of Bassett Creek as impaired for aquatic recreation due to E.coli (bacteria). The MPCA's resulting 2014 Upper Mississippi River Bacteria TMDL Study & Protection Plan (TMDL Study), and 2016 Upper Mississippi River Bacteria TMDL Implementation Plan (TMDL Implementation Plan) includes the North Branch of Bassett Creek. The TMDL Study identified pets are the most likely largest source of E. coli, but wildlife, such as deer, ducks and geese, was also identified as one of the bacteria sources. In addition to bacteria, Canada goose excrement contains high levels of phosphorus.

Managing goose populations could help to reduce the bacteria (and phosphorus) loading to Winnetka Pond/North Branch of Bassett Creek. Goose management measures, beyond the native vegetated buffer in Section 5.2.4, include physical barriers (such as fences), redistribution methods (such as harassing geese with dogs), and population reduction (such as nesting management, trapping and removal, and harvesting/shooting). The population reduction methods would have the largest impact on reducing bacteria (and phosphorus) loadings from geese. Contractors provide nesting management services, such as egg removal, and trapping and removal of geese (round-ups). According to Three Rivers Park District (TRPD) staff, goose roundups cost approximately $1,500 per lake, but there should be more than 40 geese on the lake for the roundup to be cost effective ($50/bird). Crystal staff observed 10 adult geese and 5 goslings on April 25th on Winnetka Pond.

TRPD staff also noted that a DNR permit is required to remove geese; the DNR also requires a written goose management plan. The BCWMC or the City of Crystal would need to develop a goose management plan before geese could be removed.

For $5,000, some amount of goose management could be implemented on Winnetka Pond.



Bassett Creek Survey Contours
Potential Sediment Disposal Location
Construction Zone
Temporary Trail Closure
Potential Forebay (BCWMC)
Base Alternative (BCWMC)
Alternative 2 (BCWMC)
Potential Native Buffer (BCWMC/CITY)
Existing Fishing Pier
Potential New Fishing Pier (City/DNR)

N

Feet
75 0 75 150

Meters
20 0 20 40

Figure 5-1

BASSETT CREEK PARK POND ALTERNATIVES
Feasibility Report for Bassett Creek Park Pond and Winnetka Pond East Dredging
Bassett Creek Watershed Management Commission

Winnetka Pond Survey Contours

Base Alternative & Alternative 2

Construction Zone

Native Vegetation Buffer 50ft

Feet
40 0 40 80

Meters
10 0 10 20

Figure 5-2

WINNETKA POND EAST
ALTERNATIVES
Feasibility Report for Bassett Creek
Park Pond and Winnetka Pond East
Dredging
Bassett Creek Watershed
Management Commission

6.0 Project impacts

This section discusses the impacts of the dredging project, including the land ownership and permitting requirements and the estimated pollutant reduction resulting from each alternative.

6.1 Easement acquisition

Nearly all of the proposed work is located on City of Crystal property, or within existing easements. Temporary construction easements are not included in the opinion of cost and are not expected to have significant effect on cost along the City property. Temporary construction easements would potentially be necessary at Winnetka Pond East to facilitate access to the site, construction staging, and material dewatering.

6.2 Permits required for the project

The proposed projects may require 1) a Clean Water Act Section 404 permit from the USACE, or Letter of Permission under a General Permit, and Section 401 certification from the Minnesota Pollution Control Agency (MPCA), 2) compliance with the Minnesota Wetland Conservation Act, 3) a Construction Stormwater General Permit from the MPCA and compliance with the MPCA's guidance for managing dredged materials and 4) a Public Waters Work Permit from the MDNR.

Section 404 Permit and Section 401 Certification

According to Section 404 of the Clean Water Act (CWA), the USACE regulates the placement of fill into wetlands if they are hydrologically connected to a Water of the United States. In addition, the USACE may regulate all proposed wetland alterations if any wetland fill is proposed. The MPCA may be involved in wetland mitigation requirements as part of the CWA Section 401 water quality certification process for the 404 Permit, which means the MPCA's antidegradation rules (MN Rules 7050) could be applied to the projects. However, as noted in Section 4.2, it is likely both ponds would be considered constructed water bodies, not waters of the state, so the rules would not apply.

As discussed in Section 2.0, the BCWMC developed its Resource Management Plan (RMP) with the goal of completing a conceptual-level USACE permitting process for proposed projects. The RMP was submitted to the USACE in April 2009 and revised in July 2009. This feasibility study follows the protocols for projects within the BCWMC RMP.

Minnesota Wetland Conservation Act

The Minnesota Wetland Conservation Act (WCA) regulates the filling and draining of wetlands and excavation within Type 3, 4, and 5 wetlands—and may regulate any other wetland type if fill is proposed. The WCA is administered by local government units (LGU), which include cities, counties, watershed management organizations, soil and water conservation districts, and townships. The City of Crystal is the LGU for both project locations. The Minnesota Board of Water and Soil Resources (BWSR) oversees administration of the WCA statewide.

The WCA may be applicable depending on the alternative and add-ons selected and the associated types of wetland impacts that will be a part of each project. A permit related to wetland impacts will likely be required; however the LGU will have the final determination.

The MDNR will likely determine that each project area qualifies as a public waters wetland and require permitting. Each of the proposed projects will involve excavation in a wetland and access to the site through wetland areas.

Minnesota Pollution Control Agency (MPCA) Permits

Construction of the proposed project may require a National Pollutant Discharge Elimination System/ State Disposal System Construction Stormwater (CSW) General Permit issued by the MPCA. The CSW permit requires the preparation of a stormwater pollution prevention plan that explains how stormwater will be controlled within the project area during construction. This permit is required if the project will disturb 1 acre or more of soil; a permit will likely be needed only if material is disposed of at Bassett Creek Park Pond.

Both projects will need to comply with the MPCA's guidance for managing dredged materials (see Section 3.2.3 for more information).

MDNR Public Waters Work Permit

The MDNR regulates projects constructed below the ordinary high water level of public waters, watercourses, or wetlands, which alter the course, current, or cross section of the water body. Public waters regulated by the MDNR are identified on published public waters inventory maps. Bassett Creek Park Pond and Winnetka Pond East are public waters wetlands, so the proposed work will require a MDNR public waters work permit for each project. Typically, the MDNR public waters work permit includes a condition that "no activity affecting the bed of the protected water may be conducted between April 1 and June 1, to minimize impacts on fish spawning and migration. If work during this time is essential, it shall be done only upon written approval of the Area Fisheries Manager." Without such approval, work on these projects would need to occur outside the fish spawning and migration dates.

6.3 Other project impacts

Temporary Closure of Park Trail

Bassett Creek Park Pond is located within Bassett Creek Park and is surrounded by a trail. The likely construction access for the site would be to use the park trail to access the pond from 29th Avenue North. Because the trail is in close proximity to the pond, it will be necessary to close the trail during construction activities. Using the trail for a construction access will minimize restoration needed as part of the project. During final design, the trail section and access routes will be evaluated to determine if the trail should be reconstructed with a more robust section to support the large truck and equipment traffic necessary to construct the project. The extents of the trail closure will depend on if material disposal occurs on-site. Trail closure signs and barricades will be installed and a pedestrian detour route will be determined during

final construction. Every effort will be made to minimize the duration of the trail closure, including considering winter construction to minimize impacts to park users.

Impacts to Bats

Preservation of bat species in Minnesota has recently become an important issue. White Nose Syndrome (WNS) has been attributed to the deaths of millions of bats in recent years across the United States, and all four species that hibernate in Minnesota are susceptible to the disease (Reference (4)). Bats typically hibernate in sheltered areas such as caves, but some bats nest in trees during summer months. Extensive tree removals are to be avoided when bats are not hibernating to avoid inadvertently destroying nests. During final design, there should be additional consultation with the US Fish and Wildlife Service or MDNR regarding the timing of any tree removals and the potential impacts to bats.

Impacts to Bassett Creek Park

Due to the location of Bassett Creek Park Pond within the park, some areas of the park may need to be temporarily closed during construction to facilitate construction staging and/or material dewatering. During final design, the City may identify areas that need to remain functional and accessible and areas that could be used for access, staging, and dewatering. Impacts to park users may be minimized by scheduling the construction work over the winter.

6.4 Anticipated pollutant removal

The pollutant (total phosphorus and total suspended solids) removals at Bassett Creek Park Pond and Winnetka Pond East for each alternative were estimated using the BCWMC P8 model. The model was first updated to reflect existing conditions, using the bathymetric survey data collected during this study. The model was then updated to reflect the additional permanent pool volume provided by each of the alternatives. Because Bassett Creek Park Pond is downstream from Winnetka Pond East, and its pollutant removal is therefore affected by changes to Winnetka Pond East, scenarios were run for completion of each individual project and for completing both projects.

6.4.1 Bassett Creek Park Pond

6.4.1.1 Remove Accumulated Sediment at Bassett Creek Park Pond—No Winnetka Pond East Improvement

The baseline alternative at Bassett Creek Park Pond involves removing accumulated sediment from the portion of the pond where the flood control project was constructed in 1996. This will restore the permanent pool volume in the pond and provide more water quality treatment volume. The permanent pool (area below the normal water level) is where water slows as it enters the pond, which allows for sediment particles to settle from the water, removing the pollutants associated with the sediment from the water conveyed downstream to the Main Stem of Bassett Creek. By providing a larger permanent pool volume, the water is stored in the pond longer which allows for increased sedimentation. Over time, as sediment accumulates in the pond, the permanent pool volume is reduced.

The MPCA Minnesota Stormwater Manual recommends a permanent pool volume of 1,800 cubic feet per acre of watershed area tributary to a pond. The direct drainage area to Bassett Creek Park Pond is approximately 137 acres. This results in a recommended permanent pool volume of 5.7 acre-feet. The permanent pool volume in Bassett Creek Park Pond after the construction of the baseline alternative would be 24.2 acre-feet. However, because Bassett Creek Park Pond is on the North Branch of Bassett Creek, there is additional watershed area tributary to the pond. The entire drainage area for the North Branch of Bassett Creek between Winnetka Pond East (the next upstream storage area) and Bassett Creek Park Pond is approximately 847 acres. This results in a recommended permanent pool volume of 35.0 acre-feet. This larger volume is more consistent with the permanent pool volume provided by constructing alternative 2; see the discussion in Section 6.4.2 below.

Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 70,508 pounds of total suspended solids per year and 151.3 pounds of total phosphorus per year. Upon construction of the baseline alternative, the P8 model estimates that Bassett Creek Park Pond would remove 71,735 pounds of total suspended solids per year (TSS) (1.7% increase to 67.5% removal efficiency) and 156.1 pounds of total phosphorus (TP) per year (3.2% increase to 23.6% removal efficiency). Based on the MPCA Minnesota Stormwater Manual, the expected average performance for a stormwater pond is 84% TSS removal and 50% TP removal. This system is not the typical stormwater pond configuration because the inflows are not limited to stormwater runoff from a parking lot or roadway, they are inflows from the entire North Branch of Bassett Creek; therefore, the anticipated pollutant removals may not be achievable even with typical sizing guidance.

6.4.1.2 Deepen Bassett Creek Park Pond—No Winnetka Pond East Improvement

Alternative 2 at Bassett Creek Park Pond involves deepening the southeastern portion of the pond to 10 feet to provide additional permanent pool volume and create a deeper habitat area to promote fish habitat and over-wintering of fish in the pond.

The permanent pool volume in Bassett Creek Park Pond after the construction of alternative 2 would be 29.6 acre-feet. This is an additional excavation of 5.4 acre-feet of material from the pond, when compared to the baseline alternative. This alternative is 5.4 acre-feet short of the MPCA recommended volume for the pond based on the entire contributing drainage area between Winnetka Pond East and Bassett Creek Park Pond. It would be challenging to perform additional excavation in other, shallower areas of the pond, as there could be wetland impacts if excavation were to result in depths greater than six feet. This additional impact would likely involve costly wetland mitigation and permitting for a large portion of the pond and may not be approved by the regulators. Therefore additional excavation was not pursued based on the additional costs and the incremental pollutant removal observed from the baseline alternative to alternative 2.

Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 70,508 pounds of TSS per year and 151.3 pounds of TP per year. Upon construction of alternative 2, the P8 model estimates that Bassett Creek Park Pond would remove 72,300 pounds of TSS per year (2.5% increase to 68.1% removal efficiency) and 158.3 pounds of TP per year (4.6% increase to 23.9% removal efficiency). Based on the MPCA Minnesota Stormwater Manual, the expected average performance for a stormwater pond is

84% TSS removal and 50% TP removal. This system is not the typical stormwater pond configuration because the inflows are not limited to stormwater runoff from a parking lot or roadway, they are inflows from the entire North Branch of Bassett Creek; therefore, the anticipated pollutant removals may not be achievable even with typical sizing guidance.

6.4.1.3 Sediment Forebay Add-on at Bassett Creek Park Pond

Construction of a forebay within Bassett Creek Park Pond will not significantly affect the pollutant removal of Bassett Creek Park Pond because it does not change the permanent pool volume of the pond. However, construction of a forebay will provide increased pollutant removals (sedimentation) within the forebay area, which will prevent sediment from migrating downstream into the larger pond area. This will allow for smaller, more frequent, and more cost-effective maintenance projects in the future, which will improve the long-term cost of providing water quality treatment at Bassett Creek Park Pond. The primary goal of constructing a forebay would be to improve the ease of maintenance such that the City could perform smaller, more frequent maintenance projects as is required because Bassett Creek Park Pond is part of the BCWMC Flood Control Project. The expectation would be that the City would take over the smaller, frequent maintenance projects, therefore reducing the maintenance burden on the BCWMC. Because Bassett Creek Park Pond is a MDNR public water, there would likely be permitting requirements each time maintenance is performed. The BCWMC may need to assist the City with applying for the MDNR and/or USACE permit on an annual basis to facilitate the City's maintenance. The anticipated long-term benefits cannot be reasonably estimated at this time because they are based on the rate of sediment accumulation, future construction costs, and future cost of material disposal, all of which are likely largely variable and likely to increase over time.

6.4.1.4 Remove Accumulated Sediment at Bassett Creek Park Pond—With Winnetka Pond East Improvement

Because Winnetka Pond East is upstream of Bassett Creek Park Pond on the North Branch of Bassett Creek, improvements to Winnetka Pond East may have impacts on the pollutant load reaching Bassett Creek Park Pond and the pollutant removal efficiency of Bassett Creek Park Pond.

Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 70,508 pounds of TSS per year and 151.3 pounds of TP per year. Upon construction of the baseline alternative in both Winnetka Pond East and Bassett Creek Park Pond, the P8 model estimates that Bassett Creek Park Pond would remove 71,595 pounds of TSS per year (1.5% increase to 67.7% removal efficiency) and 155.5 pounds of TP per year (2.8% increase to 23.6% removal efficiency).

6.4.1.5 Deepen Bassett Creek Park Pond—With Winnetka Pond East Improvement

Because Winnetka Pond East is upstream of Bassett Creek Park Pond on the North Branch of Bassett Creek, improvements to Winnetka Pond East may have impacts on the pollutant load reaching Bassett Creek Park Pond and the pollutant removal efficiency of Bassett Creek Park Pond.

Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 70,508 pounds of TSS per year and 151.3 pounds of TP per year. Upon construction of alternative 2 in both Winnetka Pond

East and Bassett Creek Park Pond, the P8 model estimates that Bassett Creek Park Pond would remove 71,725 pounds of TSS per year (1.7% increase to 68.6% removal efficiency) and 156.0 pounds of TP per year (3.1% increase to 23.8% removal efficiency).

6.4.1.6 Create native vegetation buffer around pond

A native buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff, improving the water quality of the pond. Although a native buffer would provide these water quality benefits, the amount of the load reductions cannot be quantified without more study.

6.4.2 Winnetka Pond East

6.4.2.1 Remove Accumulated Sediment at Winnetka Pond East

The baseline alternative at Winnetka Pond East involves removing accumulated sediment from the entire pond to the same depth as the original construction contours (2.1 feet). This will restore the permanent pool volume in the pond and provide more water quality treatment volume. The permanent pool (area below the normal water level) is where water slows as it enters the pond, which allows for sediment particles to settle from the water, removing the pollutants associated with the sediment from the water conveyed downstream to the North Branch of Bassett Creek. By providing a larger permanent pool volume, the water is stored in the pond longer which allows for increased sedimentation. Over time as sediment accumulates in the pond, the permanent pool volume is reduced.

The MPCA Minnesota Stormwater Manual recommends a permanent pool volume of 1,800 cubic feet per acre of watershed area tributary to a pond. The direct drainage area to Winnetka Pond East is approximately 20 acres. This results in a recommended permanent pool volume of 0.8 acre-feet. The permanent pool volume in Winnetka Pond East after the construction of the baseline alternative would be 5.7 acre-feet. However, because Winnetka Pond East is on the North Branch of Bassett Creek, there is additional watershed area tributary to the pond. The entire drainage area for the North Branch of Bassett Creek between Northwood Lake (the next upstream storage area) and Winnetka Pond East is approximately 243 acres. This results in a recommended permanent pool volume of 10.0 acre-feet. This larger volume is more consistent with the permanent pool volume provided by constructing alternative 2; see the discussion in Section 6.4.7 below.

Under current conditions, the P8 model estimates that Winnetka Pond East removes 19,286 pounds of TSS per year and 55.7 pounds of TP per year. Upon construction of the baseline alternative, the P8 model estimates that Winnetka Pond East would remove 19,724 pounds of TSS per year (1.0% increase to 43.6% removal efficiency) and 57.4 pounds of TP per year (0.4% increase to 13.9% removal efficiency). Based on the MPCA Minnesota Stormwater Manual, the expected average performance for a stormwater pond is 84% TSS removal and 50% TP removal. This system is not the typical stormwater pond configuration because the inflows are not limited to stormwater runoff from a parking lot or roadway, they are inflows from the entire North Branch of Bassett Creek; therefore, the anticipated pollutant removals may not be achievable even with typical sizing guidance.

6.4.2.2 Deepen Winnetka Pond East to 4.2 feet

Alternative 2 at Winnetka Pond East involves deepening the entire pond section to 4.2 feet to provide additional permanent pool volume.

The permanent pool volume in Winnetka Pond East after the construction of alternative 2 would be 10.7 acre-feet. This is an additional excavation of 5.0 acre-feet of material from the pond, when compared to the baseline alternative. This alternative slightly exceeds the MPCA recommended volume for the pond based on the entire contributing drainage area between Northwood Lake and Winnetka Pond East. However, the modeled pollutant removal efficiencies with the additional volume do not provide the average expected pollutant removal for a stormwater pond based on the contributing drainage area. This is likely due to other upstream storage areas and BMPs being undersized for the contributing drainage area, and the P8 model not taking this into account.

Under current conditions, the P8 model estimates that Winnetka Pond East removes 19,286 pounds of TSS per year and 55.7 pounds of TP per year. Upon construction of alternative 2, the P8 model estimates that Winnetka Pond East would remove 20,557 pounds of TSS per year (2.8 percentage point increase to 45.4% removal efficiency) and 60.8 pounds of TP per year (1.2 percentage point increase to 14.6% removal efficiency). Based on the MPCA Minnesota Stormwater Manual, the expected average performance for a stormwater pond is 84% TSS removal and 50% TP removal. This system is not the typical stormwater pond configuration because the inflows are not limited to stormwater runoff from a parking lot or roadway, they are inflows from the entire North Branch of Bassett Creek upstream of Winnetka Pond; therefore, the anticipated pollutant removals may not be achievable even with typical sizing guidance.

6.4.2.3 Deepen Winnetka Pond East to 6.0 feet

Alternative 3 at Winnetka Pond East involves deepening the entire pond section to 6.0 feet to provide additional permanent pool volume.

The permanent pool volume in Winnetka Pond East after the construction of alternative 2 would be 14.6 acre-feet. This is an additional excavation of 8.9 acre-feet of material from the pond, when compared to the baseline alternative. This alternative exceeds the MPCA recommended volume for the pond based on the entire contributing drainage area between Northwood Lake and Winnetka Pond East. However, the modeled pollutant removal efficiencies with the additional volume do not provide the average expected pollutant removal for a stormwater pond based on the contributing drainage area. This is likely due to other upstream storage areas and BMPs being undersized for the contributing drainage area, and the P8 model not taking this into account.

Under current conditions, the P8 model estimates that Winnetka Pond East removes 19,286 pounds of TSS per year and 55.7 pounds of TP per year. Upon construction of alternative 3, the P8 model estimates that Winnetka Pond East would remove 21,109 pounds of TSS per year (4.1 percentage point increase to 46.7% removal efficiency) and 62.8 pounds of TP per year (1.8 percentage point increase to 15.2% removal efficiency). Based on the MPCA Minnesota Stormwater Manual, the expected average performance for a stormwater pond is 84% TSS removal and 50% TP removal. This system is not the typical stormwater pond configuration because the inflows are not limited to stormwater runoff from a parking lot or roadway,

they are inflows from the entire North Branch of Bassett Creek upstream of Winnetka Pond; therefore, the anticipated pollutant removals may not be achievable even with typical sizing guidance.

6.4.2.4 Create native vegetation buffer around Winnetka Pond East

A native buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff, improving the water quality of the pond. Although a native buffer would provide these water quality benefits, the amount of the load reductions cannot be quantified without more study.

6.4.2.5 Goose management at Winnetka Pond East

Managing goose populations could help to reduce the bacteria (and phosphorus) loading to Winnetka Pond/North Branch of Bassett Creek. Although goose management measures could provide these water quality benefits, the amount of the load reductions cannot be quantified without more study.

7.0 Project cost considerations

This section presents a feasibility-level opinion of cost of the evaluated alternatives, discusses potential funding sources, and provides an approximate project schedule.

7.1 Opinion of Cost

The opinion of cost is a Class 4 feasibility-level cost estimate as defined by the American Association of Cost Engineers International (AACI International) and uses the assumptions listed below and detailed in the following sections.

1. The cost estimate assumes a 30% construction contingency.
2. Costs associated with design, permitting, and construction observation (collectively "engineering") is assumed to be 30% of the estimated construction costs (excluding contingency).
3. Construction easements may be necessary to construct the project; however, the cost is expected to be negligible.
4. Additional work may be required to determine if cultural and/or historical resources are present at any project site.

The total construction and 30-year cost estimates for each recommended alternative are summarized in Table 7-1. Detailed cost-estimate tables for all alternatives considered are provided in Appendix E.

The Class 4 level cost estimates have an acceptable range of between -15% to -30% on the low range and +20% to +50% on the high range. Based on the development of concepts and initial vetting of the concepts by the City of Crystal, it is not necessary to utilize the full range of the acceptable range for the cost estimate; and we assume the final costs of construction may be between -20% and +30% of the estimated construction budget. The assumed contingency for the project (30%) incorporates the potential high end of the cost estimate range.

An opinion of cost was prepared for each considered alternative and add-on discussed in the sections above. The details of the cost estimate are presented in Table 7-1.

Bassett Creek Park Pond Opinion of Cost:

- The total capital cost for construction of removing accumulated sediment at Bassett Creek Park Pond (baseline alternative) is $1,167,000, which includes estimated construction costs of $730,000, plus $219,000 for construction contingency and $219,000 for engineering (all costs rounded to the nearest $1,000).
- The total capital cost for construction of deepening Bassett Creek Park Pond (alternative 2) is $1,550,000, which includes estimated construction costs of $969,000, plus $291,000 for construction contingency and $291,000 for engineering.

- The total additional capital cost for construction of the forebay at Bassett Creek Park Pond (add-on 1) is $183,000, which includes estimated construction costs of $115,000, plus $35,000 for construction contingency and $35,000 for engineering.

- The total capital cost for construction of the forebay at Bassett Creek Park Pond as a stand-alone project (add-on 1a) is $956,000, which includes estimated construction costs of $598,000, plus $180,000 for construction contingency and $180,000 for engineering.

- The total capital cost for construction of a native vegetation buffer at Bassett Creek Park Pond (add-on 2) is $85,000, which includes estimated construction costs of $53,000, plus $16,000 for construction contingency and $16,000 for engineering.

- Reusing Level 1 material at Bassett Creek Park Pond (add-on 3) will reduce the construction cost of removing accumulated sediment or deepening the pond by $6,000 to $12,000, based on the City's use of 1,200 cubic yards of excavated material at the park. Additional analysis will be needed during final design to determine the volume of material that could be reused, and if the excavated material is suitable for reuse and could be sufficiently dewatered onsite to be used as fill.

- A cost for construction of a fishing pier at Bassett Creek Park Pond (add-on 4) was not determined because this would likely be funded by the City of Crystal with cooperation from the MDNR and the possible use of grant funds.

Winnetka Pond East Opinion of Cost:

- The total capital cost for construction of removing accumulated sediment at Winnetka Pond East (baseline alternative) is $259,000, which includes estimated construction costs of $162,000, plus $49,000 for construction contingency and $49,000 for engineering.

- The total capital cost for construction of deepening Winnetka Pond East to 4.2 feet (alternative 2) is $617,000, which includes estimated construction costs of $386,000, plus $116,000 for construction contingency and $116,000 for engineering.

- The total capital cost for construction of deepening Winnetka Pond East to 6.0 feet (alternative 3) is $888,000, which includes estimated construction costs of $555,000, plus $167,000 for construction contingency and $167,000 for engineering.

- The total capital cost for construction of a native vegetation buffer at Winnetka Pond East (add-on 1) is $17,000, which includes estimated construction costs of $11,000, plus $4,000 for construction contingency and $4,000 for engineering.

- The total capital cost for goose management at Winnetka Pond East (add-on 2) is $8,000, which includes estimated construction costs of $5,000, plus $2,000 for construction contingency and $2,000 for engineering.

7.1.1 Temporary easements

Most of the project is located on property owned by the City of Crystal or in areas where the City has access easements. The costs associated with temporary construction easements, if required, are typically negligible; no costs for temporary construction easements are included in this estimate.

7.1.2 Off-site sediment disposal

Most alternatives assume off-site disposal of excavated sediment. Based on the sediment sampling and investigation conducted during this study, it is assumed that sediment disposed off-site will not require additional testing. As such, these costs are not included in this estimate. If the projects are not constructed in 2018, additional testing should be considered to determine if the level of contaminants present in the material has increased such that the material would require different material management and disposal considerations.

7.1.3 Wetland mitigation

The wetland delineation for both Winnetka Pond East and Bassett Creek Park Pond identified wetlands around the perimeter of the pond and in the pond. The goal of the proposed alternatives is to minimize the amount of wetland impacts and to limit impacts to areas where the work would not change the wetland type from what is in place now or was in place following the original construction or previous work in the ponds. Therefore, it is not anticipated that the projects will require additional costs for wetland mitigation. The project alternatives were selected to minimize wetland impacts to preserve existing wetlands and minimize additional project cost.

7.1.4 30-year cost

The 30-year cost for each alternative is based on anticipated maintenance and replacement costs. For alternatives with an estimated life span less than 30 years, significant maintenance is assumed to occur at the end of the estimated life span shown in Table 7-1. The 30-year cost for each alternative is calculated as the future worth of the initial capital cost (including contingency and engineering costs) plus the future worth of annual maintenance and significant maintenance at the end of the alternative's life span. A 3% rate of inflation is assumed. The annualized cost for each alternative is calculated as the value of 30 equal, annual payments of the same future worth as the 30-year cost.

Bassett Creek Park Pond 30-year cost:

- The estimated total 30-year cost for removing accumulated sediment at Bassett Creek Park Pond (baseline alternative) is $3,455,000; the equivalent annualized cost is $72,600.
- The estimated total 30-year cost for deepening Bassett Creek Park Pond (alternative 1) is $4,384,000; the equivalent annualized cost is $92,100.
- The estimated total additional 30-year cost for construction of a forebay at Bassett Creek Park Pond (add-on 1) is $963,000; the equivalent annualized cost is $20,200.

- The estimated total 30-year cost for construction of a forebay at Bassett Creek Park Pond as a stand-alone project (add-on 1a) is $2,839,000; the equivalent annualized cost is $59,700.
- The estimated total 30-year cost for construction of a native vegetation buffer at Bassett Creek Park Pond (add-on 2) is $659,000; the equivalent annualized cost is $13,900.

Winnetka Pond East 30-year cost:

- The estimated total 30-year cost for removing accumulated sediment at Winnetka Pond East (baseline alternative) is $823,000; the equivalent annualized cost is $17,300.
- The estimated total 30-year cost for deepening Winnetka Pond East to 4.2 feet (alternative 2) is $1,693,000; the equivalent annualized cost is $35,600.
- The estimated total 30-year cost for deepening Winnetka Pond East to 6.0 feet (alternative 3) is $2,350,000; the equivalent annualized cost is $49,400.
- The estimated total 30-year cost for construction of a native vegetation buffer at Winnetka Pond East (add-on 1) is $130,000; the equivalent annualized cost is $2,700.
- The estimated total 30-year cost for goose management at Winnetka Pond East (add-on 2) is $238,000; the equivalent annualized cost is $5,000.

7.1.5 Annualized pollutant reduction cost

Estimated annual loading reductions for TSS and TP are included for each recommended alternative in Table 7-1. The BCWMC Engineer computed the loading reductions by modifying the BCWMC P8 model to include the proposed alternatives. The annualized pollutant-reduction cost for each alternative is the annualized 30-year cost divided by the annual load reduction.

Bassett Creek Park Pond annualized pollutant reduction cost:

- The estimated total annualized pollutant reduction costs for removing accumulated sediment at Bassett Creek Park Pond without improvements at Winnetka Pond East (baseline alternative) are $15,130 per pound TP and $59 per pound TSS. The estimated total annualized pollutant reduction costs for deepening Bassett Creek Park Pond without improvements at Winnetka Pond East (alternative 2) are $13,160 per pound TP and $51 per pound TSS.
- The estimated total annualized pollutant reduction costs for removing accumulated sediment at Bassett Creek Park Pond with improvements at Winnetka Pond East (baseline alternative) are $17,290 per pound TP and $67 per pound TSS. The estimated total annualized pollutant reduction costs for deepening Bassett Creek Park Pond with improvements at Winnetka Pond East (alternative 2) are $19,600 per pound TP and $76 per pound TSS.
- Annualized pollutant reduction costs were not determined for the add-ons at Bassett Creek Park Pond because the add-ons will facilitate more cost-effective long term maintenance, but not

provide additional pollutant removal (construction of a forebay—add-on 1), will provide habitat and unquantified water quality benefits (native vegetation buffer—add-on 2), will provide recreational benefit (fishing pier—add-on 4), or will reduce the construction cost (disposal of material on-site—add-on 3).

Winnetka Pond East annualized pollutant reduction cost:

- The estimated total annualized pollutant reduction costs for removing accumulated sediment at Winnetka Pond East (baseline alternative) are $10,180 per pound TP and $39 per pound TSS.
- The estimated total annualized pollutant reduction costs for deepening Winnetka Pond East to 4.2 feet (alternative 2) are $6,980 per pound TP and $28 per pound TSS.
- The estimated total annualized pollutant reduction costs for deepening Winnetka Pond East to 6.0 feet (alternative 3) are $6,960 per pound TP and $27 per pound TSS.
- Annualized pollutant reduction costs were not determined for the native vegetation buffer (add-on 1) and goose management (add-on 2) at Winnetka Pond East because the add-ons will provide habitat and unquantified water quality benefits.

The cost per pound of phosphorus removed for these dredging projects using the current analysis is very high compared to other BCWMC CIP projects—for example, the previous highest cost per pound of phosphorus removed for a BCWMC CIP project was $5,900 for the Northwood Lake Improvement Project (project NL-1). The high cost per pound of phosphorus removed for this project is likely due to several factors. The P8 model was developed at the watershed scale; this means that many of the watersheds are relatively large and the model may not be accurately reflecting the time it takes runoff to reach the ponds. This could be causing the model to over-predict flows and thus under-predict pollutant removals because the model is flushing more pollutants downstream and not allowing them to settle in the ponds. The P8 model does not account for pollutant load from the creek upstream of the ponds. For example, there are sections of the North Branch of Bassett Creek, upstream of Bassett Creek Park Pond, which have eroded banks that are contributing sediment and pollutants to the creek. This additional pollutant load is not included in the P8 model and the ponds are likely removing some of this additional load, providing a pollutant removal benefit that is not reflected in the modeling. This creek bank erosion could contribute an additional phosphorus load estimated between 3 and 92 pounds per year to the North Branch of Bassett Creek upstream of Bassett Creek Park Pond, depending on the severity of the erosion. This additional potential phosphorus load represents 15 percent—450 percent of the P8 modeled phosphorus inflow to Bassett Creek Park Pond.

The P8 model also does not account for resuspension of the sediment accumulated in the ponds. Once sediment (and the associated pollutants) has settled in the pond, the P8 model assumes they remain trapped. Calculations to determine the velocity of water through the ponds indicate that in Winnetka Pond East under current conditions, the velocities are high enough to resuspend sediment particles up to medium silt size and carry them downstream. This means that the model is over-estimating the current performance of the pond. Based on the scour/resuspension analysis, the BCWMC Engineer's professional

judgment is that Winnetka Pond East under current conditions is removing only 20% of the total phosphorus predicted by the P8 model. Under current conditions, the P8 model estimates that the pond removes 55.7 pounds of total phosphorus per year. Applying the 20% effectiveness to the 55.7 pounds of phosphorus removal per year results in an estimate of 11.1 pounds of phosphorus removal per year under current conditions at Winnetka Pond East. The P8 model estimates for the Winnetka Pond East alternatives reasonably predict the total phosphorus removal provided by the pond. Therefore, another way to analyze the annual pollutant removal costs for total phosphorus is to compare the predicted phosphorus removals for the alternatives to the professional judgment phosphorus removal under current conditions. This results in lower costs per pound of phosphorus removal (see Table 7-2).

Constructing the Winnetka Pond East project to remove the accumulated sediment and deepen the pond would reduce the velocities through the pond, reducing the potential for resuspension and increasing the actual pollutant removal efficiency of the ponds.

For Bassett Creek Park Pond under current conditions, the calculations showed that the pond was not experiencing any scour or resuspension. However, approximately half of the pond surface area is located in an ineffective flow or shallow backwater area (north/northeast side of pond). As a result, the BCWMC Engineer's professional judgment is that the model may be overestimating by 50% the TP removal provided by the pond. Under current conditions, the P8 model estimates that Bassett Creek Park Pond removes 151.3 pounds of total phosphorus per year. Applying the 50% effectiveness to the 151.3 pounds of phosphorus removal per year results in an estimate of 75.7 pounds of phosphorus removal per year under current conditions. As none of the proposed alternatives address the ineffective flow area in the north of the pond, the predicted phosphorus removals for the Bassett Creek Park Pond alternatives would also be only 50% effective. The proposed conditions total phosphorus removals predicted by the P8 ranged from 155.5-158.3 pounds per year; applying the 50% effectiveness results in 77.8-79.2 pounds per year of phosphorus removal. This results in higher costs per pound of phosphorus removal (see Table 7-2).

7.1.6 Miscellaneous costs

Most site costs include erosion control and other miscellaneous items needed during construction (e.g., a rock construction entrance, silt fence or biologs, and restoration of access paths). Based on previous project experience, the estimate for each alternative includes some costs that could be applied to these miscellaneous items.

7.2 Funding sources

The City of Crystal proposes to use BCWMC CIP funds to pay for the Bassett Creek Park Pond and Winnetka Ponds dredging projects. The source of these funds is an ad valorem tax levied by Hennepin County over the entire Bassett Creek watershed. The City may pursue grants related to the recreation components of the project, such as deepening the southeastern portion of Bassett Creek Park Pond and installing a new fishing pier and aerator. The sediment removal portion of the project is typically considered standard maintenance by grantors and is usually not eligible for grant funding.

7.3 Project schedule

For project construction to occur in 2018, project design would be scheduled to begin in winter 2017. The construction work would likely be completed during the fall/winter of 2018 and into 2019. This would require the BCWMC to hold a public hearing and order the project in time to submit its ad valorem tax levy request to Hennepin County. If project construction is scheduled for fall or winter, spring or summer 2018 bidding is recommended. This will allow contractors to schedule to complete the project at a reasonable price. In the intervening time, the City would gather public input, prepare the final design, and obtain permits.

8.0 Alternatives assessment and recommendations

The final project will consist of a combination of the alternatives discussed below. The costs of the alternatives recommended for the final design are summarized in Table 8-1 (TP load reductions based on the P8 model) and Table 8-2 (TP load reductions based on professional judgment). Alternatives that could be implemented in combination were chosen if they presented cost-effective TP and TSS loading reductions and appear feasible to permit for construction. The ability of alternatives to improve habitat and recreation (identified as priorities in stakeholder meetings and goals of the BCWMC) was also taken into consideration in choosing the final alternatives.

The final design process for the Bassett Creek Park Pond project should include continuing to work closely with the City of Crystal Parks and Recreation Department to develop a plan to successfully combine efforts to improve Bassett Creek Park Pond with the Bassett Creek Park System Master Plan.

The annualized pollutant reduction costs indicate that the improvements at Winnetka Pond East are the most cost effective and that improvements at Bassett Creek Park Pond are more cost effective when work at Winnetka Pond East is not completed. Because Bassett Creek Park Pond is in a prominent park in the City of Crystal, completion of a project at this location would provide the opportunity to complete additional work such as the creation of a native vegetation buffer and enhancements to fish habitat and recreational use of the pond.

Because the modeling results do not show the expected pollutant removals from completing the projects, the BCWMC Engineer recommends completing first the Winnetka Pond East alternative 3 project (deepening to 6.0 feet), along with add-on 1 (native buffer) and add-on 2 (goose management), completing further investigation on Bassett Creek Park Pond, and ordering a project at this location in the future if it is determined to be feasible. This additional analysis on Bassett Creek Park Pond would allow time for the City of Crystal to complete its parks planning process at this location, which may result in identifying other feasible options for improvements at Bassett Creek Park Pond. These additional options may include options for increasing flood storage in the park to reduce the flood elevation of Bassett Creek Park Pond and reduce flooding downstream or identify other locations and alternatives for other water quality treatment alternatives at the site. The P8 model could be calibrated using City of Plymouth/Three Rivers Park District information and using BCWMC information that will be collected as part of a proposed monitoring program on the North Branch of Bassett Creek. After calibrating the model, the pollutant removal efficiencies for this project could be updated to more accurately predict the pollutant removals provided by the proposed project (updated model results would likely show more pollutant removal provided by completing the project).

In addition to providing pollutant removal benefits, removing accumulated sediment from Bassett Creek Park Pond and Winnetka Pond East is necessary to continue to provide flood storage in these areas along the trunk line of the North Branch of Bassett Creek. An area near the center of Winnetka Pond East just downstream of two inlets to the pond is becoming very shallow. As additional sediment accumulates, the sediment will form an island near the center of the pond. Once the island forms above the normal water level, the sediment island reduces the flood storage available in the area, which could lead to additional

flooding in other areas that would normally not be inundated. The sediment islands may also cause flow restrictions and therefore additional flooding during smaller storm events where flooding may not normally occur. A similar situation will eventually occur at Bassett Creek Park Pond, though the island formation is not as dramatic at this time. Eventually, some sediment removal will need to be performed to maintain flood storage capacity, regardless of the water quality benefit provided. Furthermore, when the flood control project at Bassett Creek Park Pond was designed and constructed, it assumed some additional excavation volume to allow for sediment storage that would not interfere with providing the designed flood control benefits. Maintenance removal of the accumulated sediment is necessary to maintain functionality of the flood control project.

Removing accumulated sediment and deepening the permanent pool to 6.0 feet at Winnetka Pond East (alternative 3), creating a native buffer (add-on 1), and implementing goose management methods (add-on 2) will provide water quality improvement by 1) providing additional permanent pool storage for increased sedimentation, 2) minimizing downstream transport of sediment, 3) filtering pollutants such as phosphorus, sediment, and bacteria from stormwater runoff, and 4) reducing phosphorus and bacteria loads from geese. If the BCWMC decides to support the Winnetka Pond East project, we recommend completing it in 2018, which fits into the City's CIP schedule and the BCWMC CIP schedule. The total estimated project capital cost to implement the Winnetka Pond East project is $913,000, which includes $888,000 to deepen Winnetka Pond East to 6.0 feet, $17,000 to construct a native buffer, and $8,000 for goose management. We recommend that the opinions of cost identified in this study be used to develop a levy request for the selected project and that the Winnetka Pond East project proceeds to the design and construction phase.

Table 7-1. Bassett Creek Park Pond and Winnetka Pond East feasibility study alternatives cost estimates - TP load reductions based on P8 model results

Site	Alternative	Alternative Description	Construction Cost Estimate (1)	Construction Contingency (2)	Engineering (3)	Capital Cost Estimate (4)(5)	Estimated Life Span(6) (years)	Annual Maintenance Cost Estimate	Major Maintenance Cost Estimate (7)	30-Year Future Worth Cost Estimate(8)(9)	Annualized Cost(9)(10)	Total Phosphorus (TP) Loading		Total Suspended Sediment (TSS)	
												Load Reduction Improvement (lb/yr)(11)	Cost/lb TP Reduction (12)	Load Reduction Improvement (lb/yr)	Cost/lb TSS Reduction(12)
Bassett Creek Park Pond (No Winnetka Pond Improvement)	Baseline Alternative	Remove accumulated sediment	$ 730,000	$ 219,000	$ 219,000	$ 1,167,000	30	$ -	$ 256,400	$ 3,455,000	$ 72,600	4.8	$ 15,130	1,227	$ 59
Bassett Creek Park Pond (No Winnetka Pond Improvement)	Alternative 2	Deepen SE section to 10 feet	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	30	$ -	$ 256,000	$ 4,384,000	$ 92,100	7.0	$ 13,160	1,792	$ 51
Bassett Creek Park Pond	Baseline Alternative	Remove accumulated sediment	$ 730,000	$ 219,000	$ 219,000	$ 1,167,000	30	$ -	$ 256,400	$ 3,455,000	$ 72,600	4.2	$ 17,290	1,087	$ 67
Bassett Creek Park Pond	Alternative 2	Deepen SE section to 10 feet	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	30	$ -	$ 256,000	$ 4,384,000	$ 92,100	4.7	$ 19,600	1,217	$ 76
Bassett Creek Park Pond	Add-on 1	Construct sediment forebay in northwest section (forebay in addition to baseline alternative or alternative 2)	$ 115,000	$ 35,000	$ 35,000	$ 183,000	30	$ 10,900	$ -	$ 963,000	$ 20,200	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 1a	Construct sediment forebay in northwest section (forebay only, no other pond construction)	$ 598,000	$ 180,000	$ 180,000	$ 956,000	30	$ 10,900	$ -	$ 2,839,000	$ 59,700	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 2	Create native vegetation buffer around pond	$ 53,000	$ 16,000	$ 16,000	$ 85,000	30	$ 8,800	$ 21,120	$ 659,000	$ 13,900	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 3 (13)	Dispose of Level 1 material onsite	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 4 (14)	Construct new fishing pier at deepened southeast section	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	0.0	$ -	0	$ -
Winnetka Pond East	Baseline Alternative	Remove accumulated sediment	$ 162,000	$ 49,000	$ 49,000	$ 259,000	30	$ -	$ 80,000	$ 823,000	$ 17,300	1.7	$ 10,180	438	$ 39
Winnetka Pond East	Alternative 2	Deepen entire pond to 4.2 feet	$ 386,000	$ 116,000	$ 116,000	$ 617,000	30	$ -	$ 80,000	$ 1,693,000	$ 35,600	5.1	$ 6,980	1,271	$ 28
Winnetka Pond East	Alternative 3	Deepen entire pond to 6.0 feet	$ 555,000	$ 167,000	$ 167,000	$ 888,000	30	$ -	$ 80,000	$ 2,350,000	$ 49,400	7.1	$ 6,960	1,823	$ 27
Winnetka Pond East	Add-on 1	Create Native Vegetation Buffer Around Pond (50-foot buffer)	$ 11,000	$ 4,000	$ 4,000	$ 17,000	30	$ 1,700	$ 4,200	$ 130,000	$ 2,700	0.0	$ -	0	$ -
Winnetka Pond East	Add-on 2	Goose Management	$ 5,000	$ 2,000	$ 2,000	$ 8,000	30	$ 5,000	$ -	$ 238,000	$ 5,000	0.0	$ -	0	$ -

(1) A Class 4 screening-level opinion of probable cost, as defined by the American Association of Cost Engineers International (AACI International), has been prepared for these alternatives. The opinion of probable construction cost provided in this table is made based on Barr's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. The cost opinion is based on project-related information available to Barr at this time and includes a conceptual-level design of the project.

(2) Assumed 30% contingency on construction costs.

(3) Assumed 30% of construction costs for design, permitting, and adminstration.

(4) Includes estimated initial construction cost (with 30% contingency) and design, permitting, and adminstration costs (30% of construction cost).

(5) Many of the alternatives in this table are mutually exclusive. The total project cost will not be a sum of each of these alternatives, rather a sum of a unique combination of a portion of these alternatives.

(6) Estimated life span until significant maintenance is required.

(7) Future value of significant maintenance at the end of the lifespan of the project (i.e. future cost at 20 years for a project with a 20 year life span)

(8) Future value of initial capital cost, annual maintenance cost, and major maintenance cost at end of expected life span.

(9) Assumes 3% inflation rate.

(10) Annualized 30-year future worth.

(11) TP load reductions based on P8 model results

(12) Annualized cost divided by estimated annual pollution load reduction.

(13) This alternative would provide no additional pollutant removal, but would reduce the construction cost associated with the Bassett Creek Park Pond Baseline Alternative and Alternative 2 and the Winnetka Pond Baseline Alternative, Alternative 2, and Alternative 3 by $6,000 - $12,00.

(14) This alternative would likely be funded by the City of Crystal/MDNR/Grant Funds, not the BCWMC.

Table 7-2. Bassett Creek Park Pond and Winnetka Pond East feasibility study alternatives cost estimates - TP load reductions based on professional judgement

Site	Alternative	Alternative Description	Construction Cost Estimate (1)	Construction Contingency (2)	Engineering (3)	Capital Cost Estimate (4)(5)	Estimated Life Span(6) (years)	Annual Maintenance Cost Estimate	Major Maintenance Cost Estimate (7)	30-Year Future Worth Cost Estimate(8)(9)	Annualized Cost(9)(10)	Total Phosphorus (TP) Loading		Total Suspended Sediment (TSS)	
												Load Reduction Improvement (lb/yr)(11)	Cost/lb TP Reduction (12)	Load Reduction Improvement (lb/yr)	Cost/lb TSS Reduction(12)
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Bassett Creek Park Pond (No Winnetka Pond Improvement)	Alternative 2	Deepen SE section to 10 feet	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	30	$ -	$ 256,000	$ 4,384,000	$ 92,100	3.5	$ 26,310	1,792	$ 51
Bassett Creek Park Pond	Baseline Alternative	Remove accumulated sediment	$ 730,000	$ 219,000	$ 219,000	$ 1,167,000	30	$ -	$ 256,400	$ 3,455,000	$ 72,600	2.1	$ 34,570	1,087	$ 67
Bassett Creek Park Pond	Alternative 2	Deepen SE section to 10 feet	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	30	$ -	$ 256,000	$ 4,384,000	$ 92,100	2.3	$ 40,040	1,217	$ 76
Bassett Creek Park Pond	Add-on 1	Construct sediment forebay in northwest section (forebay in addition to baseline alternative or alternative 2)	$ 115,000	$ 35,000	$ 35,000	$ 183,000	30	$ 10,900	$ -	$ 963,000	$ 20,200	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 1a	Construct sediment forebay in northwest section (forebay only, no other pond construction)	$ 598,000	$ 180,000	$ 180,000	$ 956,000	30	$ 10,900	$ -	$ 2,839,000	$ 59,700	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 2	Create native vegetation buffer around pond	$ 53,000	$ 16,000	$ 16,000	$ 85,000	30	$ 8,800	$ 21,120	$ 659,000	$ 13,900	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 3 (13)	Dispose of Level 1 material onsite	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	0.0	$ -	0	$ -
Bassett Creek Park Pond	Add-on 4 (14)	Construct new fishing pier at deepened southeast section	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	0.0	$ -	0	$ -
Winnetka Pond East	Baseline Alternative	Remove accumulated sediment	$ 162,000	$ 49,000	$ 49,000	$ 259,000	30	$ -	$ 80,000	$ 823,000	$ 17,300	46.3	$ 370	438	$ 39
Winnetka Pond East	Alternative 2	Deepen entire pond to 4.2 feet	$ 386,000	$ 116,000	$ 116,000	$ 617,000	30	$ -	$ 80,000	$ 1,693,000	$ 35,600	49.7	$ 720	1,271	$ 28
Winnetka Pond East	Alternative 3	Deepen entire pond to 6.0 feet	$ 555,000	$ 167,000	$ 167,000	$ 888,000	30	$ -	$ 80,000	$ 2,350,000	$ 49,400	51.7	$ 960	1,823	$ 27
Winnetka Pond East	Add-on 1	Create Native Vegetation Buffer Around Pond (50-foot buffer)	$ 11,000	$ 4,000	$ 4,000	$ 17,000	30	$ 1,700	$ 4,200	$ 130,000	$ 2,700	0.0	$ -	0	$ -
Winnetka Pond East	Add-on 2	Goose Management	$ 5,000	$ 2,000	$ 2,000	$ 8,000	30	$ 5,000	$ -	$ 238,000	$ 5,000	0.0	$ -	0	$ -

(1) A Class 4 screening-level opinion of probable cost, as defined by the American Association of Cost Engineers International (AACI International), has been prepared for these alternatives. The opinion of probable construction cost provided in this table is made based on Barr's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. The cost opinion is based on project-related information available to Barr at this time and includes a conceptual-level design of the project.

(2) Assumed 30% contingency on construction costs.

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(8) Future value of initial capital cost, annual maintenance cost, and major maintenance cost at end of expected life span.

(9) Assumes 3% inflation rate.

(10) Annualized 30-year future worth.

(11) TP load reductions based on professional judgment. For **Bassett Creek Park Pond**, equivalent to 50% of the removal predicted by P8 model under existing and proposed conditions; lower estimated removal based on approximately half of the pond surface area in the existing conditions model is located in an ineffective flow or shallow backwater area. P8 model predicted 151.3 lbs of TP removal under existing conditions; 50% of 151.3 is 75.7 lbs/yr. The proposed conditions TP removals predicted by P8 ranged from 155.5 - 158.3 lbs/yr; 50% is 77.8 - 79.2 lbs/yr. Result: approximately doubles the $/lb/yr TP removed. For **Winnetka Pond East**, equivalent to 20% of the removal predicted by P8 model under existing conditions; lower estimated removal based on scour/resuspension analysis finding almost all sediment particles subject to resuspension. P8 model predicted 55.7 lbs of TP removal under existing conditions; 20% of 55.7 is 11.1 lbs/yr.

(12) Annualized cost divided by estimated annual pollution load reduction.

(13) This alternative would provide no additional pollutant removal, but would reduce the construction cost associated with the Bassett Creek Park Pond Baseline Alternative and Alternative 2 and the Winnetka Pond Baseline Alternative, Alternative 2, and Alternative 3 by $6,000 - $12,00.

(14) This alternative would likely be funded by the City of Crystal/MDNR/Grant Funds, not the BCWMC.

Table 8-1. Bassett Creek Park Pond and Winnetka Pond East recommended alternatives cost summary - TP load reductions based on P8 model results

Alternative	Construction Cost Estimate (1)	Construction Contingency (2)	Engineering (3)	Capital Cost Estimate (4)	Annualized Cost(5)	TP Loading		TSS Loading	
						Load Reduction (lb/yr)	Cost/lb Reduced(6)	Load Reduction (lb/yr)	Cost/lb Reduced(6)
Bassett Creek Park Pond Alternative 2 (No Winnetka Pond)	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	$ 92,100	7.0	$ 13,160	1,792	$ 51
Bassett Creek Park Pond Add-on 1 (forebay)	$ 115,000	$ 35,000	$ 35,000	$ 183,000	$ 20,200	0.0	$ -	0	$ -
Bassett Creek Park Pond Add-on 2 (buffer)	$ 53,000	$ 16,000	$ 16,000	$ 85,000	$ 13,900	0.0	$ -	0	$ -
Winnetka Pond East Baseline Alternative	$ 162,000	$ 49,000	$ 49,000	$ 259,000	$ 17,300	1.7	$ 10,180	438	$ 39
Winnetka Pond East Alternative 3 (deepen to 6.0 ft)	$ 555,000	$ 167,000	$ 167,000	$ 888,000	$ 49,400	7.1	$ 6,960	1,823	$ 27
Winnetka Pond East Add-on 1 (buffer)	$ 11,000	$ 4,000	$ 4,000	$ 17,000	$ 2,700	0.0	$ -	0	$ -
Winnetka Pond East Add-on 2 (goose management)	$ 5,000	$ 2,000	$ 2,000	$ 8,000	$ 5,000	0.0	$ -	0	$ -

(1) A Class 4 screening-level opinion of probable cost, as defined by the American Association of Cost Engineers International (AACI International), has been prepared for these alternatives. The opinion of probable construction cost provided in this table is made based on Barr's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. The cost opinion is based on project-related information available to Barr at this time and includes a conceptual-level design of the project.

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(3) Assumed 30% of construction costs for design, permitting, and adminstration.

(4) Includes estimated initial construction cost (with 30% contingency) and design, permitting, and adminstration costs (30% of construction cost).

(5) Future value of capital cost, annual maintenance cost, and major maintenance cost at end of expected life span, annualized to 30-year value assuming 3% inflation rate.

(6) Annualized cost divided by estimated annual pollution load reduction.

Table 8-2. Bassett Creek Park Pond and Winnetka Pond East recommended alternatives cost summary - TP load reductions based on professional judgement

Alternative	Construction Cost Estimate (1)	Construction Contingency (2)	Engineering (3)	Capital Cost Estimate (4)	Annualized Cost(5)	TP Loading		TSS Loading	
						Load Reduction (lb/yr)(6)	Cost/lb Reduced(7)	Load Reduction (lb/yr)	Cost/lb Reduced(7)
Bassett Creek Park Pond Alternative 2 (No Winnetka Pond)	$ 969,000	$ 291,000	$ 291,000	$ 1,550,000	$ 92,100	75.7	$ 30,250	1,792	$ 51
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Bassett Creek Park Pond Add-on 2 (buffer)	$ 53,000	$ 16,000	$ 16,000	$ 85,000	$ 13,900	0.0	$ -	0	$ -
Winnetka Pond East Alternative 3	$ 555,000	$ 167,000	$ 167,000	$ 888,000	$ 49,400	51.7	$ 956	1,823	$ 27
Winnetka Pond East Add-on 1 (buffer)	$ 11,000	$ 4,000	$ 4,000	$ 17,000	$ 2,700	0.0	$ -	0	$ -
Winnetka Pond East Add-on 2 (goose management)	$ 5,000	$ 2,000	$ 2,000	$ 8,000	$ 5,000	0.0	$ -	0	$ -

(1) A Class 4 screening-level opinion of probable cost, as defined by the American Association of Cost Engineers International (AACI International), has been prepared for these alternatives. The opinion of probable construction cost provided in this table is made based on Barr's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. The cost opinion is based on project-related information available to Barr at this time and includes a conceptual-level design of the project.

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(3) Assumed 30% of construction costs for design, permitting, and adminstration.

(4) Includes estimated initial construction cost (with 30% contingency) and design, permitting, and adminstration costs (30% of construction cost).

(5) Future value of capital cost, annual maintenance cost, and major maintenance cost at end of expected life span, annualized to 30-year value assuming 3% inflation rate.

(6) TP load reductions based on professional judgment. For **Bassett Creek Park Pond**, equivalent to 50% of the removal predicted by P8 model under existing and proposed conditions; lower estimated removal based on approximately half of the pond surface area in the existing conditions model is located in an ineffective flow or shallow backwater area. P8 model predicted 151.3 lbs of TP removal under existing conditions; 50% of 151.3 is 75.7 lbs/yr. The proposed conditions TP removals predicted by P8 ranged from 155.5 - 158.3 lbs/yr; 50% is 77.8 - 79.2 lbs/yr. Result: approximately doubles the $/lb/yr TP removed.

For **Winnetka Pond East**, equivalent to 20% of the removal predicted by P8 model under existing conditions; lower estimated removal based on scour/resuspension analysis finding almost all sediment particles subject to resuspension. P8 model predicted 55.7 lbs of TP removal under existing conditions; 20% of 55.7 is 11.1 lbs/yr.

(7) Annualized cost divided by estimated annual pollution load reduction.

Item 6B.
BCWMC 5-18-17

BCWMC Capital Improvement Program 2016 – 2018

2018 Max Levy Request

Project Name	City	Number	2016	2017	2018	TOTAL
Honeywell Pond Expansion, Main Stem Watershed	GV	BC-4	$1,202,000			$1,202,000
Northwood Lake Improvement Project: Construct pond upstream of lake & install underground stormwater treatment and reuse system and bioinfiltration cells	NH	NL-1	$676,000	$1,093,070		$1,769,070
Main Stem Channel Restoration, Cedar Lake Road to Irving Ave	MPLS	2017CR-M		$400,000	$664,472	$1,064,472
Plymouth Creek Restoration, from Annapolis Lane to 2,500 feet upstream (west) of Annapolis Lane	Plymouth	2017CR-P		$580,930	$282,643	$863,573
Bassett Creek Park Pond Phase I Dredging Project: Winnetka Pond	Crystal	BCP-2			$1,000,000	$1,000,000
TOTAL Estimated Project Cost			**$1,878,000**	**$2,074,000**	**$1,947,115**	
City Contributions ($450,000 for BC-4 + $276,400 for NL-1)			-$450,000	-$276,400	-$0	
Grants Received [a]			-$206,000	-$494,000	-$600,300	
Levy [b]			$1,222,000	$1,303,600	$1,346,815	

[a] $300,000 MPCA Clean Water Partnership grant + $400,000 BWSR Clean Water Fund grant for NL-1 (2016 and 2017); $450,000 for 2017CR-P (2018) + $150,300 for 2017CR-M (2018)

[b] 2016 and 2017 amounts already levied; 2018 proposed maximum levy

Item 6C.
BCWMC 5-18-17

Bassett Creek Watershed Management Commission

MEMO

To: Bassett Creek Watershed Management Commissioners
From: BCWMC Technical Advisory Committee
Date: May 5, 2017

RE: TAC Recommendations – 5/4/17 TAC Meeting

The BCWMC Technical Advisory Committee met on May 4th to discuss the XP-SWMM Phase II project and the water quality requirements for linear projects. They forward the following recommendations for the Commission's consideration.

TAC Members and Others at 5/4/17 TAC Meeting:

Paul Hudalla and Lois Eberhart, Minneapolis
Jeff Oliver and Eric Eckman, Golden Valley
Erick Francis, St. Louis Park
Richard McCoy, Robbinsdale
Chris Long, New Hope
Mark Ray, Crystal (partial attendance)
Tom Dietrich, Minnetonka
Ben Scharenbroich, Plymouth
Rachael Crabb, MPRB
Stacy Harwell, Golden Valley Commissioner
Gary Holter, Medicine Lake Commissioner
Jim Prom, Plymouth Commissioner
Laura Jester, Administrator
Karen Chandler and Jen Koehler, Commission Engineers

1. **XP-SWMM Phase II**

   Commission Engineer Koehler gave a brief overview of a technical memo describing the model finalization process that resulted from meetings with individual cities, and additional data submitted by some cities and the Blue Line LRT Project Office. Engineer Koehler noted the final 100-year inundation area maps, along with a comparison table of the existing and proposed new flood elevations and peak discharges for areas along the BCWMC Trunk System. Engineer Koehler noted that the inundation area maps now distinguish between areas where the Commission has floodplain jurisdiction (along the BCWMC Trunk System) and areas outside of the Commission jurisdiction where cities have floodplain jurisdiction. Engineer Koehler reported that she was very comfortable with the model results and recommended that the TAC and Commission accept the model as complete.

   Engineer Chandler thanked the cities for taking time to review the model and results individually with the Commission Engineers. She noted that it was a very helpful exercise for all parties.

   There was some discussion about the differences between the Commission vs. city jurisdictions, how to improve the look of the maps, and how/when model updates would be needed. The

TAC agreed that the model should be considered final and to recommend approval by the Commission.

Commission Engineer Chandler noted that if the Commission adopts the new floodplain levels, the Commission would start reviewing projects within its floodplain jurisdiction (along the Trunk System) against these new elevations. There was discussion about the implications of adopting the new elevations and it was noted that in some areas, the elevations are lower than existing Commission floodplain levels and in other areas the elevations are higher than existing Commission floodplain levels. It was also noted that FEMA recently updated its floodplain maps and that in many areas the FEMA floodplain levels and Commission floodplain levels are different but that this discrepancy has occurred in the past. In areas where the city has jurisdiction, it would be up to individual cities whether or not to adopt the new floodplain elevations. Noting that it's important to use the latest information in reviewing projects, the TAC recommended that the Commission adopt the new floodplain levels within its jurisdiction and begin reviewing projects against the new elevations.

Engineer Koehler reported that the final XP-SWMM model will be run for the Atlas 14 2-year, 10-year, and 100-year, 24-hour design storm events. She noted that although the results for the 2- and 10-year events will not be summarized in the report, the results will be encrypted as an XP-Viewer file that can be used by member cities. She noted that XP-Viewer is a free software program that allows users to open the XP-Viewer file and see model inputs and results without needing an XP-SWMM license. The TAC members expressed interest in obtaining the XP-Viewer software and information.

TAC members discussed additional implications of the new floodplain levels, noting that most of the challenges will be in non-Commission jurisdiction areas. Mr. Eckman reported that Golden Valley looks at floodplain levels for two reasons: FEMA flood insurance needs and the protection of structures. He noted that cities can opt to simply use the new floodplain elevations as information to residents and businesses and to help provide technical assistance to those property owners in floodplains. It was noted that city comprehensive plans will need to show the BCWMC Trunk System and Commission-adopted floodplain elevations.

The TAC also discussed the need for a comprehensive communication piece from the Commission about the new floodplain levels but that for now the Commission Engineer can continue its current message with project proposers about the discrepancies in FEMA vs. Commission floodplain levels.

The TAC agreed that the Commission should not approach FEMA about officially changing the flood elevations at this time due to the expensive, long, and arduous process involved. The TAC also agreed that only member cities should be able to request the model on behalf of themselves and other entities working in the city (which is current practice) and that the Commission should develop its own user agreement for entities that wish to use the model. It was further noted that in order to maintain the integrity of the model, only the Commission Engineer will be authorized to revise and update the model.

RECOMMENDATIONS:

1. The TAC recommends that the Commission approve the XP-SWMM Phase II model and final report (see 6Ci for final report online).

2. The TAC recommends that the Commission adopt the new floodplain elevations within its floodplain jurisdiction, which lies along the BCWMC Trunk System, and begin reviewing development/redevelopment projects against these new elevations (see 6Cii Engineer's memo with tables and maps).
3. The TAC recommends that the Commission should not, at this time, begin the process of requesting an official map revision with the Federal Emergency Management Administration (FEMA).
4. The TAC recommends that the Commission allow only member cities to request the model on behalf of themselves and other entities working in the city.
5. The TAC recommends that the Commission develop a user agreement for entities that wish to use the model.
6. The TAC recommends that in order to maintain the integrity of the model, only the Commission Engineer be authorized to revise and update the model.

2. Water Quality Performance Standards for Linear Projects

Commission Engineer Chandler noted that at the January Commission meeting, the Commission heard recommendations from the TAC regarding proposed revisions to the water quality performance standards (MIDS) in linear projects. She noted that the Commission Engineer was directed to further evaluate the issue and come to the Commission with their own recommendations. Engineer Chandler reported that at the March Commission meeting, the Commission Engineer presented her analyses and recommendations for a cost cap (in dollars/pound of total phosphorus removed) above which treatment in accordance with the MIDS performance goals for linear projects would not be required. Engineer Chandler noted that she reported that the Commission is the only organization that adopted MIDS in full and reported that many organizations only require treatment from new impervious surfaces, rather than from all reconstructed impervious surfaces. She reminded the TAC that the Commission directed her to consider and analyze a tiered approach, such as requiring the Commission's 2004 standard ("good faith effort" or "reasonable technology") for projects that add less than 5,000 ft^2 of imperviousness, then requiring MIDS for projects that create more than 5,000 ft^2 of imperviousness and that the TAC review the results of the analyses at their May 4th meeting.

The Commission Engineer presented a table that showed analyses of different alternatives for modifying the MIDS criteria for linear projects. She noted the table includes the existing BCWMC requirements and numerous alternative options for the criteria triggering treatment and the level of treatment that would be required. Further she noted the table includes and analyzes the BCWMC's project review data for linear projects from September 2015 through March 2017and shows the alternatives that are similar to the requirements of other watershed management organizations in the area. The TAC discussed the results of the analyses and the various challenges to treating runoff from linear projects given limited space, existence of utilities, the desire to retain large boulevard trees, the need to sometimes include bike lanes, and the need to improve and consider pedestrian safety on trails and sidewalks. There was consensus that the cost of treating storm water in linear projects might well exceed the cost of the project itself and that there should be a balance of needs and outcomes. It was recognized that the funding and time spent attempting to retrofit storm water projects into such tight and challenging spaces could be better spent on projects with higher impact for lower costs. TAC members also noted that cities have always worked to include best management practices in street projects wherever possible within the project area.

There was also discussion about the challenges presented by new trail and sidewalk projects that are needed to address residents' desires for improvements in quality of life and community amenities. TAC members indicated that it is increasingly challenging to meet MIDS requirements on these projects due to public right of way, safety of trail users, presence of utilities, etc., and that although vegetated buffers are installed whenever possible, sometimes there is not space to include a buffer between the trail/sidewalk and road. After further discussion, there was consensus that trails and sidewalks should be exempt from the linear projects water quality performance standards. (Current BCWMC requirements: trails and sidewalks do not count as impervious surface if they are buffered by a vegetated area at least half the width of the trail (Section 4.5 of BCWMC Requirements Document).)

RECOMMENDATIONS:

The TAC recommends that the Commission revise its water quality performance standards for linear projects with the following requirements:

1. Trails and sidewalks are exempt from BCWMC water quality performance standards, and that buffers be provided where possible.
2. For projects that create less than 1 acre of net new impervious surface, the project must include the installation/construction of best reasonable technologies to improve water quality conditions and reduce storm water runoff.
3. Net new impervious surface calculations will be based on the street surface from back of curb to back of curb; trails/sidewalks (as noted above) and driveways are not included in the net new impervious surface calculations.
4. For linear projects that create 1 acre or more of net new impervious surface, the project must capture and retain 0.55 inches of runoff off of the net new impervious area.
5. The project must use the MIDS flexible treatment options for the net new impervious area if it is not possible to capture and retain 0.55 inches of runoff from these areas.

The attached table shows the TAC-proposed triggers and water quality performance standards for linear projects and compares this to the existing BCWMC requirements. The table also includes the BCWMC's project review data for linear projects from September 2015 through March 2017, and shows the provided/required treatment amount for these projects under the existing and proposed treatment requirements.

Table 1. Proposed triggers and water quality performance standards for linear projects and comparison to existing BCWMC requirements

BCWMC Reviews of Linear Projects			2015-32 Douglas Drive	2016-03 2016 Northwood South Area Infrastructure	2016-04 Three Rivers Park District BC Regional Trail	2016-06 GV 2016 PMP STH 169-Plymouth Ave	2016-17 SWLRT	2016-32 CSAH 24 Reconstruction Project	2016-38 Northwood North Area Infrastructure	2017-02 GV 2017 PMP
BCWMC Project Review Data	Project Disturbance (acres)		32.87	11.81	7.14	2.82	57.90	4.20	12.09	6.33
	Existing Impervious (acres)		18.29	6.48	4.29	1.98	41.30	-	6.51	4.40
	Proposed Impervious (acres)		20.55	6.54	4.18	1.81	42.40	-	6.53	3.78
	Change in Impervious (acres)		2.26	0.06	(0.11)	(0.17)	1.10	-	0.02	(0.62)
	New Impervious (acres)		2.26	-	-	-	1.10	-	0.02	-
	Reconstructed Impervious (acres)		18.29	6.54	0.33	1.81	18.23	-	6.51	3.78
	Total New and Reconstructed Impervious (acres)		20.55	6.60	0.22	1.64	19.33	-	6.53	3.16
	*Capture and Retain Volume Provided (acre-feet)		0.31	0.01	-	-	0.33	N/A	0.02	-
Existing BCWMC Requirement:	Trigger MIDS at 1 acre of new/fully reconstructed impervious	MIDS Treatment: Capture & retain larger of 1.1 inches off the net increase in impervious – or – 0.55 inches off the new/fully reconstructed impervious (acre-feet)	0.94	0.30	-	0.08	0.89	-	0.30	0.14
TAC-Proposed BCWMC Requirement:	Trigger treatment at 1 acre of net new impervious	Capture & retain 0.55 inches off the net new impervious area (acre-feet), plus go through MIDS flexible treatment options for the net new impervious area if it's not possible to capture and retain 0.55 inches of runoff from these areas	0.10	-	-	-	0.05	-	-	-

* Projects with site restrictions may not be required to "capture & retain" the water quality volume. These projects must follow MIDS FTOs.

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Technical Memorandum

To: Bassett Creek Watershed Management Commission
From: Jen Koehler & Karen Chandler, Barr Engineering
Subject: BCWMC Phase 2 XP-SWMM Model – Revisions
Date: May 9, 2017
Project: 23/27-0015.36

1.1 Model Review Process

The preliminary results of the BCWMC XP-SWMM Phase 2 modeling were presented to the BCWMC Commissioners in January 2017 followed by a presentation to the BCWMC TAC in February 2017. Follow-up information was provided to each of the member cities to more closely review the flood elevations, areas with more significant change in flood elevations, and areas with potentially impacted structures. Individual meetings were held in March 2017 with member cities (as requested) to review the model results and discuss specific questions related to the modeling/model results. Meetings were conducted with the Cities of Plymouth, Minnetonka, Medicine Lake, Golden Valley, Crystal, and New Hope. Meetings were not requested by the Cities of Robbinsdale, St. Louis Park, or Minneapolis. At the May 4th TAC meeting, the TAC reviewed the final revisions. There was consensus that the model is complete and recommended approval of the final report by the Commission.

1.2 Model Revisions Since Draft Report

The meetings with the member cities in March resulted in a handful of minor changes to the BCWMC Phase 2 XP-SWMM model. The revised Phase 2 XP-SWMM model was rerun for the Atlas 14 100-year (1% chance), 24-hour design storm event. The plots of the original 100-year hydrographs (from the calibrated January 2017 model) were compared with the updated 100-year hydrographs (from the revised April 2017 model) at each of the four calibration locations. (Note: a hydrograph shows the rate of flow (discharge) versus time at a specific location in the flow system.)

The hydrographs for the design storm event were very similar between the January and April 2017 models suggesting that the modifications to the model would not impact the model calibration results.

The revisions to the draft January 2017 model resulted in small changes at a few locations within the watershed. Table 1 below summarizes the final revisions to the model and the resulting changes to the 100-year design storm event results.

Table 1: Summary of Changes in the 100-Year Peak Elevations as a Result of Final Revisions to the BCWMC Phase 2 XP-SWMM Model

Change No.	Description	Changes in 100-Year Results
1	Verify stop logs are modeled in-place at Central Park Pond (Link L-PCE-134) (Plymouth)	No Change –January 2017 model assumed stop logs in place
2	Revise overflow for subwatershed MLS-032 (Minnetonka)	Lowering of overflow resulted in reductions in the 100-year flood elevations in watersheds MLS-031, MLS-032, and MLS-029 (-0.3 to -1.2 ft) while resulting in slight increases in flood elevations in downstream subwatersheds MLS-030, MLS-033, MLS-034, MLS-024, MLS-019, MLS-015, and MLS-009 (+0.1 to 0.3 ft)
3	Update inlet capacity at Jersey and 36th to reflect 16 catch basins (Crystal)	Reduction in flood elevation in immediate watershed (-0.5 ft) while slight increases (+0.1 – 0.3 ft) in the North Branch upstream of 34th Avenue North.
4	Incorporate small development at Georgia Avenue north of 32nd (Crystal)	Subdivided subwatersheds BPP-015, BPP-015A, and BPP-015B to incorporate Gardendale Development.
5	Revise subwatershed (BPP-019) south of Jersey and 36th (Crystal)	Subwatershed BPP-019 revised to reflect comment from Crystal.
6	10th Avenue Culvert Crossing: Updated to reflect recent survey data and existing field conditions (versus conditions shown in construction plans) (Golden Valley)	Slight increase (+0.1 ft) in Bassett Creek main stem for two watersheds immediately upstream of the 10th Ave culvert crossing and a slight reduction (-0.1 ft) in watershed immediately downstream of crossing
7	Revise Highway 55 structure elevations based on survey data provided by the Blue Line Project Office (Golden Valley)	Surveyed weir elevation ~0.5 ft lower than included in January 2017 model (structure has likely settled since construction); resulted in slight reductions (-0.1 to -0.2 ft) in flood elevations along the main stem upstream of Highway 55 and slight increases (+0.1 ft) along the main stem downstream of Highway 55 to the tunnel

Change No.	Description	Changes in 100-Year Results
8	Revise arch pipe dimensions for those modeled in Golden Valley to reflect revised data provided by the City (Golden Valley)	Minimal impact; one watershed BUE-021A has a slight increase (+0.1 ft)
9	Revise Northwood Lake outlet weir/structure based on recent survey data collected by City of New Hope (New Hope)	Surveyed weir control elevation ~0.2 ft higher than included in January 2017 model; slight increase (+0.1 ft) in subwatersheds immediately upstream of Northwood Lake including NWD-022, NWD-034, NWD-024, and NWD-032

The 100-year inundation mapping was recreated based on the revised Phase 2 XP-SWMM model (April 2017) results and is shown in Figures 3-16, 3-17, 3-18, and 3-19 (attached) (note: figure numbers are from the Phase 2 XP-SWMM model report). Inundation areas shown in blue are those along the BCWMC trunk system, while inundation areas shown in yellow are located in the upper watersheds and under the jurisdiction of the member cities. Table 3-7 (note: table number from the Phase 2 XP-SWMM model report) summarizes the 100-year peak elevations and flows included in the BCWMC Watershed Management Plan along with the Atlas 14 100-year, 24-hour peak elevations and peak flows from the revised model at key locations along the BCWMC trunk system.

1.3 Model Use and Updates

Based on feedback from the BCWMC TAC during the model review process, an XP-Viewer file for the entire BCWMC model will be developed, once the XP-SWMM model is finalized and approved by the Commission. The final XP-SWMM model will be run for the Atlas 14 2-year, 10-year, and 100-year, 24-hour design storm events. Although the results for the 2- and 10-year events are not summarized in the BCWMC Phase 2 XP-SWMM report, the results will be encrypted as an XP-Viewer file that can be used by member cities. XP-Viewer is a free software developed by XP-SWMM that allows users to open the encrypted XP-Viewer file and see model inputs and results without needing an XP-SWMM license. However, the model cannot be modified or re-run in XP-Viewer.

The final BCWMC Phase 2 XP-SWMM model will be updated annually by the BCWMC to incorporate information on projects constructed within the watershed, as provided by member cities. The updates to the XP-SWMM model will be coordinated with the P8 water quality model updates.

The XP-SWMM model could be used to predict the impact of anticipated large precipitation or snowmelt runoff events.

The XP-SWMM model could also be further validated by using a storm event in the model larger than the large calibration events (2.5 – 3.6 inches), if/when an event occurs and there is corresponding flow and NEXRAD precipitation data available.

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Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)		Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3		XPSWMM - Plan	
			Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
BASSETT CREEK MAIN STEM								
Tunnel Inlet	8,000		807.3	1,220	810.9	1,380	3.6	160
Irving Avenue Bridge (DS)	9,800		808.6	1,135	811.2	1,380	2.6	245
Irving Avenue Bridge (US)	---		809.3	1,135	811.3	1,380	2.0	245
Cedar Lake Rd (Bridge)	10,900		812.9	945	813.3	1,380	0.4	435
MN&S RR Bridge	11,600		814.8	945	813.7	1,370	-1.1	425
Old Penn Ave Bridge (DS)	12,410		814.9	705	814.5	1,370	-0.4	665
Old Penn Ave Bridge (US)	---		815.2	705	814.5	1,370	-0.7	665
BN RR Bridge	12,670		815.3	705	814.4	1,370	-0.9	665
MN&S RR Bridge (DS)	13,930		816.2	465	815.6	1,370	-0.6	905
MN&S RR Bridge (US)	---		816.4	465	815.8	1,370	-0.6	905
Fruen Mill Dam (DS)	14,150		816.5	510	817.2	1,370	0.7	860
Fruen Mill Dam (US)	---		818.2	510	819.8	1,370	1.6	860
Glenwood Ave	14,855		820.3	680	822.2	1,290	1.9	610
Hwy 55 (DS)	16,500		821.7	680	823.4	1,190	1.7	510
Hwy 55 (US)	---		826.2	680	826.5	1,500	0.3	820
Golf Cart Bridge	---		826.2	680	826.6	1,520	0.4	840
MN&S RR Bridge	18,700		826.2	945	826.6	1,520	0.4	575
Plymouth Ave Bridge	19,500		826.2	680	826.7	1,550	0.5	870
Wirth Parkway (DS)	20,480		826.2	1,570	826.7	1,450	0.5	-120
Wirth Parkway (US) Bridge	---		826.5	1,570	826.8	1,460	0.3	-110
Confluence w/ Sweeney Lake Branch	22,000		827.2	----	827.2	1,460	0.0	---
Golden Valley Road (DS)	23,800		827.4	790	828.2	1,350	0.8	560
Golden Valley Road (US)	23,800		830.2	680	833.8	1,340	3.6	660
Dresden Lane (DS)	25,900		830.5	680	834.1	1,340	3.6	660
Dresden Lane (US)	---		831.6	680	834.1	1,350	2.5	670
Bassett Creek Drive (DS)	---		832.2	665	834.4	1,290	2.2	625
Bassett Creek Drive (US)	---		832.9	665	837.0	1,300	4.1	635
Noble Lane (DS)	29,200		839.7	660	838.7	1,320	-1.0	660
Noble Lane (US)	---		839.7	660	839.7	1,300	0.0	640
Regent Avenue (DS)	30,800		---	660	---	1,300	---	640
Regent Avenue (US)	---		842.1	660	843.7	1,280	1.6	620
Minnaqua Avenue	31,650		842.7	---	844.0	1,260	1.3	---
Highway 100 (DS)	34,020		843.4	770	844.8	1,300	1.4	530
Highway 100 (US)	34,020		849.2	610	851.2	1,040 [2]	2.0	430
DS Confluence N. Branch	34,400		849.2	495	851.2	1,040 [2]	2.0	545
Westbrook Road (DS)	37,000		857.3	940	859.0	870	1.7	-70

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)		Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3		XPSWMM - Plan	
			Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
Westbrook Road (US)	---		858.3	940	860.9	870	2.6	-70
Duluth Street (DS)	38,400		861.5	850	861.9	850	0.4	0
Duluth Street (US)	---		862.0	850	862.6	830	0.6	-20
St. Croix Avenue (DS)	39,800		863.2	850	864.5	830	1.3	-20
St. Croix Avenue (US)	---		864.3	850	864.7	800	0.4	-50
MN&S RR (DS)	41,660		869.7	760	870.3	700	0.6	-60
MN&S RR (US)	---		869.7	760	870.5	690	0.8	-70
Douglas Drive (DS)	42,130		870.4	670	871.0	700	0.6	30
Douglas Drive (US)	---		871.2	670	871.8	690	0.6	20
Florida Avenue (DS)	42,820		871.8	670	872.6	690	0.8	20
Florida Avenue (US)	---		872.5	670	873.0	690	0.5	20
Hampshire Ave (DS)	43,410		872.7	630	873.4	690	0.7	60
Hampshire Ave (US)	---		873.2	630	874.0	670	0.8	40
GV Country Club (DS)	44,320		874.6	365	876.1	660	1.5	295
GV Country Club (US)	---		878.6	405	880.6	650	2.0	245
Pennsylvania Avenue (DS)	46,500		879.5	380	881.6	650	2.1	270
Pennsylvania Avenue(US)	---		880.7	375	882.9	550	2.2	175
C&NW RR (DS)	47,200		881.9	375	884.1	560	2.2	185
C&NW RR (US)	---		883.1	375	885.0	460	1.9	85
Winnetka Ave (DS)	48,000		883.5	360	885.1	440	1.6	80
Winnetka Ave (US)	---		883.7	360	885.3	430	1.6	70
Wisconsin Ave (DS)	49,750		884.9	360	886.0	430	1.1	70
Wisconsin Ave (US)	50,100		888.2	340	887.6	360	-0.6	20
Golden Valley Road (DS)	---		888.2	290	887.7	340	-0.5	50
Golden Valley Road (US)	---		888.2	290	887.7	340	-0.5	50
Westbound Hwy 55 (DS)	51,250		888.2	290	887.7	340	-0.5	50
Eastbound Hwy 55 (US)	---		888.3	290	887.8	410	-0.5	120
Boone Ave (DS)	---		888.4	280	887.9	320	-0.5	40
Boone Ave (US)	---		888.5	280	887.9	220	-0.6	-60
Hwy 169 (DS)	56,500		888.6	255	888.3	300	-0.3	45
Hwy 169 (US)	---		888.7	250	888.4	240	-0.3	-10
Hwy 55 Ramp (DS)	58,300		888.7	235	888.4	210	-0.3	-25
Hwy 55 Ramp (US)	---		888.7	235	888.4	210	-0.3	-25
Hwy 55 Eastbound (DS)	58,500		888.7	235	888.4	210	-0.3	-25
Hwy 55 Eastbound (US)	---		888.7	235	888.4	210	-0.3	-25
Hwy 55 Westbound (DS)	---		888.7	235	888.4	210	-0.3	-25
Hwy 55 Westbound (US)	---		889.0	235	888.4	210	-0.6	-25
Hwy 169 ramp to W 55 (DS)	58,750		889.0	235	888.4	210	-0.6	-25

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

version May 2017

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)		Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3		XPSWMM - Plan	
			Flood Elevation	Flow Rate	Flood Elevation	Flow Rate	Flood Elevation	Flow Rate
			(NAVD88 feet)	(cfs)	(NAVD88 feet)	(cfs)	(feet)	(cfs)
Hwy 169 ramp to W 55 (US)	---		889.0	235	888.5	210	-0.5	-25
Hwy 55 N Frontage Rd (DS)	58,850		889.2	235	888.5	210	-0.7	-25
Hwy 55 N Frontage Rd (US)	---		889.2	235	888.5	210	-0.7	-25
10th Ave (DS)	---		889.2	---	888.9	210	-0.3	---
10th Ave (US)	---		889.2	---	889.1	210 [2]	-0.1	---
C&NW RR Bridge (DS)	63,450		889.2	200	889.1	210 [2]	-0.1	10
C&NW RR Bridge (US)	---		889.6	200	889.1	210	-0.5	10
South Shore Drive (DS)	63,800		889.6	190	889.3	210	-0.3	20
South Shore Drive (US)	---		890.5	190	889.3	210 [2]	-1.2	20
Medicine Lake Weir (DS)	63,960		890.5	190	889.3	210	-1.2	20
Inundation Areas								
Theodore Wirth Park (Area upstream of Highway 55 Control Structure)	---	815.7	826.2	---	826.5	---	0.3	---
South Rice Pond	---		831.7	---	834.3	---	2.6	---
North Rice Pond	---	832.5	838.2	---	836.4	---	-1.8	---
Grimes Avenue Pond	---	832.5	838.2	---	836.4	---	-1.8	---
Golden Valley Country Club	---		878.6	---	880.6	---	2.0	---
Brookview Golf Course	---		888.3	---	887.8	---	-0.5	---
Westwood Lake	---	887.6 [3]	889.2	---	890.0	---	0.8	---
Medicine Lake	---	887.9	890.5	---	890.3	---	-0.2	---
NORTH BRANCH								
Hwy 100 Control (US)	---		849.2	610	851.2	1,040	2.0	430
Confluence w/Main Stem	---		849.2	---	851.2	1,740 [2]	2.0	---
29th Avenue (DS)	200		849.2	1,515	851.2	1,740 [2]	2.0	225
29th Avenue (US)	---		849.7	1,515	851.2	1,290 [2]	1.5	-225
32nd Avenue (DS)	2,600		849.8	1,175	851.9	1,290 [2]	2.1	115
32nd Avenue (US)	---		854.2	1,175	852.7	560 [2]	-1.5	-615
Brunswick Avenue (DS)	3,000		854.9	1,175	852.7	560 [2]	-2.2	-615
Brunswick Avenue (US)	---		856.1	1,175	856.7	510	0.6	-665
34th Culvert (DS)	4,200		863.0	700	865.4	520	2.4	-180
34th Culvert (US)	---		866.3	430	867.2	500	0.9	70
Douglas Drive (DS)	5,250		870.2	670	869.6	580 [2]	-0.6	-90
Douglas Drive (US)	---		870.3	670	870.5	380 [2]	0.2	-290

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

version May 2017

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)			Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3			XPSWMM - Plan	
			Flood Elevation	Flow Rate	Flood Elevation	Flow Rate		Flood Elevation	Flow Rate
			(NAVD88 feet)	(cfs)	(NAVD88 feet)	(cfs)		(feet)	(cfs)
Edgewood Emb (DS)	5,600		870.9	430	871.0	380	2	0.1	-50
Edgewood Emb (US)	---		878.4	340	880.4	340		2.0	0
Georgia Avenue (DS)	6,250		878.4	305	880.4	460		2.0	155
Georgia Avenue (US)	---		878.6	305	880.8	520	2	2.2	215
36th & Hampshire (DS)	6,800		878.6	260	880.8	480	2	2.2	220
36th & Hampshire (US)	6,980		879.2	260	881.3	280	2	2.1	20
Louisiana Ave. (DS) (Street Elevation Approx. 882.4)	8,000		881.2	---	883.3	490	2	2.1	---
Maryland Ave. (Street Elevation Approx. 885.7)	8,500		---	---	886.0	260	2	---	---
Oregon Ave. (Street Elevation Approx. 885.4)	9,000		---	---	888.8	90	2	---	---
MN & S RR (Street Elevation Approx. 889.1)	9,300		---	---	889.6	90	2	---	---
Inlet of 42" CMP (East Winnetka Pond)	9,500		888.2	---	890.9	100	2	2.7	---
Service Road (West Winnetka Pond)	10,000		888.2	---	891.1	190	2	2.9	---
Winnetka Ave. (DS)	10,600		888.2	---	891.2	220	2	3.0	---
Winnetka Ave. (US)	---		889.2	---	891.3	270		2.1	---
Boone Ave. (DS)	13,500		889.5	---	891.4	730	2	1.9	---
Boone Ave. (US)	---		889.7	---	891.4	270	2	1.7	---
Northwood Lake	---		889.7	---	891.4	270	2	1.7	---
TH 169 (DS)	16,850		889.7	---	893.0	270	2	3.3	---
TH 169(US)	---		890.7	---	893.1	750	2	2.4	---
Rockford Road (DS)	18,350		890.7	---	893.1	750	2	2.4	---
Rockford Road (US)	---		898.7	---	897.2	---	2	-1.5	---
Inundation Areas									
Bassett Creek Park	---	840.6	849.7	---	851.2	---		1.5	---
Edgewood Avenue Pond	---		878.4	---	880.4	---		2.0	---
Winnetka Pond (DS of Winnetka Avenue)	---	879.8	888.2	---	890.8	---		2.6	---
Northwood Park	---		889.5	---	891.3	---		1.8	---
Northwood Lake	---	884.6	889.7	---	891.3	---		1.6	---
SWEENEY LAKE BRANCH									
Confluence w/Main Stem	---		827.2	---	827.2	1,460		0.0	---
France Ave extension (DS)	700		827.2	---	827.7	170	2	0.5	---
France Ave (US)	---		829.2	---	828.0	170	2	-1.2	---

version May 2017

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)			Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3			XPSWMM - Plan	
			Flood Elevation	Flow Rate	Flood Elevation	Flow Rate		Flood Elevation	Flow Rate
			(NAVD88 feet)	(cfs)	(NAVD88 feet)	(cfs)		(feet)	(cfs)
Courage Center & Hidden Lakes Parkway (DS)	900		829.2	---	830.6	170		1.4	---
Courage Center & Hidden Lakes Parkway (US)	---		831.2	---	831.9	170		0.7	---
Precast Concrete Dam (DS)	1,700		831.7	---	831.9	170		0.2	---
Sweeney Lake	---		831.7	---	831.9	170		0.2	---
Union Pacific RR (DS)	6,800		831.7	---	831.9	400		0.2	---
Union Pacific RR (US)	---		835.8	311	836.3	480	[2]	0.5	169
Hwy 55 (DS)	8,150		835.8	680	836.8	860	[2]	1.0	180
Hwy 55 (US)	---		836.9	680	838.4	310	[2]	1.5	-370
MN & S RR (DS)	9,000		836.9	233	838.4	260		1.5	27
MN & S RR (US)	---		839.5	233	841.7	260		2.2	27
Breck Pond & Control Structure (US)	9,580		839.9	296	842.5	270	[2]	2.6	-26
TH 100 (DS) (Breck Pond)	10,400		839.9	298	842.5	440	[2]	2.6	142
TH 100 (US)	---		845.4	298	851.0	500	[2]	5.6	202
Turners Crossroad (US)	10,950		854.9	241	857.2	430	[2]	2.3	189
Glenwood Pond A	---		854.9	---	857.2	---		2.3	---
MN & S RR (DS)	11,550		854.9	233	857.2	440	[2]	2.3	207
MN & S RR (US)	---		855.0	233	857.2	440	[2]	2.2	207
Glenwood Pond B	---		855.0	---	857.2	---		2.2	---
Glenwood Ave (DS)	---		855.0	84	857.2	100	[2]	2.2	16
Glenwood Ave (US)	---		855.0	84	857.2	100		2.2	16
Duck Pond	---		855.0	---	857.2	---		2.2	---
MN & S RR (DS)	---		855.0	233	857.2	560	[2]	2.2	327
MN & S RR (US)	---		858.9	233	859.4	300	[2]	0.5	67
Ravine Storage Area	---		858.9	---	859.4	90	[2]	0.5	---
Courtlawn Pond	---		873.1	---	873.6	120	[2]	0.5	---
East Ring Pond	---		879.0	---	879.4	180	[2]	0.4	---
78" RCP Equalizer	18,800		---	---	---	480	[2]	---	---
West Ring Pond	---		879.0	---	879.4	---		0.4	---
Ravine Storage Area Overflow									
Glenwood Pond B	---		855.0	---	857.2	---		2.2	---
MN & S RR (DS)	---		855.0	---	857.2	---		2.2	---
MN & S RR (US)	---		857.3	---	859.4	---		2.1	---
Glenwood Ave (DS)	---		855.0	---	857.2	---		2.2	---
Glenwood Ave (US)	---		855.0	---	857.2	---		2.2	---

version May 2017

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)		Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3		XPSWMM - Plan	
			Flood Elevation	Flow Rate	Flood Elevation	Flow Rate	Flood Elevation	Flow Rate
			(NAVD88 feet)	(cfs)	(NAVD88 feet)	(cfs)	(feet)	(cfs)
Inundation Areas								
Sweeney Lake	---	827.2 [4]	831.7	---	831.9	---	0.2	---
Twin Lake	---	827.2 [4]	831.7	---	831.9	---	0.2	---
Breck Pond	---	831.6	839.9	---	842.5	---	2.6	---
Courtlawn Pond	---	870.1	873.1	---	873.6	---	0.5	---
East Ring Pond	---	874.1	879.0	---	879.4	---	0.4	---
West Ring Pond	---	874.1	879.0	---	879.4	---	0.4	---
MEDICINE LAKE BRANCH (PLYMOUTH CREEK)								
West Medicine Lake Drive (DS)	10,450		890.5	---	890.6	290	0.1	---
West Medicine Lake Drive (US)	---		891.7	---	893.6	690 [2]	1.9	---
26th Avenue N. (DS)	16,500		925.2	---	924.4	230	-0.8	---
26th Avenue N. (US)	---		925.7	---	925.0	230	-0.7	---
28th Avenue N. Dike (DS)	---		928.2	---	929.9	230	1.7	---
28th Avenue N. Dike (US)	---		931.0	---	932.3	260 [2]	1.3	---
County Road 61 (DS)	---		931.0	---	932.3	260	1.3	---
County Road 61 (US)	---		931.4	---	933.9	230	2.5	---
Xenium Lane (DS)	20,850		931.4	---	933.9	440	2.5	---
Xenium Lane (US)	---		931.7	---	934.2	460 [2]	2.5	---
I-494 (DS)	22,500		935.2	---	938.1	440	2.9	---
I-494 (US)	---		938.7	---	938.9	410	0.2	---
Fernbrook Lane (DS)	25,000		947.2	---	946.5	260	-0.7	---
Fernbrook Lane (US)	---		948.2	---	946.6	260	-1.6	---
Central Park Pond Outlet Structure (DS)	---		949.2	---	949.6	260	0.4	---
Central Park Pond Outlet Structure (US)	---		953.2	---	954.7	690 [2]	1.5	---
37th Avenue	28,900		956.2	---	954.8	690 [2]	-1.4	---
County Road 9	30,450		959.2	---	955.0	390	-4.2	---
Vicksburg Lane (DS)	31,300		961.2	---	963.0	380	1.8	---
Vicksburg Lane (US)	---		962.2	---	963.7	280	1.5	---
Dunkirk Lane (DS)	---		979.2	---	979.3	80	0.1	---
Dunkirk Lane (US)	34,450		982.2	---	985.3	90	3.1	---
T.H. 55 (DS)	38,300		982.2	---	987.5	40	5.3	---
T.H. 55 (US)	---		982.7	---	987.5	---	4.8	---

Table 3-7 Comparison of BCWMC Watershed Management Plan to the Phase 2 XPSWMM Model - Flood Elevations and Peak Discharges

Location	Creek Distance above the Mississippi River (feet)	Normal Water Level (NAVD88)	BCWMC Watershed Management Plan[1]		BCWMC Phase 2 XP-SWMM Model - Atlas 14 (4/19/2017)		Change in Flood Elevations and Flow Rates	
			100-yr		100-yr Atlas 14 MSE3		XPSWMM - Plan	
			Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (NAVD88 feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
Inundation Areas								
Xenium Lane	---		931.7	---	934.2	---	2.5	---
Central Park Pond	---	948.2	952.2	---	954.7	---	2.5	---
Turtle Lake	---	962.9 [5]	964.2	---	967.0	---	2.8	---
Rockford Road	---		968.2	---	968.5	---	0.3	---
Dunkirk Lane	---		982.2	---	982.2	---	0.0	---
Oak Knoll Pond	---	914.4	917.3	---	918.6	---	1.3	---
Crane Lake	---	917.3	920.7	---	920.2	---	-0.5	---

Notes

[1]Values reported in the Bassett Plan were presented in NGVD29 and have been updated to NAVD88 (NAVD88=NGVD29+0.18ft)

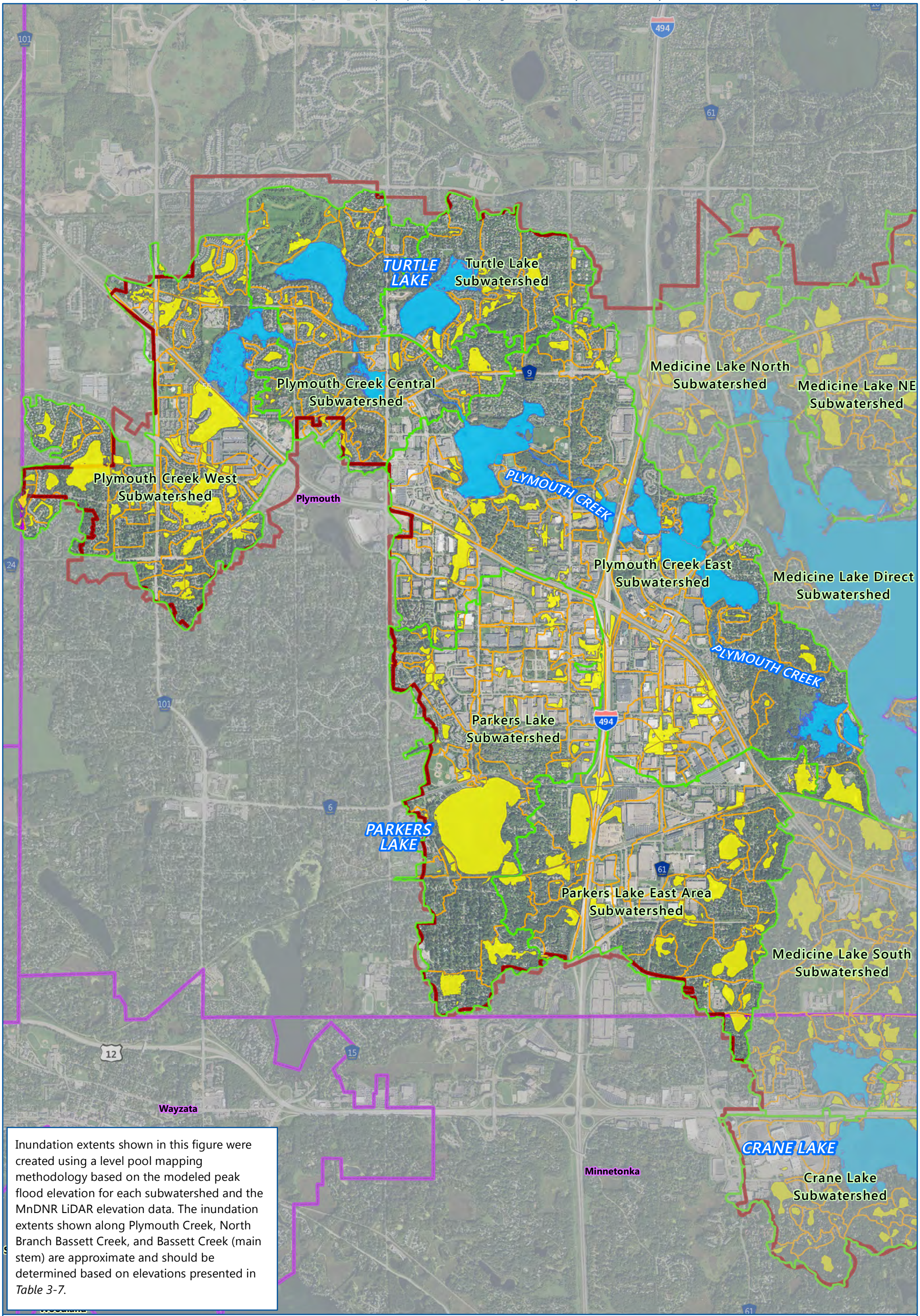
[2]Multiple inflows to node. The reported peak inflow reflects the sum all inflow peaks.

[3]Barr study surveyed outlet of Westwood Lake and found the outlet ditch has filled with sediment to evelevation 887.6ft.
The outlet pipe invert elevation (historical normal water level) is at 886.18ft

[4]As-built survey November 27,2012

[5]Turtle Lake Feasibility Study, November 10, 2011

Barr Footer: ArcGIS 10.4, 2017-01-11 17:07 File: I:\Client\BassettCreek\Work_Orders\2015\Phase2_XPSWMM_ModelUpdate\Maps\Reports\Bassett_Report\Figure 3-16 Atlas 14 100-year Inundation Extents Plymouth creek.mxd User: Mac2



Inundation extents shown in this figure were created using a level pool mapping methodology based on the modeled peak flood elevation for each subwatershed and the MnDNR LiDAR elevation data. The inundation extents shown along Plymouth Creek, North Branch Bassett Creek, and Bassett Creek (main stem) are approximate and should be determined based on elevations presented in *Table 3-7*.

Atlas 14 100yr Inundation Extents

- Jurisdictional Flooding (BCWMC Trunk[1])
- Nonjurisdictional Flooding (City Jurisdiction)

[1]-See Figure 2-15 in the 2015-2025 BCWMC Watershed Management Plan

- Subwatersheds
- Major Subwatersheds
- Legal Boundary
- City Boundaries

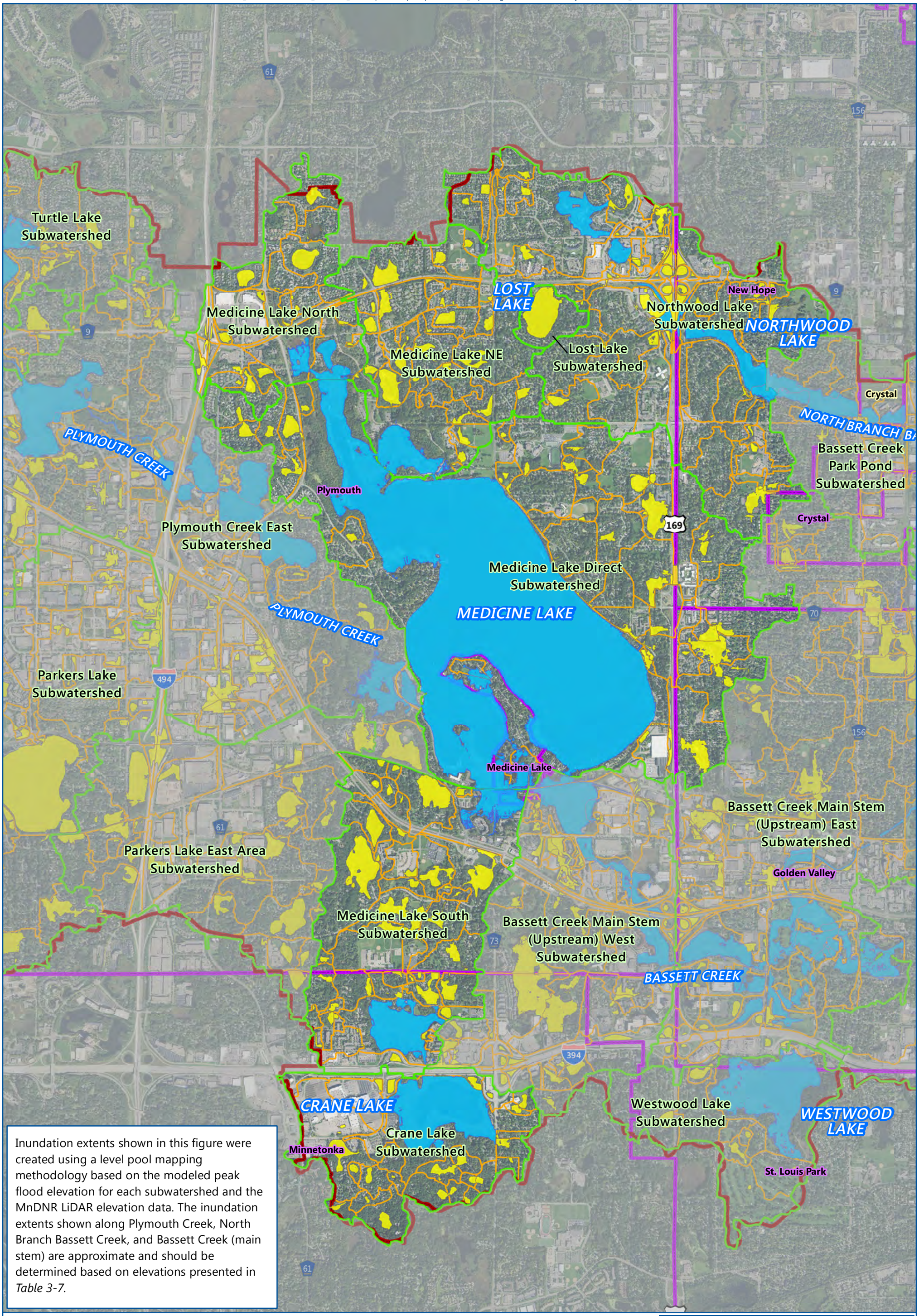
N

0 2,500 5,000

Feet

PLYMOUTH CREEK, TURTLE LAKE AND PARKERS LAKE SUBWATERSHEDS
ATLAS 14 100-YEAR INUNDATION EXTENTS
Bassett Creek Water Management Commission

FIGURE 3-16



Inundation extents shown in this figure were created using a level pool mapping methodology based on the modeled peak flood elevation for each subwatershed and the MnDNR LiDAR elevation data. The inundation extents shown along Plymouth Creek, North Branch Bassett Creek, and Bassett Creek (main stem) are approximate and should be determined based on elevations presented in *Table 3-7*.

Atlas 14 100yr Inundation Extents

- Jurisdictional Flooding (BCWMC Trunk[1])
- Nonjurisdictional Flooding (City Jurisdiction)

[1]-See Figure 2-15 in the 2015-2025 BCWMC Watershed Management Plan

- Subwatersheds
- Major Subwatersheds
- Legal Boundary
- City Boundaries

N

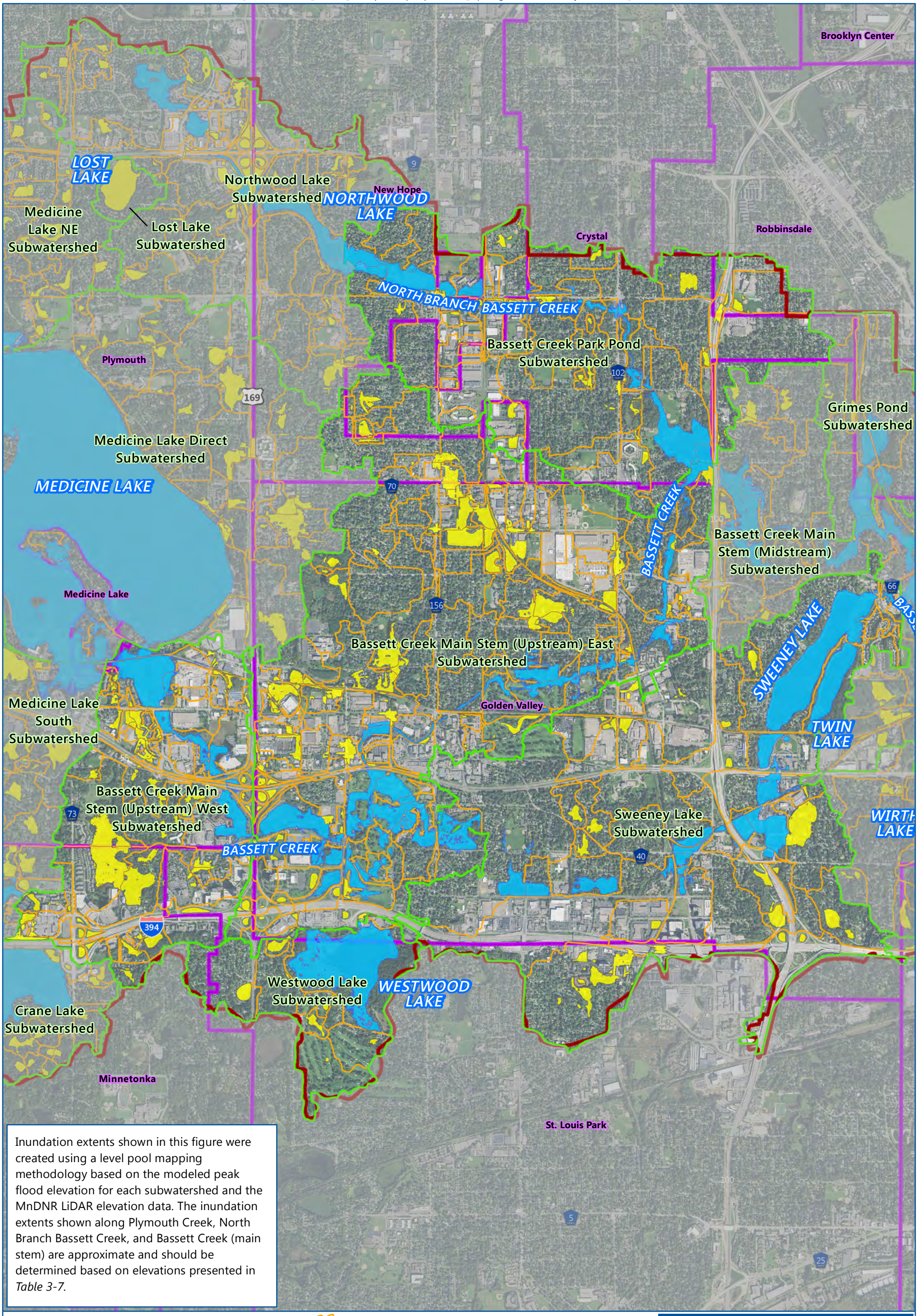
0 2,500 5,000

Feet

LOST LAKE, NORTHWOOD LAKE, CRANE LAKE, AND MEDICINE LAKE SUBWATERSHEDS
ATLAS 14 100-YEAR INUNDATION EXTENTS
Bassett Creek Water Management Commission

FIGURE 3-17

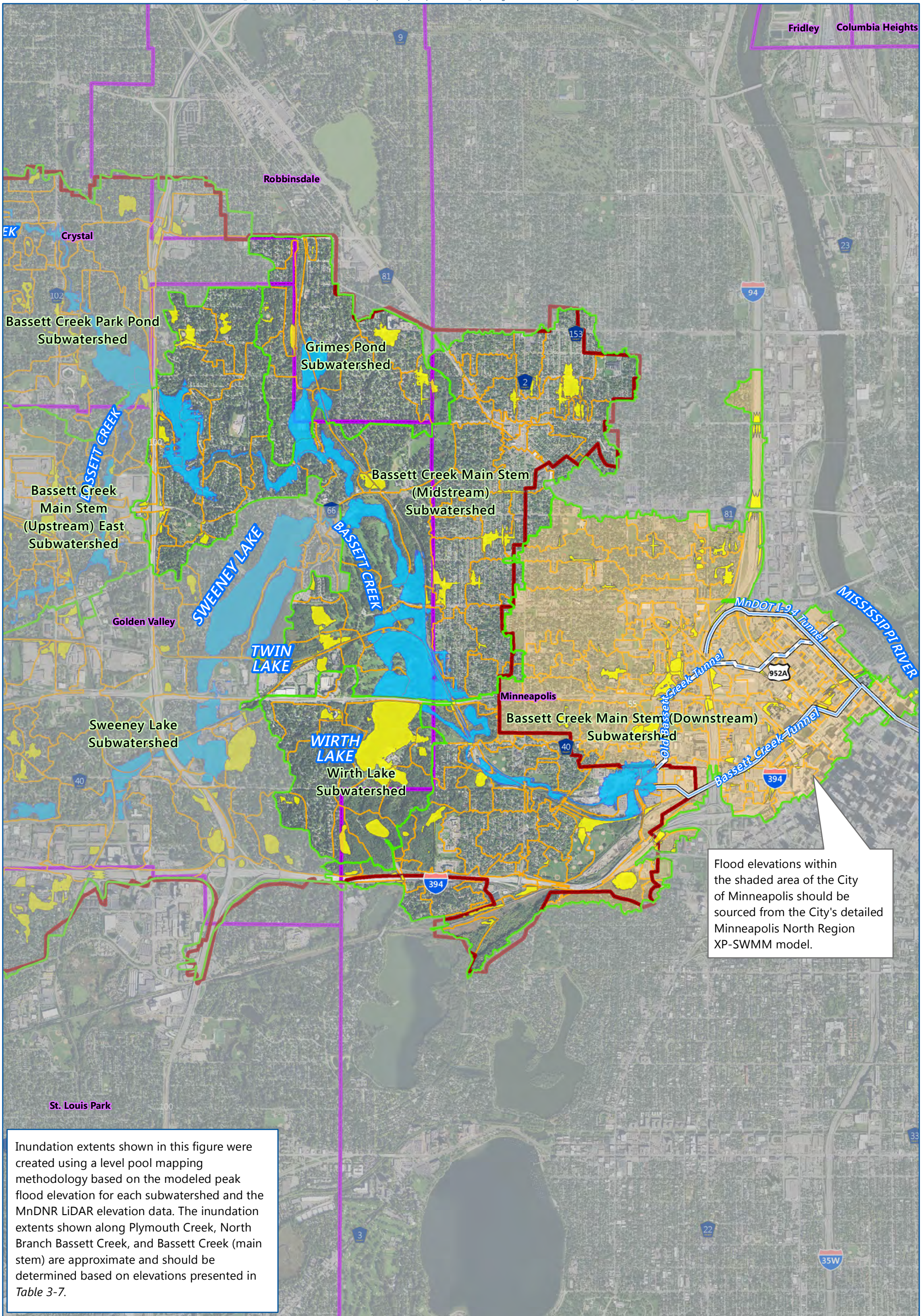
Barr Footer: ArcGIS 10.4, 2017-01-11 17:09 File: I:\Client\BassettCreek\Work_Orders\2015\Phase2_XPSWMM_ModelUpdate\Maps\Reports\Bassett_Report\Figure 3-18 Atlas 14 100-year Inundations_BassettCreek.mxd User: Mac2



BASSETT CREEK MAIN STEM (UPSTREAM), WESTWOOD LAKE, BASSETT CREEK PARK POND, AND SWEENEY LAKE ATLAS 14 100-YEAR INUNDATION EXTENTS
Bassett Creek Water Management Commission

FIGURE 3-18

Barr Footer: ArcGIS 10.4, 2017-01-11 17:11 File: I:\Client\BassettCreek\Work_Orders\2015\Phase2_XPSWMM_ModelUpdate\Maps\Reports\Bassett_Report\Figure 3-19 Atlas 14 100-year Inundations_Grimes.mxd User: Mac2



Atlas 14 100yr Inundation Extents

Jurisdictional Flooding (BCWMC Trunk[1])

Nonjurisdictional Flooding (City Jurisdiction)

[1]-See Figure 2-15 in the 2015-2025 BCWMC Watershed Management Plan

Subwatersheds

Major Subwatersheds

Legal Boundary

City Boundaries

N

0 2,500 5,000

Feet

GRIMES POND, NORTH AND SOUTH RICE PONDS, BASSETT CREEK MAIN STEM (DOWNSTREAM), AND WIRTH LAKE SUBWATERSHEDS ATLAS 14 100-YEAR INUNDATION EXTENTS

Bassett Creek Water Management Commission

FIGURE 3-19

Item 6D.
BCWMC 5-18-17

Bassett Creek Watershed Management Commission

MEMO

To: BCWMC Commissioners
From: Laura Jester, Administrator
Date: May 10, 2017

RE: BCWMC Budget Committee Recommendations

The BCWMC Budget Committee met on March 27th and April 24th to discuss the 2018 operating budget. The committee appointed Alt. Commissioner McDonald Black as committee chair. Attendees at the March meeting included Committee Chair Mc Donald Black, Alt. Commissioner Prom, Commissioner Mueller, Engineer Chandler, and me. April meeting attendees included Committee Chair McDonald Black, Alt. Commissioner Prom, Commissioner de Lambert, Commissioner Mueller, Engineer Chandler, and me.

During their meetings, the committee reviewed different budget scenarios and considered ways to reduce costs for various projects and programs. According to the BCWMC Monitoring Plan, the Commission is slated to begin a new stream monitoring program to measure water quality and quantity in 2018, in addition to its regular stream biotic index monitoring and lake monitoring. Although initial monitoring costs were estimated at nearly $160,000, the Commission Engineer and I worked to reduce 2018 monitoring costs by 1) finding partners to perform some of the monitoring; 2) reducing the number of samples collected in streams (as compared to new WOMP protocols); 3) reconfiguring the schedule to spread stream monitoring over a 6-year period rather than a 2-year period; and 4) proposing to purchase monitoring equipment this year for use in the Schaper Pond Effectiveness Monitoring Project (eliminating the need for the Commission to rent equipment this year and which can then be used for stream monitoring starting next year).

The committee reviewed the costs associated with the annual Flood Control Project inspections. In 2018, these inspection costs include the 2nd Street (deep) tunnel inspection using NASSCO protocol (estimated at $36,000), and the usual annual inspection of all non-tunnel Flood Control Project structures (estimated at $12,000). Please see further notes on these costs under “H” on page 3.

The committee also reviewed staff recommendations to reduce budgets for some areas in order to keep assessments to cities at a reasonable level and to include budgets that are closer to actual costs from the last few years.

The committee discussed various budgeting priorities and will work on the following during the course of this year including:

- The need to keep assessments relatively stable over years without large increases or decreases
- The need to communicate the value of services to member cities and reasons for any proposed increases

- The fact that the use of fund balance will not be a viable option beyond 2018 (currently used as a "revenue" stream) due to the need to keep approximately 50% of annual operating costs within the fund balance
- The need to begin planning for and possibly saving for large future expenses such as development of the next watershed management plan (due 2025), future tunnel inspections, future Flood Control Project maintenance costs
- The desire to develop a 10-year cash flow outlook

RECOMMENDATIONS:

1. The BCWMC Budget Committee recommends that the 2018 budget include a 3% increase in assessments to cities over 2017 levels.

2. The BCMMC Budget Committee recommends the Commission purchase up to $10,900 of monitoring equipment with the 2017 Surveys and Studies budget line for use on the Schaper Pond Effectiveness Monitoring Project in 2017 (eliminating the need for the Commission to rent equipment this year and which can then be used for stream monitoring starting next year).

Since the committee last met, staff further reduced the anticipated lake monitoring costs by finding more monitoring partners and biotic index monitoring costs, and proposes to move those savings into other areas within the monitoring budget, and into surveys and studies, water quantity, and APM/AIS work.

Please see the attached budget tables and notes.

2018 Proposed Operating Budget

Bassett Creek Watershed Management Commission

Item	2014 Budget	2014 Actual	2015 Budget	2015 Actual	2016 Budget	2016 Actual	2017 Budget	2018 Cmte Proposed Budget	Staff Revisions Since Committee Meeting	See Notes
ENGINEERING & MONITORING										
Technical Services	120,000	109,391	120,000	116,972	120,000	112,502	125,000	125,000	125,000	
Development/Project Reviews (funded by fees)	65,000	52,643	65,000	51,622	65,000	94,619	65,000	75,000	75,000	(A)
Non-fee and Preliminary			15,000	53,686	15,000	35,253	15,000	10,000	10,000	(B)
Commission and TAC Meetings	16,000	15,984	14,500	11,525	13,000	11,808	14,000	12,000	12,000	(C)
Surveys and Studies	20,000	7,446	20,000	22,109	25,000	24,444	20,000	10,000	12,000	(D)
Water Quality / Monitoring	45,000	74,090	63,000	77,429	76,000	75,892	74,300	87,000	80,700	(E)
Shoreland Habitat Monitoring					6,000	2,468	-			
Water Quantity	11,000	12,100	11,500	9,115	11,500	8,731	11,500	6,000	6,300	(F)
Assistance on Erosion Control Inspections	1,000	225	1,000		1,000	-	1,000	1,000	1,000	(G)
Annual Flood Control Project Inspections	20,000	17,031	10,000	9,996	10,000	8,867	12,000	48,000	48,000	(H)
Municipal Plan Review	2,000	764	2,000		2,000	2,491	8,000	8,000	8,000	(I)
Watershed Outlet Monitoring Program (WOMP)	17,000	13,917	17,000	15,786	17,000	17,002	15,500	20,500	20,500	(J)
Annual XP-SWMM Model Updates/Reviews							10,000	10,000	10,000	(K)
APM/AIS Work							35,000	28,000	32,000	(L)
Subtotal Engineering & Monitoring	**$317,000**	**$303,591**	**$339,000**	**$368,240**	**$361,500**	**$394,077**	**$406,300**	**$440,500**	**$440,500**	
PLANNING										
Watershed-wide XP-SWMM Model (I &II)	0	0	-		-	-	-	-		
Watershed-wide P8 Water Quality Model	0	0	-		-	-	-	-		
Next Generation Plan Development	40,000	55,198	30,000	28,277	-	-	-	-		
Subtotal Planning	**$40,000**	**$55,198**	**$30,000**	**$28,277**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
ADMINISTRATION										
Administrator	60,000	53,917	62,000	59,395	62,000	59,033	67,200	67,200	67,200	(M)
Legal	18,500	22,269	18,500	12,969	18,500	15,470	18,500	17,000	17,000	(N)
Financial Management	3,045	3,045	3,200	3,200	3,200	3,277	3,200	3,200	3,200	
Audit, Insurance & Bond	15,500	12,476	15,500	13,181	15,500	14,606	15,500	15,500	15,500	
Digitize Historic Paper Files/Data			2,500	-	5,000	2,167	-			
Meeting Catering Expenses	3,000	1,836	2,500	1,564	2,200	1,572	2,000	1,600	1,600	(O)
Admin Services (Rec Sec+Printing+Postage)	35,800	22,763	32,000	29,843	25,000	11,583	18,000	15,000	15,000	(P)
Subtotal Administration	**$135,845**	**$116,306**	**$136,200**	**$120,152**	**$131,400**	**$107,708**	**$124,400**	**$119,500**	**$119,500**	
OUTREACH & EDUCATION										
Publications / Annual Report	2,000	2,272	4,000	1,430	2,500	1,246	2,500	1,500	1,500	(Q)
Website	2,000	0	12,000	11,802	3,500	2,275	4,400	4,200	4,200	(R)
Watershed Education	15,500	11,100	15,500	10,700	15,500	9,550	15,500	13,850	13,850	(S)
Education and Public Outreach	15,000	20,292	17,000	12,830	22,500	25,710	20,000	22,000	22,000	(T)
Public Communications	3,000	1,198	3,000	2,270	2,500	1,128	2,500	2,500	2,500	
Subtotal Outreach &	**$37,500**	**$34,862**	**$51,500**	**$39,032**	**$46,500**	**$39,909**	**$44,900**	**$44,050**	**$44,050**	
MAINTENANCE FUNDS										
Erosion/Sediment (Channel Maintenance)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	(U)
Long-Term Maint. (Flood Control Project)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	(V)
Subtotal Maintenance Funds	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	
TMDL WORK										
TMDL Implementation Reporting	20,000	20,000	20,000	15,881	20,000	18,950	20,000	10,000	10,000	(W)
Subtotal TMDL Work	**$20,000**	**$20,000**	**$20,000**	**$15,881**	**$20,000**	**$20,000**	**$20,000**	**$10,000**	**$10,000**	
GRAND TOTAL	**$600,345**	**$579,957**	**$626,700**	**$621,582**	**$609,400**	**$611,694**	**$645,600**	**$664,050**	**$664,050**	

NOTES
(A) Majority of costs are covered by review fees. 2018 budget assumes 40 submittals at average cost of $2,000 - $2,500 per review, which is based on 2014 -2016 trend of increasing number of submittals and increased number of complex reviews (including MIDS)
(B) Assumes reduction in non-fee reviews in 2018 because reviews for light rail projects should be completed. This was a new line item in 2015 used to cover reviews for which either we do not receive an application fee or it's too early in the process for us to have received an application fee (such as the Blue Line LRT, SWLRT, MnDOT projects, etc.). Through agreements with Met Council, some of these costs were recovered in 2015, 2016 and 2017.
(C) Assumes acutal meeting attendance is similar to 2015 and 2016. Engineer attendance at BCWMC meetings and TAC meetings (and Plan Steering Cmte Meetings thru 2015). 2010- 2013 estimates based on 18 meetings. 2014 estimate based on 30 meetings. 2015 estimate based on 24 meetings. 2016 estimated based on 18 meetings (12 BCWMC and 5 TAC). 2017 budget increased to allow for additional BCWMC Engineer staff to attend Commission/TAC meetings (total of 3 assumed).
(D) For Commission-directed surveys and studies - e.g., past work has included watershed tours, Medicine Lake outlet work, Flood Control Project Maintenance and Responsibilites, Sweeney Lake sediment monitoring. Budget reduced from previous years for overall budget savings. Under "staff revisions," staff recommends using some of the savings recently realized for 2018 monitoring (see E below) to increase this budget slightly from committee-recommended amount.
(E) Routine lake and new stream monitoring. See details on next page.
(F) Water Quatity (lake level) monitoring budget lowered: will result in fewer data points.
(G) After recommendations from the TAC and Budget Committee,the Commission's ended the erosion and sediment control inspection program (Watershed Inspection) in 2014 due to duplication with activities required by the member cities. Some budget remains here to provide, as requested by the Commission, some oversight of city inspection activities (reports of inspections are available from each city). May require additional budget if BCWMC Engineer is to inspect MnDOT and Hennepin County projects.
(H) Includes the 2nd Street (deep) tunnel inspection, following NASSCO protocol ($36,000), and the usual annual inspection ($12,000). The cost of tunnel inspection has significantly increased over the last 20 years due to developing industry standards and safety considerations and confined space OSHA requirements. NAASCO is essentially a system of identifying tunnel defects using consistent and industry standard terminology. The City of Minneapolis requires NAASCO coding for consistency with all of its tunnel systems.The alternative would be a standard walkthrough to look for any urgent issues such as large voids that require immediate attention – this is limited to one day in the tunnel to reduce costs. The 2008 deep tunnel inspection was much less expensive to the BCWMC because the City performed all of the surface attendant duties and provided the crane and man basket access and the ladder access for the inspection and emergency egress. The budget includes $10,000 for subcontractors for crane, operator and man basket and for the confined space emergency extraction team. Although the city funded a portion of the BCWMC double box culvert inspection in 2014 to ensure the project was performed according to NAASCO, they did so because the BCWMC budgets were already set. The BCWMC Watershed Plan and newly adopted policies for long term maintenance of the Flood Control Project indicates that inspections are the responsibility of the BCWMC. The Commission Engineer recommends the BCWMC perform a NAASCO inspection in 2018. The budget also include a GIS interface that helps display results. 2014 budget included inspection of double box culvert (performed once every 5 years).2016 and 2015 budgets included typical annual inspection. 2017 budget included annual inspection + follow-up with cities, stemming from Flood Control Project Maintenance and Responsibilities-related effort.

(I) 2018 budget assumed same as 2017, as some reviews will likely come before the Commission in 2018. 2017 budget assumes review of updated/revised municipal local water plans/official controls likely to come before Commission in 2017. Assume 4 cities at $2,000 each. This task has also included review of adjacent WMO plan amendments, and review of city ordinances.
(J) Monitoring at the Watershed Outlet Monitoring Program site in Minneapolis through an agreement with Met Council. Commission is reimbursed $5,000 from Met Council. Met Council pays for equipment, maintenance, power, cell service, and lab analyses. Monitoring protocol changed in 2017 with collection of bi-monthly samples (up from once-per-month sampling). $20,500 includes $16,000 for Wenck or similar contractor + $4,500 for Barr's data management and analyses
(K) Make updates to XP-SWMM model, coordinate with P8 model updates, assist cities with model use.
(L) Funds to implement recommendations of Aquatic Plant Management/Aquatic Invasive Species Committee likely including curly-leaf pondweed control in Medicine Lake. Under "staff revisions," staff recommends using some of the savings recently realized for 2018 monitoring (see E above) to increase this budget from committee-recommended amount.
(M) No increase in Administrator hourly rate. $70/hour for average of 80 hours per month.
(N) Slight budget decrease over previous years to be more in line with actual spending in last few years. Hourly rate will increase from $199/hr in 2017 to $201/hr in 2018.
(O) Budget decrease to be in line with current expenses. Catering expenses for meetings = coffee, juice, rolls, fruit
(P) Recording Secretary $42/hr rate * 21 hrs/mo (6.5 hrs for minutes, 14.5 for social media, writing articles, coordinating with city communication staff) + $370 annual mileage + $250/mo meeting packet printing/mailing + $546 contingency
(Q) Budget decrease to be more in line with actual expenses in last few years. Costs associated with Commission Engineer assistance with annual report
(R) Based on 2017-2019 agreement with HDR for website hosting and maintenance activities.
(S) Includes CAMP ($5,000), River Watch ($2,000), Metro Watershed Partners ($3,500), Metro Blooms ($3,000), Children's Water Festival ($350). Does not allow for additional partnerships or increases in contributions.
(T) Includes funding for West Metro Water Alliance at $13,000 plus funding for other educational supplies and materials including educational signage, display materials, Commissioner training, etc.
(U) Will be transferred to Channel Maintenance Fund
(V) Will be transferred to Long-Term Maintenance Fund
(W) Budget reduced from previous years for overall budget savings.Task includes reporting on TMDL implementation and updating P8 model to include new BMPs.

2018 Proposed Water Monitoring Program		
Task	**Budget Committee Recommendation**	**Staff Revisions since Committee Meeting**
Routine Lake Monitoring on Parkers and Westwood Lakes: Detailed lake monitoring includes monitoring one location on each lake on six occasions for selected parameters (total phosphorus, soluble reactive phosphorus, total nitrogen, pH and chlorophyll a), sample analysis, phytoplankton and zooplankton collection and analysis, an aquatic plant survey (two occasions), preparation of a presentation and preparation of a final report (following template of 2016 reports). Estimated amount includes field assistance from St. Louis Park/Westwood Nature Center staff and Three Rivers Park District staff (originally estimated at $4,000 worth of work; revised to $6,000 worth of work). Additionally, the Minneapolis Park and Rec Board will monitor Wirth Lake in 2018 using similar methods and collecting the same data as BCWMC methods.	$36,000	$34,000
First of 2 yrs of stream water quality/quantity monitoring designed to approximate the Met Council's WOMP. Originally this was slated for all three stations along the creek (the Sweeney Branch, North Branch and Plymouth Creek) to be monitored in the same year. To reduce costs, committee and staff recommend spreading out monitoring over 6 years (2 years/site * 3 sites). Recommendation to monitor North Branch in 2018/2019. Includes 16 grab samples (although Met Council recommends 24 grab samples), 16 event samples, initial site evaluation, design, and equipment installation, labor and laboratory costs. Equipment would be purchased in 2017 with "Surveys and Studies" budget for the Schaper Pond Effectiveness Monitoring Study.	$19,400	$19,400
Biotic index monitoring in streams: Originally included macroinvertebrate monitoring and habitat survey at five stations, macroinvertebrate analyses (microscopic identification/ enumeration), computation of HBI and M-IBI, trend analyses, data summary/analyses, and preparation of report and presentation for BCWMC Meeting. Since the committee meeting, staff determined it would be beneficial to correlate biotic index monitoring with stream monitoring and perform monitoring at only the North Branch site + 2 Main Stem sites. A 3rd Main Stem site (at the WOMP station) will be monitored for biota by the Met Council.	$27,600	$17,300
General water quality: Potential items/issues include additions to the MPCA's impaired waters list (perhaps including Fish IBI and Plant IBI listings), new AIS species, and possible coordination with the MPCA regarding their upcoming 2020 TMDL-related efforts. (Since the committee meeting, staff recommends using some savings from biotic index monitoring to increase this amount to reflect a typical year's work.)	$7,000	$10,000
Total	**$87,000**	**$80,700**

2017 Financial Information			
Fund Balance as of January 31, 2017 (audited)		$	350,939
Expected income from assessments in 2017	+	$	500,000
Expected interest income in 2017	+	$	-
Expected income from project review fees	+	$	60,000
Expected income from CIP Administrative Funds	+	$	26,072
Expected transfer from Long-term Maint Fund for Flood Control Project	+	$	12,000
Expected income from WOMP reimbursement	+	$	5,000
Expected income from reimbursements from 2016/2017 work[1]	+	$	14,000
Estimated funds available for fiscal year 2017		$	968,011
Estimated expenitures for fiscal year 2017	-	$	645,600
Estimated fund balance as of January 31, 2018		$	322,411

[1] Already invoiced for work on Blue Line LRT + work expected this year

2018 Revenues			
Expected Income			
Proposed Assessments to cities	+	$	515,050
Use of fund balance	+	$	14,000
CIP Administrative Funds (2.0% of est. requested levy of $1.35M)	+	$	27,000
Project review fees	+	$	55,000
Transfer from Long-term Maint Fund for Flood Control Proj Inspections[2]	+	$	48,000
WOMP reimbursement	+	$	5,000
Expected reimbursement for Blue Line LRT work	+	$	-
Interest income in 2017	+	$	-
		$	664,050
Expected Expenses			
Total operating budget		$	664,050
Fund Balance Details			
Est. Beginning Fund Balance (Jan 31, 2018)		$	322,411
Use of Fund Balance (see income above)	-	$	14,000
Est. Remaining Fund Balance (Jan 31, 2019)		$	308,411

[2] Requires reducing Long Term Flood Control Project Amount by $23,000.

Community	For Taxes Payable in 2017	2017 Percent	Current Area Watershed	Percent	Average	2012 Assessment	2013 Assessment	2014 Assessment	2015 Assessment	2016 Assessment	2017 Assessment	2018 Proposed Assessment (3% increase from 2017)
	Net Tax Capacity	of Valuation	in Acres	of Area	Percent	$461,045	$515,016	$490,345	$490,345	$490,345	$500,000	$515,050
Crystal	$7,808,179	5.36	1,264	5.09	5.22	$24,941	$27,424	$25,504	$25,868	$25,771	$26,118	$26,904
Golden Valley	$37,384,452	25.66	6,615	26.63	26.14	$115,080	$129,126	$123,033	$121,964	$127,675	$130,715	$134,649
Medicine Lake	$972,923	0.67	199	0.80	0.73	$3,484	$3,909	$3,479	$3,543	$3,600	$3,672	$3,783
Minneapolis	$9,756,021	6.70	1,690	6.80	6.75	$32,661	$35,236	$32,953	$33,235	$32,885	$33,747	$34,763
Minnetonka	$9,373,403	6.43	1,108	4.46	5.45	$24,920	$28,464	$27,402	$28,121	$27,536	$27,234	$28,053
New Hope	$7,785,981	5.34	1,252	5.04	5.19	$25,533	$27,648	$26,479	$25,681	$25,627	$25,959	$26,740
Plymouth	$62,940,854	43.20	11,618	46.77	44.98	$209,101	$235,310	$224,959	$225,159	$220,974	$224,912	$231,682
Robbinsdale	$2,609,710	1.79	345	1.39	1.59	$8,022	$8,479	$7,743	$7,587	$7,843	$7,950	$8,189
St. Louis Park	$7,067,617	4.85	752	3.03	3.94	$17,303	$19,420	$18,792	$19,184	$18,433	$19,695	$20,287
TOTAL	**$145,699,140**	**100.00**	**24,843**	**100.00**	**100.00**	**$461,045**	**$515,045**	**$490,345**	**$490,345**	**$490,345**	**$500,000**	**$515,050**

Item 6Ei.
BCWMC 5-18-17

Revised Committee Recommended 2017 BCWMC Education and Outreach Budget and Work Plan (additions shown in gray boxes)

	Activity	Amount in 2017 Budget	Commitee Recommended Amount	Notes	Websites
1	**Publications/Annual Report**	$2,500	$2,500	To develop and distribute the Commission's Annual Report, as required by State Rule .	
2	**Website Hosting/Maintenance**	$4,400	$4,123	For website hosting and maintenance by HDR. 2016 contract with HDR estimates $4,420. ($360 for hosting + 3 hrs/month for labor, as needed)	
	Subtotal	**$6,900**	**$6,623**		
3	**Watershed Education Partnerships**				
	a. Citizen Assisted Monitoring Program	$5,000	$4,600	This program through the Met Council sponsors volunteer monitors on several BCWMC lakes. The BCWMC has spent an average of $3,440/year. Spending be $4,600 if volunteers collect all possible samples.	
	b. River Watch Program	$2,000	$2,000	BCWMC has sponsored this program coordinated by Hennepin County for many years. High school students collected water quality data on local creeks. The 2016 Report is available online.	http://www.hennepin.us/-/media/hennepinus/business/work-with-hennepin-county/documents/river-watch-report.pdf?la=en
	c. MetroWaterShed Partners	$3,500	$3,500	BCWMC provides funding to support the Clean Water MN Media Campaign. Watershed organizations our size are asked to contribut between $3,000 and $5,000.	http://www.cleanwaterm n.org/
	d. Children's Water Festival	$350	$350	For the last three years, BCWMC has donated $350 to this event that targets 4th graders throughout the Metro. Same amount is recommended again this year.	
	e. Metro Blooms Workshops	$3,000	$3,000	The BCWMC has included funding for these workshops each year for several years. Workshops are geared toward planting resilient yards including alternative turf, raingardens, and native plants. BCWMC cities coordinate with Metro Blooms to schedule an event. Three BCWMC cities already have workshops scheduled.	http://metroblooms.org/events/list/
	Subtotal Water Ed Partnerships	**$15,500**	**$13,450**		
4	**Education and Public Outreach**				
	a. West Metro Water Alliance	$9,750	$9,750	Contract approved by BCWMC 2/19/15. Administrator attends monthly WMWA meetings and is involved with this organization and its activities.	http://www.westmetrowateralliance.org/
	b. Prairie Moon Native Seeds	$0	$110	Already purchased for 2017 events as we've done for several years.	
	c. Plymouth Home Expo Booth	$0	$60	Exhibit will be manned by Commissioners or volunteers only. The BCWMC booth will be next to WMWA partners Elm Creek and Shingle Creek WMC's.	http://www.plymouthmn.gov/Home/Components/Calendar/Event/6427/271
	d. Training for Commissioners (registrations, fees)	$0	$1,400	Funding for reimbursement of registration fees for Commissioners, Alt. Commissioners, or Committee members to attend workshops, trainings, and other events. Pre-approval from the Commission is required for each expenditure and funds are used to reimburse individuals with proper receipts and documentation. Typically, meals, travel expenses or other expenses are not allowed for reimbursement. Funds are distributed on a first come, first serve basis until depleted. Committee recommends approving requests from Commissioners and CAMP volunteers to attend DNR's AIS Detection Certification Course.	

	Activity	Amount in 2017 Budget	Commitee Recommended Amount	Notes
	e. Metro Blooms Harrision Neighborhood Project Support	$0	$4,000	At the December 2015 Commission meeting, Metro Blooms requested support for a large project to engage youth and install small BMPs in alleyways in the Harrison Neighborhood. Since then, the Commission has supported several grant applications and has received grants from the Met COuncil and BWSR for this project. The Commission provided $4,000 in 2016 as match for the grants. The same amount is requested for this year (and is already included in a grant work plan).
	f. Purchase of 150 dog waste bag dispensers	$0	$300	In 2015 and 2016 the Commission purchased 150 dog waste bag dispensers to use as giveaways at events. They were a very popular item and we ran out in the fall.
	g. Parking Lot and Sidewalk Winter Maintenance Training	$0	$1,500	BCWMC will host "Parking Lot and Sidewalk Winter Maintenance Workshop" targeting private winter maintenance contractors and property managers. Cost includes contracting with Dawn Pape for up to 20 hrs ($800) for marketing and event coordination + $200 printing/marketing materials + $500 catering light breakfast and lunch for participants. Likely to be held at City of Crystal facility.
	h. Purchase "Pledge to Plant" banner; final piece of new educational display materials	$0	$300	The committee reviewed a banner developed as part of the new educational display materials. The banner features cartoon characters with cutouts for faces. It will be used to draw young people into a display booth and hopefully result in photos being posted on social media.
	i. Purchase 250 plastic cups with proper residential salt use instructions for give-aways at events	$0	$180	250 - 12 oz. plastic cups will be purchased for give away to residents at events with a message indicating that a heaping cup holds about one pound of salt - enough for 250 ft^2. Other messages might include "sweep up salt from dry surfaces" or "more isn't better." The cup will also include the BCWMC name and/or logo.
	j. Creek crossing signs	$0	$1,000	This endeavor includes up to 12.5 hours of Dawn Pape's time (12.5 * $40/hr = $500) for assistance with coordination/communication with city or county staff and/or sign shops to learn sign fabrication and installation options (starting within the City of Golden Valley), plus coordinating with city & Commission staff on best locations for signs, and designing the sign with review and approval by the Commission. Sign fabrication and installation (expected up to 10 signs) estimated at $50/sign *10 signs = $500
	k. Business Outreach & Recognition Program	$0	$1,530	A program to reach out to the private sector to help increase the BCWMC's visibility in the community, provide education on water friendly practices, and increase use of BCWMC Facebook page. Cost includes purchase of list of businesses in Golden Valley and their contact information ($730) + 20 hrs of Dawn Pape's time to develop and distribute email communication to businesses seeking to learn their water friendly practices and then promoting them on BCWMC Facebook page. (20 hrs * $40/hr = $800)
	Subtotal Education & Public Outreach	**$20,000**	**$20,130**	
5	**Public Communications**	**$2,500**	**$2,500**	This budgeted amount is for required announcements and public notices.
	TOTAL ASSIGNED	$44,900	$42,703	
6	**Unassigned Education Funds**	**$2,197**		This is the difference between the already budgeted amount of $44,900 and total amount of existing and recommended items above ($42,703).

Item 6Eii.
BCWMC 5-18-17

FIRST AMENDMENT TO THE
ADMINISTRATIVE SERVICES AGREEMENT

The Bassett Creek Watershed Management Commission, a Minnesota joint powers organization (the "Commission"), and Dawn Pape, doing business as the Lawn Chair Gardener, 5901 Birchwood Street, Shoreview, MN 55126 (the "Contractor") hereby enter into this First Amendment ("First Amendment") to the Administrative Services Agreement ("Agreement") executed by the parties in February 2017 and agree as follows:

1. Section 1 of the Agreement titled "SERVICES" is hereby amended to expand the scope of services provided by the Contractor to the Commission to include educational services as outlined in the proposal issued April 28, 2017 and attached hereto as Exhibit A ("Additional Services").

2. The Additional Services shall be provided between June 1, 2017 and January 31, 2018, and at the same compensation rate as set out in the Agreement.

3. This amendment, including the Additional Services and Exhibit A, are incorporated in and made part of the Agreement.

4. No other modifications to the Agreement are intended by this First Amendment.

IN WITNESS WHEREOF, the parties have executed this First Amendment to the Agreement effective as of the date of the last party to execute it.

CONTRACTOR

By: _____
Dawn Pape (Lawn Chair Gardener) Date

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION

By: _____
Chair Date

By: _____
Secretary Date

LAWN CHAIR Gardener

Make your yard work for you . . . and the Earth too

2017

OUTREACH SERVICES
PROPOSAL FOR BCWMC
June 1-January 31, 2017

Dawn Pape has nineteen years of experience in the field of education and thirteen years of experience specifically in water-related public education. Pape started the Blue Thumb—Planting for Clean Water® program when she was the director of outreach at the Rice Creek Watershed District. In that position, she communicated and coordinated projects with 29 communities, four counties, and many water management organizations.

Dawn Pape brings a unique skill set to projects: writing, creativity, graphic design, photography, social media, website development, friendliness, energy, practicality, implementation experience, fiscal responsibility and even public speaking and performance. With a Masters of Science in Environmental Education from University of Wisconsin—Stevens Point, Pape keeps abreast of environmental issues and technology with continuing education.

Lawn Chair Gardener	BCWMC
Dawn Pape 5901 Birchwood St. Shoreview, MN 55126 651.485.5171	Laura Jester
dawn@lawnchairgardener.com lawnchairgardener.com	laura.jester@keystonewaters.com bassettcreekwmo.org

Proposal Issued:	Proposal Valid to:
04.28.2017	07.28.2017

Services	Hourly Rate x Time	Total
1. Parking Lot & Sidewalk Winter Maintenance Training Course Oct. 13, 2017 This task includes working with the trainers and others to determine and carry out best method for getting up to 40 private contractors to the event. Other tasks include assisting Administrator with coordinating event including communications with venue staff, trainers, caters, participants, etc.	Marketing/participant recruitment. Help w/ event coordination (20 hrs. @ $40/hr)	$800
	Marketing materials	$200
		$1,000
2. Facebook Outreach Building/Business Recognition Program Project entails writing/designing email for Golden Valley businesses announcing that BCWMC is looking to highlight local business on the BCWMC Facebook page that are doing water-friendly practices. This initial message will double as an educational tool summarizing the types of practices that BCWMC wants the public to adopt, i.e. planting native plants and raingardens, keeping streets and sidewalks clean, minimizing salt use, etc. *Goals of project:* • Educate businesses about positive water stewardship practices • Build Facebook page "Likes" to expand social media reach (businesses receiving praise for their efforts will likely "Like" BCWMC page and share the post about their business • Provide a way for businesses to receive positive, deserved recognition for helping to protect water resources • Normalize water-friendly practices through positive social pressure	Develop/implement program + reporting results to Commission = 20 hours * $40/hour	$800
	Purchase business email lists	$730
		$1,530
3. Creek Crossing Signs Coordinate fabrication/installation of BCWMC signs within Golden Valley. Coordinate with city & Commission on best sign locations. Design sign with review and approval by the Commission. Estimate installing up to 10 signs.	$1,000 split for materials and labor.	$1,000
		$1,000

Labor	$2,100.00
Materials	$1,430.00
Total	$3,530.00

Item 7A.
BCWMC 5-18-17

Bassett Creek Watershed Management Commission

MEMO

Date: May 10, 2017
From: Laura Jester, Administrator
To: BCWMC Commissioners
RE: Administrator's Report

Aside from this month's agenda items, the Commission Engineers, city staff, committee members, and I continue to work on the following Commission projects and issues.

CIP Projects (more resources at http://www.bassettcreekwmo.org/projects.)

2017 Plymouth Creek Restoration Project, Annapolis Lane to 2,500 feet Upstream (2017CR-P): The final feasibility study and project information are available online at http://www.bassettcreekwmo.org/index.php?cID=284. The BCWMC recently executed agreements with the BWSR for a $400,000 Clean Water Fund grant and with Hennepin County for a $50,000 Opportunity Grant A subgrant agreement with the City will be developed and executed. Project design is underway through a contract between the City and Wenck Associates. The City will soon apply for permits from the U.S. Army Corps of Engineers and the Department of Natural Resources. Sixty-percent designs will be reviewed by the Commission Engineer and presented at the June Commission meeting. The project is slated for construction next winter.

2017 Main Stem Bassett Creek Streambank Erosion Repair Project (2017CR-M): (No update since March) The feasibility study for this project was approved at the April Commission meeting and the final document is available on the project page at: http://www.bassettcreekwmo.org/index.php?cID=281. A Response Action Plan to address contaminated soils in the project area was completed by Barr Engineering with funding from Hennepin County and was reviewed and approved by the MPCA. The County Board approved the 2017 maximum levy request at their meeting on July 28th. At the September meeting, the Commission held a public hearing on the project and adopted a resolution ordering the project and certifying a final levy to Hennepin County. Also at that meeting, the Commission entered an agreement with the City of Minneapolis to design and construct the project. The Commission was awarded an Environmental Response Fund grant from Hennepin County for $150,300 and a grant agreement being. A subgrant agreement with the City will be developed. The City recently received a proposal from Barr Engineering to design and construct the project.

2013 Four Season Area Water Quality Project/Agora Development (NL-2): At their meeting in December, the Commission took action to contribute up to $830,000 of Four Seasons CIP funds for stormwater management at the Agora development on the old Four Seasons Mall location. At their February meeting the Commission approved an agreement with Rock Hill Management and an agreement with the City of Plymouth allowing the developer access to a city-owned parcel to construct a wetland restoration project and to ensure ongoing maintenance of the CIP project components. The developer recently submitted plans for the wetland restoration portion of the project to the Commission Engineer for review. These plans are slated for presentation at the June Commission meeting. At this time, the development parcel has not yet been sold to Rock Hill Management.

2014 Schaper Pond Diversion Project, Golden Valley (SL-3): Last August, the Commission Engineer reported that the structure had been vandalized and repair was needed. The City executed a change order with Sunram Construction (the contractor for the project) to add weights to some of the baffle anchors. The weights will provide more support against wind loading on the baffle. Ice formed on the pond before the contractor could perform the work last fall. The contractor performed more seeding in the two access areas, which improved

vegetation coverage, but more coverage is required to achieve final stabilization. The contractor returned to the site in Mid-April to reinstall baffle anchors. The contractor also added weights to the baffle anchors to hold them in place in windy conditions. Staff will continue to monitor the baffle and anchors to ensure that they stay in place. The contractor has some final vegetation establishment to complete before the contract can be closed. Erosion control will be removed once the final stabilization is completed. Effectiveness monitoring by the Commission Engineer will begin soon.

2014 Twin Lake In-lake Alum Treatment, Golden Valley (TW-2): (No update since January.) At their March 2015 meeting, the Commission approved the project specifications and directed the city to finalize specifications and solicit bids for the project. The contract was awarded to HAB Aquatic Solutions. The alum treatment spanned two days: May 18- 19, 2015 with 15,070 gallons being applied. Water temperatures and water pH stayed within the desired ranges for the treatment. Early transparency data from before and after the treatment indicates a change in Secchi depth from 1.2 meters before the treatment to 4.8 meters on May 20th. There were no complaints or comments from residents during or since the treatment. Water monitoring continues to determine if and when a second alum treatment is necessary. Lake monitoring this summer will help determine if a second dose of alum is needed to retain water quality.

2015 Main Stem Restoration Project 10th Avenue to Duluth Street, Golden Valley (2015CR): The restoration project is being constructed in two phases, each under separate contract. Phase one included stream bank shaping, placement of field stone rock and 12-inch bio-logs, and repair of storm sewer outlets. The first phase of the project began in November 2015 and was finished in June 2016. Turf establishment and minor restoration repairs in Phase 1 were accepted in late October 2016. Repairs to some areas where flooding impacted rocks or biologs were completed and accepted in mid-December 2016. Phase 1 of the construction project has entered the warranty period.

Phase 2 of the project includes the establishment of native vegetation along the stream, including grasses, wildflowers, shrubs, live stakes and fascines, and cordgrass plugs. The second phase of the contract, Native Buffer Vegetation installation is underway. The project has been seeded and stabilized and maintenance mowing and spot treatments have been completed. Applied Ecological Services (AES) has installed live stakes and fascines this spring. Shrubs and trees will be planted later this month. The contractor also will touch up some areas that were damaged by high water and ice over the winter and will replace erosion control blanket where needed. AES will continue to monitor and maintain the native vegetation through 2018. It is anticipated that the total contract amount for both Phase one and Phase two will be within the Watershed's overall project budget.

2016 Northwood Lake Improvement Project, New Hope (NL-1): Northwood Lake Improvement Project is nearing completion with all major work complete. The storm water tank was fully operational as of yesterday and will be irrigating the fields for the summer. The educational sign is being designed and will be installed within the next two months. Grading and seed touch ups will occur over the next month. The 2nd rain garden will be planted with the fescue grass this month.

Grant reporting is up to date although I need to perform a grant audit with MPCA per the grant agreement. A grand opening of the park is scheduled for the evening of May 15th. Friends of Northwood Lake will disseminate water quality educational materials, including BCWMC materials. At a Friends of Northwood Lake annual meeting last week, Hennepin County Commissioner Opat mentioned the project and indicated it was a good example of a partnership.

Photos and construction progress are available at: http://www.ci.new-hope.mn.us/departments/publicworks/2016infrastructure.shtml

2016 Honeywell Pond Expansion Project, Golden Valley (BC-4): In spring 2016, the Honeywell Pond Project was bid as part of the City of Golden Valley and Hennepin County's Douglas Drive (CSAH 102) Reconstruction Project. The reconstruction project began in June 2016. Excavation of the pond basin is complete and the disturbed soils around the pond were temporarily stabilized. The contractor will finish installation of the storm sewer and install the pumps for the water reuse system next month. Final grading and stabilization will also be completed within the next month.

2018 Bassett Creek Park Pond & Winnetka Pond Dredging, Crystal (BCP-2) (See Items 6A and 6B): A feasibility study for this project has been underway since last August. A technical stakeholder/permitting agency meeting was held January 17th. A public open house for the project was held the on February 16th with over 19 residents in attendance. The Commission Engineer attended a Crystal City Council workshop on April 13th and the Commission discussed the draft feasibility report and heard staff and city recommendations at their April 2017 meeting. The final feasibility study will be presented at this meeting. The Commission also needs to approve a maximum levy amount for this project at this meeting.

Other Work

Financial:

- Posted 2016 financial audit online
- Continued to refine the 2018 proposed operating budget
- Received pay year 2017 taxable market value and updated assessment table
- Prepared for and attended April 24th Budget Committee meeting
- Prepared committee recommendations for this meeting

Volunteers and Education:

- Gathered additional information and estimated costs for various educational programming ideas for committee consideration
- Prepared for and attended April 24th Education Committee meeting
- Prepared committee recommendations for this meeting
- Sent email to Commissioners with upcoming events and volunteer opportunities
- Delivered education materials to Metro Blooms for use at Earth Day clean up event
- Gathered, edited and submitted newsletter articles for WMWA spring newsletter

Curly-leaf Pondweed Control on Medicine Lake:

- Executed contract with PLM Lake and Land Management
- Coordinated with DNR to submit final requirements to receive herbicide application permit
- Received daily updates from PLM on water temperature and plans/timing of herbicide treatment

Other Activities:

- Prepared agenda and meeting materials for May 4th TAC meeting; attended meeting, drafted TAC recommendations, submitted draft recommendations to TAC members for review and comment
- Fielded phone calls and emails from residents (and coordinated with appropriate city) about high water conditions, possible blue green algae, activities near Fruen Mill, etc.
- Fielded phone calls from developers with questions about project review process and fees