



Bassett Creek Watershed Management Commission

Regular Meeting
Thursday May 17, 2018
8:30 – 11:30 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 19, 2018 Commission Meeting
- B. Approval of May 2018 Financial Report
- C. Approval of Payment of Invoices
 - i. Keystone Waters, LLC – April 2018 Administrative Services
 - ii. Keystone Waters, LLC – April 2018 Meeting Materials Distribution Expenses
 - iii. Barr Engineering – April 2018 Engineering Services
 - iv. Triple D Espresso – May 2018 Meeting Refreshments
 - v. Wenck – April 2018 WOMP Monitoring
 - vi. Lawn Chair Gardener – April 2018 Administrative Services
 - vii. Kennedy Graven – March 2018 Legal Services
 - viii. MMKR – 2017 Financial Audit
- D. Accept Fiscal Year 2017 Financial Audit Report
- E. Approval of 2017 BCWMC Annual Report
- F. Approval of Bassett Creek Park Playground Project
- G. Approval of Agreement with Met Council for Citizen Assisted Monitoring Program (CAMP)

5. BUSINESS

- A. Consider Approval of Feasibility Study for Westwood Lake Water Quality Improvement Project (WST-2) and Choose Alternative (25 minutes)
- B. Receive Presentation on Schaper Pond Effectiveness Monitoring Results and Consider Next Steps (25 minutes)
- C. Consider Temporary Variance Request for Minneapolis Impound Lot Facility Improvements (20 minutes)
- D. Consider Approval of Feasibility Study for DeCola Ponds B & C Improvement Project (BC-2,3,8) and Choose Alternative (25 minutes)
- E. Set 2019 Maximum Levy Amount for Collection by Hennepin County (5 Minutes)
- F. Discuss Recommendations from Budget Committee on Proposed 2019 Operating Budget (20 minutes)

- G. Discuss Interest and Possibility of Inviting Commissioners to Participate in Bassett Creek Deep Tunnel Inspection (15 minutes)
- H. Receive Update on Watershed Based Funding Pilot Program (15 minutes)
- I. Receive Update on Zebra Mussel Surveys on Medicine Lake (10 minutes)

6. COMMUNICATIONS (15 minutes)

- A. Administrator's Report
 - i. Update on Chloride Limited Liability Legislation
- B. Chair
- C. Commissioners
- D. TAC Members
- E. Committees
- F. Legal Counsel
- G. Engineer
 - i. Report on WOMP Total Suspended Solids Loadings

7. INFORMATION ONLY (Information online only)

- A. Administrative Calendar
- B. CIP Project Updates <http://www.bassettcreekwmo.org/projects>
- C. Grant Tracking Summary and Spreadsheet
- D. WCA Notice of Application, Plymouth
- E. West Metro Water Alliance Spring WaterLinks Newsletter
- F. [Article on Northwood Lake Improvement Project in League of MN Cities Magazine](#)

8. ADJOURNMENT

Upcoming Meetings & Events

- Winnetka Pond Dredging Project Public Open House: May 24th, 5:30 – 7:00 p.m., Crystal City Hall
- BCWMC Public Hearing and Regular Meeting: June 21st, 8:30 a.m., Golden Valley City Hall
- Minnesota Association of Watershed Districts Summer Tour: June 20 – 22, 2018



Bassett Creek Watershed Management Commission

AGENDA MEMO

Date: May 10, 2018

To: BCWMC Commissioners

From: Laura Jester, Administrator

RE: Background Information for 5/17/18 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 19, 2018 Commission Meeting- **ACTION ITEM with attachment**
 - B. Approval of May 2018 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 2018 Administrative Services
 - ii. Keystone Waters, LLC – April 2018 Meeting Materials Distribution Expenses
 - iii. Barr Engineering – April 2018 Engineering Services
 - iv. Triple D Espresso – May 2018 Meeting Refreshments
 - v. Wenck – April 2018 WOMP Monitoring
 - vi. Lawn Chair Gardener – April 2018 Administrative Services
 - vii. Kennedy Graven – March 2018 Legal Services
 - viii. MMKR – 2017 Financial Audit
 - D. Accept Fiscal Year 2017 Financial Audit Report – **ACTION ITEM with attachment (full document online) – The audit of the Commission’s finances for the period February 1, 2017 to January 31, 2018 is complete. The auditor found no deficiencies in internal financial control and no findings based on testing of the Commission’s compliance with laws and regulations. Deputy Treasurer Virnig recommends the Commission accept the audit. Staff will submit the audit to the BWSR (due at the end of May).**
 - E. Approval of 2017 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 recommends approval of the attached report and direction to submit the report.**
 - F. Approval of Bassett Creek Park Playground Project – **ACTION ITEM no attachment – The proposed project is located in the Bassett Creek Main Stem subwatershed in Minneapolis and includes playground and picnic table replacement, and walkway and bench installation resulting in 1.03 acres of disturbance (grading) and an increase of 0.21 acres of impervious surface. The proposed project includes work in the floodplain and creates 132.5 cubic yards of floodplain fill at the playground. Compensatory floodplain storage of 135 cubic yards is proposed east of the playground to mitigate the fill, resulting in a net increase in floodplain storage of 2.5 cubic yards. Staff recommends approval.**

- G. Approval of Agreement with Met Council for Citizen Assisted Monitoring Program (CAMP) – ACTION ITEM with attachment – *Each year the Commission has an agreement with the Met Council for the CAMP which uses volunteers to collect water samples and data on various lakes. This year the following lakes will be monitored by volunteers through the program: Sweeney (2 sites), Twin, Lost, Parkers, Medicine (2 sites), Northwood, and Westwood. The Met Council supplies the equipment, training, program coordination, and reporting. The Commission coordinates volunteers and pays for sample analyses. Funding for CAMP is included in your education and outreach budget line. Staff recommends approval.*

5. BUSINESS

- A. Consider Approval of Feasibility Study for Westwood Lake Water Quality Improvement Project (WST-2) and Choose Alternative (25 minutes) – ACTION ITEM with attachment – *At your meeting last month, you reviewed the draft feasibility study for this project and had a good discussion about the various options. Two additional options are included in this final report. Staff recommends approval of this final report and recommends choosing option #3 due to water quality improvement, education, cost effectiveness, and aesthetic possibilities.*
- B. Receive Presentation on Schaper Pond Effectiveness Monitoring Results and Consider Next Steps (25 minutes) – ACTION ITEM with attachment – *The Schaper Pond Diversion Project was a BCWMC CIP project constructed in the winter of 2015-2016. It was designed to divert water, via a floating water baffle, within the pond to the northwest part of the pond to allow water to remain in the pond for a longer period of time, resulting in more pollutants settling out before water exits the pond and enters Sweeney Lake. In 2016 the Commission approved the use of some of the remaining CIP funds to study the effectiveness of the pond in 2017. The Commission Engineer will present results of the study and make recommendations for next steps.*
- C. Consider Temporary Variance Request for Minneapolis Impound Lot Facility Improvements (20 minutes) – ACTION ITEM with attachment – *The Commission conditionally approved this impound lot improvement project in Minneapolis in November 2017. After completing final designs, the city is now seeking a variance to temporarily place 467 cubic yards of fill (surcharge) in the floodplain. The proposed temporary fill will result in approximately 0.01 feet of increase in the 1% (base flood elevation, 100-year flood) floodplain. The BCWMC Requirements document indicates that in granting variances, the Commission shall make a finding showing that certain conditions exist. See the attached memo from the Commission Engineer and a memo from the city's consultant responding to the variance conditions.*
- D. Consider Approval of Feasibility Study for DeCola Ponds B & C Improvement Project (BC-2,3,8) and Choose Alternative (25 minutes) – ACTION ITEM with attachment – *At your meeting last month, you reviewed feasibility concepts for this project and had a good discussion about the various options. Staff recommends approval of this final report and recommends choosing option #3 which balances the development of flood mitigation volume with tree preservation.*
- E. Set 2019 Maximum Levy Amount for Collection by Hennepin County (5 Minutes) – ACTION ITEM with attachment – *A maximum 2019 levy amount for collection by Hennepin County on behalf of the Commission must be set at this meeting. The amount is dependent on the alternatives chosen for the Westwood Lake Improvement Project and the DeCola Ponds Improvement Project. Staff recommends a levy of \$1.1M for the DeCola Ponds Project. The table attached assumes implementation of Concept 3 for the Westwood Project but includes other scenarios as well. The Commission can lower the levy request when it submits its final levy amount in September of this year, but it cannot request more.*

- F. Discuss Recommendations from Budget Committee on Proposed 2019 Operating Budget (20 minutes) – **DISCUSSION ITEM with attachment** – *The Budget Committee met on March 23 and April 25 to discuss and develop the attached proposed 2019 operating budget for the Commission. The committee chair, Alt. Commissioner McDonald Black, will give a brief presentation of the proposed budget, seeking feedback from commissioners and TAC members. The final proposed budget should be approved no later than your June meeting and is due to cities by July 1 to receive their input.*

- G. Discuss Interest and Possibility of Inviting Commissioners to Participate in Bassett Creek Deep Tunnel Inspection (15 minutes) – **DISCUSSION ITEM no attachment** – *The BCWMC engineer is scheduled to inspect the Bassett Creek deep tunnel this fall. The tunnel entry is near Mill Ruins Park and the Stone Arch Bridge on the Mississippi River. Here, the tunnel is submerged and a good length of the tunnel is underwater. The river pool will be lowered for access and to drain the tunnel for inspection. There is a potential opportunity for Commissioners/TAC members to enter and observe portions of the tunnel during the inspection. Several logistical items regarding legal waivers, planning, safety, confined space entry, equipment, etc. would need to be considered and planned if there is interest in this activity. Staff would like to get input regarding participation and an approximate head count of how many Commissioner/TAC member may be interested.*

- H. Receive Update on Watershed Based Funding Pilot Program (15 minutes) – **INFORMATION ITEM no attachment** – *At your meeting in April you appointed me as your representative at the official “convene” meeting on May 16th where a final decision will be made on distribution of Clean Water Funds to entities in Hennepin County during this biennium. Alt. Commissioner Monk, Engineer Chandler and I will attend the meeting and will update you on the outcome.*

- I. Receive Update on Zebra Mussel Surveys on Medicine Lake (10 minutes) – **INFORMATION ITEM no attachment** – *On Saturday April 28th, approximately 18 Plymouth/Medicine Lake residents gathered to learn zebra mussel identification and then inspected docks that were pulled on shore for the winter around the entire lake. No mussels were found. Staff with TRPD are performing a shoreline/shallow water survey around the lake this week. I will update you with the latest findings at the meeting.*

6. COMMUNICATIONS

- A. Administrator’s Report - **INFORMATION ITEM with attachment**
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- B. Chair
- C. Commissioners
- D. TAC Members
- E. Committees
- F. Legal Counsel
- G. Engineer
 - i. Report on WOMP Total Suspended Solids Loadings – **INFORMATION ITEM with attachment online**

7. INFORMATION ONLY (Information online only)

- A. Administrative Calendar
- B. CIP Project Updates <http://www.bassettcreekwmo.org/projects>
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8. ADJOURNMENT

Upcoming Meetings & Events

- Winnetka Pond Dredging Project Public Open House: May 24th, 5:30 – 7:00 p.m., Crystal City Hall
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Item 4A.
BCWMC 5-17-18

Bassett Creek Watershed Management Commission

DRAFT Minutes of Regular Meeting Thursday, April 19, 2018 8:30 a.m.

Golden Valley City Hall, Golden Valley MN

1. CALL TO ORDER and ROLL CALL

On Thursday, April 19, 2018 at 8:32 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.

Commissioners and city staff present:

City	Commissioner	Alternate Commissioner	Technical Advisory Committee Members (City Staff)
Crystal	<i>Vacant</i>	<i>Vacant</i>	Mark Ray
Golden Valley	Stacy Harwell	<i>Absent</i>	Eric Eckman, Jeff Oliver
Medicine Lake	Clint Carlson	Gary Holter	<i>Absent</i>
Minneapolis	Michael Welch	<i>Vacant</i>	<i>Absent</i>
Minnnetonka	<i>Absent</i>	Bill Monk	Tom Dietrich
New Hope	<i>Absent</i>	Pat Crough	Megan Albert
Plymouth	Jim Prom – partial attendance	John Byrnes – voting member when Prom absent	Derek Asche
Robbinsdale	Michael Scanlan	<i>Absent</i>	Richard McCoy, Marta Roser
St. Louis Park	Jim de Lambert	Patrick Noon	Erick Francis
Administrator	Laura Jester, Keystone Waters		
Engineer	Karen Engineer Chandler		
Recorder	Dawn Pape, Lawn Chair Gardener		
Legal Counsel	Troy Gilchrist, Kennedy & Graven		
Presenters/ Guests/Public	Michelle Kimble, Jen Koehler, Patrick Brokamp - Barr Engineering Jason West, City of St. Louis Park Mark Oestreich, City of St. Louis Park Chuck Schmidt, Crystal resident Laurie Larsen, New Hope resident		

2. CITIZEN FORUM ON NON-AGENDA ITEMS

None

3. APPROVAL OF AGENDA

MOTION: Commissioner Welch moved to approve the agenda. Alternate Commissioner Byrnes seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

[Commissioner Prom arrives.]

4. CONSENT AGENDA

Commissioner Welch requested the removal from the consent agenda item 4E: Approval of Kilmer Park Street Reconstruction Project, Plymouth. Commissioner Carlson requested the removal from the consent agenda item 4H: Approval of agreement with Met Council for Watershed Outlet Monitoring Program (WOMP). These will become items 5H and 5I, respectively.

The following items were approved as part of the consent agenda: March 15, 2018 Commission meeting minutes, April 2018 financial report, payment of invoices, approval not to waive monetary limits on municipal tort liability, approval to reimburse commissioners for conference registrations, approval of agreement with Hennepin County for 2018 River Watch program.

The general and construction account balances reported in the April 2018 Financial Report are as follows:

Checking Account Balance	\$ 801,670.02
TOTAL GENERAL FUND BALANCE	\$ 801,670.02
TOTAL CASH & INVESTMENTS ON-HAND (4/7/18)	\$ 3,690,561.66
CIP Projects Levied – Budget Remaining	(\$ 4,262,228.70)
Closed Projects Remaining Balance	(\$ 571,667.04)
2012-2016 Anticipated Tax Levy Revenue	\$ 3,721.01
2017 Anticipated Tax Levy Revenue	\$ 1,771.12
Anticipated Closed Project Balance	(\$ 566,174.91)

MOTION: Commissioner Scanlan moved to approve the consent agenda as amended. Commissioner Prom seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

5. BUSINESS

A. Receive Presentation of Draft Feasibility Study for Westwood Lake Water Quality Improvement Project (WST-2)

Erick Francis with the City of St. Louis Park introduced Jason West, St. Louis Park Recreation Superintendent and Mark Oestreich, St. Louis Park Westwood Hills Nature Center Manager who gave an overview of the Westwood Hills Nature Center reconstruction project. They covered the goals, process, and new features planned for the new nature center including aiming for a building that will be “zero energy”—meaning it will produce its energy on-site. It will use energy

efficiency techniques such as passive solar and a massing wall. It will also incorporate floor heat, geothermal and rooftop solar panels. The new building will be ideal for teaching school groups and the public. The old building will be deconstructed. The Commission’s CIP project will allow the project to treat stormwater “above and beyond” what would be required by the redevelopment project.

Michelle Kimble with Barr Engineering gave an overview of the Commission’s Westwood Lake Improvement Project. She noted the lake is a BCWMC Priority 1 Shallow Lake and the goal of the project is to improve stormwater runoff quality to Westwood Lake by removing sediment, phosphorus, and perhaps chloride.

Ms. Kimble reviewed the concepts for the project. Concept 1 includes adding more permeable pavers to the parking lot in addition to pavers that are currently planned. Concept 2 includes expanding filtration basins that are already planned. Filtration would be needed rather than infiltration due to tight soils and high groundwater. Concept 3 features directing roof water through a linear water feature behind the building that would include a series of pools with a pump to recirculate the water, increasing evapotranspiration. Visitors could also manually pump and recirculate the water. It was noted that this feature allows for education and interaction with visitors. Ms. Kimble covered an additional concept not in the draft feasibility study; concept 4 includes heated concrete sidewalks to reduce the need for winter salt use. She plans to include further information about this idea in the final feasibility study.

Ms. Kimble walked through the water quality improvement impacts of the various concepts, the estimated costs, and estimated 30-year annualized cost per pound of pollutant removal:

Alternative	Estimated TSS removal (lbs/year)	Estimated TP removal (lbs/year)	Estimate design and construction cost	Estimated annualized cost/lb TP removal
Concept 1: Additional Permeable Pavers	39.5	0.171	\$170,000	\$59,060 - \$78,950
Concept 2: Expand Filtration Basins	0.7	0.004	\$62,000	\$925,000 - \$1,250,000
Concept 3: Linear Water Feature	59.9	0.330	\$351,000	\$63,380 - \$84,610
Concepts 1 + 2	40.2	0.175	\$232,000	Not available
Concept 4: Heated Sidewalk	0	0	Not available	Not available

Commissioner Welch noted this project should be viewed through a different lens because the phosphorus reductions are not significant, but the education value is tremendous.

Administrator Jester added that Westwood Lake has good water quality, although chlorides are on the rise. She noted, however, there are few opportunities to protect or improve this lake.

There was a discussion about the educational components of the various concepts. It was noted that education with concepts 1, 2, and 4 would require visitors reading signs but concept 3 has the possibility of interaction.

Commissioner Carlson asked why permeable pavements were included since they are so expensive and usually used in areas where there is little space for raingardens and infiltration features. Ms. Kimble answered with the benefits of permeable pavements; they allow for infiltration and less salt is needed because they do not allow as much ice to form.

Commissioner Harwell noted that with all of the sustainable elements included in the building design, perhaps this could also be designed as a zero-chloride use facility. She also offered the idea of water re-use for toilet flushing and asked about permeable paver maintenance. Ms. Kimble acknowledged that sediment does need to be vacuumed from pavers but reminded the group that permeable pavers are already part of the design. The Commission’s project would simply add more pavers.

There was discussion about the CIP funding available for the project. Administrator Jester noted that the 5-year CIP included \$300,000 for this project which includes the \$40,000 feasibility study and \$6,000 for administration. She noted that the Commission could decide to increase the levy amount requested and indicated that a decision on this project is not needed until the May meeting.

Alternate Commissioner Monk asked if there were other possibilities for treatment in the Westwood Lake watershed because all concepts presented here are very expensive relative to the pollutant removals being provided. Mr. Francis replied that the watershed is fully developed and there are not a lot of other opportunities.

Commissioner Welch expressed that concepts 1 and 2 did not appear to be worth implementing because of the high costs of pollutant removal and low educational value. Chair de Lambert and Commissioner Scanlan concurred. Staff was asked that the final feasibility study include more discussion of the educational value of the various concepts and a note on the impairments (or lack thereof) in Westwood Lake.

B. Consider Approval of 50% Design Plans for Bassett Creek Park Phase I Dredging Project: Winnetka Pond (BCP-2)

Commission Engineer Chandler introduced Patrick Brockamp with Barr Engineering, who performed the bulk of the work designing this project, and she reminded the Commission of the agreement between the city and the Commission for the city to design and construct the project. She reported the city hired Barr Engineering to design the project, develop construction bidding materials and provide construction oversight. She then gave a presentation on the project, noting the Commission had selected alternative 3 in the feasibility study to dredge Winnetka Pond East (deepening to 6.0 feet), along with add-on 1 (native buffer) and add-on 2 (goose management). She noted the selected project will provide water quality improvement by (1) providing additional permanent pool storage for sedimentation and preventing re-suspension of sediment, (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.

She reviewed the primary design features of the proposed work to include: pond dredging of 18,000 cubic yards, maintenance access, outlet structure modifications, erosion repair and new storm sewer installation, expanding the existing vegetated buffer and goose management. She reported that City of Crystal staff met with the Winnetka Village Apartments management staff to discuss the native buffer and goose management measures and that apartment management agreed to provide an easement for the buffer to the city at no cost. As a result of these discussions and further discussion at the March 20th city council workshop, the city council decided to move ahead with installing the native buffer. Engineer Chandler reported the buffer will be 1.1 acres with prairie-type grasses and flowers. She noted tall plants that limit geese's visibility limit attractiveness of the area to geese and that egg addling would be used to further reduce goose numbers.

Engineer Chandler also reported on the permits that would be needed to complete the project and the estimated project cost of \$830,000, including engineering and construction, which is less than the original expected cost that was included in the Commission's CIP budget. She noted there may be administrative costs to securing the easement from the apartment building to the city of about \$3,000.

There was a discussion about goose management. It was reported the City of Crystal will perform egg addling at the site at not cost to the Commission. Commissioner Prom noted that it can be a cost-effective way of improving water quality.

MOTION: Commissioner Scanlan moved to approve the 50% Design Plans for Bassett Creek Park Phase I Dredging Project: Winnetka Pond (BCP-2) and to direct the city to proceed with 90% design plans. Commissioner Prom seconded the motion.

Discussion: Commissioner Welch noted the Commission is relying on the city to perform certain functions, like buffer maintenance and goose management, so an amendment to the agreement with the city may be needed. He also asked that information on the history of the Commission's involvement in spending CIP funds for easement purchases or administrative costs be brought to the June meeting.

Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

C. Review Feasibility Study Concepts for DeCola Ponds B & C Improvement Project (BC-2,3,8)

Commission Engineer Chandler introduced Jen Koehler with Barr Engineering. Ms. Koehler gave a presentation on the DeCola Ponds B and C Improvement Project. She reminded the Commission that at the meeting in November 2016, the Commission received a presentation on the Long-Term Flood Mitigation Plan for Medicine Lake Rd and Winnetka Ave Area prepared by the cities of Golden Valley, New Hope, and Crystal. She then reviewed the history of flooding in the DeCola Ponds area and the three concepts for flood mitigation and water quality improvements developed for this project. She noted the primary goal of the project is flood mitigation, with a secondary goal of water quality improvement. She noted the complete feasibility study will be presented in June.

Ms. Koehler walked through the different components of the three flood mitigation concepts that were investigated during this feasibility study. She noted the major differences between each concept are the amount of additional flood storage developed, the area of disturbance (and resulting tree removal), and the additional water quality treatment volume that can be developed. She noted that permitting requirements are the same for all three options.

Concept 1: Maximize Flood Storage (resulting in the most significant disturbance area and tree removal)

Concept 2: Maximize Tree Preservation (minimizing disturbance area and tree removal while developing flood storage)

Concept 3: Hybrid of Concepts 1 & 2 (balancing the need for flood storage with tree preservation)

Ms. Koehler reported that the BCWMC Phase 2 XP-SWMM and P8 models were used to quantify the impacts of each concept on flood reduction and water quality improvement. She noted the engineers also quantified habitat impacts, including estimated tree removals, and wetland and upland restorations, based on the proposed concepts.

Ms. Koehler reported that her recommended concept is Concept 3, which balances the development of flood migration volume with tree preservation. She noted the planning level estimated cost for the recommended Concept 3 is \$3.8 million (-20%/+30%) and that the BCWMC CIP budget for this project is \$1.6 million. She noted, however, that the BCWMC CIP funding is not the sole source of funding for this project and the remainder of the funding will come from a variety of sources, including the City of Golden Valley, Hennepin County, Minnesota Department of Natural Resources (MnDNR) Flood Damage Reduction Grant program, and other sources (e.g. other grants, as appropriate).

Ms. Koehler also relayed the public's comments and concerns gathered through two open houses. Public comments were varied. Some people wanted trails, tree removal, tree preservation, focus on combatting invasive species, pond safety, concerns about special assessments to property owners. However, the general feedback was positive and many people thought Concept 3 seemed like a good compromise.

There was discussion about the need for significant funds aside from the Commission's CIP. Eric Eckman, City of Golden Valley, said that this is a long-term flood mitigation plan and that the City of Golden Valley is pursuing funding through the the MnDNR Flood Reduction Grant program (state legislature's bonding bill).

Alternate Commissioner Monk asked whose decision this is to make. Administrator Jester clarified that it is the BCWMC's decision and reminded the group that during the May meeting, the Commission will set their maximum levy for 2019. She noted that CIP funds do not have to be spent the same year they are levied and can be held until all of the funding comes together. Alternate Commissioner Monk wondered about approving a project that isn't fully funded. He also wondered if other BMPs had been considered upstream, rather than construction of a forebay. Ms. Koehler explained that the presence of a sanitary sewer limited the size of the forebay. Jeff Oliver, City of Golden Valley, added that they will have to figure out how to scale the project with whatever funding is available and that it may be completed in phases.

Commissioner Welch commented that since stakeholder feedback varied, he thinks it would be wise to do what Engineer Koehler recommends. Commissioner Welch remarked that Alternate Commissioner Monk made a good

point, and that the Commission can approve a concept, but still know that there will be several more checkpoints ahead. The final feasibility study should include a framework of how it fits into the BCWMC plan and policies and why it is included in CIP. Alternate Commissioner Byrnes added that the Commission will not know about the legislative bonding bill until after the next Commission meeting.

New Hope resident, Laurie Larsen, briefly shared her story with the Commission. She noted she has lived in this area for 12 years and has experienced flooding at Roselyn Court and continues to be concerned about the flooding. She stated that she was moved and impressed by the Commission's thoughtfulness, time, effort, and energy. This is the first Commission meeting she has attended and she is impressed by the commitment she saw. Commissioner Harwell added that this is a high priority for the Commission.

D. Consider Approval of Recommendations from Technical Advisory Committee

Mr. Francis relayed that the BCWMC Technical Advisory Committee met April 9th to discuss the 2020-2024 CIP project list and the 2019 operating budget and to consider a request for use of Channel Maintenance Funds from the City of Golden Valley.

i. 2020-2024 Capital Improvement Program and Project Fact Sheets

With regards to the 5-year CIP, Mr. Francis noted the TAC recommends adding the following projects:

- 2020: Crane Lake Improvement Project as part of Ridgedale Drive reconstruction project - \$300,000
- 2024: Bassett Creek Main Stem Restoration - Regent Ave to Golden Valley Rd - \$500,000 (over 2 years)
- 2024: Bassett Creek Park Water Quality Improvement Project - \$500,000
- 2024: Ponderosa Woods Stream Restoration - \$500,000

The TAC noted that the levy amount of \$1.3 - \$1.4 million per year may need to increase slightly each year to keep up with rising construction costs. It was suggested that the construction cost index be used as a guide for gradual increases in the levy amount. Administrator Jester reviewed the Commission's current CIP fiscal policy of keeping the levy amount stable. She said she would add the recommendation to gradually increase the levy according to the construction cost index to a future Budget Committee or Administrative Services Committee meeting agenda.

Administrator Jester also noted the Bryn Mawr Meadows Improvement Project is proposed to be moved from a 2019 project to a 2020 project to better align with MPRB timing of park improvements and to allow the Crane Lake Improvement Project to be added to the CIP.

Alternate Commissioner Byrnes noted that Crane Lake has high chloride levels. He was wondering if the Commission could look at projects to reduce chloride pollution to the lake. Tom Dietrich, City of Minnetonka, said it is on the table for consideration. He said the Ridgedale area is redeveloping quickly and chloride reductions are being pursued. Commissioner Harwell suggested smart salting certification.

Commissioner Scanlan thought a discussion on increasing the levy amount based on the increase in the construction cost index would be important to pursue. Chair de Lambert replied that project costs are basis for the levy.

MOTION: Alternate Commissioner Monk made a motion to approve the 5-year CIP as recommended by the TAC and to begin a minor plan amendment process. Commissioner Scanlan seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

ii. Channel Maintenance Fund Request

Mr. Francis reported that the City of Golden Valley requests the use of Channel Maintenance funds for a project on private property. There was a brief discussion of the Channel Maintenance Fund use and how the city will ensure maintenance of the buffer. It was noted that public funds should be spent on projects that are maintained.

MOTION: Commissioner Welch moved to approve the Channel Maintenance Fund Request of \$15,000 from the City of Golden Valley. Commissioner Scanlan seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

Mr. Francis briefly reviewed the other discussions by the TAC including the TAC's input on the 2019 budget: 1) it is a good idea to begin saving for the next watershed plan now; 2) \$30,000 - \$40,000 is a good amount for the AIS/APM budget; and 3) a 2 – 3% increase in assessments is appropriate and justifiable.

[Commissioner Prom departed. Commissioner Byrnes assumed voting role.]

E. Receive Update on Status of Bryn Mawr Meadows Water Quality Improvement Project.

As she noted in item 5D, Administrator Jester reported that this CIP project will be moved from a 2019 project to a 2020 project to better align with design and construction of park improvements. She noted a feasibility study is underway and will be presented in the coming months.

F. Consider Authorizing Expenditures for Possible Rapid Response to Zebra Mussels in Medicine Lake

Administrator Jester reminded the Commission that a zebra mussel survey will be completed in Medicine Lake as soon as ice is off the lake. She noted that if a rapid response (chemical treatment) of the mussels is warranted (if they are found to be in very limited area and the MnDNR agrees to allow a treatment), the treatment would need to happen quickly. She reviewed the current allocated spending of the 2018 APM/AIS budget and requested authorization to spend up to \$11,000 on treatment, if required. She reported that Hennepin County staff verbally agreed to help fund the rapid response and the cities of Medicine Lake and Plymouth have each agreed to spend \$3,000 (for a total of \$6,000) on the survey and treatment.

MOTION: Commissioner Scanlan moved to approve the request to spend up to \$11,000 on a rapid response to zebra mussels in Medicine Lake. Commissioner Harwell seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

G. Consider Appointing Administrator as Commission Representative at Hennepin County Watershed-Based Funding Pilot Program Convene Meeting and Discuss Funding Options

Administrator Jester reviewed her memo and recommended that she be appointed to officially represent the Commission at the Hennepin County Watershed-Based Funding Pilot Program Convene meeting and that Engineer Chandler be appointed as an alternate. She also walked through the three collaboration options that will be presented and voted on at the convene meeting.

- Option 1: Use a formula based on area and property tax base to disseminate funds by watershed organization (approximately \$76,000 for BCWMC projects)
- Option 2: Take a modest amount of funding (a figure of \$100,000 has been discussed) off the top of the \$1M for Hennepin County to address chloride pollution on a countywide basis and distribute the remainder of funds via the formula in Option 1. (approximately \$70,000 for BCWMC projects)
- Option 3: Take a modest amount of funding (a figure of \$100,000 has been discussed) off the top of the \$1M for Hennepin County to address chloride pollution on a countywide basis and distribute the remainder of funds to major river basins to use on their priority programs/projects (approximately \$530,000 - \$630,000 for projects in the Mississippi River Basin watersheds).

She noted that watershed organizations in the County have tentatively agreed to advocate for Option 3. She mentioned that if option 3 were chosen, the Commission is not likely to receive Clean Water Funds in this biennium as the BCWMC projects did not rank very high among other projects in the Mississippi River Basin watersheds. She noted that IF the funding is distributed by county after this pilot program biennium, the Commission would receive funding for future projects.

Commissioner Welch noted it was a good idea for Administrator Jester to be the Commission's representative and volunteered Alternate Commissioner Monk as someone else that should attend the meeting as a support.

It was agreed that the watershed-wide chloride approach is a good one, but Commissioner Welch noted there is a very real possibility the funding will be distributed in a completely different way in the future. There was discussion

about advocating for Option 2 in order for the Commission to get at least some funding in this biennium. Engineer Chandler noted that Option 3 would be the best if funds continue to be distributed in this manner. Alternate Commissioner Monk thought we should stick with Option 3 even if the funding distribution changes because it allows watersheds to implement bigger, more effective projects because funding levels would be higher.

MOTION: Alternate Commissioner Monk moved to appoint Administrator Jester as the official BCWMC representative and to direct her to advocate for Option 3 at the convene meeting. Commissioner Scanlan seconded the motion.

Commissioner Harwell noted that the Commission's DeCola Ponds B and C Improvement Project should be added to the list of projects considered by the Mississippi River Basin watersheds because it has a water quality improvement component in addition to flood mitigation.

MOTION: Commissioner Harwell moved to amend the motion to allow Engineer Chandler and Administrator Jester to make a decision on which option to advocate for and to approve appointing Administrator Jester as the Commission Representative at the Hennepin County Watershed-Based Funding Pilot Program Convene Meeting. Commissioner Scanlan seconded the motion. Upon a vote, the motion carried 7-1 with St. Louis Park voting no. [City of Crystal absent from the vote.]

Voting on amended motion: Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

[Alternate Commissioner Noon departs.]

H. Approval of Kilmer Park Street Reconstruction Project (from consent agenda)

Commissioner Welch inquired about the trigger of this project and why the wetland question is not spelled out in the memo. Engineer Chandler replied that BCWMC is not the WCA Authority.

MOTION: Commissioner Welch moved to approve the Kilmer Park Street Reconstruction Project. Alternate Commissioner Byrnes seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

I. Approval of Agreement with the Met Council for Watershed Outlet Monitoring Program (WOMP)

Commissioner Carlson inquired about this program. Chair de Lambert described WOMP and the importance of the data it generates.

MOTION: Alternate Commissioner Byrnes moved to approve the WOMP contract with Met Council. Commissioner Carlson seconded the motion. Upon a vote, the motion carried 8-0. [City of Crystal absent from the vote.]

6. COMMUNICATIONS

A. Administrator's Report – Administrator Jester reported that the meeting for lake groups to be facilitated by Freshwater Society is coming along and a date for the meeting will be set soon. She also reported that the limited liability legislation for chlorides is still moving through committees. She also reported that she and TRPD staff, Commissioners Byrnes and Carlson, and Plymouth staff recently met with AMLAC representatives to discuss zebra mussels, dock inspections, and boat launch inspections.

B. Chair – Chair de Lambert reported that he is involved with development of a white paper on chlorides and their impact on groundwater.

C. Commissioners

Commissioner Welch – Reported the chloride bill is likely dead for now, but progress was made. He also noted the cleanup planned for in Bassett Creek Park was postponed until May 12th.

Commissioner Scanlan – attended the State Water Conference and gave some insights. He mentioned that the speakers were excellent.

D. TAC Members

Nothing to report

E. Committees

Budget and Education committees have met and they are moving forward. Commissioner Harwell asked if the education committee was working on developing education ideas for the Westwood Lake Improvement Project. Administrator Jester replied that it was not currently doing that.

F. Legal Counsel

Nothing to report

G. Engineer

Nothing to report

7. INFORMATION ONLY (Information online only)

- A. Administrative Calendar
- B. CIP Project Updates <http://www.bassettcreekwmo.org/projects>
- C. Grant Tracking Summary and Spreadsheet
- D. Minnesota Association of Watershed Districts' Summer Tour
- E. 2017 WMWA Annual Report
- F. 2017 Met Council Water Resources Update

8. ADJOURNMENT

The meeting adjourned at 11:50 a.m.

Signature/Title Date

Signature/Title Date

Bassett Creek Watershed Management Commission General Account
 General Fund (Administration) Financial Report
 Fiscal Year: February 1, 2018 through January 31, 2019
 MEETING DATE: May 17, 2018

Item 4B.
 BCWMC 5-17-18 (UNAUDITED)

BEGINNING BALANCE	11-Apr-18	801,670.02
ADD:		
General Fund Revenue:		
Interest less Bank Fees		30.28
Assessments:		
Permits:		
Environmental Resource Mgmt	BCWMC 2018-09	1,500.00
NW Islamic Comm Center	BCWMC 2018-10	1,500.00
Loucks	BCWMC 2018-03	1,000.00
Merjent	BCWMC 2018-11	2,500.00
City of Minneapolis	BCWMC 2017-37	1,000.00
Reimbursed Construction Costs		40,333.45
	Total Revenue and Transfers In	47,863.73
DEDUCT:		
Checks:		
3072 Barr Engineering	April Engineering	71,347.04
3073 Kennedy & Graven	March Legal	975.10
3074 Keystone Waters LLC	April Administrator	5,657.43
3075 Lawn Chair Gardener	April Admin Serv/Educ	1,552.71
3076 MMKR	Audit	5,800.00
3077 Triple D Espresso	May Meeting	103.98
3078 Wenck Associates	April WOMP	1,084.78
	Total Checks/Deductions	86,521.04
Outstanding from previous month:		
3064 Freshwater Society	Road Salt Symposium	135.00
3066 Metro Conservation Districts	Festival Sponsor	350.00
ENDING BALANCE	9-May-18	763,012.71

Bassett Creek Watershed Management Commission General Account

General Fund (Administration) Financial Report

(UNAUDITED)

Fiscal Year: February 1, 2018 through January 31, 2019

MEETING DATE: May 17, 2018

	2018 /2019 BUDGET	CURRENT MONTH	YTD 2018 /2019	BALANCE
OTHER GENERAL FUND REVENUE				
ASSESSMENTS TO CITIES	515,000	0.00	515,050.00	(50.00)
PROJECT REVIEW FEES	55,000	7,500.00	19,500.00	35,500.00
WOMP REIMBURSEMENT	5,000	0.00	0.00	5,000.00
METRO BLOOMS - MET COUNCIL GRANT		0.00	36,541.24	
TRANSFERS FROM LONG TERM FUND & CIP	75,000	0.00	0.00	75,000.00
REVENUE TOTAL	650,000	7,500.00	571,091.24	115,450.00
EXPENDITURES				
ENGINEERING & MONITORING				
TECHNICAL SERVICES	125,000	11,322.00	35,561.66	89,438.34
DEV/PROJECT REVIEWS	75,000	4,997.41	16,892.70	58,107.30
NON-FEE/PRELIM REVIEWS	10,000	2,331.50	4,631.50	5,368.50
COMMISSION AND TAC MEETINGS	12,000	997.50	2,625.00	9,375.00
SURVEYS & STUDIES	12,000	0.00	0.00	12,000.00
WATER QUALITY/MONITORING	80,700	8,695.29	25,371.59	55,328.41
WATER QUANTITY	6,300	514.39	1,637.89	4,662.11
WATERSHED INSPECTIONS -EROSION CONTROL	1,000	0.00	0.00	1,000.00
ANNUAL FLOOD CONTROL INSPECTIONS	48,000	95.00	95.00	47,905.00
REVIEW MUNICIPAL PLANS	8,000	0.00	1,487.50	6,512.50
WOMP	20,500	1,084.78	4,838.36	15,661.64
XP-SWMM MODEL UPDATES/REVIEWS	10,000	1,211.00	3,694.00	6,306.00
APM / AIS WORK	32,000	0.00	0.00	32,000.00
ENGINEERING & MONITORING TOTAL	440,500	31,248.87	96,835.20	343,664.80
ADMINISTRATION				
ADMINISTRATOR	67,200	5,302.50	18,217.50	48,982.50
LEGAL COSTS	17,000	975.10	1,950.20	15,049.80
AUDIT, INSURANCE & BONDING	15,500	5,800.00	7,400.00	8,100.00
FINANCIAL MANAGEMENT	3,200	0.00	0.00	3,200.00
MEETING EXPENSES	1,600	103.98	415.92	1,184.08
ADMINISTRATIVE SERVICES	15,000	1,282.66	3,838.86	11,161.14
ADMINISTRATION TOTAL	119,500	13,464.24	31,822.48	87,677.52
OUTREACH & EDUCATION				
PUBLICATIONS/ANNUAL REPORT	1,500	689.50	689.50	810.50
WEBSITE	4,200	0.00	0.00	4,200.00
PUBLIC COMMUNICATIONS	2,500	0.00	0.00	2,500.00
EDUCATION AND PUBLIC OUTREACH	22,000	624.98	6,933.51	15,066.49
WATERSHED EDUCATION PARTNERSHIPS	13,850	0.00	3,850.00	10,000.00
OUTREACH & EDUCATION TOTAL	44,050	1,314.48	11,473.01	32,576.99
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	10,000	160.00	4,588.00	5,412.00
TMDL WORK TOTAL	10,000	160.00	4,588.00	5,412.00
TOTAL EXPENSES	664,050	46,187.59	144,718.69	519,331.31

Cash Balance 4/11/18				
Cash			1,187,717.84	
	Transfer to purchase investments			
		Total Cash		1,187,717.84
Investments:				
	Minnesota Municipal Money Market (4M Fund)		2,500,000.00	
	Dividends-prior months		2,843.82	
	Dividends-Current		2,881.29	
		Total Investments		<u>2,505,725.11</u>
		Total Cash & Investments		3,693,442.95
Add:				
	Interest Revenue (Bank Charges)		85.13	
		Total Revenue		85.13
Less:				
	CIP Projects Levied - Current Expenses - TABLE A		0.00	
	Proposed & Future CIP Projects to Be Levied - Current Expenses - TABLE B		<u>(40,333.45)</u>	
		Total Current Expenses		(40,333.45)
		Total Cash & Investments On Hand	05/09/18	<u>3,653,194.63</u>
	Total Cash & Investments On Hand		3,653,194.63	
	CIP Projects Levied - Budget Remaining - TABLE A		<u>(5,201,159.45)</u>	
	Closed Projects Remaining Balance		(1,547,964.82)	
	2012 - 2016 Anticipated Tax Levy Revenue - TABLE C		3,721.01	
	2017 Anticipated Tax Levy Revenue - TABLE C		1,771.12	
	Anticipated Closed Project Balance		<u>(1,542,472.69)</u>	
	Proposed & Future CIP Project Amount to be Levied - TABLE B		0.00	

TABLE A - CIP PROJECTS LEVIED

	Approved Budget	Current Expenses	2018 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	0.00	162,907.34	827,092.66	
2014						
Schaper Pond Enhance Feasibility/Project (SL-1)(SL-3)	612,000	0.00	0.00	349,661.40	262,338.60	
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	1,003,746.24	499,253.76	
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	0.00	1,445,143.38	(11,403.38)	670,000
2017						
Main Stem Cedar Lk Rd-Dupont (2017CR-M)	2017 Levy 400,000	1,064,472	0.00	0.00	938,095.61	
	2018 Levy 664,472			126,376.39		
Plymouth Creek Restoration (2017 CR-P)	2017 Levy 580,930	863,573	0.00	0.00	704,855.77	200,000
	2018 Levy 282,643			158,717.23		
2018						
Bassett Creek Park & Winnetka Ponds Dredging (BCP-2)	1,000,000	0.00	0.00	61,069.25	938,930.75	
	8,886,715	0.00	0.00	3,685,555.55	5,201,159.45	

TABLE B - PROPOSED & FUTURE CIP PROJECTS TO BE LEVIED

	Approved Budget - To Be Levied	Current Expenses	2018 YTD Expenses	INCEPTION To Date Expenses	Remaining Budget
2019					
Bryn Mawr Meadows (BC-5)	0	16,426.91	36,938.74	68,181.06	(68,181.06)
Decola Ponds B&C Improvement(BC-2,BC-3,BC-8)	0	11,046.54	37,142.40	81,651.56	(81,651.56)
Westwood Lake Water Quality Improvement Project(Feasibility)	0	12,860.00	25,035.00	27,545.20	(27,545.20)
2019 Project Totals	0	40,333.45	99,116.14	177,377.82	(177,377.82)
Total Proposed & Future CIP Projects to be Levied	0	40,333.45	99,116.14	177,377.82	(177,377.82)

BCWMC Construction Account

Fiscal Year: February 1, 2018 through January 31, 2019

(UNAUDITED)

May 2018 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
2018 Tax Levy	947,115.00		947,115.00	0.00	0.00	0.00	947,115.00	947,115.00
2017 Tax Levy	1,303,600.00	(10,691.48)	1,292,908.52	0.00	0.00	1,291,137.40	1,771.12	1,303,600.00
2016 Tax Levy	1,222,000.00	(9,526.79)	1,212,473.21	0.00	0.00	1,211,215.56	1,257.65	1,222,000.00
2015 Tax Levy	1,000,000.00	32.19	1,000,032.19	0.00	0.00	998,931.70	1,100.49	1,000,000.00
2014 Tax Levy	895,000.00	(8,533.75)	886,466.25	0.00	0.00	885,636.52	829.73	895,000.00
2013 Tax Levy	986,000.00	(10,510.52)	975,489.48	0.00	0.00	974,956.34	533.14	986,000.00
				<u>0.00</u>			<u>5,492.13</u>	

OTHER PROJECTS:

	Approved Budget	Current Expenses / (Revenue)	2018 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	690,573.00	0.00	0.00	320,742.41	
Less: State of MN - DNR Grants				0.00	(93,000.00)
	690,573.00	0.00	0.00	227,742.41	462,830.59
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	375,000.00	0.00	73,461.65	255,619.60	119,380.40
Metro Blooms Harrison Neighborhood CWF Grant Project					
BWSR Grant	134,595.00	0.00	0.00	8,396.89	126,198.11
	134,595.00	0.00	0.00	(67,298.00)	(67,298.00)
	134,595.00	0.00	0.00	(58,901.11)	
Total Other Projects	1,835,168.00	0.00	73,461.65	464,928.05	1,168,345.95

Cash Balance 4/11/18 **1,065,845.90**

Add:

Transfer from GF 0.00

Less:

Current (Expenses)/Revenue 0.00

Ending Cash Balance 05/09/18 **1,065,845.90**

Additional Capital Needed **(102,500)**

Bassett Creek Construction Project Details

5/9/2018

CIP Projects Levied

	Total	2013	2013	2014	2014	2014	2015	2016	2016	2017	2017	2018
	CIP Projects Levied	Lakeview Park Pond (ML-8)	Four Seasons Mall Area Water Quality Project (NL-2)	Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	Briarwood / Dawnview Water Quality Improve Proj (BC-7)	Twin Lake In-Lake Alum Treatment Project (TW-2)	Main Stem - 10th Ave to Duluth (CR2015)	Honeywell Pond Expansion (BC-4)	Northwood Lake Pond (NL-1)	Main Stem-Cedar Lk Rd to Dupont (CR-M)	Plymouth Creek Restoration (CR-P)	Bassett Cr Pk & Winnetka Ponds Dredging (BCP-2)
Original Budget	8,275,115	196,000	990,000	612,000	250,000	163,000	1,503,000	810,930	822,140	1,064,472	863,573	1,000,000
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	42,671.88	49,412.13	
Feb 2015-Jan 2016	313,510.98		25,866.35			432.00	93,862.65	6,442.53	94,823.44			
Feb 2016-Jan 2017	2,835,773.05		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	31,319.05
Feb 2017-Jan 2018	266,299.84		21,055.50	46,397.95			57,299.09		6,869.40	11,814.60	93,113.10	29,750.20
Feb 2018-Jan 2019												
Total Expenditures:	3,685,555.55	11,589.50	162,907.34	349,661.40	250,000.00	91,037.82	1,003,746.24	25,307.00	1,445,143.38	126,376.39	158,717.23	61,069.25
Project Balance	5,201,159.45	184,410.50	827,092.66	262,338.60		71,962.18	499,253.76	785,623.00	(11,403.38)	938,095.61	704,855.77	938,930.75

	Total	2013	2013	2014	2014	2014	2015	2016	2016	2017	2017	2018
	CIP Projects Levied	Lakeview Park Pond (ML-8)	Four Seasons Mall Area Water Quality Project (NL-2)	Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	Briarwood / Dawnview Water Quality Improve Proj (BC-7)	Twin Lake In-Lake Alum Treatment Project (TW-2)	Main Stem - 10th Ave to Duluth (CR2015)	Honeywell Pond Expansion (BC-4)	Northwood Lake Pond (NL-1)	Main Stem-Cedar Lk Rd to Dupont (CR-M)	Plymouth Creek Restoration (CR-P)	Bassett Cr Pk & Winnetka Ponds Dredging (BCP-2)
Project Totals By Vendor												
Barr Engineering	519,796.93	6,338.95	64,076.04	121,649.45	13,089.74	15,712.00	15,825.00	13,157.98	17,966.00	111,939.39	78,973.13	61,069.25
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	1,471,580.12			213,668.55	230,401.91	66,812.17	960,697.49					
City of Minneapolis			75,759.35								71,584.90	
City of Plymouth	147,344.25											
City of New Hope	1,413,267.55								1,413,267.55			
City of Crystal										2,500.00		
MPCA	2,500.00											
Blue Water Science	3,900.00					3,900.00						
Misc												
2.5% Admin Transfer	115,205.00	4,050.00	20,600.00	13,350.00	5,470.00	3,555.00	25,000.00	11,353.02	12,208.38	11,618.60	8,000.00	
Transfer to General Fund												
Total Expenditures	3,685,555.55	11,589.50	162,907.34	349,661.40	250,000.00	91,037.82	1,003,746.24	25,307.00	1,445,143.38	126,376.39	158,717.23	61,069.25

	Total	2013	2013	2014	2014	2014	2015	2016	2016	2017	2017	2018
	CIP Projects Levied	Lakeview Park Pond (ML-8)	Four Seasons Mall Area Water Quality Project (NL-2)	Schaper Pond Enhancement Feasibility / Project (SL-1) (SL-3)	Briarwood / Dawnview Water Quality Improve Proj (BC-7)	Twin Lake In-Lake Alum Treatment Project (TW-2)	Main Stem - 10th Ave to Duluth (CR2015)	Honeywell Pond Expansion (BC-4)	Northwood Lake Pond (NL-1)	Main Stem-Cedar Lk Rd to Dupont (CR-M)	Plymouth Creek Restoration (CR-P)	Bassett Cr Pk & Winnetka Ponds Dredging (BCP-2)
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	947,115								282,643	282,643	664,472	
Construction Fund Balance	703,000	34,000	166,000				503,000		470,000			
BWSR Grant- BCWMO	470,000											
DNR Grants-LT Maint												
Total Levy/Grants	7,526,715	196,000	990,000	534,000	218,800	142,200	1,503,000	810,930	1,203,740	863,573	1,064,472	
BWSR Grants Received									670,000		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						Totals - All Projects
Total Proposed & Future CIP Projects (to be Levied)	2019 Bryn Mawr Meadows (BC-5)	2019 DeCola Ponds B&C Improve (BC-2,BC-3,BC-8)	Westwood Lake Water Quality - Feasibility	Other Projects	TMDL Studies	Flood Control Emergency Maint	Flood Control Long-Term Maint	Channel Maint		
Original Budget										
Added to Budget										
Expenditures:										
Feb 2004 - Jan 2014	5,282.80	5,282.80								
Feb 2015-Jan 2016										
Feb 2016-Jan 2017										
Feb 2017-Jan 2018	72,978.88	25,959.52	44,509.16	2,510.20			43,195.48	94,465.60		520,680.71
Feb 2018-Jan 2019	99,116.14	36,938.74	37,142.40	25,035.00			110,580.19	26,777.35		450,868.52
Total Expenditures:	177,377.82	68,181.06	81,651.56	27,545.20	684,127.16	107,765.15	320,742.41	255,619.60		4,547,060.53
Project Balance	(177,377.82)	(68,181.06)	(81,651.56)	(27,545.20)	1,109,445.84	27,234.85	500,000.00	462,830.59	119,380.40	6,133,227.47
Project Totals By Vendor										
Barr Engineering	177,377.82	68,181.06	81,651.56	27,545.20	387,939.50	104,888.70	283,050.80			1,085,114.25
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		1,526,867.62
City of Minneapolis					38,823.35			38,823.35		38,823.35
City of Plymouth					100,209.15			100,209.15		247,553.40
City of New Hope								29,240.00		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										115,205.00
Transfer to General Fun					32,600.00			32,600.00		32,600.00
Total Expenditures	177,377.82	68,181.06	81,651.56	27,545.20	652,452.16	107,765.15	320,742.41	223,944.60		4,486,145.53
Levy/Grant Details										
2010 -2014 Levies										1,881,000
2014/2015 Levy					42,200.00	30,000	175,000	175,000		1,042,200
2015-2016 Levy							17,200	25,000		
2016-2017 Levy										
2017-2018 Levy										
Construction Fund Balance										703,000
BWSR Grant- BCWMO										470,000
DNR Grants-LT Maint					93,000.00		93,000			
Total Levy/Grants					515,200.00	30,000	285,200	200,000		4,096,200

DNR Grant From GF

2010-2017 2017/18

DNR Grant

April 16, 2018

To the Board of Commissioners and Management
Bassett Creek Watershed Management Commission

The following is a summary of our audit work, key conclusions, and other information that we consider important or that is required to be communicated to the Board of Commissioners, administration, or those charged with governance of the Bassett Creek Watershed Management Commission (the Commission).

OUR RESPONSIBILITY UNDER AUDITING STANDARDS GENERALLY ACCEPTED IN THE UNITED STATES OF AMERICA AND *GOVERNMENT AUDITING STANDARDS*

We have audited the financial statements of the governmental activities and each major fund of the Commission as of and for the year ended January 31, 2018, and the related notes to the financial statements. Professional standards require that we provide you with information about our responsibilities under auditing standards generally accepted in the United States of America and *Government Auditing Standards*, as well as certain information related to the planned scope and timing of our audit. We have communicated such information to you verbally and in our audit engagement letter. Professional standards also require that we communicate to you the following information related to our audit.

PLANNED SCOPE AND TIMING OF THE AUDIT

We performed the audit according to the planned scope and timing previously discussed and coordinated in order to obtain sufficient audit evidence and complete an effective audit.

AUDIT OPINION AND FINDINGS

Based on our audit of the Commission's financial statements for the year ended January 31, 2018:

- We have issued an unmodified opinion on the Commission's financial statements. The Commission has elected not to present the management's discussion and analysis, which accounting principles generally accepted in the United States of America have determined necessary to supplement, although not required to be a part of, the basic financial statements. Our opinion on the Commission's basic financial statements is not affected by this missing information.
- We reported no deficiencies in the Commission's internal control over financial reporting that we considered to be material weaknesses.
- The results of our testing disclosed no instances of noncompliance required to be reported under *Government Auditing Standards*.
- We reported no findings based on our testing of the Commission's compliance with Minnesota laws and regulations.

SIGNIFICANT ACCOUNTING POLICIES

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Commission are described in Note 1 of the notes to basic financial statements. No new accounting policies were adopted, and the application of existing policies was not changed during the year.

We noted no transactions entered into by the Commission during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

ACCOUNTING ESTIMATES AND MANAGEMENT JUDGMENTS

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected.

We evaluated the key factors and assumptions used to develop these accounting estimates in determining that they are reasonable in relation to the basic financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

CORRECTED AND UNCORRECTED MISSTATEMENTS

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. Where applicable, management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management, when applicable, were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

DIFFICULTIES ENCOUNTERED IN PERFORMING THE AUDIT

We encountered no significant difficulties in dealing with management in performing and completing our audit.

DISAGREEMENTS WITH MANAGEMENT

For purposes of this report, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

MANAGEMENT REPRESENTATIONS

We have requested certain representations from management that are included in the management representation letter dated April 16, 2018.

MANAGEMENT CONSULTATIONS WITH OTHER INDEPENDENT ACCOUNTANTS

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a “second opinion” on certain situations. If a consultation involves application of an accounting principle to the Commission’s financial statements or a determination of the type of auditor’s opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no consultations with other accountants.

OTHER AUDIT FINDINGS OR ISSUES

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Commission’s auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

OTHER MATTERS

We were not engaged to report on the introductory section, which accompanies the financial statements but is not required supplementary information. We did not audit or perform other procedures on this other information and we do not express an opinion or provide any assurance on it.

CLOSING

We would be pleased to further discuss any of the information contained in this report or any other concerns that you would like us to address. We would also like to express our thanks for the courtesy and assistance extended to us during the course of our audit.

The purpose of this report is solely to provide those charged with governance of the Commission, management, and those who have responsibility for oversight of the financial reporting process required communications related to our audit process. Accordingly, this report is not suitable for any other purpose.

Malloy, Montague, Karnowski, Radosevich & Co., P.A.

Minneapolis, Minnesota
April 16, 2018

**BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION**

**Financial Statements and
Supplemental Information**

**Year Ended
January 31, 2018**

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Table of Contents

	Page
INTRODUCTORY SECTION	
BOARD OF COMMISSIONERS	1
FINANCIAL SECTION	
INDEPENDENT AUDITOR’S REPORT	2–3
BASIC FINANCIAL STATEMENTS	
Government-Wide Financial Statements	
Statement of Net Position	4
Statement of Activities	5
Fund Financial Statements	
Balance Sheet – Governmental Funds	6
Statement of Revenue, Expenditures, and Changes in Fund Balances – Governmental Funds	7
Statement of Revenue, Expenditures, and Changes in Fund Balances – Budget and Actual – General Fund	8
Notes to Basic Financial Statements	9–15
OTHER REQUIRED REPORTS	
Independent Auditor’s Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With <i>Government Auditing Standards</i>	16–17
Independent Auditor’s Report on Minnesota Legal Compliance	18

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Statement of Net Position
as of January 31, 2018
(With Partial Comparative Information as of January 31, 2017)

	Governmental Activities	
	2018	2017
Assets		
Cash and temporary investments	\$ 5,567,305	\$ 4,267,929
Interest receivable	-	4,088
Delinquent taxes receivable	5,537	9,414
Due from other governments	36,541	426,702
Prepays	2,898	1,810
	<u>\$ 5,612,281</u>	<u>\$ 4,709,943</u>
Liabilities		
Accounts payable	\$ 71,145	\$ 448,201
Unearned revenue	462,495	224,247
Total liabilities	<u>533,640</u>	<u>672,448</u>
Net position		
Restricted for watershed improvements	4,710,196	3,686,556
Unrestricted	368,445	350,939
Total net position	<u>5,078,641</u>	<u>4,037,495</u>
Total liabilities and net position	<u>\$ 5,612,281</u>	<u>\$ 4,709,943</u>

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Statement of Activities
Year Ended January 31, 2018
(With Partial Comparative Information for the Year Ended January 31, 2017)

	Governmental Activities	
	2018	2017
Expenses		
Watershed management		
Administration	\$ 638,444	\$ 559,831
Improvement projects	416,625	2,980,686
Total expenses	1,055,069	3,540,517
Program revenues		
Watershed management		
Charges for services – member assessments	500,001	490,344
Charges for services – permit fees	73,700	55,900
Capital grants and contributions	223,422	664,973
Total program revenues	797,123	1,211,217
Net program revenue (expense)	(257,946)	(2,329,300)
General revenues		
Property taxes	1,286,450	1,209,273
Unrestricted state aids	2	2
Investment earnings	8,052	14,328
Other	4,588	41,676
Total general revenues	1,299,092	1,265,279
Change in net position	1,041,146	(1,064,021)
Net position		
Beginning of year	4,037,495	5,101,516
End of year	\$ 5,078,641	\$ 4,037,495

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Balance Sheet
Governmental Funds
as of January 31, 2018
(With Partial Comparative Information as of January 31, 2017)

	General Fund	Improvement Capital Projects Fund	Total Governmental Funds	
			2018	2017
Assets				
Cash and temporary investments	\$ 654,914	\$ 4,912,391	\$ 5,567,305	\$ 4,267,929
Interest receivable	-	-	-	4,088
Delinquent taxes receivable	-	5,537	5,537	9,414
Due from other governments	36,541	-	36,541	426,702
Prepays	2,898	-	2,898	1,810
	<u>\$ 694,353</u>	<u>\$ 4,917,928</u>	<u>\$ 5,612,281</u>	<u>\$ 4,709,943</u>
Liabilities				
Accounts payable	\$ 50,729	\$ 20,416	\$ 71,145	\$ 448,201
Unearned revenue	275,179	187,316	462,495	224,247
Total liabilities	<u>325,908</u>	<u>207,732</u>	<u>533,640</u>	<u>672,448</u>
Deferred inflows of resources				
Unavailable revenue – property taxes	-	5,537	5,537	9,414
Fund balances				
Nonspendable for prepaids	2,898	-	2,898	1,810
Restricted for watershed improvements	-	4,704,659	4,704,659	3,677,142
Assigned for METRO blue line extension	14,000	-	14,000	-
Unassigned	351,547	-	351,547	349,129
Total fund balances	<u>368,445</u>	<u>4,704,659</u>	<u>5,073,104</u>	<u>4,028,081</u>
Total liabilities, deferred inflows of resources, and fund balances	<u>\$ 694,353</u>	<u>\$ 4,917,928</u>		

Amounts reported for governmental activities in the Statement of Net Position are different because:

Certain revenues (including delinquent taxes) are included in net position, but are excluded from fund balances until they are available to liquidate liabilities of the current period.

	5,537	9,414
Net position of governmental activities	<u>\$ 5,078,641</u>	<u>\$ 4,037,495</u>

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Statement of Revenue, Expenditures, and Changes in Fund Balances
Governmental Funds
Year Ended January 31, 2018
(With Partial Comparative Information for the Year Ended January 31, 2017)

	General Fund	Improvement Capital Projects Fund	Total Governmental Funds	
			2018	2017
Revenue				
Member contributions	\$ 500,001	\$ –	\$ 500,001	\$ 490,344
Permit fees	73,700	–	73,700	55,900
Property taxes	–	1,290,327	1,290,327	1,209,517
Intergovernmental	111,413	112,011	223,424	664,975
Investment earnings	470	7,582	8,052	14,328
Miscellaneous	4,588	–	4,588	41,676
Total revenue	690,172	1,409,920	2,100,092	2,476,740
Expenditures				
Current				
Engineering	391,011	–	391,011	377,079
Legal	16,249	–	16,249	15,470
Professional services	16,216	–	16,216	14,122
Administrative services	73,905	–	73,905	70,616
Public relations and outreach	23,092	–	23,092	21,810
Financial management	3,319	–	3,319	3,278
Education	112,113	–	112,113	52,375
Miscellaneous	1,423	1,116	2,539	5,081
Capital outlay				
Improvement projects	19,210	397,415	416,625	2,980,686
Total expenditures	656,538	398,531	1,055,069	3,540,517
Excess (deficiency) of revenue over expenditures	33,634	1,011,389	1,045,023	(1,063,777)
Other financing sources (uses)				
Transfers in	26,072	42,200	68,272	76,108
Transfers (out)	(42,200)	(26,072)	(68,272)	(76,108)
Total other financing sources (uses)	(16,128)	16,128	–	–
Net change in fund balances	17,506	1,027,517	1,045,023	(1,063,777)
Fund balances				
Beginning of year	350,939	3,677,142		
End of year	\$ 368,445	\$ 4,704,659		

Amounts reported for governmental activities in the Statement of Activities are different because:

Certain revenues (including delinquent taxes) are included in net position, but are excluded from fund balances until they are available to liquidate liabilities of the current period.	(3,877)	(244)
Change in net position of governmental activities	\$ 1,041,146	\$ (1,064,021)

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

Statement of Revenue, Expenditures, and Changes in Fund Balances
Budget and Actual
General Fund
Year Ended January 31, 2018

	Original and Final Budget	Actual	Over (Under) Budget
Revenue			
Member contributions	\$ 500,000	\$ 500,001	\$ 1
Permit fees	60,000	73,700	13,700
Intergovernmental	12,000	111,413	99,413
Investment earnings	-	470	470
Miscellaneous	-	4,588	4,588
Total revenue	572,000	690,172	118,172
Expenditures			
Current			
Engineering	390,800	391,011	211
Legal	18,500	16,249	(2,251)
Professional services	15,500	16,216	716
Administrative services	85,200	73,905	(11,295)
Public relations and outreach	24,900	23,092	(1,808)
Financial management	3,200	3,319	119
Education	35,500	112,113	76,613
Miscellaneous	2,000	1,423	(577)
Capital outlay			
Improvement projects	20,000	19,210	(790)
Total expenditures	595,600	656,538	60,938
Excess (deficiency) of revenue over expenditures	(23,600)	33,634	57,234
Other financing sources (uses)			
Transfers in	38,072	26,072	(12,000)
Transfers (out)	(50,000)	(42,200)	7,800
Total other financing sources (uses)	(11,928)	(16,128)	(4,200)
Net change in fund balances	\$ (35,528)	17,506	\$ 53,034
Fund balances			
Beginning of year		350,939	
End of year		\$ 368,445	

Bassett Creek Watershed Management Commission



2017 Annual Report

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



May 2018

Bassett Creek Watershed Management Commission 2017 Annual Report

Table of Contents

I. Annual Activity Report	3
A. 2017 Commissioners	3
B. BCWMC Staff and Consultants	4
C. Watershed Management Plan, Mission Statement, Goals	4
D. 2017 Activities	5
E. BCWMC Project Reviews.....	12
F. Water Quality Monitoring Data and Studies	14
G. Local Plan Adoption.....	15
H. Watershed Communication/Public Education.....	16
I. Professional Services Proposal.....	17
J. Assessment of Changes in Fund Balance	17
K. Wetland Conservation Act.....	18
II. 2018 Projected Work Plan.....	19
A. Capital Improvements Program (CIP).....	19
B. Watershed Management Plan	20
C. Additional Monitoring, Studies, and Programs	20
D. Education and Outreach.....	22
III. Annual Financial Report	23
A. 2017 Approved Budget.....	23
B. Report of Revenues	23
C. Report of Expenditures	23
D. Financial Audit Report	23

List of Appendices

Appendix A	2017 Financial Information
Appendix B	2017 Lake Monitoring Reports
Appendix C	2017 Resolutions
Appendix D	2017 Website Usage Report

Cover photo: Wirth Lake, Minneapolis

Bassett Creek Watershed Management Commission

Executive Summary: 2017 Annual Report



2017 Activities & Achievements

The BCWMC worked on the following activities in 2017 in order to fulfill its mission:
Stewardship of Water Resources to Protect and Enhance Our Communities.

Major Projects (Capital Improvement Program)

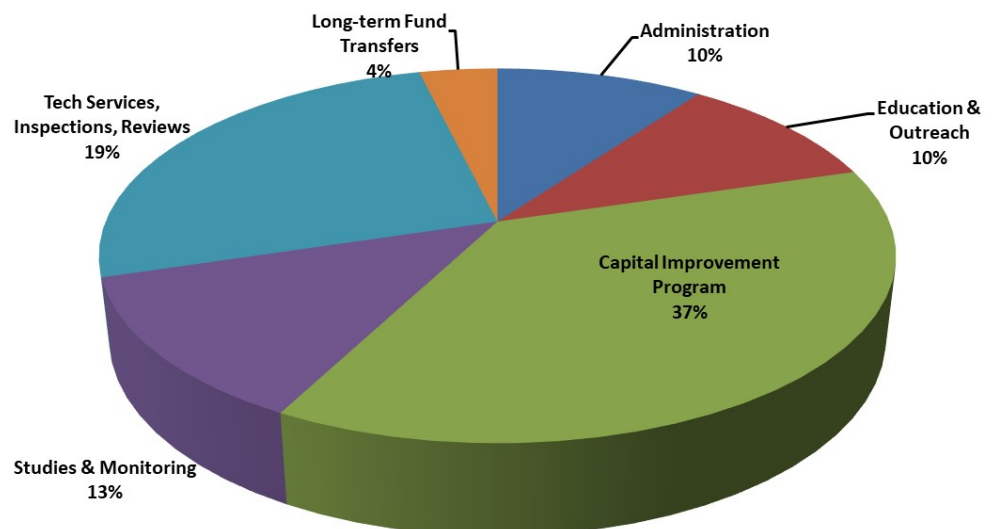
The BCWMC continued to implement its capital improvements program. Information on all BCWMC projects (completed, on-going, and proposed) can be found at www.bassettcreekwmo.org.



- **COMPLETED PROJECTS:** 1) Northwood Lake Improvement Project in New Hope that includes a 160,000-gallon underground tank that captures storm water runoff for use in irrigation, rain gardens and a storm water pond. The project was partially funded with city contributions, a Clean Water Fund grant and a Clean Water Partnership Grant. 2) Honeywell Pond Expansion Project in Golden Valley that improves the pollution removal capacity of the pond and uses a pumping station to pump storm water from the pond to ballfields for irrigation. 3) Phase 1 of the Main Stem Restoration Project 10th Ave. to Duluth St. in Golden Valley included stream bank shaping, placement of field stone rock and 12-inch bio-logs, repair of storm sewer outlets and native vegetation planted along the streambanks. Phase 2 which includes maintenance of the new vegetation will continue through 2018.
- **UNDERWAY:** Project design was completed and construction began on the Plymouth Creek Restoration Project in Plymouth. The project includes repairing eroding streambanks and establishing vegetation along Plymouth Creek in Plymouth Creek Park and downstream of Fernbrook Ave. This project received grant funds from Hennepin County and a Clean Water Fund Grant.
- **UNDERWAY:** Project designs were completed for the Main Stem Erosion Repair Project in Minneapolis near the Fruen Mill and downstream of Cedar Ave. Construction is planned for 2018. This project received Environmental Response Funds from Hennepin County.
- **UNDERWAY:** The feasibility study was completed and project designs began for the Bassett Creek Park Pond Phase I Dredging Project: Winnetka Pond in Crystal. Construction is slated for late 2018/early 2019.

Budget

In FY 2017, the BCWMC spent approximately \$699,400 on activities and programs and \$416,600 on capital projects. BCWMC income included \$500,000 from member cities, \$781,398 in grants, \$19,400 in reimbursements, and \$73,700 in development review fees. Another \$1.304 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 2017 expenditures, see the Year End Financial Report in Appendix A or the financial audit online.



2017 BCWMC Expenditures

Water Monitoring Activities

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

- Assessed the health of Lost, Sweeney, and Twin 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 at the Watershed Outlet Monitoring program coordinated by the Metropolitan Council Environmental Services

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

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.

Education & Outreach Activities

- Continued partnering 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 in 2016 and \$134,500 Clean Water fund grant in 2017.
- 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, salt dispenser cups, 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.
- Provided funding for the Hennepin County's River Watch - a program for high school students to collect benthic invertebrates to determine stream health.
- Hosted "Parking Lot and Sidewalk Winter Maintenance Workshop" for twenty-one city staff, private applicators, and parks district staff. Most participants took an exam to become certified in level one "smart salting."
- Designed, had fabricated and Installed Bassett Creek signs at four creek crossings in Golden Valley.





Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 4F – Bassett Creek Park Playground – Minneapolis, MN
BCWMC May 17, 2018 Meeting Agenda
Date: May 9, 2018
Project: 23270051 2018 2159

4F Bassett Creek Park Playground – Minneapolis, MN BCWMC 2018-12

Summary:

Proposed Work: Playground Replacement, Picnic Tables Replacement, Walkway and Bench Installation

Basis for Review at Commission Meeting: Cut and Fill in the Floodplain

Impervious Surface Area: Increase 0.21 Acres

Recommendation: Approval

General Background & Comments

The proposed project is located in the Bassett Creek Main Stem subwatershed in Minneapolis, MN, at approximately the intersection of Chestnut Avenue West and Thomas Avenue South. The proposed project includes playground replacement, new playground equipment, picnic table replacement, and walkway and bench installation resulting in 1.03 acres of disturbance (grading). The proposed project results in an increase in impervious surface of 0.21 acres from 0.03 acres (existing) to 0.24 acres (proposed).

Floodplain

The proposed project includes work in the Bassett Creek floodplain. The August 2017 BCWMC Requirements for Improvements and Development Proposals (Requirements) document states that projects within the floodplain must maintain no net loss in floodplain storage and no increase in flood level at any point along the trunk system (managed to at least a precision of 0.00 feet). The floodplain elevation of Bassett Creek at the project site is 814.7 feet NAVD88. A portion of the site is within the BCWMC floodplain, requiring the creation of compensatory storage for any proposed fill within the floodplain.

The proposed project creates 132.5 cubic yards of floodplain fill at the playground and near a proposed concrete pad southeast of the playground. Compensatory floodplain storage of 135 cubic yards is proposed east of the playground to mitigate floodplain fill. This results in a net increase in floodplain storage of 2.5 cubic yards.

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 4F – Bassett Creek Park Playground – Minneapolis, MN
Date: May 9, 2018
Page: 2

Wetlands

The proposed project appears to involve work in or adjacent to wetlands. The City of Minneapolis is the local governing unit (LGU) responsible for administering the Wetland Conservation Act, therefore BCWMC wetland review is not required.

Stormwater Management

The proposed project does not create one or more acres of net new or fully reconstructed impervious surfaces and therefore does not trigger the BCWMC requirements for rate control.

Water Quality Management

The proposed project does not create one or more acres of net new or fully reconstructed impervious surfaces and therefore does not trigger the BCWMC requirements for water quality.

Erosion and Sediment Control

The BCWMC Requirements document states that proposed projects that involves more than 200 cubic yards of cut/fill or more than 10,000 square feet of land disturbance must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control include silt fence, a woodchip construction entrance, and inlet protection. Permanent erosion and sediment control features include stabilization through seeding and sod.






Recommendation

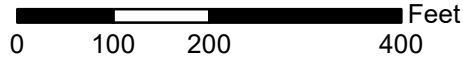
Approval.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Barr Footer: ArcGIS 10.6, 2018-05-09 11:27 File: I:\Client\BassetCreek\gis\maps\Permits\Maps-2018\2018-12.mxd User: JPP

-  Project Location
-  Municipality
-  Basset Creek
-  WMC Boundary
-  Major Subwatershed



BCWMC #2018-12
Basset Creek Park
Playground

Minneapolis, MN

LOCATION MAP

**INTERGOVERNMENTAL AGREEMENT BETWEEN THE
METROPOLITAN COUNCIL AND THE
BASSETT CREEK WATERSHED MANAGEMENT COMMISSION**

THIS AGREEMENT is made and entered into by and between the Metropolitan Council (the "Council") and the Bassett Creek Watershed Management Commission (the "Watershed"), each acting by and through its duly authorized officers.

THE ABOVE-NAMED PARTIES hereby agree as follows:

I. GENERAL SCOPE OF AGREEMENT

The Council and the Watershed agree to undertake a volunteer lake monitoring study in order to provide an economical method of broadening the water quality database on lakes in the Twin Cities Metropolitan Area.

II. SPECIFIC SCOPE OF SERVICES

2.01 Lake Monitoring Program. The Watershed and the Council agree to jointly undertake a volunteer lake monitoring program as specified below:

- a. **General Purposes of Program.** The volunteer lake monitoring program involves the use of citizen-scientist volunteers to monitor lakes in the Twin Cities Metropolitan Area. The volunteers will collect surface water samples which will be analyzed for total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll-a (CLA). In addition, the volunteers will measure surface water temperature, water transparency, and fill out a monitoring form that describes the lake and weather conditions at the time of the monitoring event. Lakes will be visited from April through October of 2018 (the "Monitoring Period") for the number of times and at the approximate intervals specified in paragraph (b) below. Each lake will be sampled at the location as indicated on the site location map provided by the Council. The Council will arrange for chemical analysis of the samples either through its own laboratory or an outside laboratory.
- b. **Specific Lakes Involved.** The following lakes and specific lake site(s) listed below will be involved in the Council's Citizen-Assisted Lake Monitoring Program (CAMP) in 2018.

Lake name	DNR ID#	Number of monitoring events	Approximate monitoring interval	Quantity of new kits
Lost	27-0103	8 to 14	Biweekly	0
Medicine, site 1	27-0104	8 to 14	Biweekly	0
Medicine, site 2	27-0104	8 to 14	Biweekly	0
Northwood	27-0627	8 to 14	Biweekly	0
Parkers	27-0107	8 to 14	Biweekly	0
Sweeney, site 1	27-0035-01	8 to 14	Biweekly	0
Sweeney, site 2	27-0035-01	8 to 14	Biweekly	0
Twin	27-0035-02	1 to 7	Biweekly	0
Westwood	27-0711	8 to 14	Biweekly	0

2.02 Watershed Responsibilities. The Watershed agrees that it will have sole responsibility for:

- a. Recruiting volunteers (who have access to a boat) to monitor the lakes the Watershed wishes to involve in the program as listed in section 2.01(b) above.
- b. Providing the Council and/or volunteers with needed lake information such as lake bathymetric maps and access locations.
- c. Paying for the laboratory analysis cost of the samples collected by volunteers which cost is included in the amounts specified in Article III below.
- d. Ensuring that the volunteers participate in the training program and follow CAMP methods and procedures.
- e. Ensuring that the volunteers fill out a monitoring form during each monitoring event.
- f. Picking up the samples and the lake monitoring forms from their volunteers and delivering those items to the Watershed's central storage location. The Watershed will be responsible for providing the central storage location. The central storage location can be a Council facility, but the Watershed will be required to deliver the samples and monitoring forms to this facility. The samples are required always to be frozen.

- h. Storing its volunteers' samples until picked up by Council staff. The samples are required always to be frozen.
- j. Maintaining, storing, and restocking its monitoring kits.
- k. Delivering and picking up its monitoring kits to and from their volunteers.

2.03 Council Responsibilities. The Council agrees that it will:

- a. Organize the survey.
- b. Provide training for the volunteers.
- c. Pick up the samples and lake monitoring forms from the Watershed's central storage location and deliver them to the laboratory at approximately 2-month intervals starting in June.
- d. Review the results of the monitoring data.
- e. Prepare a final report containing the physical, chemical, and biological data obtained during the Monitoring Period and a brief analysis of the data.
- f. Provide quality control by collecting lake samples from random lakes involved in the volunteer program. The resulting parameter values will then be compared to the volunteers' results to determine if any problems exist involving the volunteer's monitoring activities and what should be done to correct the problem.
- g. Provide and deliver to the Watershed the expendable monitoring items (e.g. sample containers, labels, filters, aluminum sheets, zip-style plastic bags, and lake monitoring forms). The expendable monitoring items will be delivered in the weeks preceding the start of the monitoring season. The cost of the expendable monitoring items is included in the annual participation fee.

III. COMPENSATION; METHOD OF PAYMENT

3.01 Payment to Council. For all labor performed and reimbursable expenses incurred by the Council under this agreement during the Monitoring Period, the Watershed agrees to pay the Council the following amounts per lake site listed in section 2.01(b). The participation fee will be billed for the contracted amount regardless whether the volunteer collects samples from or monitors a lake site fewer times than the contracted quantity.

Number of Monitoring events	Participation Fee (excludes monitoring equipment)
8 to 14	\$550
1 to 7	\$280

For lake sites requiring monitoring equipment, the cost for a kit of monitoring equipment is \$150 per kit.

3.02 Payment Schedule. Payment of the total amount owing to the Council by the Watershed shall be made by October 30, 2018. An invoice specifying the amount owed by the Watershed will be sent under separate cover.

3.03 Additional Analyses. The total amount specified in paragraph 3.01 does not include the cost of any additional analyses requested by the Watershed, such as analysis of bottom samples. The Council will carry out any such additional analyses at the request of the Watershed and subject to the availability of Council resources for carrying out such analyses. The Council will bill the Watershed after the end of the Monitoring Period for any such additional analyses at the Council’s actual cost, and the Watershed will promptly reimburse the Council for any such costs billed. The costs for additional analyses are provided in Exhibit A.

3.04 Replacement of Durable Equipment. The total amount specified in paragraph 3.01 does not include the cost of replacing durable monitoring equipment, such as thermometers, Secchi disks, filter holders, hand pumps, graduated cylinders, sampling jugs, forceps, and tote boxes. The Council will provide and deliver durable monitoring equipment that needs replacement upon request from the Watershed. The Council will bill the Watershed for any such replaced durable monitoring equipment at the Council’s actual cost, and the Watershed will promptly reimburse the Council for any such costs billed.

IV. GENERAL CONDITIONS

4.01 Period of Performance. The services of the Council will commence on April 1, 2018, and will terminate on March 30, 2019, or following work completion and payment, whichever occurs first.

4.02 Amendments. The terms of this agreement may be changed only by mutual agreement of the parties. Such changes will be effective only on the execution of written amendment(s) signed by duly authorized officers of the parties to this agreement.

4.03 Watershed Personnel. Laura Jester, or such other person as may be designated in writing by the Watershed, will serve as the Watershed’s representative and will assume primary responsibility for coordinating all services with the Council.

Laura Jester - Administrator
Bassett Creek Watershed Management Commission
c/o Keystone Waters
16145 Hillcrest Lane
Eden Prairie, MN 55346
952-270-1990

4.04 Council's Contract Manager. The Council's Contract Manager for purposes of administration of this agreement is Brian Johnson, or such other person as may be designated in writing by the Council's Regional Administrator. The Council's Contract Manager will be responsible for coordinating services under this agreement. However, nothing in this agreement will be deemed to authorize the Contract Manager to execute amendments to this agreement on behalf of the Council.

Brian Johnson
Metropolitan Council
2400 Childs Road
St. Paul, MN 55106
651-602-8743

4.05 Equal Employment Opportunity; Affirmative Action. The Council and the Watershed agree to comply with all applicable laws relating to nondiscrimination and affirmative action. In particular, the Council and the Watershed agree not to discriminate against any employee, applicant for employment, or participant in this study because of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, membership or activity in a local commission, disability, sexual orientation, or age; and further agree to take action to assure that applicants and employees are treated equally with respect to all aspects of employment, including rates of pay, selection for training, and other forms of compensation.

4.06 Liability. Each party to this agreement shall be liable for the acts and omissions of itself and its officers, employees, and agents, to the extent authorized by law. Neither party shall be liable for the acts or omissions of the other party or the other party's officers, employees or agents. Nothing in this agreement shall be deemed to be a waiver by either party of any applicable immunities or limits of liability including, without limitation, Minnesota Statutes, sections 3.736 (State Tort Claims) and chapter 466 (Municipal Tort Claims).

4.07 Copyright. No reports or documents produced in whole or in part under this agreement will be the subject of an application for copyright by or on behalf of the Council or Watershed.

4.08 Termination of Agreement. The Council and the Watershed will both have the right to terminate this agreement at any time and for any reason by submitting written notice of the intention to do so to the other party at least thirty (30) days prior to the specified effective date of such termination. In the event of such termination, the Council shall retain a pro-rata portion of the amounts provided for in Article III, based on

the number of monitoring events occurring for each lake before termination versus the total monitoring events specified for each lake. The balance of the amounts will be refunded by the Council to the Watershed.

4.09 Force Majeure. The Council and the Watershed agree that the Watershed shall not be liable for any delay or inability to perform this agreement, directly or indirectly caused by, or resulting from, strikes, labor troubles, accidents, fire, flood, breakdowns, war, riot, civil commotion, lack of material, delays of transportation, acts of God or other cause beyond reasonable control of Council and the Watershed.

4.10 Audits. Pursuant to Minn. Stat. Section 16C.05, Subd. 5, the books, records, documents, and accounting procedures and practices of Provider relative to this agreement shall be subject to examination by the Watershed and the State Auditor. Complete and accurate records of the work performed pursuant to this agreement shall be kept by provider for a minimum of six (6) years following termination of this agreement for such auditing purposes. The retention period shall be automatically extended during the course of any administrative or judicial action involving the Watershed regarding matters to which the records are relevant. The retention period shall be automatically extended until the administrative or judicial action is finally completed or until the authorized agent of the Watershed notifies Provider in writing that the records need no longer be kept.

4.11 Relationship of Parties and their Employees. Nothing contained in this agreement is intended, or should be construed, to create the relationship of co-partners or a joint venture between the Council and the Watershed. No tenure or any employment rights including worker's compensation, unemployment insurance, medical care, sick leave, vacation leave, severance pay, retirement, or other benefits available to the employees of one of the parties, including indemnification for third party personal injury/property damage claims, shall accrue to employees of the other party solely by the fact that an employee performs services under this agreement.

4.12 Severability. If any part of this agreement is rendered void, invalid or unenforceable such rendering shall not affect the remainder of this agreement unless it shall substantially impair the value of the entire agreement with respect to either party. The parties agree to substitute for the invalid provision a valid provision that most closely approximates the intent of the invalid provision.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed by their duly authorized representatives on the dates set forth below. This agreement is effective upon final execution by, and delivery to, both parties.

**BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION**

Date _____

By _____

Name _____

Its _____

METROPOLITAN COUNCIL

Date _____

By _____

Name _____

Water Resources Assistant Manager

EXHIBIT A

Metropolitan Council Environmental Services Laboratory Prices for Additional Analyses		
Parameter	Laboratory Code	Price (per sample)
Nutrients (TP & TKN)	NUT-AHLV	\$15.25
Chlorophyll	CLA-TR-CS	\$15.50
Phosphorus	P-AHLV	\$15.25
Chloride	CL-AV	\$15.75
Ortho-phosphorus	ORTHO-AV	\$15.50
Hardness	HARD-AV	\$7.25
Alkalinity	ALK-AV	\$13.50
Sulfate	SO4-ICV	\$13.50
Metals (Cd, Cr, Cu, Pb, Ni, Zn)	MET-MSV	\$36.00
Individual metal/mineral (e.g. Fe)	XX-MSV	\$6.00 (per element)
A parameter not on this list		Contact the Council's Contract Manager for specific pricing.

Feasibility Report for Westwood Lake Water Quality Improvement Project

St. Louis Park, MN

May 2018



Prepared for
Bassett Creek Watershed Management Commission



Feasibility Report for Westwood Hills Nature Center

May 2018

Contents

1.0	Background	1
1.1	Project Area Description	1
1.1.1	Westwood Lake	1
1.1.2	Westwood Lake Subwatershed	2
1.1.3	Turtle Pond	2
1.1.4	Wetland Delineation	3
1.1.5	Soil Borings	3
1.2	Hydrologic and Hydraulic Models	3
1.3	Water Quality Models	3
2.0	Goals and Objectives	7
2.1	Scope	7
2.2	Considerations	8
3.0	Stakeholder Input	8
3.1	Public Stakeholder Meeting	8
3.2	Technical Stakeholder Meeting	8
3.3	BCWMC Stakeholder Comments	9
4.0	Water Quality Improvement Concepts	9
4.1	Concept 1 – Additional Permeable Pavers	9
4.2	Concept 2 – Expand Filtration Basins	10
4.3	Concept 3 – Linear Water Feature	11
4.4	Concept 4 – Heated Sidewalks	12
4.5	Concept 5 – Water Reuse	13
5.0	Water Quality Impacts	18
6.0	Project Cost Considerations	18
6.1	Opinion of cost	18
6.2	Concept 3 Potential Cost Reduction	19
6.3	Funding Sources	19
6.4	Project Schedule	19

7.0	Permitting, Site Impacts, and Coordination	21
7.1	Permitting	21
7.2	Site Impacts.....	21
7.3	Coordination.....	21
8.0	Recommendations	21
9.0	References	21

List of Tables

Table 5-1	Estimated Annual TSS and TP Removals for Concepts 1, 2, and 3.....	18
Table 6-1	Estimated Capital and Annualized Costs for Concepts 1, 2, 3, and 4.....	20

List of Figures

Figure 1-1	BCWMC Major Subwatersheds and Drainage Patterns	4
Figure 1-2	Westwood Hills Nature Center Location and Land Use	5
Figure 1-3	Westwood Hills Nature Center - Existing Conditions and Proposed Conditions.....	6
Figure 4-1	Concept 1: Additional Permeable Pavers	14
Figure 4-2	Concept 2: Expand Filtration Basins.....	15
Figure 4-3	Concept 3: Linear Water Feature	16

List of Appendices, Attachments, or Exhibits

Appendix A	Westwood Hills Nature Center Site Topographic and Tree Survey
Appendix B	Soil Borings
Appendix C	Cost Estimates

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.



Michelle Kimble
PE #: 42012

May 9, 2018

Date

1.0 Background

The BCWMC's 2015-2025 Watershed Management Plan (Plan, Reference (1)) addresses the need to improve the quality of stormwater runoff reaching the Mississippi River by reducing nonpoint source pollution, protecting and enhancing fish and wildlife habitat, reducing stormwater runoff volume to improve water quality, and taking into account aesthetics and recreational opportunities within the watershed. This project is consistent with the goals (Section 4.1) and policies (Sections 4.2.1 and 4.2.10) in the Plan. The Plan's 10-year Capital Improvement Program (CIP, Table 5-3 in the Plan) includes project WST-2 Westwood Lake Water Quality Improvement Project. The BCWMC approved the 5-year (working) CIP at their March 17, 2016 meeting, which included implementation of the Westwood Lake Water Quality Improvement Project in 2019.

The Westwood Lake Water Quality Improvement Project is part of a larger project at the Westwood Hills Nature Center (WHNC). The City of St. Louis Park is in the planning phase of a complete reconstruction of its facilities in 2019. A master plan for the reconstruction project was completed in May 2016 for the City of St. Louis Park. The proposed improvements in the master plan include trail circulation and wayfinding, additional parking, expanded outdoor classroom area and water garden, expanded natural play and outdoor education area, interpretive features, and a new interpretive center building. This study examines the feasibility of constructing additional water quality improvements (that would go above and beyond stormwater treatment that is required by the development project) to treat stormwater runoff that would otherwise flow untreated to Westwood Lake.

1.1 Project Area Description

The WHNC is a 160-acre park located in St. Louis Park in the southern portion of the Bassett Creek watershed, southeast of the intersection of Interstate 394 and Highway 169 (Figure 1-1). The park is bordered by Westwood Hills Drive, Virginia Avenue South, and Westwood Hills Road on the east; and Westmoreland Lane and Flag Avenue South on the south and west. Wayzata Boulevard is north of the park. The park contains trails, marsh, woods, and restored prairie, and is surrounded by medium density residential and commercial areas (Figure 1-2). The existing interpretive center at the WHNC is located in the southeast portion of the park, approximately 360 feet north of the existing parking lot, and is accessed via a paved trail from the parking lot. The existing interpretive center will be deconstructed as part of the larger WHNC reconstruction project and the new interpretive center will be built near the north edge of the existing parking lot. The existing parking lot will be demolished and reconstructed farther to the south. The new facility will be nearly five times as large as the existing building. The existing parking lot has 33 parking spaces and the proposed parking lot will provide nearly double the number of parking spaces (Figure 1-3).

1.1.1 Westwood Lake

Westwood Lake is a 38-acre lake in St. Louis Park in the southern portion of the Bassett Creek watershed. The BCWMC classified Westwood Lake as a Priority 1 shallow lake, making this water quality improvement project eligible for inclusion in the BCWMC's CIP. Westwood Lake has a maximum depth of 5 feet, a

normal water elevation of 887.6 feet (NAVD88 datum), and a 100-year elevation of 890.0 feet (NAVD88 datum).

Runoff draining into the lake enters through five storm sewers located around the perimeter. On the north side of the lake, the outlet is a 400-foot long open channel which discharges to a 27-inch reinforced concrete pipe (RCP) storm sewer at an elevation of 886.2 feet (NAVD88 datum). From there runoff drains through several ponds and pipes over 1500 feet in length, and outlets into the main stem of Bassett Creek, downstream of General Mills Boulevard.

Westwood Lake's water quality, including total phosphorus concentrations, meets Minnesota Pollution Control Agency (MPCA) water quality standards for shallow lakes in the north central hardwood forest ecoregion; therefore, the lake is not included on the MPCA's 303(d) List of Impaired Waters. Westwood Lake also meets the MPCA standards for specific conductance (when chloride measurements are not available, specific conductance is used as a surrogate for chloride).

Specific conductance in Westwood Lake has remained relatively stable over time, ranging from about 400 to 500 $\mu\text{mhos/cm}$ @ 25°C during 2011 and 2015, well below the MPCA standard of 1,000 $\mu\text{mhos/cm}$ @ 25°C. Although chlorides have not been measured in Westwood Lake, chloride concentrations can be estimated by using a relationship between specific conductance and chlorides documented for Nine Mile Creek. Using that relationship, the estimated chloride concentrations in Westwood Lake during 2011 and 2015 ranged from about 40 to 50 mg/L, well below the MPCA chronic standard of 230 mg/L. (Study, Reference (2))

In 2015, *Lynchnothamnus barbaratus* (bearded stonewort) was observed in Westwood Lake. This was the first known occurrence of this plant in Minnesota. Bearded stonewort and other the two other dominant plant species in the lake, fetid stonewort (*Chara contraria*) and coontail (*Ceratophyllum demersum*), are strong nutrient absorbers and likely contribute to the good water quality in the lake. (Study, Reference (2))

1.1.2 Westwood Lake Subwatershed

Westwood Lake's 463-acre watershed includes portions of St. Louis Park, Golden Valley, and Minnetonka. The watershed primarily comprises low-density residential land use, park and recreational areas, and a golf course (Figure 1-2). The lake is adjacent to parkland and within the WHNC, both of which provide access to trails surrounding the lake and opportunities for canoeing or kayaking, scenic viewing, birding, and hiking. The project area is generally flat or moderately undulating, with the exception of a steep hilly area near the existing WHNC interpretive center. Adjacent upland areas east of the parking lot have steep topography. A detailed topographic map can be found in Appendix A.

1.1.3 Turtle Pond

Turtle Pond is a small wetland located northwest of the proposed WHNC interpretive center building. The Turtle Pond outlet is a 12-inch polyvinyl chloride (PVC) culvert with an invert elevation of 889.4. Turtle Pond drains into a small unnamed wetland which then drains into Westwood Lake via an 8-inch PVC culvert with an invert elevation of 888.6 (Figure 1-3).

1.1.4 Wetland Delineation

The City of St. Louis Park, in coordination with HGA Architects and Engineers (HGA), completed a site topographic and tree survey, wetland delineation, and Phase 1 environmental site assessment in 2017 as part of the larger WHNC reconstruction project. The site topographic and tree survey, which shows the wetland locations, was provided by HGA and is included in Appendix A.

1.1.5 Soil Borings

The City of St. Louis Park, in coordination with HGA, completed soil borings in 2017 for the proposed WHNC reconstruction project. Soils are generally characterized as fill, swamp deposits, peat, or clay with groundwater seven to ten feet below grade. The Soil boring logs were provided by HGA and are included in Appendix B.

1.2 Hydrologic and Hydraulic Models

The BCWMC completed the Phase II XP-SWMM model for Bassett Creek and its contributing watersheds in 2016. Hydrologic and hydraulic information was not reviewed or analyzed as part of this feasibility study because no changes are proposed that would impact the information included in the XP-SWMM model.

1.3 Water Quality Models

The BCWMC developed the P8 model for Bassett Creek and its contributing watersheds in 2012. The P8 water quality model was not reviewed or analyzed as part of this feasibility study, however this study included a preliminary MIDS and water balance analysis to estimate the water quality improvement expected from each proposed alternative. Final design efforts should include both additional refinements to the water quality modeling as the design components are finalized and incorporation of the constructed improvements into the BCWMC's P8 model after completion of the project.

2.0 Goals and Objectives

The goals and objectives of the feasibility study are to:

1. Review the feasibility of improving quality of stormwater runoff reaching Westwood Lake.
2. Develop conceptual designs.
3. Provide an opinion of cost for design and construction of concepts.
4. Identify potential impacts and permitting requirements.

The goals and objectives of the water quality project is to:

1. Reduce nonpoint source pollution
2. Protect and enhance fish and wildlife habitat at WHNC
3. Reduce stormwater runoff volume
4. Prevent erosion of soil into Westwood Lake and surrounding wetlands
5. Consider aesthetics and recreational opportunities at WHNC
6. Increase the quality of wetlands

2.1 Scope

As part of the larger WHNC reconstruction project, the City of St. Louis Park is proposing to construct additional water quality improvements to treat stormwater runoff that would otherwise flow untreated to Westwood Lake. The BCWMC's WST-2 CIP project funding would be applied towards the portions of the water quality improvements that provide treatment "above and beyond" the BCWMC requirements for the WHNC reconstruction project.

This project is consistent with the goals (Section 4.1) and policies (Sections 4.2.1, 4.2.2, and 4.2.10) in the 2015 – 2025 BCWMC Watershed Management Plan. The BCWMC has included the Westwood Hills Nature Center Water Quality Project in its CIP, based on gatekeeper policy 110 from the BCWMC Plan:

The BCWMC will consider including projects in the CIP that meet one or more of the following "gatekeeper" criteria.

- *Project is part of the BCWMC trunk system (see Section 2.8.1, Figure 2-14 and Figure 2-15)*
- *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 BCWMC will use the following criteria, in addition to those listed above, to aid in the prioritization of projects:

- *Project protects or restores previous Commission investments in infrastructure*
- *Project addresses intercommunity drainage issues*
- *Project addresses erosion and sedimentation issues*

- *Project will address multiple Commission goals (e.g., water quality, runoff volume, aesthetics, wildlife habitat, recreation, etc.)*
- *Subwatershed draining to project includes more than one community*
- *Addresses significant infrastructure or property damage concerns*

The BCWMC will place a higher priority on projects that incorporate multiple benefits, and will seek opportunities to incorporate multiple benefits into BCWMC projects, as opportunities allow.

The Westwood Hills Nature Center Water Quality Project meets multiple of the gatekeeper criteria—the project is part of the BCWMC trunk system, the project would improve water quality, increase education opportunities, provide habitat, and address multiple commission goals.

2.2 Considerations

The following considerations played a key role in determining recommendations for the Westwood Hills Nature Center Water Quality Project and should continue to be evaluated through final design:

1. Maximizing the water quality benefit.
2. Minimizing permitting required to construct the project.
3. Minimizing wetland impacts.
4. Minimizing tree loss.
5. Adding educational opportunities.

3.0 Stakeholder Input

3.1 Public Stakeholder Meeting

Two public stakeholder open house meetings were held on February 22 and 28, 2018. The City of St. Louis Park and their consultant organized these meetings. The BCWMC administrator did not attend either meeting, however Chair de Lambert did attend one of the meetings. While the presentations and discussions focused on the proposed interpretive center, the BCWMC had a display at the meetings with a watershed map, a brief project description, educational materials, and information about the BCWMC. An opportunity was provided for residents to offer thoughts or concerns about the project on index cards; however, no comments were passed along to Barr or BCWMC concerning the water quality portion of the project.

3.2 Technical Stakeholder Meeting

Two technical stakeholder meetings were held for the project. The first was held onsite on November 21, 2017. The meeting included representatives from the City of St. Louis Park, HGA (the city's architect and engineer), and the Commission Engineer. The attendees discussed project scope, field work schedule, design and meeting schedules, and site layout.

The second meeting was held at City of St. Louis Park offices on March 1, 2018. Attendees included representatives from the City of St. Louis Park, the city's consultant, the BCWMC administrator, and the BCWMC Engineer. Attendees discussed possible design concepts, permitting needs, project schedule and funding were also reviewed.

3.3 BCWMC Stakeholder Comments

A draft version of the April 2018 draft report was provided to the BCWMC administrator and City of St. Louis Park staff. The draft feasibility study was revised in response to the comments received. Additional review of the technical comments is recommended during final design.

4.0 Water Quality Improvement Concepts

This section provides a summary of the alternatives analyzed for water quality and other improvements at WHNC. Multiple alternatives were evaluated for removing sediment, improving water quality, protecting and enhancing fish and wildlife habitat, and adding aesthetic and educational opportunities within the project area. The measures considered for potential implementation include the following:

- Adding additional permeable paver parking bays in the proposed parking lot for water quality treatment and a possible reduction of salt application in the parking bay (Concept 1)
- Increasing the size of proposed filtration basins, or supplementing the site with additional filtration basins (Concept 2)
- Installing a linear water quality feature on the north side of the interpretive center with signage and interactive features for education (Concept 3)
- Directing additional site runoff to Turtle Pond to increase the water quality treatment provided by the pond (Concept 3)
- Heating concrete sidewalks near building to avoid placing salt during winter months (Concept 4)
- Water reuse (Concept 5)

Five water quality treatment concepts were developed. The proposed concepts will reduce sediment, phosphorus, or chloride loading to Westwood Lake and all downstream water bodies, including Bassett Creek and the Mississippi River.

4.1 Concept 1 – Additional Permeable Pavers

Concept 1 includes installing additional permeable pavers in the proposed parking lot. The proposed parking lot is designed with an outer and inner ring of parking stalls and includes permeable pavers at the inner ring location. Concept 1 would increase the amount of pervious concrete pavers by constructing the outer ring of parking stalls with the same permeable paver design proposed for the inner ring of parking stalls. All pervious pavers would include granular filters with draintile beneath them. An overflow structure would be installed in each paver bay to minimize flooding if the pavers become plugged. Educational signage would be installed near the pavers explaining how the system works to improve

water quality and why chlorides are harmful to aquatic resources. Concept 1 is shown in detail on Figure 4-1.

The soil borings show soils near the proposed parking lot that would not be conducive to infiltration. As a result, the permeable pavers are designed as a filtration system. Pervious pavers improve water quality by trapping sediments and nutrients at the surface or in the sand filter below. There is also evidence that pervious pavers require less salt application during winter months than traditional bituminous or concrete paving. Installing additional permeable pavers would reduce sediment and nutrient loading, and may reduce chloride loading to Westwood Lake, Bassett Creek, and the Mississippi River. Signage could be used to educate the visitors on how the pavers are improving water quality in the watershed.

To maintain effectiveness, permeable pavers must be maintained. Regular maintenance includes removing accumulated sediment or organic matter with sweeping and cleaning out the drintile. Even with regular maintenance, eventually the pavers may need to be removed and reinstalled to replace the filter media. The life of the pavers depends on how well they are maintained.

4.2 Concept 2 – Expand Filtration Basins

Concept 2 includes increasing size and filtration capacity of the proposed filtration basins on the south side of the proposed interpretive center. Two areas have been identified for expansion of the filtration basins, which could provide an additional 3,300 cubic feet (0.08 acre-feet) of storage. Educational signage would be installed near the basins explaining how the system works to improve water quality and habitat. Concept 2 is shown in detail on Figure 4-2. At the time of this report, the site design for the WHNC reconstruction project had not yet been completed. It is possible additional locations could be identified for expansion of the filtration basins. This should be evaluated during final design.

The soil borings show soils near the proposed parking lot that would not be conducive to infiltration. As a result, the basins are designed as filtration systems. The expanded filtration basins would match the design of the proposed filtration basins. These designs have not yet been finalized but will generally include a sand trench with drintile, planting soil, surface mulch, plantings, and an overflow outlet. Filtration basins improve water quality by trapping sediments and nutrients, or removing nutrients through plant uptake. Expanding the proposed filtration basins would increase the filtration capacity of the basins, and further reduce the sediment and nutrient loading to Westwood Lake, Bassett Creek, and the Mississippi River. Signage could be used to educate the visitors on how the basins are improving water quality in the watershed.

To maintain effectiveness, filtration basins must be maintained. Regular maintenance includes removal of trash and debris, weeding, cleaning out the drintile, loosening the surface of the basin, removing accumulated sediment or organic material, replacing plants, and replacing surface mulch. Even with regular maintenance, eventually the filtration basins may require removal and replacement of the planting soil, plants, and sand trench to restore effectiveness.

Adding iron filings to the sand trenches for iron enhanced sand filtration to remove soluble phosphorus was discussed. Soil borings near the basins show groundwater elevations to be as high as 888.0 feet

(NAVD88 datum), and could be higher when groundwater is seasonally high. The basin sand trenches could be close to this elevation. We do not recommend using iron in continuously wet areas as the system can go anoxic, the iron can clump together, the system may discharge iron into the downstream waterbodies, and may not function as intended. Most of the maintenance for this option could be accomplished with volunteers.

4.3 Concept 3 – Linear Water Feature

Concept 3 includes collecting stormwater runoff from the roof of the proposed interpretive center and the north patio areas. Runoff would be routed through a series of meandering channels and basins on the north side of the proposed interpretive center. Pumps would recirculate the runoff through the channels and basins until it leaves the system through infiltration, evaporation, or evapotranspiration. The recirculation pumps could be solar-powered or manual. An overflow would be provided from the downstream basin to Turtle Pond for storm events larger than the design event. Turtle Pond is currently stagnant and receives minimal runoff. This concept would increase flows to Turtle Pond, which may improve its water quality.

All of the basins and channels would be constructed to promote infiltration. Soils may not be highly conducive to infiltration, however an appropriate infiltration rate for the soil type would be used in design calculations. Infiltration basins improve water quality by trapping sediments and nutrients, or removing nutrients through plant uptake, and reducing runoff volume. Routing stormwater runoff to this series of channels and basins would reduce the sediment and nutrient loading to Westwood Lake, Bassett Creek, and the Mississippi River.

To maintain effectiveness, infiltration basins must be maintained. Regular maintenance includes removal of trash and debris, weeding, cleaning out the drain tile, loosening the material at the surface of the basin, removing accumulated sediment or organic material, replacing plants, and replacing surface mulch. Even with regular maintenance, eventually the basins may require removal and replacement of surface mulch and plants.

In addition to water quality benefits, this system could be designed as an educational experience with signage, pedestrian bridges, and interactive features. A recirculation pump could be powered with a stationary bike, a wheel, or a hand crank. When initiated, the manual pumping could discharge at a highly visible, elevated, and accessible location. These, or similar educational features, would allow WHNC visitors to see the connection between their effort and the recirculation flow. A separate solar-powered recirculation pump could provide a lower “base-flow” for the system to ensure that the system is providing consistent water quality treatment. A manual switch could be provided for the pumps to turn them off during winter months or when visitors are not at the site.

WHNC had nearly 36,000 program participants in 2017, ranging in age from toddlers to seniors. There were also an unknown number of visitors who used the park and trails. WHNC staff develops educational programming for many groups throughout the year. Discussions with WHNC staff resulted in the following ideas for educational opportunities related to Concept 3:

- Install a rain gauge and record how much it rains. Relate the gauge to the amount of water in the system. Have discussion about precipitation trends and if the area is in a wet or dry cycle.
- Place a visual marker within the manhole which shows water level in the pipe/manholes. Relate the marker to the recent amount of rain, or lack of rain.
- Construct the structure that conveys rain from the roof down to the water feature in a location that can be seen when standing inside the building and out on the patio.
- Install signage showing the volume of runoff the system holds and the runoff volume the building roof is generating, which otherwise would be infiltrated if the area was forested.
- Install signage showing the complete hydrologic cycle from rain, runoff, infiltration, evapotranspiration, and overflow; install markers along the linear water feature system to identify each part in the cycle.
- Plant each basin with specific plants for wet and dry zones, allowing staff to educate visitors on plant identification.
- Measure the amount the solar pump is pumping and show how the amount of water being pumped increases when the sun is brighter.
- Install signage inside the building showing the different habitats that are present as part of the greater WHNC project. The linear water feature would give staff a way to show visitors some of those habitats.
- Collect water quality samples from the water feature pools and from Turtle pond, and compare the water quality in each, and to other samples from Westwood Lake.
- Discuss the importance of erosion control when viewing the controlled elevation drops through the linear water feature system.
- Note the variety of animals fairly close to the building as a result of the habitat provided by the linear water feature.

This concept would also provide added aesthetics to the north side of the building. Most of the maintenance for this option could be accomplished with volunteers. According to WHNC staff, they have a greater number of volunteers than they have activities for volunteers to help with.

4.4 Concept 4 – Heated Sidewalks

Concept 4 includes installing heated sidewalks between the building and the parking lot. The location of the heated sidewalks is shown on Figure 4-4. Two systems were briefly evaluated for this concept. Circulating glycol was not deemed a practical option for this location as pump and heater locations would be required throughout the sidewalk area and heating would be uneven. An electrical system would be more effective with this layout, however annual electric costs would be greater than if a glycol system was installed. If heated sidewalks are the chosen concept, we recommend an electrical system; the concept 4 cost estimate in Table 6-1 is based on an electrical system. This option would require annual maintenance by a building maintenance engineer. Educational signage would be installed near the sidewalks explaining how the system works to improve water quality and why chlorides are harmful to aquatic resources.

4.5 Concept 5 – Water Reuse

Concept 5 includes capturing stormwater runoff from the building roof and reusing the water for toilet flushing and possibly animal care. This option was considered by the WHNC design engineer/architect while designing the building, however was eliminated due to high costs. Water reuse inside the building would require treating the stormwater with filtration and disinfection prior to reuse, and permitting by the Minnesota Department of Health. If there are 36,000 visitors to the building annually, with an average of 1.5 gallons per flush, 1.5 flushes per person, the annual peak water demand would be 81,000 gallons. A 1.1-inch rainfall event would generate approximately 8,600 gallons of runoff from the 12,000 square foot building roof. Approximately nine 1.1-inch rainfall events would be required to meet the annual water demand. The total construction cost would depend on the amount of storage that is desired. The greater the amount of storage, the more demand could be met with reuse water rather than city water, but it is not feasible to install enough storage to meet the entire peak demand with reuse water. Daily number of visitors vary. Based on data from WHNC, we have assumed 200 average daily users for the water balance and storage calculation. The cost estimate for this report assumes 10,000 gallons of storage.

This option would require annual maintenance by a building maintenance engineer. Educational signage would be installed explaining how the system conserves water and improves water quality.

5.0 Water Quality Impacts

This section discusses impacts of the Westwood Lake Water Quality Improvement Project, including estimated pollutant reductions resulting from each alternative. The MIDS Calculator was used to evaluate anticipated pollutant removals for Concept 1 and Concept 2. A water balance spreadsheet was used to evaluate anticipated pollutant removals for Concepts 3 and 5. Concept 4 will not remove TSS or TP loading. The same concentrations of TSS and TP loading was applied to both the MIDS Calculator evaluation and the water balance spreadsheet calculations. Table 5-1 summarizes the results from each alternative.

Table 5-1 Estimated Annual TSS and TP Removals for Concepts 1 – 5

Alternative	Estimated TSS Removal (pounds/year)	Estimated TP Removal (pounds/year)
Concept 1 – Additional Permeable Pavers	39.5	0.171
Concept 2 – Expand Filtration Basins	0.7	0.004
Concept 3 – Linear Water Feature	59.9	0.330
Concept 4 – Heated Sidewalk	0	0
Concept 5 – Water Reuse	59.3	0.326

6.0 Project Cost Considerations

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

6.1 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. Additional work may be required to determine if cultural and/or historical resources are present at any project site.

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 St. Louis Park, 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.

The estimated capital and a range of 20-year to 35-year annualized costs for each alternative are summarized in Table 6-1. Detailed cost-estimate tables for all concepts considered are provided in Appendix C.

6.2 Concept 3 Potential Cost Reduction

Based on comments received at the April 19, 2018 Commission meeting, we further analyzed concept 3 for possible cost reductions from the cost estimate shown in Appendix C. There are three basins shown in the linear water feature concept. The number of basins could be reduced to two, or the basins could be reduced in size for some cost savings. This will reduce line item D in the cost estimate, which is currently \$90,000. Cost savings could be up to \$10,000 with a basin area reduction. The remaining line items are necessary for the function of the concept and no other cost savings options were identified. Table 6-1 shows the concept 3 cost estimate without the potential cost reduction. With the cost reduction, the total cost would reduce from \$351,000 to \$334,000.

6.3 Funding Sources

This project is slated to receive funding through the BCWMC's Capital Improvement Program. The source of these funds is an ad valorem tax levied by Hennepin County over the entire Bassett Creek watershed on behalf of the BCWMC.

6.4 Project Schedule

For project construction to occur in 2019, project design would be completed 2018. The BCWMC is scheduled to hold a public hearing, order the project, certify levy costs to Hennepin County, and enter into an agreement with the City of St. Louis Park at its meeting on September 20, 2018. The City of St. Louis Park is currently preparing the final design.

Table 6-1 Estimated Capital and Annualized Costs for Concepts 1 – 5

Alternative	Construction Cost	Construction Contingency ¹	Planning, Engineering, Design, and Construction Observation ²	Total Cost	Estimated TSS Removal (lbs/year)	Estimated Annualized Cost per Pound of TSS Removal (\$/lb TSS/year) ³	Estimated TP Removal (lbs/year)	Estimated Annualized Cost per Pound of TP Removal (\$/lb TP/year) ³
Concept 1 – Additional Permeable Pavers	\$101,000	\$30,000	\$39,000	\$170,000	39.5	\$260 - \$340	0.171	\$59,060 - \$78,950
Concept 2 – Expand Filtration Basins	\$37,000	\$11,000	\$14,000	\$62,000	0.7	\$5,290 - \$7,140	0.004	\$925,000 - \$1,250,000
Concepts 1 plus Concept 2	\$138,000	\$41,000	\$53,000	\$232,000	40.2	\$440 - \$580	0.175	\$100,570 - \$133,710
Concept 3 – Linear Water Feature	\$208,000	\$62,000	\$81,000	\$351,000	59.9	\$350 - \$470	0.330	\$63,380 - \$84,610
Concept 4 – Heated Sidewalk	\$151,000	\$45,000	\$59,000	\$255,000	0	n/a	0	n/a
Concept 5 – Water Reuse	\$174,000	\$52,000	\$68,000	\$294,000	59.3	\$300 - \$390	0.326	\$53,680 - \$71,470

(1) Assumed 30% contingency based on feasibility-level design (Class 4, 10-15% design completion per ASTM E 2516-06).

(2) Assumed 30% of construction cost for Engineering, Design, and Construction Observation.

(3) Assumed 4% interest rate and 20-year to 35-year lifespan.

7.0 Permitting, Site Impacts, and Coordination

This section discusses permitting and coordination required for each alternative.

7.1 Permitting

No disturbance or fill of any wetlands, nor any work in public waters is anticipated as part of the WHNC reconstruction project. The City of St. Louis Park and its contractors will be responsible for any permits required by the WHNC reconstruction project. No additional permits are anticipated as part of the Westwood Lake Water Quality Improvement Project.

7.2 Site Impacts

Some tree removals are anticipated as part of the WHNC reconstruction project. Minimal additional tree removals and no additional site impacts are anticipated for the Westwood Lake Water Quality Improvement Project.

7.3 Coordination

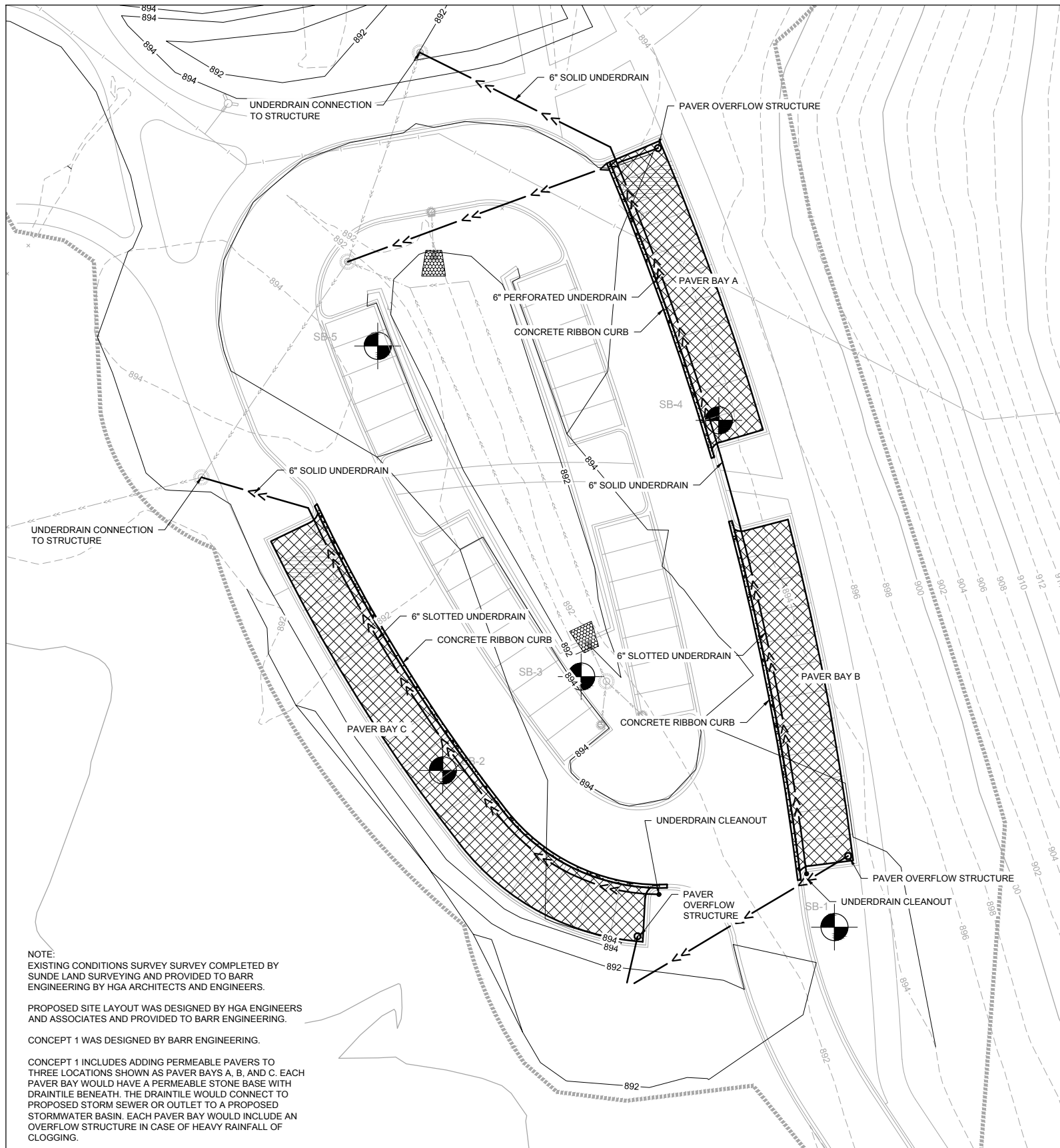
Trail usage and pedestrian safety during construction is a significant consideration for the WHNC reconstruction project. The interpretive center and some nearby paths and trails will be closed during construction, but most WHNC paths and trails will remain open. Trail closure signs and barricades will be installed and a pedestrian detour route will be determined during final construction. The parking lot will also be closed during construction and the existing park entrance drive will be used for construction access. Minimal additional path and trail closures are anticipated as part of the Westwood Lake Water Quality Improvement Project. Continued coordination with the City of St. Louis Park's Parks and Recreation Department will be required during final design.

8.0 Recommendations

The Commission Engineer recommends Concept 3 – Linear Water Feature due to water quality improvement, education, cost effectiveness, and aesthetic possibilities. We recommend that the opinions of cost identified in this study be used to develop a levy request for the selected concept(s) and that the concept(s) proceeds to the design and construction phase.

9.0 References

1. **Bassett Creek Watershed Management Commission.** 2015 Watershed Management Plan. September 2015.



LEGEND:

- 900— EXISTING MAJOR CONTOUR
- 899— EXISTING MINOR CONTOUR
- 900- PROPOSED MAJOR CONTOUR
- 899- PROPOSED MINOR CONTOUR
- 900- BCWMC CIP MAJOR CONTOUR
- 899- BCWMC CIP MINOR CONTOUR
- PROPOSED WATER LINE
- ▽ PROPOSED HYDRANT
- PROPOSED STORM STORM
- BCWMC CIP STORM SEWER
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- ⊕ SOIL BORING
- ▨ WST-2 STORMWATER TREATMENT (BY BARR ENGINEERING)

CONCEPT LEVEL DRAFT COST ESTIMATES

- PAVER BAY A: \$37,000 TO \$60,000
- PAVER BAY B: \$38,000 TO \$62,000
- PAVER BAY C: \$52,000 TO \$84,000
- **TOTAL ESTIMATE: \$127,000 TO \$206,000**

ASSUMPTIONS:

- SUBCUT AND COMMON EXCAVATION PROVIDED BY PROPOSED PROJECT AND NOT REQUIRED AS PART OF BCWMC CIP WORK.
- PROPOSED STORM SEWER STRUCTURES ARE FABRICATED WITH KNOCKOUTS FOR BCWMC CIP STORM SEWER.
- ESTIMATE INCLUDES DESIGN AND CONSTRUCTION COSTS

NOTE:
EXISTING CONDITIONS SURVEY SURVEY COMPLETED BY SUNDE LAND SURVEYING AND PROVIDED TO BARR ENGINEERING BY HGA ARCHITECTS AND ENGINEERS.

PROPOSED SITE LAYOUT WAS DESIGNED BY HGA ENGINEERS AND ASSOCIATES AND PROVIDED TO BARR ENGINEERING.

CONCEPT 1 WAS DESIGNED BY BARR ENGINEERING.

CONCEPT 1 INCLUDES ADDING PERMEABLE PAVERS TO THREE LOCATIONS SHOWN AS PAVER BAYS A, B, AND C. EACH PAVER BAY WOULD HAVE A PERMEABLE STONE BASE WITH DRAINTILE BENEATH. THE DRAINTILE WOULD CONNECT TO PROPOSED STORM SEWER OR OUTLET TO A PROPOSED STORMWATER BASIN. EACH PAVER BAY WOULD INCLUDE AN OVERFLOW STRUCTURE IN CASE OF HEAVY RAINFALL OF CLOGGING.

1 PLAN: WST-2 FEASIBILITY STUDY - CONCEPT 1: ADDITIONAL PERMEABLE PAVERS
AS SHOWN

0 20 40
SCALE IN FEET

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
B	JPP	MAK	KLC	04/11/2018	BCWMC AND CITY REVIEW
A	JPP	MAK	KLC	03/09/2018	BCWMC AND CITY REVIEW

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.

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SIGNATURE: _____
DATE: _____ LICENSE # _____

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03/09/18	04/11/18		A B C 0 1 2 3	

BARR Project Office:
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
Suite 200
MINNEAPOLIS, MN 55435

Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277
Fax: (952) 832-2601
www.barr.com

Scale	AS SHOWN
Date	04/11/2018
Drawn	JPP
Checked	MAK
Designed	MAK
Approved	KLC

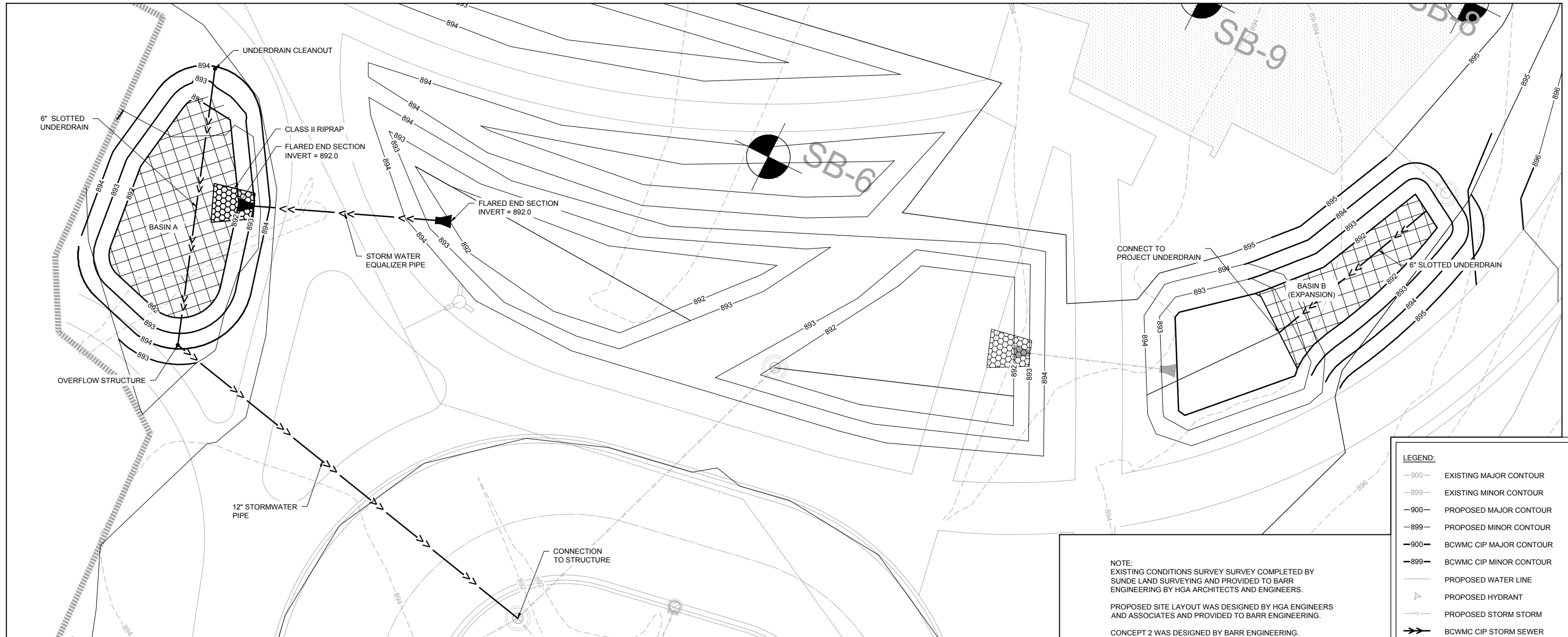
BCWMC

WESTWOOD LAKE WATER QUALITY IMPROVEMENT PROJECT (WST-2)

FEASIBILITY STUDY - CONCEPT 1
ADDITIONAL PERMEABLE PAVERS

BARR PROJECT No. 23/27-0051.40	CLIENT PROJECT No.
DWG. No. FIGURE 4-1	REV. No. B

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1 PLAN: WST-2 FEASIBILITY STUDY - CONCEPT 2: EXPANDED FILTRATION BASINS AS SHOWN



NOTE:
 EXISTING CONDITIONS SURVEY SURVEY COMPLETED BY SUNDE LAND SURVEYING AND PROVIDED TO BARR ENGINEERING BY HGA ARCHITECTS AND ENGINEERS.

PROPOSED SITE LAYOUT WAS DESIGNED BY HGA ENGINEERS AND ASSOCIATES AND PROVIDED TO BARR ENGINEERING.

CONCEPT 2 WAS DESIGNED BY BARR ENGINEERING.

CONCEPT 2 INCLUDES EXPANDING HGA'S PROPOSED STORMWATER BASIN IN TWO LOCATIONS. BASIN A EXPANDS THE BASIN TO A NEW AREA OF THE SITE, AND BASIN B EXPANDS EXISTING GRADING ON THE WEST SIDE OF THE BASIN. THE EXPANDED BASIN AREAS WOULD MATCH HGA'S PROPOSED STORMWATER BASINS TO INCLUDE A GRANULAR TRENCH WITH DRAINTILE. THE DRAINTILE WOULD TIE INTO HGA'S DESIGN OR THE PROPOSED STORM SEWER. THE EXPANDED BASIN AREAS WOULD MATCH THE ELEVATIONS HGA'S PROPOSED STORMWATER BASIN AND BASIN A WOULD BE CONNECTED WITH AN EQUALIZED PIPE. THE EXPANDED BASIN AREAS WOULD BE PLANTED TO MATCH THE PLANTINGS OF HGA'S PROPOSED STORMWATER BASIN.

LEGEND:

- 900- EXISTING MAJOR CONTOUR
- 899- EXISTING MINOR CONTOUR
- 900- PROPOSED MAJOR CONTOUR
- 899- PROPOSED MINOR CONTOUR
- 900- BCWMC CIP MAJOR CONTOUR
- 899- BCWMC CIP MINOR CONTOUR
- PROPOSED WATER LINE
- ▲ PROPOSED HYDRANT
- PROPOSED STORM STORM
- BCWMC CIP STORM SEWER
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- ⊗ SOIL BORING
- ▣ WST-2 STORMWATER TREATMENT (BY BARR ENGINEERING)

CONCEPT LEVEL DRAFT COST ESTIMATE:

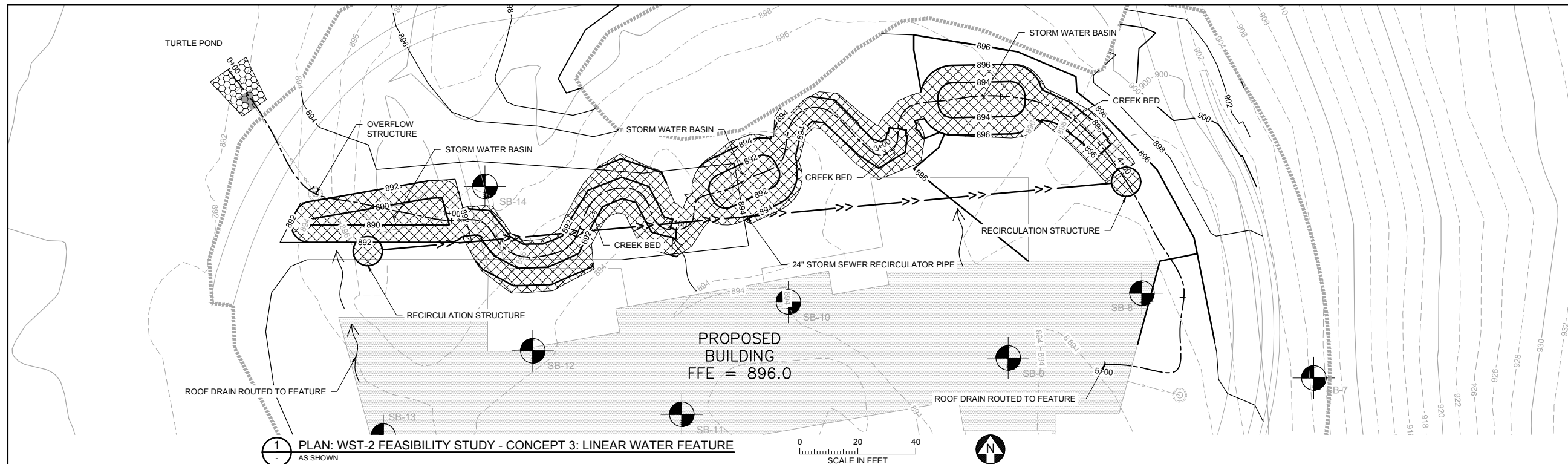
- TOTAL ESTIMATE RANGE = \$47,000 TO \$76,000

ASSUMPTIONS:

- PROPOSED STORM SEWER STRUCTURES ARE FABRICATED WITH KNOCKOUTS FOR BCWMC CIP STORM SEWER
- PLANTINGS SPACED 18" O.C. IN BASINS, INCLUDING BOTTOM AND SIDE SLOPES
- ESTIMATE INCLUDES DESIGN AND CONSTRUCTION COSTS

ISSUED FOR REVIEW
 NOT FOR CONSTRUCTION

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B JPP MAK KAL 04/11/2018 BCWMC AND CITY REVIEW				A JPP MAK KAL 03/09/2018 BCWMC AND CITY REVIEW				PRINTED NAME SIGNATURE DATE				RELEASED TO/FOR DATE RELEASED				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 www.barr.com				Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				CLIENT PROJECT No.								DWG. No. REV. No.			
NO.				BY				CHK				APP				DATE				REVISION DESCRIPTION				FEASIBILITY STUDY - CONCEPT 2 EXPANDED FILTRATION BASINS				FIGURE 4-2				B			



1 PLAN: WST-2 FEASIBILITY STUDY - CONCEPT 3: LINEAR WATER FEATURE AS SHOWN

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SCALE IN FEET

LEGEND:

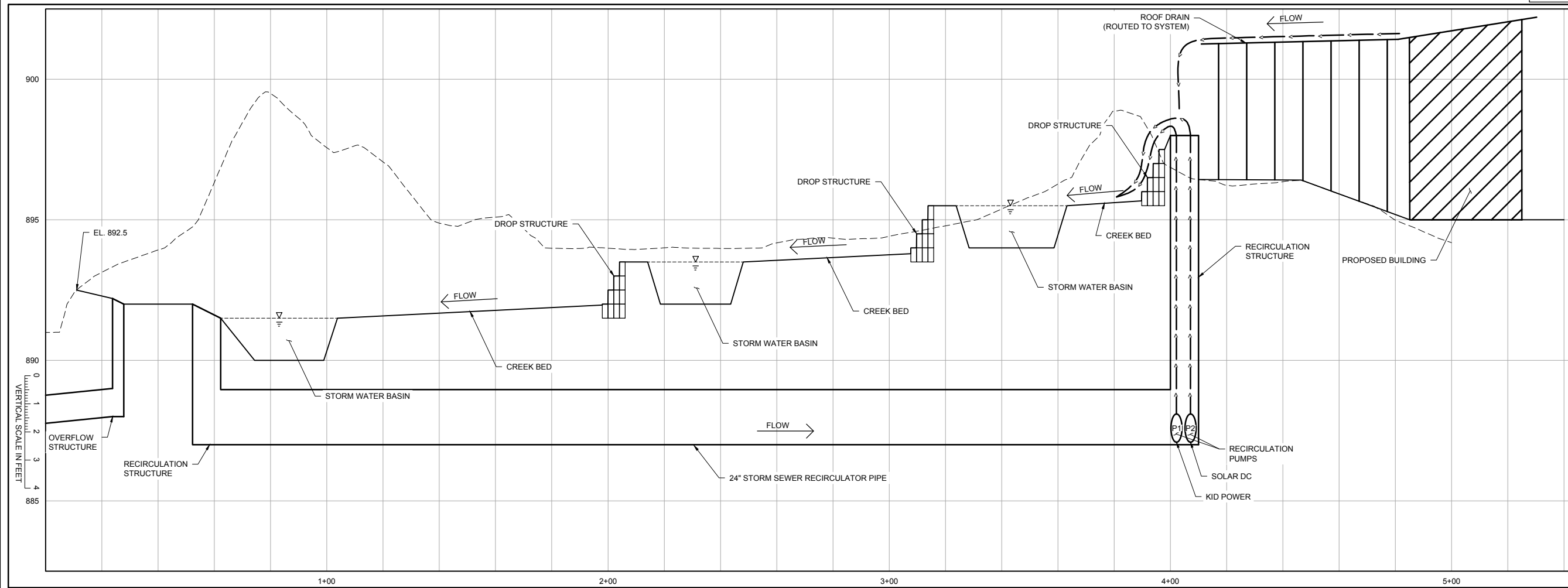
- 900- EXISTING MAJOR CONTOUR
- 899- EXISTING MINOR CONTOUR
- 900- PROPOSED MAJOR CONTOUR
- 899- PROPOSED MINOR CONTOUR
- 900- BCWMC CIP MAJOR CONTOUR
- 899- BCWMC CIP MINOR CONTOUR
- PROPOSED WATER LINE
- PROPOSED HYDRANT
- PROPOSED STORM STORM
- BCWMC CIP STORM SEWER
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- SOIL BORING
- ROOF AND PATIO RUNOFF ROUTED TO LINEAR STORMWATER FEATURE
- WST-2 STORMWATER TREATMENT (BY BARR ENGINEERING)

CONCEPT LEVEL DRAFT COST ESTIMATE:

- TOTAL ESTIMATE RANGE = \$255,000 TO \$414,000

ASSUMPTIONS:

- ESTIMATE DOES NOT INCLUDE STRUCTURES TO GET THE WATER FROM THE ROOF INTO THE RECIRCULATION STRUCTURE.
- ESTIMATE INCLUDES DESIGN AND CONSTRUCTION COSTS



2 PROFILE: WST-2 FEASIBILITY STUDY - CONCEPT 3: LINEAR WATER FEATURE AS SHOWN

0 20 40
HORIZONTAL SCALE IN FEET

NOTE:
EXISTING CONDITIONS SURVEY SURVEY COMPLETED BY SUNDE LAND SURVEYING AND PROVIDED TO BARR ENGINEERING BY HGA ARCHITECTS AND ENGINEERS.
PROPOSED SITE LAYOUT WAS DESIGNED BY HGA ENGINEERS AND ASSOCIATES AND PROVIDED TO BARR ENGINEERING.
CONCEPT 2 WAS DESIGNED BY BARR ENGINEERING.
CONCEPT 2 INCLUDES CREATING A LINEAR WATER FEATURE ALONG THE NORTH SIDE OF THE BUILDING. ROOF AND PATIO RUNOFF WILL BE DIRECTED INTO A SERIES OF BASINS CONNECTED BY A MEANDERING CREEK.

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

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NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
B	JPP	MAK	KAL	04/11/2018	BCWMC AND CITY REVIEW
A	JPP	MAK	KAL	03/09/2018	BCWMC AND CITY REVIEW

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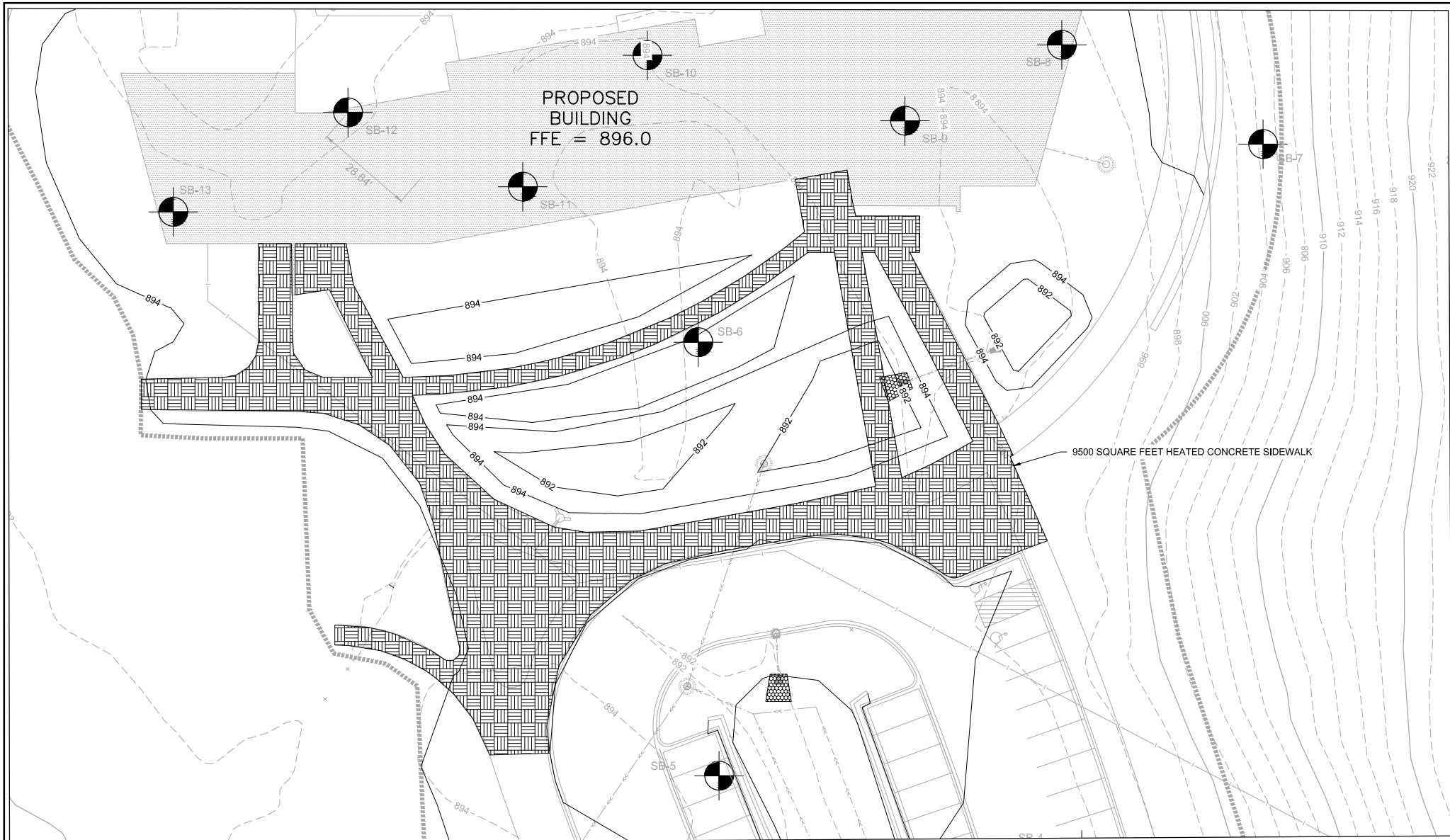
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Date	04/11/2018
Drawn	JPP
Checked	MAK
Designed	KAL
Approved	KLC

BCWMC

WESTWOOD LAKE WATER QUALITY IMPROVEMENT PROJECT (WST-2)
FEASIBILITY STUDY - CONCEPT 3
LINEAR WATER FEATURE

BARR PROJECT No. 23/27-0051.40	REV. No. B
CLIENT PROJECT No.	DWG. No. FIGURE 4-3



LEGEND:

- 900— EXISTING MAJOR CONTOUR
- 899— EXISTING MINOR CONTOUR
- 900— PROPOSED MAJOR CONTOUR
- 899— PROPOSED MINOR CONTOUR
- PROPOSED WATER LINE
- PROPOSED HYDRANT
- PROPOSED STORM STORM
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- ⊕ SOIL BORING
- ▨ WST-2 HEATED CONCRETE SIDEWALK (BY BARR ENGINEERING)

ASSUMPTIONS:

- SUBCUT AND COMMON EXCAVATION PROVIDED BY PROPOSED PROJECT AND NOT REQUIRED AS PART OF BCWMC CIP WORK.

1 PLAN: WST-2 FEASIBILITY STUDY - CONCEPT 4: HEATED CONCRETE SIDEWALKS
AS SHOWN

0 20 40
SCALE IN FEET

NOTE:
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PROPOSED SITE LAYOUT WAS DESIGNED BY HGA ENGINEERS AND ASSOCIATES AND PROVIDED TO BARR ENGINEERING.

CONCEPT 4 WAS DESIGNED BY BARR ENGINEERING.

CONCEPT 4 INCLUDES CREATING 9,500 SQUARE FEET OF HEATED CONCRETE SIDEWALK NEAR THE ENTRANCE TO THE PROPOSED INTERPRETIVE CENTER.

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CADD USER: Josh Phillips FILE: M:\DESIGN\23270051_40\23270051_40_CONCEPT_1_DWG PLOT SCALE: 1:2 PLOT DATE: 5/8/2018 3:01 PM

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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
A	MAK	JPP	KLC	05/09/2018	BCWMC AND CITY REVIEW

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.

PRINTED NAME: _____
SIGNATURE: _____
DATE: _____ LICENSE # _____

CLIENT	05/09/18								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

BARR Project Office:
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
Suite 200
MINNEAPOLIS, MN 55435

Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277
Ph: 1-800-632-2277

Scale	AS SHOWN
Date	05/09/2018
Drawn	MAK
Checked	JPP
Designed	MAK
Approved	KLC

BCWMC

WESTWOOD LAKE WATER QUALITY IMPROVEMENT PROJECT (WST-2)

FEASIBILITY STUDY - CONCEPT 4
HEATED CONCRETE SIDEWALKS

BARR PROJECT No.	23/27-0051.40
CLIENT PROJECT No.	
DWG. No.	FIGURE 4-4
REV. No.	A



Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5B: Schaper Pond Effectiveness Monitoring Results and Consider Next Steps
BCWMC May 17, 2018 Meeting Agenda
Date: May 10, 2018

Recommendations:

1. Perform additional monitoring of Schaper Pond in 2018 including water quality monitoring longitudinally through the pond, a bathymetric survey, and a carp survey.
2. Authorize expenditures of Schaper Pond Diversion Project CIP funds up to \$21,000 for the above monitoring. (Current CIP funds remaining are approximately \$250,000.)

1.0 Background

Schaper Pond is classified by the Minnesota Department of Natural Resources as a public water wetland; it is located south of Sweeney Lake and north of Highway 55 in Golden Valley. The pond receives about 90% of its flow from the Sweeney Branch of Bassett Creek from the south (under Highway 55), and 10% of its flow from a storm water inlet (called the Railroad inlet) in the northwest lobe of the pond. The pond outlets directly to Sweeney Lake from the northeast lobe (Figure 1).

In 2011, the BCWMC completed the [Sweeney Lake Total Phosphorous Total Maximum Daily Load Study \(TMDL\)](#). The study's implementation program identified modifying the water flow through Schaper Pond as one of the options toward achieving the goal of reducing phosphorous loads to the lake. The BCWMC completed a [feasibility report](#) for the "Schaper Pond Improvement Project" in February 2012. The BCWMC added the [Schaper Pond Diversion Project](#) to their Capital Improvement Program through a watershed management plan amendment in 2013 and officially ordered the project in September 2013.

1.1 2011 monitoring and recommendations

In 2011, Schaper Pond was monitored as part of the Sweeney Lake TMDL Study. Equipment, including auto samplers, level sensors, and area velocity meters, was installed at the outlet of Schaper Pond, at the southern inlet under Highway 55, and at the Railroad inlet to collect enough data to evaluate the phosphorus removal performance of Schaper Pond and to develop a model to evaluate how removal could be enhanced through pond modifications. A total of six complete (e.g., samples collected simultaneously at both inlets and at the outlet) storm events were monitored from June 9 to August 13, 2011. For all events, samples were analyzed for total phosphorus, total dissolved phosphorus, total suspended solids, and volatile suspended solids. For two events, samples were also analyzed for particle size. Flow was measured continually from May 19 through August 14, 2011.



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● Grab Sample Locations

 Feet
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Figure 1
MONITORING & BAFFLE LOCATIONS
 Schaper Pond Effectiveness Monitoring
 Bassett Creek Watershed Management Commission

The monitoring results provided a good understanding of how Schaper Pond functioned at the time and the data were used to develop the Schaper Pond Improvement Project feasibility study. The results showed that approximately 90% of the phosphorus load to Schaper pond came from the Highway 55 inlet, but it was short-circuiting 65% of the pond volume that could otherwise be used to settle phosphorus from this source. Therefore, diversion of water within the pond to the northwest lobe of the pond was identified as a way to provide more time to settle phosphorus and improve overall phosphorus removal performance in Schaper Pond.

1.2 Implementation of floating barrier

The BCWMC selected the Schaper Pond Diversion Project alternative from the feasibility study. The City of Golden Valley constructed the project, which was designed to divert water, via a floating water baffle, within the pond to direct more of the water flows to the northwest part of the pond. Based on the 2011 monitoring data and modeling, it was believed that the diversion would allow the water to remain in the pond for a longer period of time, allowing a greater amount of sediment, phosphorous, and other suspended solids to settle out before the water exits the pond. The project included the installation of an approximately 380-foot-long floating water baffle extending out from the east side of the pond and the construction of two maintenance access areas. The project was expected to reduce the amount of phosphorus reaching Sweeney Lake by an estimated 81 - 156 pounds per year.

The city completed construction of the project in December 2015. Additional repairs and maintenance to the floating baffle, as well as vegetation management on the east side of the pond occurred in 2016. Also in 2016, the Commission approved the use of a portion of the remaining CIP funds to study the effectiveness of the project in 2017 by replicating the monitoring that occurred in 2011.

2.0 2017 effectiveness monitoring

The 2017 effectiveness monitoring was initiated a little more than two months after it was confirmed that the floating barrier was secured and working properly. Flow monitoring began in mid-August and continued into the first week of November. Twelve water quality samples were collected from the Highway 55 inlet and the Schaper Pond outlet during coincidental events between August 25th and October 25th, while eight water quality samples were collected from the Railroad Inlet during coincidental events in October. Figure 1 shows the sampling locations. The 2017 and 2011 sampling locations, equipment and methods were identical.

The water quality samples collected for each event were analyzed for total suspended solids (TSS), volatile suspended solids (VSS), total phosphorus (TP) and total dissolved phosphorus (TDP), consistent with the 2011 monitoring. Similar to 2011, two sets of samples (representing both high and low flow events) from the Highway 55 inlet and Schaper Pond outlet were analyzed for particle size distribution to aid in determining the likelihood that the solids (and phosphorus attached to solids) in the inflow could be settled in the pond.

2.1 Water quality comparison before/after project implementation

Because the water quality samples were collected over a range of flows for flow events of varying magnitudes, the sample results were flow-weighted (summing the product of average flow and

constituent concentration for each sample and dividing by the total flow sampled) for direct comparison (shown in Table 1) between the 2011 and 2017 monitoring periods.

Table 1 Comparison of 2011 and 2017 Water Quality Effectiveness Monitoring

Flow-Weighted Event Mean Concentrations					
2017 Monitoring Location	Parameter (mg/L)				Average Flow (cfs)
	TSS	VSS	TP	TDP	
Highway 55 Inlet	22	6	0.090	0.018	20.8
Railroad Inlet	26	6	0.125	0.018	1.95
Pond Outlet	36	8	0.105	0.016	19.4
2011 Report					
Highway 55 Inlet	52	10	0.142	0.028	22.5
Railroad Inlet	14	5	0.118	0.055	2.5
Pond Outlet	26	7	0.098	0.034	25

When comparing the water quality in the pond and upstream of the pond between 2011 and 2017, the following observations were noted:

- Total phosphorus concentrations entering the pond under Hwy 55 was 37% lower in 2017 than in 2011.
- Total suspended solids concentrations entering the pond from the railroad inlet were nearly twice as high in 2017 as they were in 2011.
- Total phosphorus leaving the pond (and entering Sweeney Lake) was roughly similar between 2011 and 2017.
- All three monitoring locations had lower dissolved phosphorus concentrations than what was observed in 2011.
- Total suspended solids leaving the pond were 30% higher in 2017 than in 2011.
- Schaper Pond is not removing suspended solids or total phosphorus as well as it did in 2011, and during most of the monitored events, the flow-weighted constituent concentrations are higher at the pond outlet than the combined inflow.
- There was slightly less monitored flow during 2017 than in 2011 (i.e., the average flows were less in 2017 than in 2011).

Figure 2 shows the results of particle size distribution testing on four sets of samples, representing high- and low-flow events, collected from the Highway 55 inlet and Schaper Pond outlet during 2011 and 2017. The figure allows for comparisons based on flow through the pond, as well as differences between the two years of monitoring. The following observations were noted:

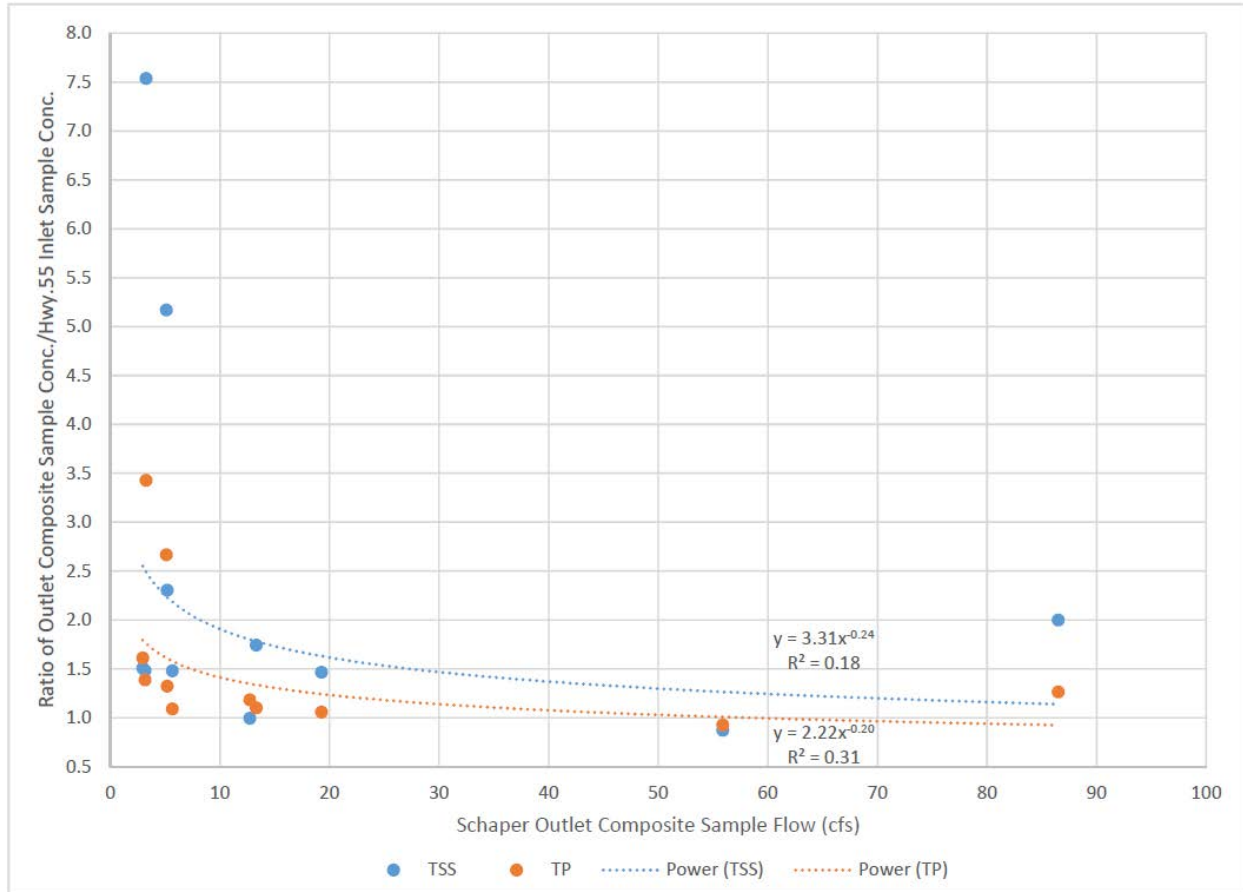
- In 2011, the particle size distributions were similar for the respective monitoring locations during low- and high-flow events.

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5B: Schaper Pond Effectiveness Monitoring Results and Consider Next Steps
BCWMC May 17, 2018 Meeting Agenda
Date: May 10, 2018
Page: 5

- In 2017, the particle size distributions were similar for the Highway 55 inlet during low- and high-flow events, but the pond outlet showed a significantly finer particle size distribution under high flow compared to the Highway 55 inlet.
- The size of particles in the water were significantly finer in 2017 than in 2011 for all monitoring locations, including during low-flow events. During 2011, the particle size distribution of the pond inflows included significant fractions of solids that would more easily settle in detention ponds (i.e., larger-sized particles).
- Resuspension of particles in the pond may have played a role during high-flow events in 2017, but was not evident in 2011.

As previously discussed (and shown in Table 1), the flow-weighted concentrations of total suspended solids (TSS), volatile suspended solids (VSS), and total phosphorus (TP) are higher at the pond outlet than the combined inflows to Schaper Pond. As a result, Figure 3 was developed to evaluate the sample results for each of the 12 sampling events and consider whether flow or residence time (the amount of time it takes water to travel through the pond) could explain why Schaper Pond is not removing suspended solids or total phosphorus as well as expected or as well as it did in 2011. Figure 3 shows the relationship between 1) the ratio of the outlet sample concentration to the Highway 55 inlet sample concentration (y-axis), and 2) the Schaper outlet composite sample flow. The points shown in Figure 3 with a ratio of the outlet sample concentration to the Highway 55 inlet sample concentration greater than 1 indicate events where either TSS or TP are not being removed by the pond. Figure 3 shows only one event when the ratio was greater than 1; this occurred when the average flow was approximately 55 cubic feet/second. This is the only monitored event that resulted in some removal of TSS and TP. All of the other sampling events resulted in a net export of phosphorus and TSS from the pond, with greater levels of export coinciding with lower flow. Notably, Figure 3 shows that the net export of TSS from the pond is significantly higher than TP export for the corresponding events (i.e., the ratio is higher). This may be a byproduct of the higher TSS concentrations entering the pond from the railroad inlet, but at a minimum, would appear to rule out sediment phosphorus release as a source of phosphorus because the dissolved phosphorus levels observed at the Schaper outlet were quite low.

Figure 3 Effect of Flow on Inflow/Outflow Concentrations during 2017 Monitoring Events



As the preliminary results of the laboratory sample analysis began to indicate that the TSS and TP concentrations were higher at the Schaper Pond outlet than the Highway 55 inlet, Barr scheduled a longitudinal monitoring event to evaluate where the constituent concentrations might become elevated within the pond system. Figure 1 shows the four sampling locations in the pond that were used for the longitudinal monitoring event and Table 2 shows the results of the analyses. The sampling occurred on November 17th, during low flow (less than 2 cfs). The sample results shown in Table 2 confirm that phosphorus and chlorophyll become elevated as the flow moves from the Highway 55 inlet through the pond to the Schaper outlet.

Table 2 Longitudinal Water Quality Monitoring Results

Pond Location	TP (µg/L)	Chlorophyll-a (µg/L)
South	28	4.3
Center	-- ¹	--
Northwest	40	--
Northeast	35	9.2

¹—not reported due to disturbance of bottom sediment during sampling.

2.2 Potential factors limiting treatment effectiveness

As a result of preliminary discussions with Golden Valley and watershed staff it was determined that there are several potential factors that could have limited the 2017 treatment effectiveness of Schaper Pond with the floating barrier in-place:

- Start-up conditions—the 2017 monitoring began approximately two months after the final floating barrier anchors had been replaced. The 2017 monitoring results may have captured conditions in which the typical flow patterns through the pond were adjusting to a new equilibrium following the final implementation of the barrier.
- High water—the floating barrier design ensures that there will be enough of the curtain to divert the flow in the intended direction at pond inundation levels that correspond with flows up to 25 cfs. There were five days during 2017 where the flow exceeded 25 cfs, resulting in inundation levels that would have raised the curtain off the bottom of the pond. Figure 2 indicates that the high flow (approximately 90 cfs) event may have resulted in resuspension of finer particulates, which could have occurred when the bottom of the curtain was above the bottom of the pond. This would have temporarily allowed for short-circuiting of the flow, similar to the flow pattern that would have existed before the barrier was installed.
- Carp—several observers have noticed the presence of carp during field visits to Schaper Pond in the past. Anecdotally, field observations have usually mentioned the northwest corner of the pond as the primary location where carp were seen. It is plausible that if a significant carp population is present, and is more often concentrated in the northwest corner of the pond, then the flow patterns established after implementation of the floating barrier would be more likely to resuspend the solids (and associated phosphorus) that are typically stirred up by carp. The flow patterns through the pond in 2011 had a lower likelihood of resuspending sediment from the northwest corner of the pond.
- Watershed construction—city staff noted that Douglas Drive was under construction during 2017, which may have contributed to the elevated TSS concentrations observed at the railroad inlet. Because the flow from the railroad inlet enters the pond downstream from the floating barrier, this source of flow may not have received the same level of treatment that would have occurred in 2011.

- Water quality changes to the Highway 55 inflow—city staff noted that several upstream water quality improvement projects were recently implemented, which could explain why the primary source of inflow to Schaper Pond is not as “treatable” as it was in 2011.
- Changes to bathymetry—during the longitudinal water quality monitoring event, it was noted that the center of the pond was approximately 1 to 1.5 feet deep, which is between 0.5 and 1 foot shallower than indicated in the previous bathymetric map. An updated bathymetric survey would be used to determine whether there is adequate volume for sediment accumulation in the pond and/or whether there are areas of the pond that are subject to sediment scour or resuspension.

3.0 Recommendations for 2018

The 2017 monitoring indicated that there were unexpected factors contributing to the results which had not previously been assessed (carp) or might require updated information (such as the bathymetry). In addition, the single longitudinal monitoring event appeared to provide a better understanding about where within the pond system the treatment effectiveness is being compromised. Consequently, it is recommended that during the remainder of 2018, the BCWMC collectively monitor the gaps in the available data and distinguish the source(s) or factors that are limiting the treatment capacity of the pond. We recommend performing longitudinal water quality monitoring during 2018, along with surveys of the carp and bathymetry.

3.1 Water quality monitoring

Our recommended longitudinal water quality monitoring includes collecting grab samples at the four locations shown in Figure 1, twice per season, under low flow and storm flow conditions. Our preliminary estimate of the longitudinal water quality monitoring costs is \$10,000, based on six sampling events.

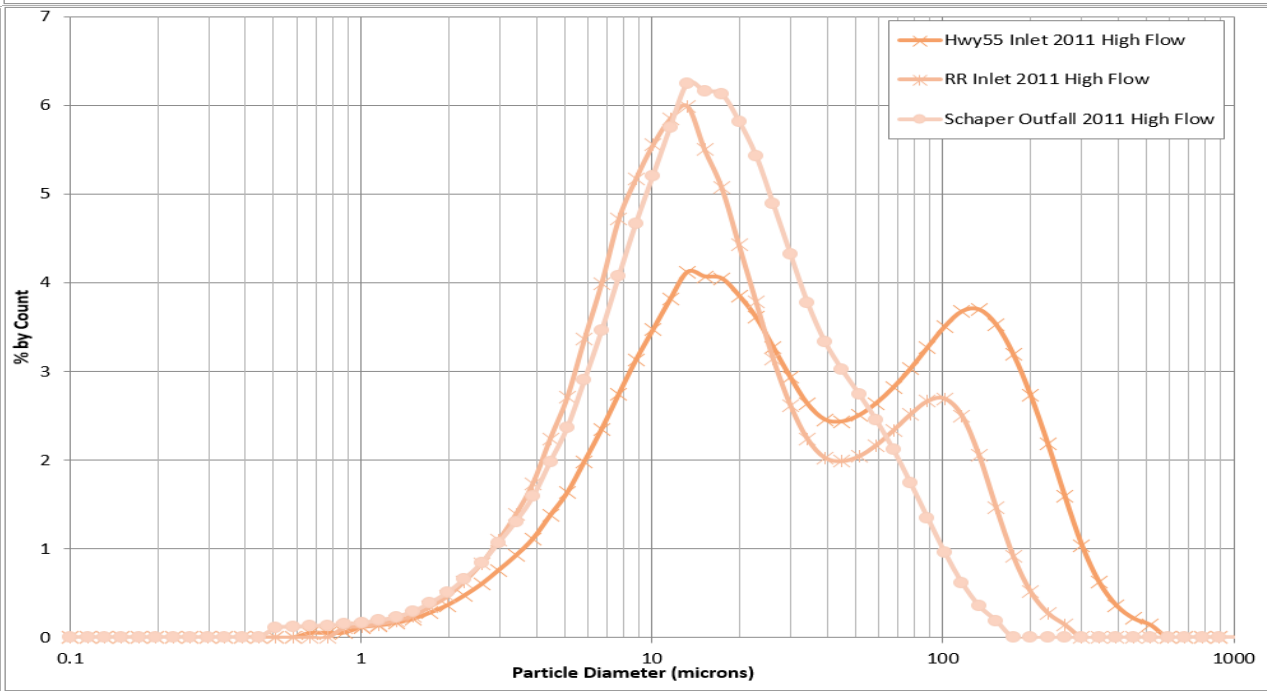
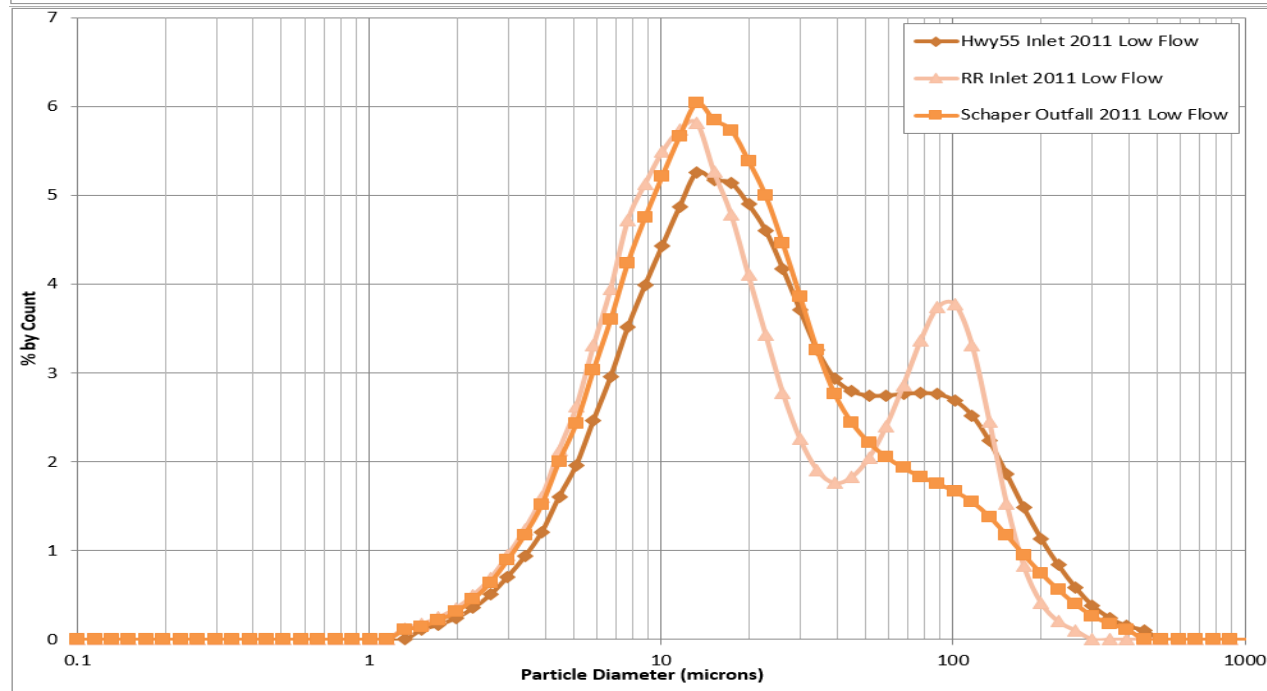
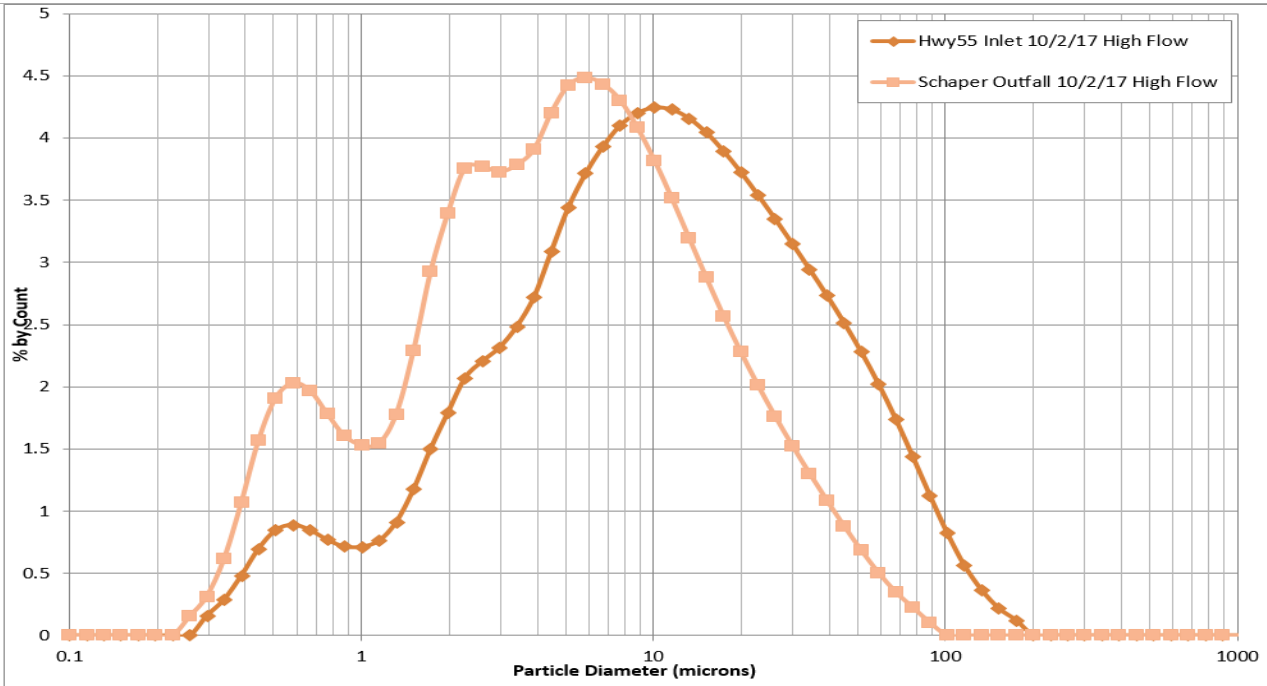
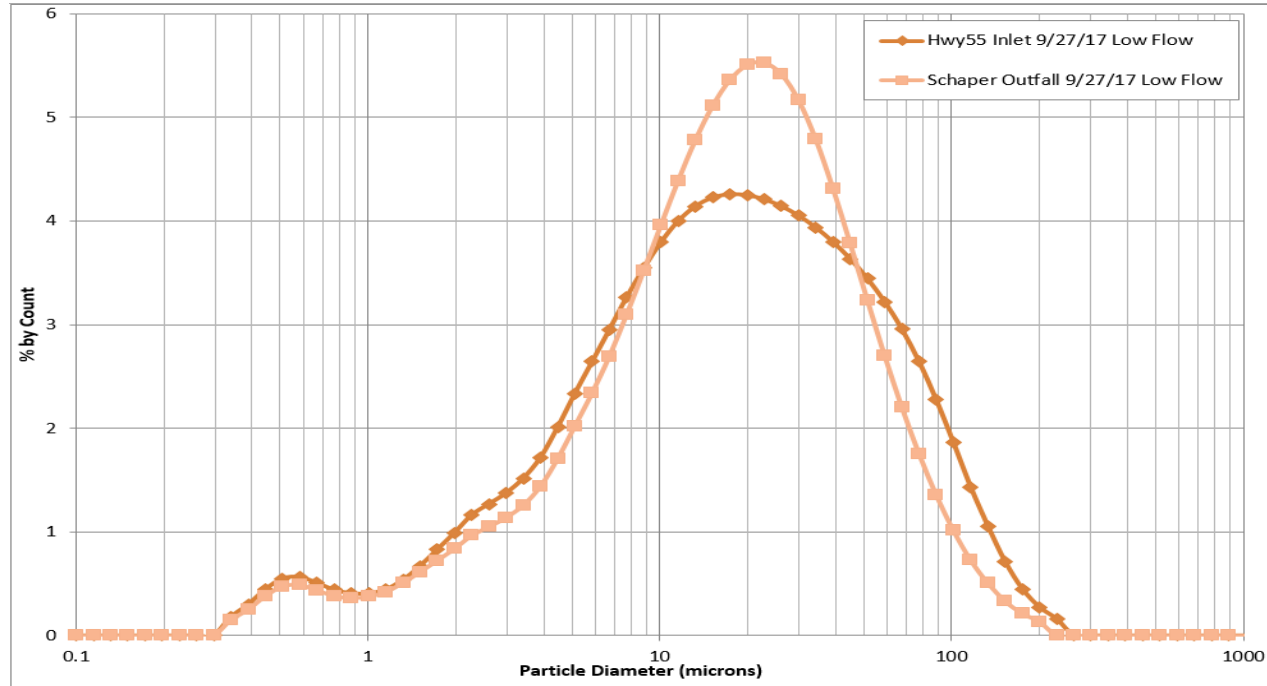
3.2 Carp and bathymetric surveys

We recommend conducting a single bathymetric survey this summer and comparing the survey results to the pre-construction survey from 2011. We also recommend conducting a carp survey, which would involve performing individual electrofishing surveys seasonally throughout the pond. The carp survey results would include a report on the population estimates of carp during 2018. A preliminary estimate of the carp survey costs is \$3,000, and the bathymetric survey is estimated to cost \$3,000.

3.3 Reporting on 2018 monitoring

We would compile the results of the 2018 monitoring and compare them with past monitoring data in a technical memorandum, which would include conclusions and recommendations for improving water quality treatment in Schaper Pond/next steps. Our estimated cost to report on the results of the 2018 monitoring is \$5,000.

Figure 2 Comparison of 2011 and 2017 Particle Size Distributions for Low and High Flow Events





Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5C – Minneapolis Impound Lot Facility Improvements – Minneapolis, MN
BCWMC May 17, 2018 Meeting Agenda
Date: May 9, 2017
Project: 23270051 2017 2144

5C Minneapolis Impound Lot Facility Improvements – Minneapolis, MN BCWMC 2017-37

Summary:

Proposed Work: Temporary surcharge for new access road from Van White Memorial Blvd

Basis for Review at Commission Meeting: Variance request for temporary fill in the floodplain

Impervious Surface Area: N/A

Recommendation: Consider approval of variance request for temporary fill in floodplain

General Background & Comments

The proposed project is located in the Bassett Creek Main Stem subwatershed at 51 Colfax Avenue North in Minneapolis, MN. The project includes demolition of existing buildings, construction of a new building, parking lot improvements, stormwater management improvements, and other site improvements, resulting in 18.8 acres of disturbance (grading). The project creates 4.91 acres of reconstructed impervious surfaces, and results in a 0.77-acre decrease of impervious surfaces from 8.96 acres (existing conditions) to 8.19 acres (proposed conditions).

The Commission conditionally approved the proposed project at their November 16, 2017 meeting. A condition of that approval was that "revised Drawings and a revised Stormwater Management Report must be provided to the BCWMC Engineer for final review and approval." On April 27, 2018, the applicant submitted revised plans to the BCWMC Engineer for review. The applicant's resubmittal included a variance request for temporary fill in the floodplain for one year. Blue italicized text in this memo is information regarding the variance request or information which has been revised or added since the original review memo.

Floodplain

The proposed project includes work in the Bassett Creek floodplain. The August 2017 BCWMC Requirements for Improvements and Development Proposals (Requirements) document states that projects within the floodplain must maintain no net loss in floodplain storage and no increase in flood level at any point along the trunk system (managed to at least a precision of 0.00 feet). The floodplain elevation of Bassett Creek at the project site is 810.9 feet NAVD88. A portion of the northwest corner of

the site is within the BCWMC floodplain, requiring the creation of compensatory storage for any proposed fill within the floodplain.

For the proposed project, a surcharge, or temporary soil loading, is proposed to limit future settling of the proposed Van White Memorial Boulevard access road. The temporary surcharge will be located approximately 150 feet from Bassett Creek and partially within the BCWMC floodplain. The original submittal indicated that surcharge material would be sourced from the proposed filtration basin area to prevent a temporary floodplain fill condition. However, the geotechnical engineer's slope stability analysis of the surcharge dictates that no excavation may occur within 100 feet of the toe (base of the surcharge fill). This excavation exclusion is required to provide an adequate factor of safety against slope failure of the surcharge. The 100-foot excavation exclusion zone significantly encompasses the area proposed for mitigation of floodplain fill. The applicant has indicated that compensatory storage cannot be created onsite during the period in which the surcharge is in place without significant impacts to construction staging, interim property use, potential disturbance and disposal of additional contaminated soil, and construction costs.

The final site condition, once the temporary surcharge is complete, will result in a net increase in floodplain storage of 186 cubic yards, from 4,667 cubic yards (existing conditions) to 4,853 cubic yards (proposed conditions). The compensatory floodplain storage is proposed by floodplain cuts to construct the filtration basin and swales in the floodplain.

Variance Request

The city of Minneapolis requested a variance to Section 5.10 of the BCWMC Requirements document for the period in which the surcharge is in place (anticipated to be one year). The proposed temporary fill will result in 467 cubic yards of temporary floodplain fill and approximately 0.01 feet of increase in the 1% (base flood elevation, 100-year flood) floodplain from the project site to upstream of the Van White Memorial Boulevard bridge.

Section 3.3 of the BCWMC Requirements document indicates that in granting variances, the Commission shall make a finding showing that all of the following conditions exist. A memo from the city's consultant, which addresses these conditions, is attached.

- 1. There are special circumstances or conditions affecting the property such that the strict application of the provisions of these standards and criteria would deprive the applicant of the reasonable use of the applicant's land.*
- 2. The variance is necessary for the preservation and enjoyment of a substantial property right of the applicant.*
- 3. The granting of the variance will not be detrimental to the public welfare or injurious to the other property in the territory in which the property is situated.*
- 4. In applications relating to a use in the 1% (base flood elevation, 100-year flood) floodplain set forth in Table 2-9 of the Plan, the variance shall not allow a lower degree of flood protection than the current flood protection.*
- 5. The granting of the variance will not be contrary to the intent of taking all reasonable and practical steps to improve water quality within the watershed.*

The memo from the city's consultant (attached) indicates that structures exist within the 100-year floodplain upstream of the Van White Memorial Boulevard bridge and to the north of the old tunnel entrance. Barr's flood inundation mapping, based on the Phase 2 XPSWMM model, indicates that approximately 20 structures are within the 100-year floodplain. Additionally, a portion of the Commission's Bassett Creek Main Stem Stabilization Project (BCWMC CIP 2017CR-M) is located within this reach of Bassett Creek. If a 100-year flood occurs during the variance period, the structures and CIP project could be impacted by the 0.01-foot increase in floodplain elevation. It should be noted, however, that this level of additional impact is minimal and within a reasonable margin of error for the modeled 100-year floodplain delineation.

Wetlands

The proposed project appears to involve work in or adjacent to wetlands. The City of Minneapolis is the local governing unit (LGU) responsible for administering the Wetland Conservation Act, therefore BCWMC wetland review is not required.

Stormwater Management

The BCWMC Requirements document states that projects that contain more than one (1) acre of new or fully reconstructed impervious area must manage stormwater such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events, based on Atlas 14 precipitation amounts and using a nested 24-hour rainfall distribution.

Under existing conditions, stormwater runoff from the majority of the site flows to Bassett Creek, either overland or through a stormwater pond and storm sewer under or adjacent to Van White Memorial Blvd. Additionally, stormwater runoff from a portion of the east side of the site is collected in a storm sewer and is routed to the Bassett Creek Tunnel, stormwater runoff from a portion of the southwest corner of the site flows offsite to a parcel to the west, and stormwater runoff from a portion of the southeast corner of the site flows offsite along the railroad right of way (ROW).

The proposed stormwater management system includes a filtration basin, swales with permanent rock ditch checks, and a Rain Guardian pretreatment feature. Stormwater runoff from the majority of the site will be routed through the swales (or Rain Guardian) and the filtration basin and continue on to Bassett Creek. Stormwater runoff from the same portion of the east side of the site is collected into a storm sewer and routed to the Bassett Creek Tunnel, and stormwater runoff from the same portion of the southeast corner of the site will flow offsite along the railroad ROW. Stormwater runoff from a smaller portion of the southwest corner of the site will flow offsite to a parcel to the west, although less runoff is produced than in existing conditions due to the proposed grading. The following table summarizes the existing and proposed peak discharges from the project area to Bassett Creek.

Discharge Point	Existing (cfs)			Proposed (cfs)		
	2-Year	10-Year	100-Year	2-Year	10-Year	100-Year
Bassett Creek	16.4	26.2	74.2	<i>12.2</i>	<i>21.0</i>	<i>33.8</i>
Bassett Creek Tunnel	8.9	13.6	23.8	<i>9.1</i>	<i>13.8</i>	<i>23.9</i>
West Parcel	2.3	3.8	7.1	0.5	0.8	1.4
Railroad ROW	0.1	0.1	0.2	0.1	0.1	0.2

Minor modifications to the plans, since the original submittal, resulted in changes to the proposed runoff flow rates to Bassett Creek and the Bassett Creek Tunnel, as shown by the blue italicized text. Due to the

increase in runoff flow rates to the Bassett Creek Tunnel from existing to proposed conditions, Condition B.2 was added as part of the conditional approval.

Water Quality Management

The BCWMC Requirements document states that redevelopment projects that create more than one (1) acre of new or fully reconstructed impervious area must treat stormwater in accordance with the BCWMC water quality standards performance goals. If the BCWMC performance goal is not feasible and/or is not allowed for a proposed project, then the applicant must implement flexible treatment options.

The proposed project results in 4.91 acres of new/fully reconstructed impervious surfaces. Due to soil contamination, no infiltration practices are allowed, and Flexible Treatment Option (FTO) #2 was selected for the proposed project. FTO #2 requires that the project provide 60% removal of total phosphorus (TP). The proposed stormwater management system was modeled with the Minimal Impact Design Standards (MIDS) calculator.

The following table summarizes the proposed TP removal rates for the proposed BMPs.

BMP	TP Load From Direct Watershed	TP Load From Upstream BMPs	TP Retained	Outflow Load	% Retained
	(lbs/year)	(lbs/year)	(lbs/year)	(lbs/year)	(%)
East Swale	<i>2.84</i>	0.00	<i>1.14</i>	<i>1.70</i>	40%
West Swale	<i>6.40</i>	0.00	<i>2.57</i>	<i>3.82</i>	40%
Filtration Basin ¹	<i>1.68</i>	<i>5.53</i>	<i>3.00</i>	<i>4.21</i>	<i>42%</i>
Total	<i>10.92</i>		<i>6.71</i>	<i>4.21</i>	<i>61%</i>

¹Filtration Basin receives outflow from East Swale and West Swale

Minor modifications to the plans and revisions to the MIDS calculator file resulted in revised TP removals for the proposed stormwater management system, as shown in the blue italicized text. The revised results meet the BCWMC requirements for water quality management.

Erosion and Sediment Control

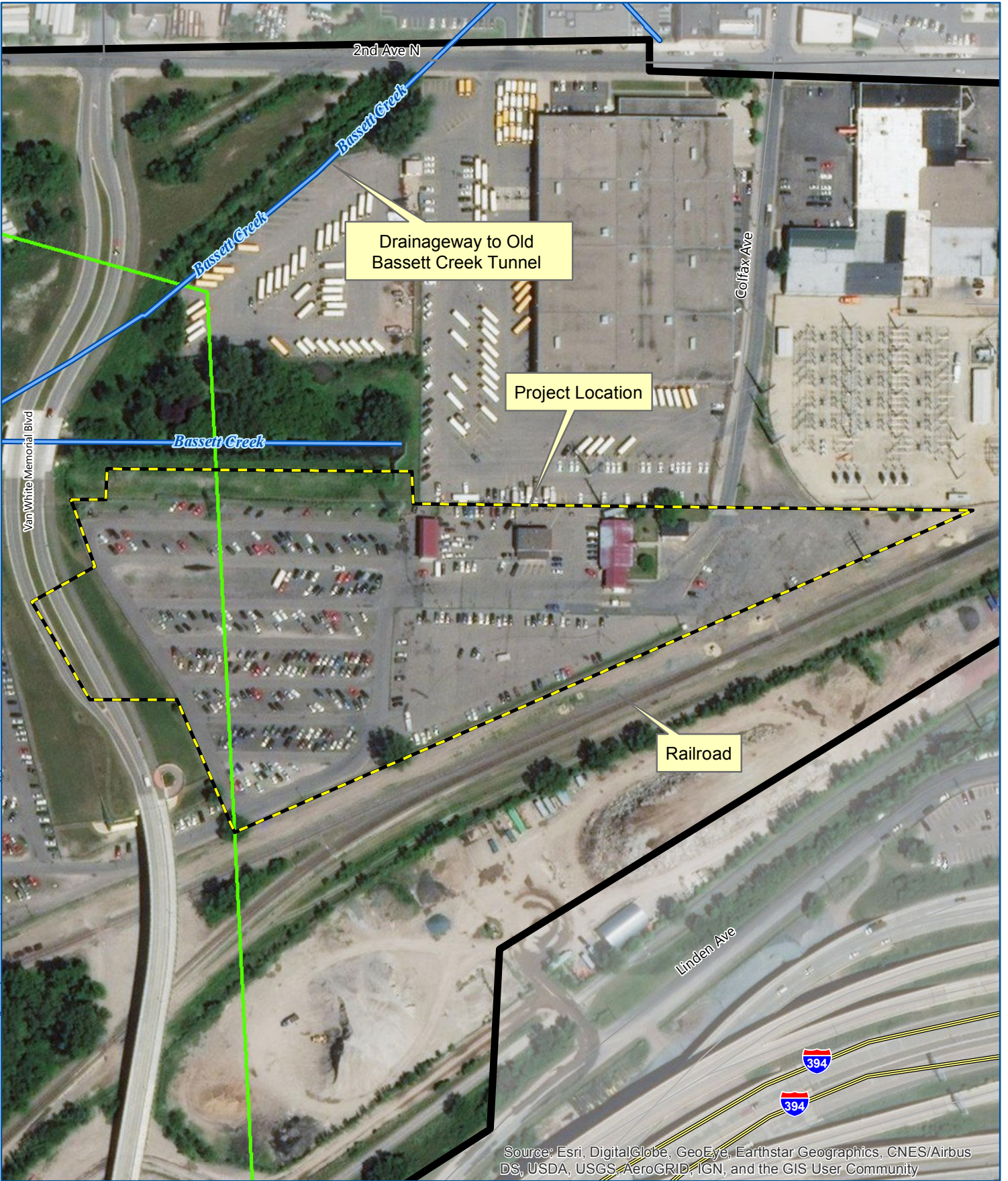
The BCWMC Requirements document states that proposed projects that involves more than 200 cubic yards of cut/fill or more than 10,000 square feet of land disturbance must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion and sediment control features include silt fence, a rock construction entrance, and inlet protection. Permanent erosion and sediment control features include riprap, permanent ditch checks, and stabilization through seeding and sod.

Recommendation

- A) *Consider approval of the City of Minneapolis' variance request for temporary fill in the floodplain. We recommend a variance period of 12 months to allow adequate time for the proposed surcharge but limit the longevity of the temporary increase in flood risk.*
- B) Conditional approval based on the following comments:
 1. In HydroCAD, the diameter of the pipe from the Filtration Basin to Bassett Creek should be revised to match the plans.






To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5C – Minneapolis Impound Lot Facility Improvements – Minneapolis, MN
Date: May 9, 2017
Page: 5

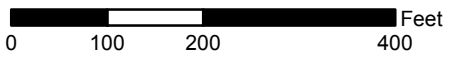
2. Work along Bassett Creek should be coordinated with the City's creek restoration project.
3. *The revised submittal indicates that proposed runoff flow rates to the Bassett Creek Tunnel exceed existing runoff flow rates. Stormwater routed to the Bassett Creek Tunnel must be managed such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events.*
4. Revised Drawings (paper and final electronic files) and a revised Stormwater Management Report must be provided to the BCWMC Engineer for final review and approval.



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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



BCWMC #2017-37
 Minneapolis Impound Lot
 Facility Improvements
 Minneapolis, MN
LOCATION MAP



MPLS Impound Lot Facility Improvements (BCWMC# 2017-37)

Variance Conditions

Below are responses to the five conditions a variance must satisfy to be granted per Section 3.3c of the BCWMC Requirements for Improvements and Development Proposals. This document serves as supplemental information to the permit application submitted on April 27th, 2018.

1. There are special circumstances or conditions affecting the property such that the strict application of the provisions of these standards and criteria would deprive the applicant of the reasonable use of the applicant's land.
 - a. The owner operates a business from the affected parcel which relies on the secure movement and storage of vehicles. Excavation to mitigate for temporary floodplain fill due to surcharge would require further impacts to the owner's ability to store impounded vehicles and operate their business while construction is ongoing. In addition, the property is known to contain contaminated soils. Design of the facility improvements has sought to limit excavation and reduce the environmental and financial impacts of mitigation of the contaminants. Excavation to mitigate for temporary floodplain fill may increase the volume of contaminated soils that must be disposed of.
2. The variance is necessary for the preservation and enjoyment of a substantial property right of the applicant.
 - a. As stated in condition 1, the variance is necessary to minimize impacts to the operation of the owner's business on the parcel during construction.
3. The granting of the variance will not be detrimental to the public welfare or injurious to the other property in the territory in which the property is situated.
 - a. Granting of the variance allows for construction site to achieve adequate slope failure safety while the surcharge material is in place, thus protecting employees and customers that visit the property at that time.
4. In applications relating to a use in the 1% (base flood elevation, 100-year flood) floodplain set forth in Table 2-9 of the Plan, the variance shall not allow a lower degree of flood protection than the current flood protection.
 - a. Modeling suggests the temporary fill does not increase flood elevations on the project site, and that an increase of 0.01' base flood elevation may occur in the Bassett Creek Channel adjacent to the site and upstream of Van White Boulevard bridge. Oscillations are seen in the hydrograph peaks of the creek reaches upstream of the Van White Boulevard bridge. Insurable structures exist within the 1%

floodplain upstream of the Van White Boulevard bridge and to the north of the old tunnel entrance based on floodplain elevations adopted by BCWMC in May of 2017. Modeling suggests that the temporary fill may increase base flood elevations at these structures by 0.01' if a 100-year event occurs during the 1-year surcharge period.

5. The granting of the variance will not be contrary to the intent of taking all reasonable and practical steps to improve water quality within the watershed.
 - a. The variance will not have a negative impact on water quality within the watershed. Granting of the variance will reduce the amount and time that soils near Bassett Creek will need to be disturbed. This reduces the risk and severity of large rainfall events mobilizing soil from disturbed areas that would then discharge into the creek.

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DeCola Ponds B and C Improvement Project Feasibility Study

Golden Valley, Minnesota

May 2018



Prepared for
Bassett Creek Watershed Management Commission



DeCola Ponds B and C Improvement Project Feasibility Study

May 2018

Contents

1.0	Executive summary.....	1-1
1.1	Background.....	1-1
1.2	Site conditions.....	1-2
1.3	Project alternatives.....	1-3
1.4	Relationship to Watershed Management Plan.....	1-4
1.5	Project impacts and estimated costs.....	1-5
1.6	Recommendations.....	1-6
2.0	Background and objectives.....	2-1
2.1	Project area description.....	2-1
2.2	Goals and objectives.....	2-2
2.3	Considerations.....	2-3
3.0	Site conditions.....	3-1
3.1	Proposed Project Location and Characteristics.....	3-1
3.1.1	Existing Flooding Conditions.....	3-1
3.1.2	Site access.....	3-2
3.1.3	Sediment sampling and bathymetric survey - 2015.....	3-3
3.1.3.1	Bathymetric Survey.....	3-3
3.1.3.2	Sediment Characterization.....	3-4
3.1.4	Phase II Site Investigation and Response Action Plan (RAP) - 2015.....	3-5
3.1.4.1	Summary.....	3-5
3.1.4.2	2018 Test Trenches.....	3-5
3.1.5	Topographic, Utility, and Tree Surveys.....	3-6
3.1.6	Wetland Delineations.....	3-6
3.1.6.1	DeCola Pond B.....	3-7
3.1.6.2	DeCola Pond C.....	3-7
3.1.6.3	Dover Hills Area (North of DeCola Pond B).....	3-7
3.1.6.4	DeCola Pond A.....	3-7
3.1.7	Threatened and Endangered Species.....	3-8
3.1.8	Cultural Resources.....	3-8
3.1.9	Ordinary High Water Level.....	3-9

4.0	Stakeholder input	4-1
4.1	Public Stakeholder Meetings.....	4-1
4.1.1	Public Stakeholder Open House 1	4-1
4.1.2	Public Stakeholder Open House 2	4-1
4.1.3	City of Golden Valley Meeting with Dover Hill Apartment Representatives.....	4-2
4.2	Technical Stakeholder Meetings	4-2
4.2.1	Technical Stakeholder Meeting.....	4-3
4.2.2	Conference Call with United States Army Corps of Engineers (USACOE).....	4-3
4.2.3	Meeting with Metropolitan Council Environmental Services (MCES).....	4-3
5.0	Potential improvements.....	5-1
5.1	Analyzed alternatives for DeCola Ponds B & C Improvement Project.....	5-1
5.1.1	Concept 1— Maximize Flood Storage.....	5-1
5.1.2	Concept 2—Maximum Tree Preservation Alternative.....	5-3
5.1.3	Concept 3—Hybrid Alternative.....	5-4
6.0	Project Modeling Results and Potential Impacts	6-1
6.1	Hydrologic, Hydraulic, and Water Quality Modeling.....	6-1
6.1.1	Available Models.....	6-1
6.1.2	XP-SWMM Flood Elevation Results.....	6-1
6.1.3	P8 Water Quality Modeling Results.....	6-8
6.2	Wetland and Upland Creation and Restoration.....	6-8
6.3	Easement acquisition	6-9
6.4	Permits required for the project.....	6-9
6.4.1	Section 404 Permit and Section 401 Certification	6-10
6.4.2	MnDNR Public Waters Work Permit	6-10
6.4.3	Section 401 Water Quality Certification	6-10
6.4.4	Construction Stormwater General Permit.....	6-10
6.4.5	Guidance for Managing Dredged Material	6-10
6.4.6	Guidance for Managing Contaminated Soils and Debris-Containing Fill	6-10
6.4.7	Minnesota Wetland Conservation Act.....	6-11
6.4.8	Environmental Assessment Worksheet (EAW)	6-11
6.4.9	City of Golden Valley Permits	6-11
6.5	Other project impacts.....	6-11
6.5.1	Temporary Closure of Nature Area Trails.....	6-11
6.5.2	Tree Removals.....	6-11
6.5.3	Impacts to Bats	6-12
7.0	Project cost considerations.....	7-1
7.1	Opinion of Cost.....	7-1

7.1.1	Temporary easements	7-1
7.1.2	Off-site sediment disposal	7-1
7.1.3	Wetland mitigation	7-2
7.1.4	30-year cost	7-2
7.1.5	Annualized pollutant reduction cost.....	7-2
7.1.6	Miscellaneous costs	7-3
7.2	Funding sources.....	7-3
7.3	Project schedule.....	7-4
8.0	Alternatives assessment and recommendations.....	8-1
9.0	References	9-1

List of Tables

Table 1-1	Feasibility-level Cost Estimates Summary	1-6
Table 6-1	DeCola Ponds B & C Improvement Project Concept Matrix Summary.....	6-4
Table 6-2	Medicine Lake Road and Winnetka Avenue Project Area Key Flood Areas and Flood Elevation Summary.....	6-6
Table 6-3	Medicine Lake Road and Winnetka Avenue Project Area At-Risk ¹ Properties	6-7

List of Figures

Figure 2-1	Project Area	2-1
Figure 3-1	Typical storm water pond configuration	3-4
Figure 3-2	Site Conditions.....	3-10
Figure 5-1	Conceptual Design 1 – Maximize Flood Storage	5-6
Figure 5-2	Proposed DeCola Pond C Outlet Structure	5-7
Figure 5-3	Conceptual Design 2 – Maximize Tree Preservation.....	5-8
Figure 5-4	Conceptual Design 3 – Hybrid of Concepts 1 & 2.....	5-9

List of Appendices

Appendix A	Sediment Sampling and Bathymetric Memo (2015)
Appendix B	Phase II Investigation – Test Trench Investigation Memo (2018)
Appendix C	Wetland Delineation Report (2017)
Appendix D	Feasibility Level Cost Estimates

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.



Jennifer Koehler, PE
PE #: 47500

5/9/2018

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 BC-2, 3, 8, 10: Medicine Lake Road and Winnetka Avenue Area Long-Term Flood Mitigation Plan (MLRWA Plan) Implementation. The first phase of this CIP is the DeCola Ponds B & C Improvement Project (BC-2, 3, 8), the subject of this feasibility study. At their meetings in September and October 2017, the Commission approved a proposal and an addition to the proposal (respectively) to conduct a feasibility study for this project.

The DeCola Ponds B & C Improvement Project builds on the City of Golden Valley's Liberty Crossing flood mitigation and conveyance project that was completed in 2017. The Liberty Crossing project was the first flood mitigation project implemented from the Medicine Lake Road and Winnetka Avenue Area Long-Term Flood Mitigation Plan Report (Barr, 2016). The City of Golden Valley city council is supportive of this specific project (and the larger long-term flood mitigation plan) with the flood mitigation projects identified in the plan being included in the City of Golden Valley's CIP. In 2015, the City of Golden Valley adopted their Natural Resources Management Plan, which specifically listed the proposed flood mitigation goals for the Pennsylvania Woods Nature Area and DeCola Ponds B and C. This project is also the City's top legislative priority for 2018 and is included in the Minnesota state bonding bill within Minnesota Department of Natural Resources (MnDNR) flood damage reduction projects, due to continued efforts by City staff.

As is required for BCWMC CIP Projects, a feasibility study must be completed prior to BCWMC holding a hearing and ordering the project. This study examines the feasibility of developing flood storage volumes in the Pennsylvania Woods area around DeCola Ponds B & C, developing additional water quality treatment volume, modifying the DeCola Pond C outlet structure, and removing accumulated sediment that has collected at the storm sewer outfall on the north end of DeCola Pond B. The goal of the project is to alleviate flooding around the low point on Medicine Lake Road, reduce downstream flooding at DeCola Ponds A through D, and to improve water quality downstream of the DeCola Ponds by trapping additional sediment and pollutants in the ponds and expanded storage areas, thus minimizing sediment passing downstream to Bassett Creek. The proposed project will also improve ecology and wildlife habitat, enhance active and passive recreation opportunities, and provide educational opportunities.

Three conceptual flood mitigation designs were investigated during this feasibility study. The first conceptual design examined a scenario maximizing flood storage, the second represented a scenario maximizing tree preservation (while still developing flood storage), and the third scenario was a hybrid of the previous two scenarios, trying to balance flood mitigation and tree preservation. Furthermore permitting requirements for each conceptual design were reviewed and cost estimates are provided.

The proposed DeCola Ponds B & C Improvement Project was identified as a priority in the MLRWA Plan and is proposed as "Phase I" of this CIP project to mitigate flooding and improve water quality in the Medicine Lake Road and DeCola Ponds B & C area. Based on the CIP (and if ordered), the project will be

implemented in 2019 and 2020. The BCWMC CIP funding (ad valorem tax levied by Hennepin County on behalf of the BCWMC), is not the sole source of funding for this project. The remainder of the funding will come from a variety of sources, including the City of Golden Valley, Hennepin County, Minnesota Department of Natural Resources (MnDNR) Flood Damage Reduction Grant program, and other sources (e.g. other grants, as appropriate).

1.2 Site conditions

DeCola Ponds B and C and the Pennsylvania Woods area are located in the City of Golden Valley east of Rhode Island Avenue and south of Medicine Lake Road. DeCola Ponds B and C are listed as Public Water Inventory Basins and are Minnesota Department of Natural Resources (MnDNR) public waters (#27-0647P). Although all proposed concepts described in this report propose normal water level (NWL) changes to DeCola Ponds A, B, and C due to outlet modifications, no other impacts are expected for DeCola Pond A, which is also a MnDNR public water (#27-0630P). DeCola Ponds B and C are located within Pennsylvania Woods Nature Area, a public, urban, walking park consisting of deciduous forest, wooded knolls, and various wetland communities. The walking trails are used heavily by the single family and multi-family residential communities surrounding the nature area. DeCola Ponds A, B, and C discharge downstream to DeCola Ponds D, E and F, which continues to Honeywell Pond and ultimately discharges to Bassett Creek. Any improvements to runoff water quality within DeCola Ponds A, B, and C will result in improvements to the Main Stem of Bassett Creek which is currently listed as impaired. The affected use is aquatic life based on fish bioassessments, and although a stressor identification study has not been completed to determine the exact cause of this impairment, reductions in sediment and pollutant loads to the creek can likely help address this impairment.

The area directly north of DeCola Pond B is located on property owned by Dover Hill Apartments, LLC (from here forward, referred to as the Dover Hills area). This area consists of deciduous forest and a delineated wetland area of approximately 0.12 acres. As part of the City of Golden Valley's flood mitigation project on the Liberty Crossing Development site, city staff engaged the owners of the apartments. The property owners supported the improvement project and a drainage and utility easement was secured in 2015 at no cost to the City of Golden Valley. No additional easement acquisition is anticipated for the area north of DeCola Pond B. A temporary construction easement on residential land may be needed for the implementation of the outlet modification and raising of the overflow between DeCola Ponds B and C. Adequate permanent easements already exist on the residential parcels on the north end of DeCola Pond D for the outlet and overflow modifications.

As part of the Liberty Crossing project, the City of Golden Valley performed wetland delineations on the Dover Hill property and around DeCola Pond B (2015), completed Phase 1 and Phase 2 environmental site assessments, developed a Response Action Plan (2015), and completed bathymetric surveys of DeCola Ponds A, B, and C and sediment sampling and testing (2015). For the DeCola Ponds B & C Improvement Project Feasibility Study, topographic and tree surveys were completed (2017), a Phase 2 site investigation was completed with soil test trenches (2018), and desktop reviews of cultural resource and threatened and endangered species databases (2017) were finalized. The results of these studies were utilized as much as applicable to define the conceptual designs and quantify impacts for this feasibility study.

1.3 Project alternatives

Three conceptual designs were evaluated for developing flood storage volume within the DeCola Ponds B and C and the Dover Hills areas. The first conceptual design focused on developing maximum flood storage volume, the second focused on tree preservation (while still providing flood storage), and the third concept concentrated on developing flood storage volume between the first and second alternatives while also trying to preserve trees and develop new habitat.

In addition of expanding flood storage within varying footprints within the project area, measures considered for potential implementation in all scenarios included the following:

- Lowering the normal water level (NWL) of DeCola Ponds A, B, and C from 893.8 ft MSL to 893.5 ft MSL to provide additional flood mitigation volume without needing to excavate that volume.
- Installing a 14' x 4' box culvert that will connect the Liberty Crossing flood storage features to the expanded storage in the Dover Hills and DeCola Ponds B and C areas.
- Developing a sediment forebay in the permanent easement on the Dover Hills area to develop water quality treatment volume, improve ease of maintenance, enhance water quality in downstream locations, and to allow lowering the normal water level of DeCola Ponds A, B, and C in order to increase flood storage capacity, while preserving or increasing the water quality treatment provided by the DeCola Ponds system.
- Increasing the DeCola Ponds B and C open water area, and increasing associated water quality treatment volume through expanding contours below the NWL and dredging accumulated sediment in DeCola Pond B. The proposed expansion does not change the overall depth of the existing ponds, but will provide additional water quality treatment volume and provide additional aquatic habitat for fish, macroinvertebrates, and macrophytes.
- In addition to increasing the open water areas, expanding the storage around DeCola Ponds B and C allows for the opportunity to create and restore wetlands. For all conceptual designs, a 25-foot wetland buffer will be placed around the proposed open water areas within the projected disturbed limits, based on the City of Golden Valley's wetland management classification for these ponds (Manage 2/3). Additionally, all areas outside of the buffer areas that fall below elevation 896.0 feet MSL will be restored as wetland habitats.
- Modifying the DeCola Pond C outlet structure and overflow to lower the NWL (and provide additional flood storage volume) while increasing the overflow on the south end of DeCola Pond C (to increase the flood storage in DeCola Ponds A, B, and C). The modified outlet will also prevent the accumulation of debris on the inlet pipe which is currently a major maintenance issue for the City.
- Preserving trees on the large knolls between DeCola Ponds A, B, and C, and preserving screening trees along the east and south side of DeCola Pond B and along east side of DeCola Pond C. Tree removal is expected within project disturbance limits. However, upland areas will be restored with native vegetation and replanted with trees at a density potentially ranging from savanna (~35 trees/acre) to forest (~110 trees/acre) – to be determined during final design.

- Replacing disturbed trails with ADA-compliant trails to preserve park use and improved walking trail opportunities.

The alternatives are discussed in more detail in Sections 5.0 and 6.0.

1.4 Relationship to Watershed Management Plan

The BCWMC included the DeCola Ponds B and C Improvement Project in its CIP, based on the following “gatekeeper” policy from the BCWMC Plan. Those items in bold italics represent those that directly apply to the DeCola Ponds B and C Improvement Project.

110. The BCWMC will consider including projects in the CIP that meet one or more of the following “gatekeeper” criteria.
- Project is part of the BCWMC trunk system (see Section 2.8.1, Figure 2-14 and Figure 2-15 of the report)
 - ***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 BCWMC will use the following criteria, in addition to those listed above, to aid in the prioritization of projects:

- Project protects or restores previous Commission investments in infrastructure
- ***Project addresses intercommunity drainage issues***
- Project addresses erosion and sedimentation issues
- ***Project will address multiple Commission goals (e.g., water quality, runoff volume, aesthetics, wildlife habitat, recreation, etc.)***
- ***Subwatershed draining to project includes more than one community***
- ***Addresses significant infrastructure or property damage concerns***

The BCWMC will place a higher priority on projects that incorporate multiple benefits, and will seek opportunities to incorporate multiple benefits into BCWMC projects, as opportunities allow.

The DeCola Ponds B and C Improvement Project meets multiple of the gatekeeper criteria— the project addresses flooding concerns (main objective) and the project will improve water quality by reducing the amount of sediment and pollutants that reach Bassett Creek. Additionally, this project will address intercommunity drainage concerns, multiple communities (the Cities of Golden Valley, Crystal, and New Hope) are within the project’s subwatershed, and the project will address multiple Commission goals by capturing increased runoff volume, enhancing water quality, providing recreation opportunities, and improving wildlife habitat.

1.5 Project impacts and estimated costs

Potential impacts of the proposed project (increasing the flood storage and water quality treatment volumes of DeCola Ponds B and C and developing a forebay area in the existing Dover Hills area north of DeCola Pond B) are summarized in Table 6-1 and discussed in Section 6.0. This section also summarizes permit requirements (e.g., Minnesota Department of Natural Resources public waters work permit), temporary impacts to wetlands, the disposal of contaminated sediment, tree loss, and closure of the pedestrian trails.

Of the project impacts, the most significant consideration is the development of the flood storage volume and the impact on flood elevations, passage of emergency vehicles and public safety, and reducing the number of structures at-risk of flooding. One of the main purposes of the proposed DeCola Ponds B & C Improvement Project is to lower the flood depths on Medicine Lake Road to allow passage of emergency vehicles during larger storm events, maintain access to Rosalyn Court, and protect structures around this area. The DeCola Ponds B and C improvement project builds on the Liberty Crossing Flood Mitigation Project implemented by the City of Golden Valley, which lowered the 100-year flood elevation on the Medicine Lake Road low point from 4.8 to 3.1 feet and reducing the number of structures at-risk of flooding by five. Of these five structures, two were commercial buildings along Medicine Lake Road and three were 12-unit condominiums at Rosalyn Court.

The proposed feasibility concept designs for the DeCola Pond B and C Improvement Project aimed to improve upon the flood reductions resulting from the Liberty Crossing Flood Mitigation Project. The XP-SWMM results for this project indicate that for all three concepts the 10-year recurrence interval flood depth on Medicine Lake Road is reduced from 1.5 feet to 1.0 feet at the low point. For the 100-year flood event, the flood depth on Medicine Lake Road is reduced from 3.1 feet to 1.7 – 1.8 feet, depending on the concept. Reductions in flood elevations can translate to structures no longer being at-risk of flooding. For all three concepts, one structure is expected to be removed from the at-risk properties list for the 100-year event, which includes 2740 Rosalyn Court, a twelve unit condominium, in New Hope. While reductions in the 10-year and 100-year flood elevations on DeCola Ponds A, B, C, and D are anticipated (0.3 to 1.0 feet), the reductions in flood elevations do not result in reducing the number of at-risk structures surrounding these ponds.

The proposed projects will result in increased permanent pool volume and sediment storage volume in the forebay and both ponds and, therefore, reduce sediment and phosphorus loading to the main stem of Bassett Creek and all downstream water bodies, including the Mississippi River. Estimates of existing pollutant loadings are presented in Section 6.0. The estimated increase in annual total phosphorus removal ranges from approximately 8.0 pounds per year (Concept 2) to 10.5 pounds per year (Concept 1).

In order to develop the flood storage volume, tree removals within the project disturbance/grading limits will be required. Since a portion of the project area is within a public nature area and is a popular walking area, community resistance to tree removal is a concern. Wetland and upland restoration, including planting of new trees and shrubs, will occur in all areas disturbed by construction, and many existing trees

will be preserved in key areas, such as the knoll with hardwoods between DeCola Ponds B and C and trees that provide screening along the edges of DeCola Ponds A and B.

The feasibility-level opinion of costs for implementing the various concepts for the 2019-2020 DeCola Ponds B & C Improvement Project is presented in Table 1-1. This table also lists the 30-year annualized total phosphorus reduction costs (based on the estimated cost of the water quality improvement work only) and the project costs per acre foot of flood mitigation volume developed. For a complete summary of the estimated impacts and costs of the concepts, including the methodology and assumptions used for the cost estimate, refer to Section 6.0, Section 7.0, and Table 6-1.

Table 1-1 Feasibility-level Cost Estimates Summary

Concept	Total Project Cost (-20%/30%)	30-Year Annualized Cost per Pound of Total Phosphorus Removed¹	Cost per Acre-Foot of Flood Mitigation Volume Developed
1	\$5.7 million (\$4.5 – 7.4 million)	\$8,900	\$173,900
2	\$3.5 million (\$2.8 - \$4.6 million)	\$11,100	\$203,400
3	\$3.8 million (\$3.0 – \$4.9 million)	\$9,600	\$173,400

¹ The costs presented represent the portion of the total project cost allocated to water quality improvements

The cost per pound of phosphorus removed for this project using the current P8 model analysis is high when compared to other BCWMC CIP projects—for example, the previous high costs per pound of phosphorus removed for a BCWMC CIP project was \$5,900 for the Northwood Lake Improvement Project. The high cost per pound of phosphorus removed for this project is due to do the fact that the DeCola Ponds B and C Improvement Project’s primary goal is to mitigate flooding. A major portion of the construction costs are for the development of flood storage volume and for the restoration of the graded areas rather than for water quality improvement.

1.6 Recommendations

Based on review of the project impacts for each of the three concepts, the recommended concept is Concept 3, which balances the development of flood mitigation volume with tree preservation. However, we also recommend that during the design process, the city pursue opportunities to increase the flood mitigation volume within the general concept disturbance footprint, with the goal to maximize the reduction of flood elevations around the low point on Medicine Lake Road and the downstream DeCola Ponds.

Concept 3 develops approximately 22 acre-feet of additional flood storage for the 100-year flood frequency event, which brings the 100-year flood elevation on the Medicine Lake Road low point from 3.1 feet of depth to approximately 1.8 feet of depth. This flood depth reduction on Medicine Lake Road is close to achieving the goal outlined in the *Medicine Lake Road Winnetka Avenue Long Term Flood*

Mitigation Plan (Barr, 2016) and will allow passage of emergency vehicles during large, intense rain events. Additionally, lowering the 100-year flood elevation eliminates one structure (12-unit condominium on Rosalyn Court) from being at-risk of flooding and improves access to Rosalyn Court during the 100-year design storm event). There are also reductions in the flood elevations on DeCola Ponds A, B, C, and D. With the combination of the Liberty Crossing Flood Mitigation Project and the recommended DeCola Ponds B and C Improvement Project, a total of six structures (two commercial properties and four 12-unit condominiums) would no longer be at-risk of flooding during the 100-year event.

Additionally, the concept increases the phosphorus load reduction by 9.0 pounds per year. The estimated tree disturbance area for Concept 3 only slightly greater than for Concept 2 and also results in the restoration of 1.7 acres of wetland and 1.0 acres of upland habitat.

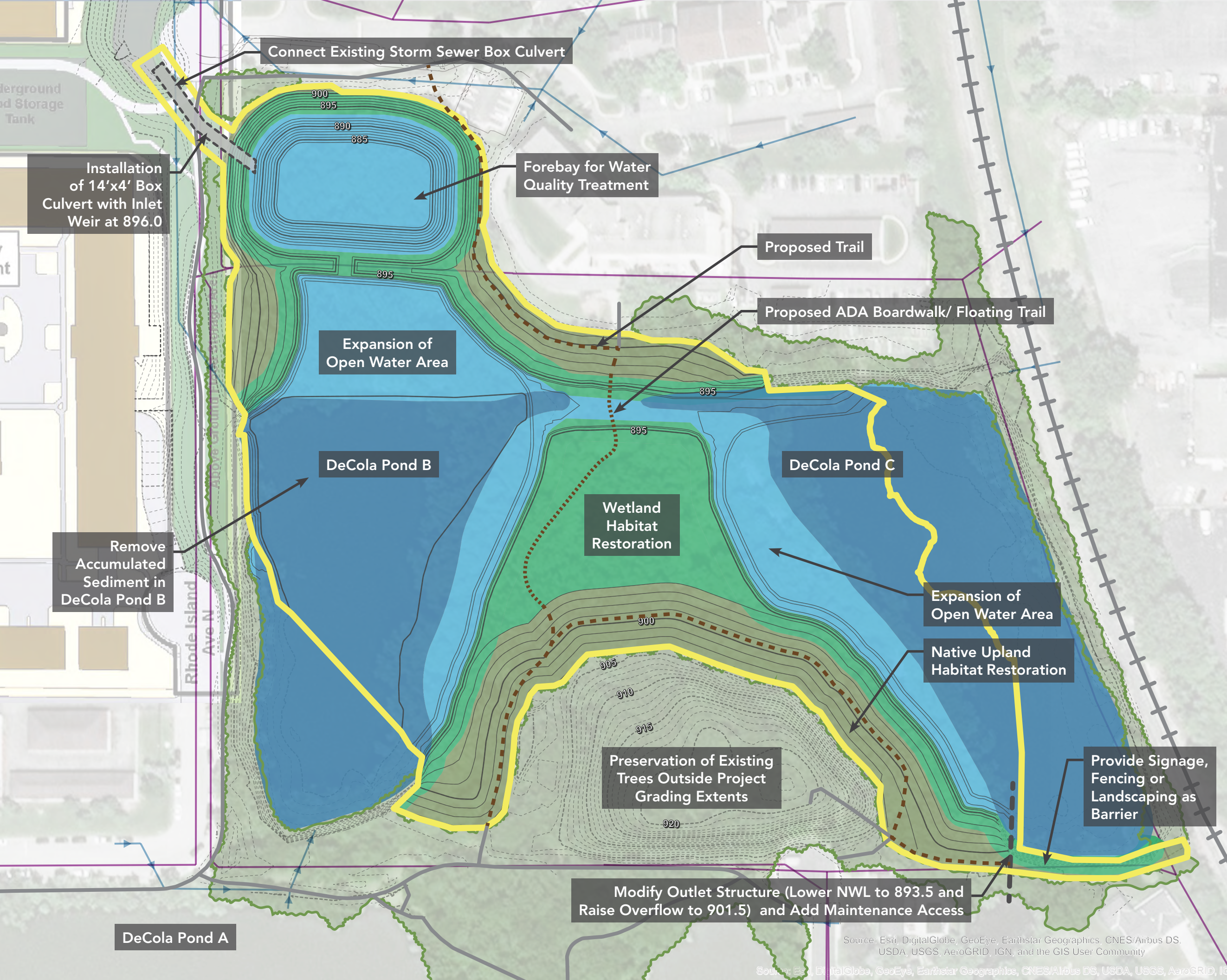
The planning level estimated cost for the recommended Concept 3 is \$3.8 million (-20%/+30%). The BCWMC CIP budget for this project is \$1.6 million. The BCWMC CIP funding (ad valorem tax levied by Hennepin County on behalf of the BCWMC), is not the sole source of funding for this project. The remainder of the funding will come from a variety of sources, including the City of Golden Valley, Hennepin County, Minnesota Department of Natural Resources (MnDNR) Flood Damage Reduction Grant program, and other sources (e.g. other grants, as appropriate). The current request for the MnDNR Flood Damage Reduction Grant is \$2.3 million. This request is currently included in the state bonding bill, which is still under discussion at the state legislature as of the date of this feasibility report. The legislative session should be complete by May 21, 2018, when it will be known if the complete flood damage grant amount requested by the Cities of Golden Valley, Crystal, and New Hope will be secured for implementation of this project. Approximately \$700,000 in funds from Hennepin County and the City of Golden Valley will also be available for use on this project.

Because this feasibility report was completed before the State of Minnesota legislative session closes and the status of the project funding is unknown, we anticipate the following potential outcomes:

- ***Project is fully-funded:*** If the Cities of Golden Valley, Crystal, and New Hope MnDNR Flood Damage Reduction grant request is fully funded is obtained (\$2.3 million), the recommended DeCola Ponds B & C Improvement project (Concept 3) can proceed as anticipated with the other funding sources in place. For project construction to occur in 2019, project design would be scheduled to begin in fall 2018, after an agreement is reached between the City of Golden Valley and the BCWMC.
- ***Project is partially-funded:*** If the Cities of Golden Valley, Crystal, and New Hope MnDNR Flood Damage Reduction grant request is partially funded, the recommended DeCola Ponds B & C Improvement project (Concept 3) could proceed as recommended, depending on the level of state funding that is obtained. For example, if half of the original MnDNR flood damage reduction request is secured (e.g. \$1.15 million), there may be sufficient funding (e.g. \$3.45 million) to implement the major components of the recommended concept, with minor modifications to help bring the anticipated design and proposed project into alignment with the available budget and/or look at potential opportunities to phase the project. For project

construction to occur in 2019, project design would be scheduled to begin in fall 2018, after an agreement is reached between the City of Golden Valley and the BCWMC.

- **Project is not funded:** If the Cities of Golden Valley, Crystal, and New Hope MnDNR Flood Damage Reduction grant is not funded during this legislative session, the recommended DeCola Ponds B & C Improvement project (Concept 3) will need to be delayed until the Cities can re-request MnDNR Flood Damage Reduction grant funds during the next legislative session. This could potentially delay the implementation of the DeCola Ponds B & C Improvement project construction. Although not preferred, BCWMC CIP funds do not have to be expended in the same year they are levied and can be held until all of the funding comes together, even if the project is delayed a year or two.



- Key**
- █ Project Grading Extents
 - █ Expanded Open Water
 - █ Wetland Habitat
 - █ Upland Habitat
 - Tree Preservation Area
 - █ Existing Pond Footprint
 - 14'x4' Box Culvert
 - Proposed Paved Trail
 - Proposed Boardwalk/ Floating Trail
 - Modified Outlet Structure
 - Proposed Contour
 - Existing Contour
 - ← Existing Storm Sewer
 - Existing Sanitary Sewer
 - Existing City Trail
 - + + Existing Rail

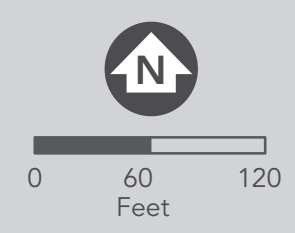
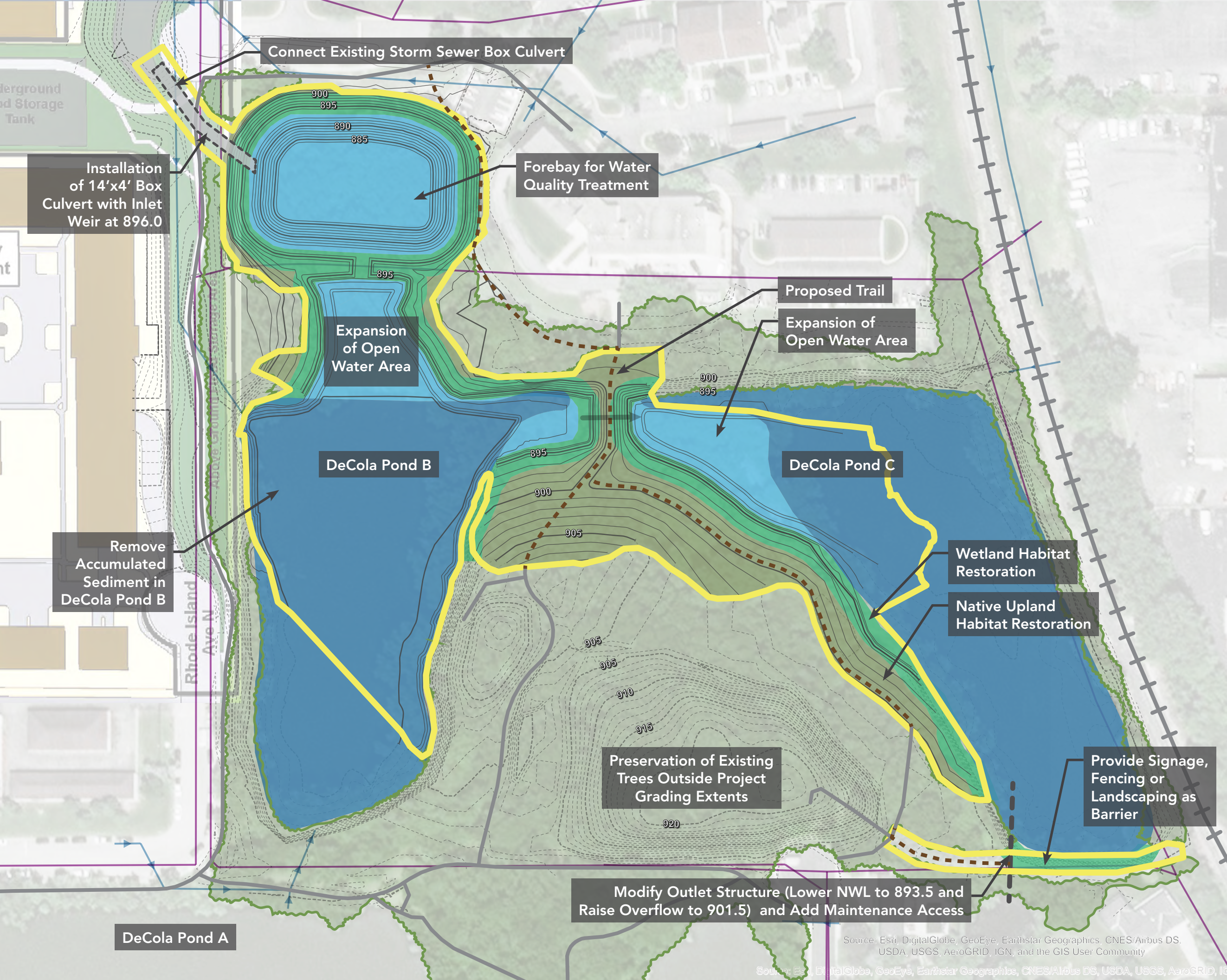


Figure 5-1
Concept 1
 Maximize
 Flood Storage

DeCola Ponds B&C
 Improvement Project
 Feasibility Study

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



- Key**
- Project Grading Extents
 - Expanded Open Water
 - Wetland Habitat
 - Upland Habitat
 - Tree Preservation Area
 - Existing Pond Footprint
 - 14'x4' Box Culvert
 - Proposed Paved Trail
 - Proposed Boardwalk/
Floating Trail
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 - Proposed Contour
 - Existing Contour
 - ← Existing Storm Sewer
 - Existing Sanitary Sewer
 - Existing City Trail
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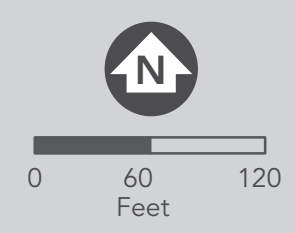


Figure 5-3
Concept 2
 Maximize Tree Preservation

DeCola Ponds B&C
 Improvement Project
 Feasibility Study

Installation of 14'x4' Box Culvert with Inlet Weir at 896.0

Connect Existing Storm Sewer Box Culvert

Expansion of Open Water Area

Forebay for Water Quality Treatment

Proposed Trail

Expansion of Open Water Area

DeCola Pond B

DeCola Pond C

Remove Accumulated Sediment in DeCola Pond B

Wetland Habitat Restoration

Native Upland Habitat Restoration

Preservation of Existing Trees Outside Project Grading Extents

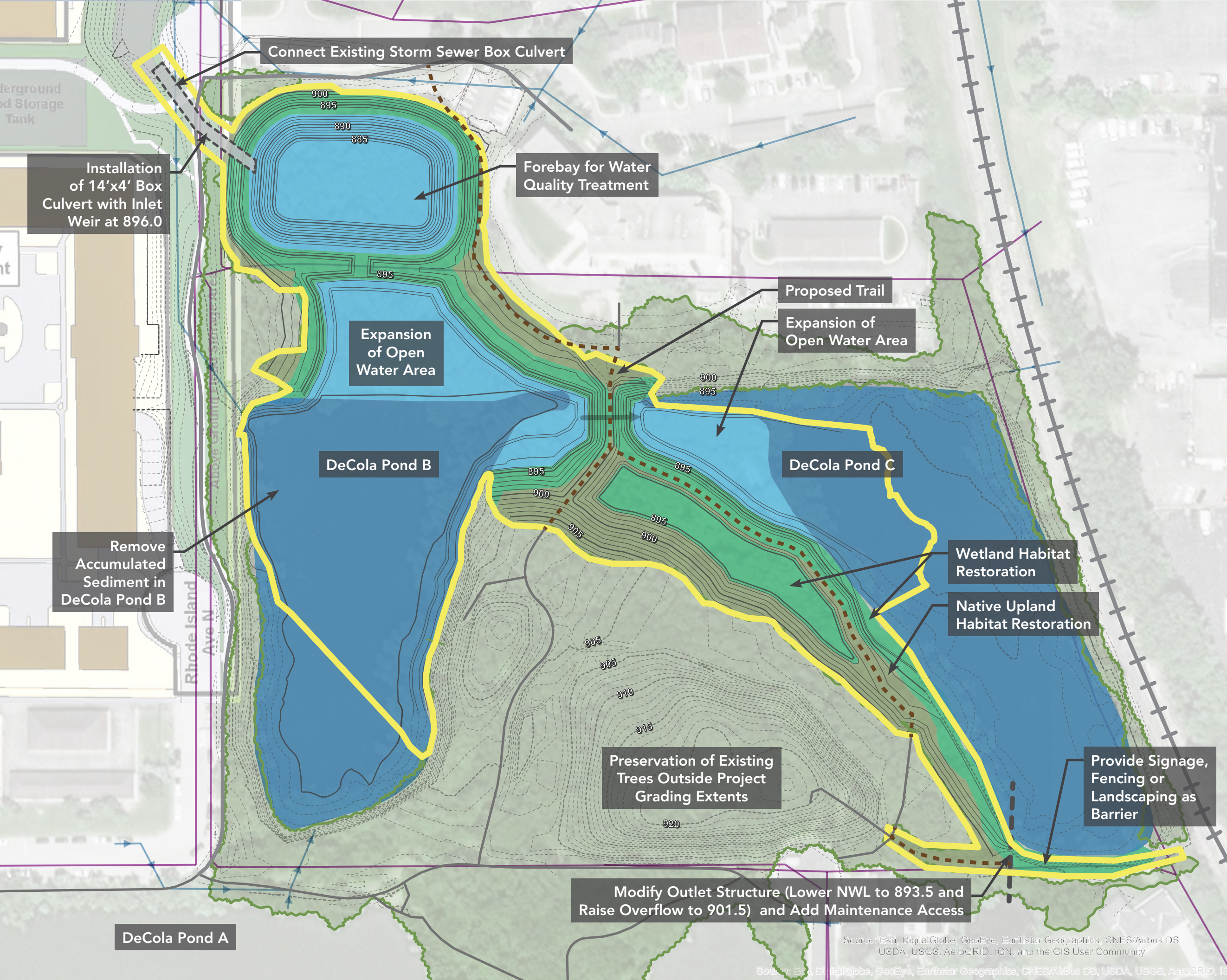
Provide Signage, Fencing or Landscaping as Barrier

Modify Outlet Structure (Lower NWL to 893.5 and Raise Overflow to 901.5) and Add Maintenance Access

DeCola Pond A

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



- Key**
- █ Project Grading Extents
 - █ Expanded Open Water
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 - Existing City Trail
 - + + Existing Rail

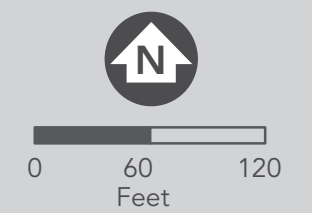


Figure 5-4
Concept 3
 Hybrid of
 Concepts 1 & 2

DeCola Ponds B&C
 Improvement Project
 Feasibility Study

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Table 6-1: DeCola Ponds B & C Improvement Project Concept Matrix Summary

Category	Item	Existing Conditions	Concept 1: Maximize Flood Storage	Concept 2: Maximize Tree Preservation	Concept 3: Hybrid Alternative
Outlet Modifications	Normal Water Level (NWL)	893.8	893.5	893.5	893.5
	Overflow Elevation (DeCola Pond C)	899.5	901.5	901.5	901.5
	Ordinary High Water Level (OHWL)	895.3	895.3	895.3	895.3
Flood Mitigation	Connection to Liberty Crossing (Box Culvert)	-	14' x 4'	14' x 4'	14' x 4'
	Box Culvert Inlet Weir Elevation	-	896	896	896
	Total Flood Mitigation Volume (ac-ft) (DeCola Ponds A, B, & C)	140.3	173.1	157.5	162.2
	Increase in Flood Mitigation Volume (ac-ft)	-	32.8	17.2	21.9
	10-Year Flood Elevation (Low Point Medicine Lake Road)	902.0	901.5	901.5	901.5
	10-Year Flood Depth (Low Point Medicine Lake Road)	1.5	1.0	1.0	1.0
	10-Year Flood Elevation (DeCola Ponds A, B, & C)	899.4	898.4	898.9	898.7
	10-Year Flood Elevation (DeCola Pond D)	894.1	893.8	893.8	893.8
	10-Year Flood Elevation (DeCola Pond E)	893.3	893.3	893.3	893.3
	10-Year Flood Elevation (DeCola Pond F)	893.2	893.2	893.2	893.2
	# of Potentially At-Risk Structures (10-year)	11	11	11	11
	100-Year Flood Elevation (Low Point Medicine Lake Road)	903.6	902.2	902.3	902.3
	100-Year Flood Depth (Low Point Medicine Lake Road)	3.1	1.7	1.8	1.8
	100-Year Flood Elevation (DeCola Ponds A, B, & C)	902.3	901.7	902.0	901.8
	100-Year Flood Elevation (DeCola Pond D)	902.3	901.1	902.0	901.8
	100-Year Flood Elevation (DeCola Pond E)	896.1	896.0	896.0	896.0
100-Year Flood Elevation (DeCola Pond F)	896.1	896.0	896.0	896.0	
# of Potentially At-Risk Structures (100-year)	35	34	34	34	
Water Quality	Open Water Surface Area (ac) (DeCola Ponds B & C and Pennsylvania Woods)	4.8	7.5	6.4	6.7
	Increase in Open Water Surface Area (ac) (DeCola Ponds B & C and Pennsylvania Woods)	-	2.7	1.6	1.9
	Forebay Water Quality Treatment Volume (ac-ft)	-	5.2	5.2	5.2
	Pond Water Quality Treatment Volume (ac-ft) (DeCola Ponds A, B, & C)	50.5	55.6	51.8	52.8
	Additional Pond Water Quality Treatment Volume (ac-ft)	-	5.1	1.3	2.3
	Total Phosphorus Removal (lbs/yr)	143.0	153.5	151.0	152.0
	Increase in Total Phosphorus Removal (lbs/yr)	-	10.5	8.0	9.0
	Accumulated Sediment Removal Volume in DeCola Pond B (Cu. Yd.)	-	3480	2760	3040
Trees	Total # of Surveyed ¹ Trees (> 4 inches)	1591	1591	1591	1591
	Tree Removal Estimate	-	1156	672	687
	Percentage of Total Surveyed ¹ Trees Removed	-	73%	42%	43%
	Percentage of Total Surveyed ¹ Trees Preserved	-	27%	58%	57%
	# of Significant Trees Removed	535	386	235	245
	# of Legacy Trees Removed	6	2	0	1
	# of Other Trees (< 6 inches diameter) Removed	915	674	373	371
	# of Dead/Dying Trees Removed	135	94	64	70
	Tree Planting Estimate	-	60 - 180	40 - 120	35 - 105
	Preservation of Hardwood Trees on Knoll	Yes	Yes	Yes	Yes
Preservation of Screening Trees	Yes	Yes	Yes	Yes	

Category	Item	Existing Conditions	Concept 1: Maximize Flood Storage	Concept 2: Maximize Tree Preservation	Concept 3: Hybrid Alternative
Other Habitat	Wetland Impact Area (ac)	-	3.09	2.53	2.53
	Restored Wetland Area (ac)	-	2.31	1.37	1.68
	Restored Native Upland Area (ac)		1.70	1.10	1.00
Trails	Length of Trail to be Removed (ft)	-	1426	984	946
	Length of New Paved Trail (ft)	-	1417	1421	1383
	Length of New Boardwalk/Floating Trail (ft)	-	385	-	-
	Connection to Railroad Right of Way	No	No	No	No
Project Costs	Feasibility Level Opinion of Cost	-	\$ 5.7 million	\$3.5 million	3.8 million
	Feasibility Level Opinion of Cost Range (-20% to +30%)	-	\$4.5 - 7.4 million	\$2.8 - \$4.6 million	\$3.0 - 4.9 million
	30-Year Annualized Cost Estimate	-	\$303,500	\$193,700	\$208,500
	Cost per Acre-Ft of Flood Mitigation Volume	-	\$173,900	\$203,400	\$173,400
	Annualized Cost per Pound of Total Phosphorus Removed (Total Project)	-	\$28,900	\$24,200	\$23,200
	Annualized Cost per Pound of Total Phosphorus Removed (Water Quality Treatment)	-	\$8,900	\$11,100	\$9,600

¹ Does not reflect a complete survey of all trees in the DeCola Ponds B and C (Pennsylvania Woods) area; Trees on large, upland knoll were not included in the original survey as the goal was not to impact those trees as part of this flood mitigation project.

BCWMC Capital Improvement Program 2016 – 2019

Item 5E.
BCWMC 5-17-18

2019 Maximum Levy Request

Project Name	City	Number	2016	2017	2018	2019	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
Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Project, DeCola Ponds B & C Improvement Project	GV	BC-2, 3, 8				\$1,100,000 ^b	\$1,600,000 ^b
Westwood Lake Water Quality Improvement Project (Concept #3)	SLP	WST-2				\$404,500 ^c	\$404,500 ^c
TOTAL Estimated Project Cost			\$1,878,000	\$2,074,000	\$1,947,115	\$1,504,500	
City Contributions (\$450,000 for BC-4 + \$276,400 for NL-1)			-\$450,000	-\$276,400	-\$0	-\$0	
Grants Received ^a			-\$206,000	-\$494,000	-\$600,300	-\$0	
Levy ^d			\$1,222,000	\$1,303,600	\$1,346,815	\$1,504,500	

Levy amount w/
various WST-2
concepts:

#1: \$1,323,500
 #2: \$1,215,500
 #1&2: \$1,385,500
 #4: \$1,408,500
 #5: \$1,743,500

^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 An additional \$500,000 to be levied for this project in 2020

^c Assumes implementation of Concept #3 (\$351,000) + feasibility study costs (\$40,500) + transfer to operating budget (\$6,000) + additional Commission review costs, if needed (\$7,000)

^d 2016 - 2018 amounts already levied; 2019 proposed maximum levy

Item 5F.
BCWMC 5-17-18

	A	B	C	D	E	F	G	H	I	J	K	L
1	2019 Proposed Operating Budget											
2	Bassett Creek Watershed Management Commission											
3	Item	2014 Budget	2014 Actual	2015 Budget	2015 Actual	2016 Budget	2016 Actual	2017 Budget	2017 Actual	2018 Budget	2019 Proposed Budget	See Notes
4	ENGINEERING & MONITORING											
5	Technical Services	120,000	109,391	120,000	116,972	120,000	112,502	125,000	140,702	125,000	130,000	(ZZ)
6	Development/Project Reviews	65,000	52,643	65,000	51,622	65,000	94,619	65,000	71,791	75,000	80,000	(A)
7	Non-fee and Preliminary Reviews			15,000	53,686	15,000	35,253	15,000	20,906	10,000	15,000	(B)
8	Commission and TAC Meetings	16,000	15,984	14,500	11,525	13,000	11,808	14,000	11,753	12,000	12,000	(C)
9	Surveys and Studies	20,000	7,446	20,000	22,109	25,000	24,444	20,000	16,347	12,000	20,000	(D)
10	Water Quality / Monitoring	45,000	74,090	63,000	77,429	76,000	75,892	74,300	70,855	80,700	78,000	(E)
11	Shoreland Habitat Monitoring					6,000	2,468	-				
12	Water Quantity	11,000	12,100	11,500	9,115	11,500	8,731	11,500	8,570	6,300	10,000	(F)
13	Assistance on Erosion Control Inspections	1,000	225	1,000		1,000	-	1,000	-	1,000	-	(G)
14	Annual Flood Control Project Inspections	20,000	17,031	10,000	9,996	10,000	8,867	12,000	7,678	48,000	48,000	(H)
15	Municipal Plan Review	2,000	764	2,000		2,000	2,491	8,000	1,835	8,000	4,000	(I)
16	Watershed Outlet Monitoring Program	17,000	13,917	17,000	15,786	17,000	17,002	15,500	19,994	20,500	20,500	(J)
17	Annual XP-SWMM Model Updates/Reviews							10,000	5,650	10,000	-	(K)
18	APM/AIS Work							35,000	34,920	32,000	32,000	(L)
19	Subtotal Engineering & Monitoring	\$317,000	\$303,591	\$339,000	\$368,240	\$361,500	\$394,077	\$406,300	\$411,001	\$440,500	\$449,500	
20	PLANNING											
21	Next Generation Plan Development	40,000	55,198	30,000	28,277	-	-	-			12,000	(LL)
22	Subtotal Planning	\$40,000	\$55,198	\$30,000	\$28,277	\$0	\$0	\$0		\$0	\$12,000	
23	ADMINISTRATION											
24	Administrator	60,000	53,917	62,000	59,395	62,000	59,033	67,200	60,559	67,200	69,200	(M)
25	Legal	18,500	22,269	18,500	12,969	18,500	15,470	18,500	16,249	17,000	17,000	(N)
26	Financial Management	3,045	3,045	3,200	3,200	3,200	3,277	3,200	3,200	3,200	3,500	(O)

	A	B	C	D	E	F	G	H	I	J	K	L
1	2019 Proposed Operating Budget											
2	Bassett Creek Watershed Management Commission											
3	Item	2014 Budget	2014 Actual	2015 Budget	2015 Actual	2016 Budget	2016 Actual	2017 Budget	2017 Actual	2018 Budget	2019 Proposed Budget	See Notes
27	Audit, Insurance & Bond	15,500	12,476	15,500	13,181	15,500	14,606	15,500	17,304	15,500	18,000	(P)
28	Digitize Historic Paper Files			2,500	-	5,000	2,167	-	-			
29	Meeting Catering Expenses	3,000	1,836	2,500	1,564	2,200	1,572	2,000	1,198	1,600	1,500	
30	Administrative Services	35,800	22,763	32,000	29,843	25,000	11,583	18,000	13,346	15,000	15,000	(Q)
31	Subtotal Administration	\$135,845	\$116,306	\$136,200	\$120,152	\$131,400	\$107,708	\$124,400	\$111,856	\$119,500	\$124,200	
32	OUTREACH & EDUCATION											
33	Publications / Annual Report	2,000	2,272	4,000	1,430	2,500	1,246	2,500	1,138	1,500	1,300	(QQ)
34	Website	2,000	0	12,000	11,802	3,500	2,275	4,400	1,228	4,200	3,000	(R)
35	Watershed Education Partnerships	15,500	11,100	15,500	10,700	15,500	9,550	15,500	12,354	13,850	15,850	(S)
36	Education and Public Outreach	15,000	20,292	17,000	12,830	22,500	25,710	20,000	19,302	22,000	25,000	(T)
37	Public Communications	3,000	1,198	3,000	2,270	2,500	1,128	2,500	732	2,500	1,000	
38	Subtotal Outreach & Education	\$37,500	\$34,862	\$51,500	\$39,032	\$46,500	\$39,909	\$44,900	\$34,754	\$44,050	\$46,150	
39	MAINTENANCE FUNDS											
40	Channel Maintenance Fund	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	(U)
41	Flood Control Project Long-Term Maint.	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	(V)
42	Subtotal Maintenance Funds	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
43	TMDL WORK											
44	TMDL Implementation Reporting	20,000	20,000	20,000	15,881	20,000	18,950	20,000	19,209	10,000	10,000	(W)
45	Subtotal TMDL Work	\$20,000	\$20,000	\$20,000	\$15,881	\$20,000	\$20,000	\$20,000	\$19,209	\$10,000	\$10,000	
46	GRAND TOTAL	\$600,345	\$579,957	\$626,700	\$621,582	\$609,400	\$611,694	\$645,600	\$626,820	\$664,050	\$691,850	

NOTES

(ZZ) New and more complicated issues continue to arise requiring engineer review, analyses, input.

(A) Partially funded by application fees; with the creation of the preliminary and non-fee budget category, most of the review costs will be covered by application fees. 2019 budget assumes 40 submittals at average cost of \$2,000 - \$2,500 per review, which is based on 2014 -2017 trend of increasing number of submittals and increased number of complex reviews (including MIDS)

(B) Assumes increase in non-fee reviews in 2019 based on actual spent in 2017 (\$20,906) and reviews for light rail projects may still be needed as these projects have been delayed. 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, 2017 and expected in 2018.

(C) Includes attendance at BCWMC meetings, TAC meetings and Next Generation Plan Steering Committee meetings (through 2015). 2010- 2013 estimates based on 18 meetings. 2014 estimate based on 30 meetings. 2015 estimate based on 24 meetings. 2016 and 2017 estimates based on 18 meetings (12 BCWMC meetings & 6 TAC meetings). 2017 budget increased to allow for additional BCWMC Engineer staff to attend Commission/TAC meetings (total of 3 assumed). 2018 budget was reduced from 2017. 2019 budget assumed same as 2018.

(D) For Commission-directed surveys and studies not identified in other categories - e.g., past work has included watershed tours, Medicine Lake outlet work, Flood Control Project Maintenance and Responsibilities, Sweeney Lake sediment monitoring, stream monitoring equipment purchase. 2018 budget was reduced from previous years for overall budget savings. 2019 proposed budget is more in line with previous years and gives Commission flexibility to investigate or tackle unforeseen issues that arise. Could include funding for iron filings study in Northwood Lake or elsewhere.

(E) Routine lake and stream monitoring. See details on next page.

(F) Water Quality (lake level) monitoring. 2018 budget lowered for budget savings and will result in fewer data points. 2019 budget recommended for setting/checking benchmarks and flooding elevations; NAVD 88 benchmarks

(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 remained here to provide, as requested by the Commission, some oversight of city inspection activities (reports of inspections are available from each city). However, little or no expenses have been incurred since 2014. Recommended to remove from budget. If inspections are needed they can be charged to general technical services.

(H) 2019 budget includes double box culvert inspection, following NASSCO protocol (\$36,000), and based on BCMWC's new Flood Control Project policies approved in 2016; 2019 budget also includes the annual FCP inspection (\$12,000). 2018 budget includes 2nd Street (deep) tunnel inspection, following NASSCO protocol, and based on BCMWC's new Flood Control Project policies approved in 2016, which call for more-frequent inspection of the deep tunnel (\$36,000, with approximately \$10,000 for subcontractors - crane rental and Rescue Resources); the 3rd Ave tunnel will also be inspected at the same time as the 2nd Street tunnel (they are connected), rather than in 2019 (as called for in schedule); 2018 budget also includes the annual inspection (\$12,000). 2017, 2016 and 2015 budgets include usual inspection. 2017 budget increased to allow for more follow-up with cities, stemming from Flood Control Project Maintenance and Responsibilities-related effort. 2014 budget included inspection of double box culvert (performed once every 5 years).

(I) Although the bulk of the reviews will be completed under the 2018 budget, the 2019 budget assumes a couple reviews/approvals may extend into 2019. 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) This item is used to make updates to the XP-SWMM model, coordinate with P8 model updates, and assist cities with model use. However, no XP-SWMM updates are expected in 2019 and 2020 due to work on the grant funded FEMA modeling project. This line item will return in the 2021 operating budget

(L) Funds to implement recommendations of Aquatic Plant Management/Aquatic Invasive Species Committee likely including curly-leaf pondweed control in Medicine Lake and small grant program for launch inspectors, education/outreach, etc. by other organizations including TRPD, AMLAC, others

(LL) Funding that will be set aside and accrued over next 5 years to pay for 2025 Watershed Plan development which will start in 2023.

(M) Includes 3% increase in Administrator hourly rate as recommended by Budget Committee. \$72/hour for average of 80 hours per month.

(N) For Commission attorney. No change in budget over 2018 levels.

(O) Funding for City of GV staff's monthly accounting activities and coordination of annual audit. Slight increase recommended as amount has not changed in many years.

(P) Insurance and audit costs have risen considerably in the last two years.

(Q) 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

(QQ) 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 and closer to actual funds spent in 2017.

(S) Includes CAMP (\$7,000), 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. CAMP costs set by Met Council will increase significantly in 2019 (after 16 years w/o increases)

(T) Includes funding for West Metro Water Alliance at \$13,000 plus \$12,000 for 50th Anniversary events, document production, etc. and some 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 in 2018 for overall budget savings. Task includes reporting on TMDL implementation and updating P8 model to include new BMPs.

Budget item	Item description	Estimated cost
Cavanaugh Lake (Plymouth) and Northwood Lake (New Hope) detailed lake monitoring	<p>Detailed lake monitoring includes monitoring one location each at Cavanaugh Lake and Northwood Lake on six occasions for selected parameters (total phosphorus, soluble reactive phosphorus, total nitrogen, chlorophyll a, chloride, temperature, pH, DO, specific conductance, and oxidation reduction potential), plus parameters associated with AIS vulnerability (calcium, alkalinity, hardness, sodium, magnesium, potassium, dissolved inorganic carbon, and dissolved organic carbon), 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 & 2017 reports).</p> <p>Assessment of vulnerability to AIS infestations (\$1,000/lake)</p>	<p style="text-align: right;">\$43,000</p> <p>(Note: estimated cost will be lower for Cavanaugh Lake if TRPD completes the monitoring, aquatic plant monitoring, and lab analyses.)</p> <p style="text-align: right;">\$2,000</p>
Second year of two-year stream water quality/ quantity monitoring effort (automatic sampling) on North Branch	<p>The stream water quality monitoring program is designed to approximate the Metropolitan Council’s Watershed Outlet Monitoring Program (WOMP) design for one location—North Branch (two additional locations would be monitored in years 3-4, and in years 5-6). The costs include 24 grab samples (approximately 1.5 per month for the open water period) and 16 storm samples. This approximates a recent change to the WOMP sampling protocols from monthly to bi-monthly samples (some WOMP stations do not collect grab samples in the winter).</p> <p>Parameters to be monitored include:</p> <ul style="list-style-type: none"> • Total Phosphorus • Ortho Phosphorus • Chloride • E. Coli • Hardness • Sulfate • Dissolved Phosphorus • TKN • TSS • Chl-a • Metals • Nitrate/Nitrite • Ammonia N • VSS • Alkalinity • TOC 	<p style="text-align: right;">\$23,000</p>
General Water Quality Task	<p>Potential items/issues include:</p> <ul style="list-style-type: none"> • Inventorying chloride sources and/or improvement measures • Preparing for TMDL studies on Northwood Lake and the Bassett Creek fish impairments, including coordination with the MPCA • Internal load assessments and/or investigation(s) of alternative chemical treatments for Medicine Lake, Lost Lake, Sweeney, etc. • Evaluating carp population dynamics in the Sweeney branch (down to Schaper Pond) • Addressing new AIS species (in 2017, the Medicine Lake zebra mussels effort was charged to the Technical Services budget) <p>If any of these become larger efforts, they could be charged to the Surveys & Studies budget.</p>	<p style="text-align: right;">\$10,000</p>
Total Estimated Budget		<p style="text-align: right;">\$78,000</p>

2018 Financial Information

Fund Balance as of January 31, 2018 (audited)		\$	368,445
Income from assessments in 2018	+	\$	515,050
Expected interest income in 2018	+	\$	-
Expected income from project review fees	+	\$	55,000
Expected income from CIP Administrative Funds	+	\$	27,000
Expected transfer from Long-term Maint Fund for Flood Control Project	+	\$	48,000
Expected income from WOMP reimbursement	+	\$	5,000
Expected income from reimbursements from 2018 work ¹	+	\$	18,000
<hr/>			
Estimated funds available for fiscal year 2018		\$	1,036,495
Estimated expenditures for fiscal year 2018	-	\$	664,050
<hr/>			
Estimated fund balance as of January 31, 2019		\$	372,445

¹ Through new agreements for SWLRT & Blue Line LRT. Agreements total \$22,000 but not likely to use and be reimbursed for total amt in 2018

2019 Revenues**Expected Income**

Proposed Assessments to cities	+	\$	529,850
Use of fund balance	+	\$	21,000
CIP Administrative Funds (2.0% of est. requested levy of \$1.4M)	+	\$	28,000
Project review fees	+	\$	60,000
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 2019	+	\$	-
		\$	<hr/> 691,850

Expected Expenses

Total operating budget		\$	691,850
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Fund Balance Details

Est. Beginning Fund Balance (Jan 31, 2019)		\$	372,445
Use of Fund Balance (see income above)	-	\$	21,000
<hr/>			
Est. Remaining Fund Balance (Jan 31, 2020)		\$	351,445

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

Community	For Taxes Payable in 2018 Net Tax Capacity	2018 Percent of Valuation	Current Area Watershed in Acres	Percent of Area	Average Percent	Assessments						Proposed 2019 Assessment (2.9% increase from 2018)
						2013	2014	2015	2016	2017	2018	
						\$515,016	\$490,345	\$490,345	\$490,345	\$500,000	\$515,050	\$529,850
Crystal	\$8,354,192	5.43	1,264	5.09	5.26	\$27,424	\$25,504	\$25,868	\$25,771	\$25,704	\$26,904	\$27,877
Golden Valley	\$39,462,902	25.67	6,615	26.63	26.15	\$129,126	\$123,033	\$121,964	\$127,675	\$131,270	\$134,649	\$138,553
Medicine Lake	\$1,000,557	0.65	199	0.80	0.73	\$3,909	\$3,479	\$3,543	\$3,600	\$3,561	\$3,783	\$3,846
Minneapolis	\$10,318,599	6.71	1,690	6.80	6.76	\$35,236	\$32,953	\$33,235	\$32,885	\$33,609	\$34,763	\$35,805
Minnetonka	\$9,964,851	6.48	1,108	4.46	5.47	\$28,464	\$27,402	\$28,121	\$27,536	\$28,199	\$28,053	\$28,989
New Hope	\$8,492,344	5.52	1,252	5.04	5.28	\$27,648	\$26,479	\$25,681	\$25,627	\$25,917	\$26,740	\$27,987
Plymouth	\$66,201,330	43.07	11,618	46.77	44.92	\$235,310	\$224,959	\$225,159	\$220,974	\$224,531	\$231,682	\$237,986
Robbinsdale	\$2,810,841	1.83	345	1.39	1.61	\$8,479	\$7,743	\$7,587	\$7,843	\$7,747	\$8,189	\$8,523
St. Louis Park	\$7,116,412	4.63	752	3.03	3.83	\$19,420	\$18,792	\$19,184	\$18,433	\$19,463	\$20,287	\$20,284
TOTAL	\$153,722,028	100.00	24,843	100.00	100.00	\$515,045	\$490,345	\$490,345	\$490,345	\$500,000	\$515,050	\$529,850



Bassett Creek Watershed Management Commission

MEMO

Date: May 9, 2018
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.>)

2019 Medicine Lake Road and Winnetka Avenue Area Long Term Flood Mitigation Plan Implementation Phase I: DeCola Ponds B & C Improvement Project (BC-2, BC-3 & BC-8), Golden Valley (See Item 5D): At their meetings in September and October, the Commission approved a proposal and additional proposed actions (respectively) from the Commission Engineer to complete a feasibility study for this project. Feasibility study field work began in late September. A project kick-off meeting was held October 6th, a public open house was held November 9th, a meeting with permitting agencies was held December 8th and a meeting with Met Council regarding the existing sanitary sewer line was held in late December. Work on various aspects of the feasibility study continued over the winter including establishment of ordinary high-water levels, test trench investigations, use of the XP-SWMM model, and development of 3 concepts for city staff, administrator review and presentation to residents at a public open house on April 11th. At its April meeting, the Commission reviewed 3 concepts for implementation. A complete feasibility study will be presented at this meeting. Project website: <http://www.bassettcreekwmo.org/index.php?cid=433>

2019 2020 Bryn Mawr Meadows Water Quality Improvement Project (BC-5), Minneapolis: At their meeting in September, the Commission approved a proposal from the Commission Engineer to complete a feasibility study for this project. A project kick-off meeting was held on October 23rd. A wetland delineation is complete and submitted for approval. Preliminary concepts were developed and discussed with designers for Minneapolis Park and Rec Board. A meeting with permitting agencies was held on January 19th and another meeting with MPRB designers was held February 13th to review possible concepts. Soil borings were recently completed and a public open house on the MPRB's Bryn Mawr Meadows Park improvement project was held March 8th and had about 50 participants. At their meeting in April, the Commission approved a TAC and staff recommendation to move this project from implementation in 2019 to design in 2020 and construction in 2021 to better coincide with the MPRB's planning and implementation of significant improvements and redevelopment Bryn Mawr Meadows Park where the project will be located. Project website: <http://www.bassettcreekwmo.org/projects/all-projects/bryn-mawr-meadows-water-quality-improvement-project>

2019 Westwood Lake Water Quality Improvement Project (WST-2), St. Louis Park (See Item 5A): At their meeting in September, the Commission approved a proposal from the Commission Engineer to complete a feasibility study for this project. The project will be completed in conjunction with the Westwood Hills Nature Center reconstruction project. A kick-off meeting was held November 21st. A wetland delineation was completed and approved. The Commission Engineer has received the architect's survey and building location and soil boring data. Project concepts were recently discussed with the city's architect and city staff and two public open houses were held in February for the Westwood Hills Nature Center reconstruction project. At their meeting in April, the Commission reviewed concepts presented in a draft feasibility study. At this meeting the Commission will consider approving a final feasibility study. Project website: <http://www.bassettcreekwmo.org/projects/all-projects/westwood-lake-water-quality-improvement-project>

2018 Bassett Creek Park Pond Phase I Dredging Project: Winnetka Pond, Crystal (BCP-2): The final feasibility study for this project was approved at the May 2017 meeting and is available on the project page online at <http://www.bassettcreekwmo.org/index.php?cID=403>. At the September 2017 meeting, the Commission held a public hearing on the project and adopted a resolution officially ordering the project, certifying costs to Hennepin County, and entering an agreement with the City of Crystal for design and construction. Hennepin County approved the 2018 final levy request at their meeting in November 2017. The City of Crystal hired Barr Engineering to design the project. At their meeting in April, the Commission approved 50% design plans. 90% design plans are expected at the June Commission meeting. A public open house on the project is scheduled for May 24th, 5:30 – 7:00 p.m. in the Crystal City Hall.

2017 Plymouth Creek Restoration Project, Annapolis Lane to 2,500 feet Upstream (2017CR-P): All project documents including the feasibility study and 90% design plans are available online at <http://www.bassettcreekwmo.org/index.php?cID=284>. The BCWMC executed agreements with the BWSR for a \$400,000 Clean Water Fund grant and with Hennepin County for a \$50,000 Opportunity Grant and a subgrant agreement with the City was executed. Project design was completed by the city's contractor, Wenck Associates, with 60% and 90% design plans approved by the Commission at the April and August 2017 meetings, respectively. Plymouth City Council awarded a construction contract in early December 2018 and construction got underway on December 11, 2018. Much of the work was on hold over the winter but recently began again. Banks are stabilized in Reach 3 (downstream of Fernbrook). Clearing, grubbing, and bank stabilization work continues in Reaches 1 and 2.

2017 Main Stem Bassett Creek Streambank Erosion Repair Project (2017CR-M): 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 Commission was awarded an Environmental Response Fund grant from Hennepin County for \$150,300 and a grant agreement is in the process of being signed by the county. A subgrant agreement with the City will be developed. The City hired Barr Engineering to design and construct the project. Fifty-percent and 90% designs were approved at the August and October Commission meetings, respectively. In September, design plans were presented by Commission and city staff to the Harrison Neighborhood Association's Glenwood Revitalization Team committee and through a public open house on the project. Bidding for construction is complete and a pre-construction meeting was recently held. Construction will begin this summer.

2016 Northwood Lake Improvement Project, New Hope (NL-1) (No change since February): Northwood Lake Improvement Project is nearing completion with all major work complete. The storm water tank was fully operational in June and irrigated the fields all summer. Since it began operating the tank has captured and reused 904,000 gallons of storm water. All raingardens are planted and working well. A grand opening of the park was held last spring. Friends of Northwood Lake disseminated water quality educational materials, including BCWMC materials. A semi-annual grant report was submitted to the MPCA in January. The final piece of the project is to install educational signage which will happen this spring.

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 force main work was recently completed. The lift station and pumps were installed and connected to the Sandburg Athletic. Final stabilization of the pond was completed last fall and the area was seeded with a mix of natives including wetland and upland species. The project is complete and a final report and final reimbursement request is expected in June.

2015 Main Stem Restoration Project 10th Avenue to Duluth Street, Golden Valley (2015CR) (No change since October): 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 biologists 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 project has been seeded and stabilized and maintenance mowing and spot treatments have been completed. Applied Ecological Services (AES) installed live stakes and fascines this spring and completed the tree and shrub planting along the restoration project. 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.

2014 Schaper Pond Diversion Project, Golden Valley (SL-3) (See Item 5B): Repairs to the baffle structure were made in 2017 after anchor weights pulled away from the bottom of the pond and some vandalism occurred in 2016. The city continues to monitor the baffle and check the anchors, as needed. Vegetation around the pond was planted in 2016 and a final inspection of the vegetation was completed last fall. Once final vegetation has been completed, erosion control will be pulled and the contract will be closed. The Commission Engineer began the Schaper Pond Effectiveness Monitoring Project last summer and will present results at this meeting.

2014 Twin Lake In-lake Alum Treatment, Golden Valley (TW-2): (No change since January 2017) 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 in 2017 will help determine if a second dose of alum is needed to retain water quality.

2013 Four Season Area Water Quality Project/Agora Development (NL-2): At their meeting in December 2016, 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 2017 meeting the Commission approved an agreement with Rock Hill Management (RHM) 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. At the August 2017 meeting, the Commission approved the 90% design plans for the CIP portion of the project. At the April 2018 meeting, Commissioner Prom notified the Commission that RHM recently disbanded its efforts to purchase the property for redevelopment. I will be writing letters to the RHM and the City of Plymouth to officially cancel the agreements. Staff will work with the City of Plymouth to determine another possible option for treatment in this area.

Other Work

CIP Project Work and Technical Assistance

- Coordinated with TRPD and AMLAC on zebra mussel identification training and presenting BWCMC's role in AIS at the AMLAC annual meeting
- Reviewed final feasibility studies for DeCola Ponds and Westwood Lake Projects
- Walked Reaches 1 and 3 and took photos of Plymouth Creek Restoration Project
- Prepared for and attended BCWMC CIP Prioritization Committee meeting; met with Commission engineers as follow up and to plan for next meeting

Administration and Education

- Participated in Mississippi River Basin meeting on Watershed Based Funding
- Began minor plan amendment process: prepared materials, set public hearing date, notified cities and review agencies
- Delivered CAMP monitoring kits
- Updated administrative calendar and CIP project status table
- Developed email of events and meetings for Commissioners, et al
- Reviewed BCWMC column for Sun Post
- Attended WMWA meeting
- Prepared proposed 2019 budget, prepared for and attended Budget Committee meeting