

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 7D. Approval to Submit Major Plan Amendment for 90-day Review
BCWMC June 20, 2013 Meeting Agenda
Date: June 12, 2013
Project: 23270051.34 2013

7D. Approval to Submit Major Plan Amendment for 90-day Review

Recommendations:

1. Authorize Commission staff to submit a letter and supporting information requesting BWSR action on the BCWMC's Major Plan Amendment at BWSR's August 29 meeting.

Background

Process To-date:

The Commission submitted a major plan amendment to the Board of Water and Soil Resources (BWSR) on February 28, 2013. The 60-day review period ended on April 30, 2013 and the Commission responded to comments on May 28, 2013 (letter to the Minnesota Department of Natural Resources). The Commission opened a public hearing on May 16, 2013 regarding the major plan amendment and will continue the hearing at their June 20, 2013 meeting. The Hennepin County Board approved the major plan amendment at their June 11, 2013 meeting. (These steps are included at the end of this memo.)

Next Steps

After the Commission holds and closes the public hearing at the June 20th meeting, and assuming the Commission wishes to proceed with the major plan amendment, the Commission must submit the major plan amendment to BWSR for its final 90-day review and approval. The attached draft letter to BWSR summarizes the proposed major plan amendment and process. It is an update to the February 28th letter, with revisions that reflect the feasibility study results for the Briarwood/Dawnview project, and revisions to the project costs for all three projects to include costs incurred by the BCWMC. The estimated project costs shown in the letter are a bit higher than those reported by the Engineer at the April Commission meeting to reflect the up-to-date costs incurred by the Commission (per the June 2013 financial report):

1. An increased cost for the Schaper Pond project, from \$550,000 (in the original letter to BWSR) to \$601,000, to include the costs incurred by the BCWMC.

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2. Further definition of the Briarwood/Dawnview project to include an iron-enhanced sand filter with the construction of the water quality treatment pond, which increased the estimated construction cost by \$34,000. Including the costs incurred by the BCWMC, the project cost increased from \$200,000 (in the original letter to BWSR) to \$247,000.
3. An increased cost for the Twin Lake in-lake alum treatment project, from \$148,000 (in the original letter to BWSR) to \$157,000, to include the costs incurred by the BCWMC.

The following items must also accompany the letter to BWSR:

- Transcript of public hearing (May 16th and June 20th meeting minutes)
- Proposed revised CIP Table 12-2 (see attached draft)
- Proposed language for Section 12.6.6, “2013 Major Plan Amendment” (see attached draft)

After submittal of the letter to BWSR the next steps are for BWSR to act on the requested amendment at their August 29th meeting. This means the Commission will need to perform the following actions at their September 19th meeting: adopt the plan amendment, conduct public hearing and order the projects, approve and certify tax levy request to Hennepin County, and approve contracts with the City of Golden Valley to construct the projects (if ready).

The attached table shows the status of the tasks; completed tasks are noted.

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Table 1. Status of Major Plan Amendment and CIP Tasks

Date	Completed	Task
February 28	Yes	Submit major plan amendment to BWSR
April 18	Yes	At regular meeting, the BCWMC: <ul style="list-style-type: none"> • Heard results of the final feasibility study for the Briarwood/Dawnview project
April 30	Yes	Review/comment period ended
May 16	Yes	At regular meeting, the BCWMC: <ul style="list-style-type: none"> • Reviewed comments and draft responses to comments letter • Approved issuance of response letter • Opened public hearing on plan amendment and continued to June 20th meeting Hennepin County has until the public hearing to let BCWMC know of their approval/disapproval of proposed CIP projects.
May 28	Yes	Commission distributed response letter
June 11	Yes	Hennepin County Board approval of the plan amendment.
June 20	No	At regular meeting, the BCWMC: <ul style="list-style-type: none"> • Holds continued public hearing on plan amendment • Approves submittal of revised plan amendment and related documents to BWSR for final review and approval
August 12	No	BWSR metro subcommittee meeting to consider plan amendment and BCWMC responses to comments, and develop recommendation to full BWSR Board. (BCWMC attendance not likely needed at the committee meeting.)
August 29	No	Full BWSR board meeting to review recommendations from BWSR metro subcommittee and approval of the plan amendment.
September 19	No	At regular meeting, the BCWMC: <ul style="list-style-type: none"> • Adopts the BWSR-approved plan amendment. • Conducts 103B.251 public hearing and orders projects • Approves tax levy request and certifies to Hennepin County • Approves contracts with cities to construct the projects (if ready)

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DRAFT

June 28, 2013

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

Re: Major Plan Amendment for the Bassett Creek Watershed Management Commission's September 2004 "Watershed Management Plan"

Dear Mr. Wozney:

The Bassett Creek Watershed Management Commission (BCWMC) proposes a major plan amendment to the September 2004 BCWMC *Watershed Management Plan* (BCWMC Plan). The proposed amendment would modify the following parts of the BCWMC Plan:

- Adding to the Capital Improvement Program (CIP) a project for 2014 (SL-3) to modify Schaper Pond, located immediately upstream of Sweeney Lake, to improve the pond's ability to remove phosphorus, and help meet the Sweeney Lake TMDL phosphorus removal goals.
- Adding to the CIP a project for 2014 (BC-7) to construct a water quality treatment pond in the Main Stem watershed to reduce phosphorus loading to Bassett Creek (Briarwood/Dawnview water quality improvement project).
- Adding to the CIP a project for 2014 (TW-2) to provide in-lake alum treatment of Twin Lake, to address internal phosphorus loading issues in the lake and prevent further water quality degradation.

On February 28th of this year the BCWMC sent you a notice of this proposed amendment, and requesting comments from the MN Board of Water and Soil Resources (BWSR) and other agencies during a 60 day review period. Since that time, the Commission completed the comment period, approved the final feasibility report for the Briarwood/Dawnview project, which further defines the methods and costs for the project, and held a public hearing on the amendment (record attached).

The BCWMC requests BWSR approval of the proposed major plan amendment at its August 29th meeting. This letter updates our February 28th correspondence to present adjustments to methods and cost estimates for the BC-7 project, based on the feasibility report. The BCWMC also updated the project costs for all three projects to include costs incurred by the BCMWC for preparing feasibility studies and follow-up work, preparing the major plan amendment, and other pre-construction costs.

The updates for the Major Plan Amendment projects include:

1. An increased cost for the Schaper Pond project, from \$550,000 to \$601,000, to include the costs incurred by the BCWMC.
2. Further definition of the Briarwood/Dawnview project to include an iron-enhanced sand filter with the construction of the water quality treatment pond, which increased the estimated

construction cost by \$34,000. Including the costs incurred by the BCWMC, the project cost increased from \$200,000 to \$247,000.

3. An increased cost for the Twin Lake in-lake alum treatment project, from \$148,000 to \$157,000, to include the costs incurred by the BCWMC.

The revised CIP (Table 12-2 in the BCWMC Plan) showing all three projects and their updated costs is attached to this request. The revised table shows the three additional projects, along with the completed and future CIP projects. The CIP shows the projects proposed to be completed from 2010 through 2018 and their estimated costs. The CIP also lists the completed CIP projects and the actual project costs; the year of completion is shown in the notes at the bottom of the table.

Also attached is a draft of the language within the BCWMC Plan that is proposed for change (Section 12.6.6, 2013 Major Plan Amendments). This language is in addition to the current plan text and does not replace any existing text.

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

Addition to the CIP— Schaper Pond Diversion Project, Golden Valley (BCWMC Project SL-3) (2014)

The Implementation Plan for the Sweeney Lake TMDL includes several options for reducing phosphorus loads to Sweeney Lake. One option in the plan was modification of Schaper Pond to improve the pond's ability to remove phosphorus. Schaper Pond is located immediately upstream (south) of Sweeney Lake. In 2012, the BCWMC completed a feasibility study (Feasibility Report for the Schaper Pond Improvement Project) that investigated alternatives for modifying the pond. The feasibility study recommended construction of a diversion structure within Schaper Pond to direct more of the stormwater to the northwest (larger, deeper) lobe of the pond where more treatment could be provided.

This project is intended to remove an estimated 81 – 156 pounds of phosphorus during the June through September period each year. This amount of phosphorus removal would go a long way towards reaching the Sweeney Lake TMDL phosphorus removal requirements of 99 pounds during the June through September period.

Table 12-3 in the BCWMC Plan lists potential future water quality capital improvement projects. An improvement option under Sweeney Lake includes "implementation of water quality improvement projects recommended in the Sweeney Lake TMDL study." Although the Schaper Pond diversion project is not specifically called out, the table shows the BCWMC's willingness to consider implementing these future projects.

The total estimated project cost is \$601,000.

Addition to the CIP— Briarwood/Dawnview Water Quality Improvement Project, Golden Valley (BCWMC Project BC-7) (2014)

This project in the Main Stem watershed is located just east of T.H. 100, near the intersection of Scott Av N and Dawnview Terrace and is per the recommendations in the BCWMC's 2000 study (Bassett Creek Main Stem Watershed Management Plan). The 2000 study assumed construction of a water quality treatment pond that would treat runoff from a 63-acre residential watershed and remove 14 pounds of phosphorus per year. In April 2013, the City of Golden Valley completed a feasibility

study (Feasibility Report, Briarwood/Dawnview Water Quality Improvement Project) that evaluated options for providing water quality treatment in the area. The feasibility study recommended the construction of a water quality treatment pond that incorporates an iron enhanced sand filter to improve phosphorus removal. The project is anticipated to reduce the phosphorus load from the 184-acre watershed by 94 pounds per year.

The recommendations from the 2000 study were incorporated into the BCMWC Plan. Table 12-3 in the BCWMC Plan lists project BC-7 as a future water quality improvement project. Per the requirements of the BCWMC Plan, it would require a minor plan amendment to move the project to the BCWMC's 10-year CIP (Table 12-2).

The total estimated project cost is \$247,000.

Addition to the CIP— Twin Lake In-Lake Alum Treatment, Golden Valley (BCWMC Project TW-2) (2014)

This project would reduce internal phosphorus loading of Twin Lake by treating bottom sediments with alum. The treatment is anticipated to reduce the internal phosphorus load by 242 pounds per year and the treatment is expected to last 10 to 20 years. Twin Lake is located directly east of Sweeney Lake and is partially within Theodore Wirth Regional Park. This project is per the recommendation of a March 2011 BCWMC report that studied the existing phosphorous levels in Twin Lake and determined that Twin Lake was experiencing a high rate of internal phosphorous loading whose source was primarily from sediments at the lake bottom. The subsequent 2013 BCWMC feasibility study (Feasibility Report for Water Quality Improvements in Twin Lake, CIP Project TW-2) recommends two applications to increase the effectiveness: once in 2014 and again in 2017.

The BCWMC Plan calls for the BCWMC to “continue to identify opportunities to maintain or improve the excellent water quality of Twin Lake” (i.e., a “non-degradation” policy) (Section 4.2.2.1, policy H, page 4-5). The 2000 BCWMC Twin Lake report (Twin Lake Watershed and Lake Management Plan) identified a stormwater pond expansion to provide additional treatment of runoff in the Twin Lake watershed. This project is identified as project TW-1 in the BCWMC 10-year CIP. The BCWMC authorized construction of the project in 2006, but the project has been delayed because of site contamination and right-of-way issues. Twin Lake is a small urban lake with a small watershed. As such, management options must include control of phosphorus sources internal to Twin Lake as well as reducing stormwater runoff or watershed loading.

The total estimated project cost is \$157,000.

Major Plan Amendment Process

In accordance with MN Statute 103B.231, copies of this proposed plan amendment were sent to the member cities, Hennepin County, Hennepin Conservation District, the Metropolitan Council, the MDNR, the Minnesota Department of Health, the MPCA, the Minnesota Department of Agriculture, MnDOT, and BWSR for their review and comment. Copies were also sent to the Minneapolis Park and Recreation Board. Copies of the major plan amendment were, and continue to be, available on the BCWMC's website (www.bassettcreekwmo.org).

The 60-day review period ended on April 30, 2013. The BCWMC received comments from the following:

- Minnesota Department of Agriculture, e-mail dated March 4, 2013; they had no comments.

- Metropolitan Council, letter dated March 12, 2013; the letter states that the proposed amendment is consistent with their Water Resources Management Policy Plan, and they had no concerns.
- Minnesota Department of Natural Resources (DNR), letter dated April 5, 2013; the letter notes significant concerns regarding the Schaper Pond Diversion Project.
- Minnesota Board of Water and Soil Resources (BWSR), letter dated April 17, 2013; the letter states that they believe the amendment is compliant with rule and statute and they had no concerns.

On May 28, 2013, the BCWMC submitted a letter to the DNR, responding to their comments.

The BCWMC held a public hearing on this amendment on May 16, and continued the hearing to June 20. An official record of that hearing is attached. *[may need to add information about comments heard.]*

On June 11, Hennepin County approved the proposed major plan amendment. This letter requests that BWSR consider this plan amendment for approval at its August 29th meeting. All three projects are proposed to be constructed in 2014. For this to happen, the BCWMC must order the projects and submit its tax levy request to Hennepin County by the end of September 2013. Assuming BWSR approval of the plan amendment, the BCWMC will adopt the amendment, hold a public hearing prior to ordering the projects, order the projects, and certify a tax levy request to Hennepin County on September 19.

Thank you for your action on this proposed amendment. We look forward to working with the BWSR staff to gain the BWSR Board's timely approval of this major plan amendment.

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

Sincerely,

Virginia (Ginny) Black,
Chair, Bassett Creek Watershed Management Commission

Enclosures

Comments received during 60-day review period
BCWMC letter to DNR responding to comments

Record of Public Hearing May 16, 2013, continued on June 20, 2013
Proposed CIP Table 12-2 in the BCWMC Plan
Proposed language for Section 12.6.6, "2013 Major Plan Amendment"

- c: Hennepin County – Mr. Joel Settles
Hennepin Conservation District – Ms. Stacey Lijewski
City of Crystal – Ms. Chrissy Serres, City Clerk
City of Golden Valley – Ms. Sue Virnig, City Clerk
City of Medicine Lake – Ms. Nancy Pauly, City Clerk
City of Minneapolis – Mr. Casey J. Carl, City Clerk
City of Minnetonka – Mr. David Maeda, City Clerk
City of New Hope – Ms. Valerie Leone, City Clerk
City of Plymouth – Ms. Sandra Engdahl, City Clerk
City of Robbinsdale – Mr. Tom Marshall, City Clerk
City of St. Louis Park – Ms. Nancy Stroth, City Clerk
Minnesota Department of Natural Resources – Mr. Nick Proulx
Minnesota Pollution Control Agency – Ms. Juline Holleran
Minnesota Department of Health – Mr. Art Persons
Minnesota Department of Agriculture – Mr. Rob Sip
Metropolitan Council – Ms. Judy Sventek
Minnesota Department of Transportation – Nick Tiedeken
Bassett Creek Watershed Management Commission
Minneapolis Park & Recreation Board – Debra Pilger, Director, Environmental & Equipment Services

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Table 12-2 Water Quality Management and Flood Control 10-Year Capital Improvements Program

	Water Quality Improvement	Capital Cost ¹		Year								
		A (Actual Project (Cost)	E (Estimated Project Cost)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Medicine Lake												
ML-1 ²	Construct wet detention pond for subwatershed BC94B1 (Option 8 in Medicine Lake Plan)		\$0									
ML-2 ³	Reduce Goose Loadings by 75% (Option 17 in Medicine Lake Plan)											
ML-3, ML-4 ⁴	Reroute flows from subwatershed BC94 to a larger wet detention pond for BC92 (Option 9a in Medicine Lake Plan) & dredging of accumulated sediment Medicine Lake East Beach wet detention pond for subwatershed BC107 (Option 11 in Medicine Lake Plan) & dredging of accumulated sediment	A	\$893,000									
ML-5 ⁵	Construct wet detention pond for subwatersheds BC98, BC98A and BC98B (Option 10a in Medicine Lake Plan) & dredging of accumulated sediment		\$0									
ML-6	Construct wet detention pond for subwatershed BC94B2 (Option 6 in Medicine Lake Plan)	E	\$14,000									\$14,000
ML-7 ⁶	In-Lake Herbicide Treatment (Option 18 in Medicine Lake Plan)	A	\$132,000									
ML-8	Lakeview Park Pond						\$196,000					
ML-11 ¹⁵	Medicine Lake Park Pond	E	\$1,100,000									
Plymouth Creek												
PC-1 ¹⁹	26th Avenue to Medicine Lake	E	\$965,000	\$902,462								
PC-2 ¹⁹	26th Avenue to 37th Avenue	E	\$559,000							\$105,000	\$454,000	
Parkers Lake												
PL-6 ¹⁴	Improvements to stormwater basin in PL-A13 near Circle Park (from the City of Plymouth's <i>Parkers Lake Implementation Plan</i>)	E	\$73,000									
Wirth Lake												
WTH-1 ⁷	Dredging subwatershed FR-5 detention pond (Option 2 in Wirth Lake Plan)	A	\$69,000									
WTH-2 ⁸	Highway 55 detention pond (option 3 in Wirth Lake Plan)	E	\$215,000									
WTH-3 ⁸	In-lake alum treatment (Option 1 in Wirth Lake Plan)	E	\$59,000									
WTH-4	Modify outlet to prevent back-flow (Wirth Lake TMDL Implementation Plan)		\$180,000			\$180,000						
Sweeney Lake												
SL-3	Schaper Pond Diversion Project	E	\$600,000					\$600,000				
Twin Lake												
TW-1 ⁹	Pond expansion (Option 1 in Twin Lake Plan)	E	\$182,000									
TW-2	Twin Lake In-Lake Alum Treatment	E	\$157,000					\$157,000				
Westwood Lake												
WST-1 ¹⁰	Flag Avenue detention/ skimming facility (Option 1 in Westwood Lake Plan)	A	\$174,000									
Bassett Creek Park Pond												
	None-see Table 2 Potential future water quality projects											
Northwood Lake												
NL-1 ¹¹	Construct ponds NB-35A, B, C and NB-29A, B (Option 4 in Northwood Lake Plan)	E	\$595,000							\$595,000		
NL-2 ²²	Four Seasons Mall Area Water Quality Project	E	\$990,000				\$990,000					
NL-3	Divert Lancaster Lane storm sewer (Option 3 in Northwood Lake Plan)	E	\$59,000									\$59,000
NL-4 ¹²	Construct ponds NB-36A, NB-37A, NB-38A and NB-28A, B (Option 5 in Northwood Lake Plan)	A	\$153,000									
NL-7 ¹⁶	Construct pond adjacent to creek	E	\$139,000									
Bassett Creek Main Stem												
BC-1 ¹³	Pond BC 10-3 (Option 4 in Bassett Creek Main Stem Plan)		\$0									
Crystal Boundary to Regent Ave ²⁰	Channel restoration	E	\$636,000	\$34,800	\$601,200							
Wisconsin Ave to Crystal Boundary	Channel restoration	E	\$580,000		\$290,000	\$290,000						
BC-7	Briarwood/Dawnview Water Quality Improvement Project, Golden Valley	E	\$247,000					\$247,000				
Irving Avenue to Golden Valley Road	Channel restoration	E	\$856,000			\$856,000						
Sweeney Lake Branch												
Courtlawn Pond to Turners Crossing ¹⁷	Channel restoration	A	\$386,000									
North Branch												
36th Ave to Bassett Creek Park ²¹	Channel restoration	E	\$835,000		\$600,000	\$235,000						
Grimes, North, & South Rice Ponds												
GR-2	Grimes Pond wet detention pond (Option 4 in Rice and Grimes Ponds Plan)	E	\$104,000									\$104,000
Crane Lake												
CL-1	Ramada Inn detention/ skimming facility (Option 1 in Crane Lake Plan)	E	\$116,000									
CL-2 ¹⁸	Joy Lane Wet Detention Pond (Alt. #2)		\$0									
Turtle Lake												
	None Proposed											
Lost Lake												
	None Proposed											
		Capital Cost		2010	2011	2012	2013	2014	2015	2016	2017	2018
	ANNUAL ESTIMATED COST			\$937,262	\$1,491,200	\$1,561,000	\$1,186,000	\$1,004,000	\$0	\$700,000	\$454,000	\$177,000

Notes:

1. Capital Cost does not include land acquisition costs, but does include legal, administration, and 25% additional for contingencies.
2. Constructed by City.
3. Periodically completed by City.
4. This project includes dredging of accumulated sediment and was completed in 2006.
5. Mn/DOT sound wall construction in New Hope will require relocation and resizing of storm sewer in this watershed.
6. Treatment completed by the City of Plymouth in 2005, 2006, and 2008.
7. Completed in 2006.
8. Project authorized in 2006. Issues regarding participation by Mn/DOT and future maintenance have delayed construction, no current schedule.
9. Project authorized in 2006. Issues regarding site contamination and right-of-way have delayed construction, no current schedule.
10. Project completed in 2006.
11. The City of New Hope constructed NB-35A, B, C but not to the same degree as proposed in the lake and watershed management plan. NB-29 A and B have not been constructed. These improvements will need to be re-evaluated as part of the feasibility study. Costs shown are for NB-29A and B only. Costs will be added to the CIP to upgrade these ponds if the feasibility study indicates that they should be upgraded.
12. The City of New Hope constructed NB-28A and B. NB-36A, NB-37A and NB-38A were completed in 2006.
13. This project was completed as part of the Boone Ave and Brookview Golf Course improvement projects in 2004.
14. Project approved for construction in 2006, to be completed as part of street repaving project.
15. Minor Plan Amendment approved April 2007. Project to be completed in 2010.
16. Minor Plan Amendment approved September 2007. Project completed in 2009.
17. Minor Plan Amendment approved August 2007. Project completed in 2008.
18. Not feasible per city of Minnetonka in 2008.
19. Minor Plan Amendment approved June 2009. Project PC-1 to be completed in 2011.
20. Minor Plan Amendment approved June 2009.
21. Project construction proposed to start in 2011 using CIP reserve funds.
22. The Four Seasons Mall Area Water Quality Project includes construction of two new water quality treatment ponds and restoration of an eroding stream channel. One of the ponds will be located on the Four Seasons Mall site; the other pond will be located southwest of the mall site, near the intersection of 40th Ave. N. and Pilgrim Lane. The original proposed project (from the 1996 <i>Northwood Lake Watershed and Lake Management Plan</i>) was to dredge and enlarge pond NB-07 to provide additional treatment of stormwater runoff. The 2012 feasibility study for the Four Seasons Mall Area Water Quality Project concluded that it was not feasible to convert pond NB-07 (a wetland) to a stormwater pond. The feasibility study also included two scenarios as alternatives to the proposed dredging. The Commission selected Scenario 1 as their preferred alternative.

12.6.6 2013 Major Plan Amendment

In August and September 2013, BWSR approved and the BCWMC adopted, respectively, a major plan amendment to add the following projects to the BCWMC's 10-year CIP (Table 12-2): Schaper Pond Diversion Project (2014), Briarwood/Dawnview Water Quality Improvement Project (2014), and the Twin Lake In-Lake Alum Treatment Project (2014).

Schaper Pond Diversion Project Description

The Implementation Plan for the Sweeney Lake TMDL includes several options for reducing phosphorus loads to Sweeney Lake. One option in the plan was modification of Schaper Pond to improve the pond's ability to remove phosphorus. Schaper Pond is located immediately upstream (south) of Sweeney Lake. In 2012, the BCWMC completed a feasibility study (Feasibility Report for the Schaper Pond Improvement Project) that investigated alternatives for modifying the pond. The feasibility study recommended construction of a diversion structure within Schaper Pond to direct more of the stormwater to the northwest (larger, deeper) lobe of the pond where more treatment could be provided.

This project is intended to remove an estimated 81 – 156 pounds of phosphorus during the June through September period each year. This amount of phosphorus removal would go a long way towards reaching the Sweeney Lake TMDL phosphorus removal requirements of 99 pounds during the June through September period.

Table 12-3 in the BCWMC Plan lists potential future water quality capital improvement projects. An improvement option under Sweeney Lake includes "implementation of water quality improvement projects recommended in the Sweeney Lake TMDL study." The 2013 major plan amendment more specifically describes a project (Schaper Pond Diversion Project) recommended in the Sweeney Lake TMDL study.

This project is on the BCWMC CIP for 2014 (project SL-3 in Table 12-2 – CIP table) with an estimated cost of \$601,000.

Briarwood/Dawnview Water Quality Improvement Project Description

This project in the Main Stem watershed is located just east of T.H. 100, near the intersection of Scott Avenue North and Dawnview Terrace in Golden Valley. This project is per the recommendations in the BCWMC's 2000 study (Bassett Creek Main Stem Watershed Management Plan) to improve the quality of stormwater runoff reaching Bassett Creek. The 2000 study assumed construction of a water quality treatment pond that would treat runoff from a 63-acre residential watershed and remove 14 pounds of

phosphorus per year. In April 2013, the City of Golden Valley completed a feasibility study (Feasibility Report, Briarwood/Dawnview Water Quality Improvement Project) that evaluated options for providing water quality treatment in the area. The feasibility study recommended the construction of a water quality treatment pond that incorporates an iron enhanced sand filter to improve phosphorus removal. The project is anticipated to reduce the phosphorus load from the 184-acre watershed by 94 pounds per year.

The recommendations from the 2000 study were incorporated into this Plan. Table 12-3 lists this project (project BC-7) as a future water quality improvement project. Per the requirements of this Plan, a minor plan amendment is required to move the project to the BCWMC's 10-year CIP (Table 12-2). The 2013 major plan amendment moved this project from Table 12-3 to Table 12-2.

This project is on the BCWMC CIP for 2014 (project BC-7 in Table 12-2 – CIP table) with an estimated cost of \$247,000.

Twin Lake In-Lake Alum Treatment Project Description

This project would reduce internal phosphorus loading of Twin Lake by treating bottom sediments with alum. The treatment is anticipated to reduce the internal phosphorus load by 242 pounds per year and the treatment is expected to last 10 to 20 years.

Twin Lake is located directly east of Sweeney Lake in Golden Valley, and is partially within Theodore Wirth Regional Park. This project is per the recommendation of a March 2011 BCWMC report that studied the existing phosphorous levels in Twin Lake and determined that Twin Lake was experiencing a high rate of internal phosphorous loading whose source was primarily from sediments at the lake bottom. The subsequent 2013 BCWMC feasibility study (Feasibility Report for Water Quality Improvements in Twin Lake, CIP Project TW-2) recommends two applications to increase the effectiveness: once in 2014 and again in 2017.

This Plan calls for the BCWMC to “continue to identify opportunities to maintain or improve the excellent water quality of Twin Lake” (Section 4.2.2.1, policy H. page 4-5). The 2000 BCWMC Twin Lake report (Twin Lake Watershed and Lake Management Plan) identified a stormwater pond expansion to provide additional treatment of runoff in the Twin Lake watershed. This project is identified as project TW-1 in the BCWMC 10-year CIP (Table 12-2). The BCWMC authorized construction of the project in 2006, but the project has been delayed because of site contamination and right-of-way issues. Twin Lake is a small urban lake with a small watershed. As such, management options must include control of phosphorus sources internal to Twin Lake as well as reducing stormwater runoff or watershed loading.

This project is on the BCWMC CIP for 2014 (project TW-2 in Table 12-2 – CIP table) with an estimated cost of \$157,000.

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