Bassett Creek Watershed Management Commission

Technical Advisory Committee Meeting

Tuesday March 26, 2019
1:30 – 3:30 p.m.
Council Conference Room, Golden Valley City Hall

1. **CALL TO ORDER**

2. **COMMUNICATIONS**

3. **BUSINESS**

   A. **Finalize Recommendations for 5-year CIP (2021 – 2025)**

   At the TAC meeting on March 8th, the group reviewed and ranked the three projects proposed for the 5-year CIP. The possible 5-year CIP table is attached below along with the same project fact sheets from the last meeting. The matrix with the projects scored and ranked is attached to the email. At this meeting the TAC should make recommendations to the Commission on the 5-year CIP.

   There were a lot of questions regarding the proposed Bassett Creek Park Pond Dredging Project. A feasibility study was completed for this project in May 2017.
   http://www.bassettcreekwmo.org/index.php?cID=403

   Here are answers to some of the questions about the project:

   - The pond was originally 7 feet deep. What is the current depth of the pond?
     It appears to be just a few feet deep at the most. The deepest part of the pond is the southeast part at about 5 feet. It's much shallower to the northwest (where the creek comes in), at a little over a foot deep. There is also a high spot between the northwest and southeast parts of the pond that is likely less than one foot deep. The north/northeast part of the pond (not part of project) is 1 – 2 ft deep.

   - What is the realistic life of the pond in years from now? What are the implications of not dredging the pond within the next 5 years?

     I believe it was last dredged in 1995 so it appears it filled roughly 5 feet in 25 years. Based on the 8/11/2016 bathymetric survey, the estimated sediment that had accumulated since 1995 was 13,500 CY. Taken over 21 years, this means 643 CY/year accumulated. Data from the 2018 North Branch monitoring may give us a better idea of the current sediment accumulation rate. (We hope to bring more information on the North Branch monitoring data to the meeting.) The current loading is not likely to be as high as 643 CY/yr. But if it's 300 CY/yr, an additional 1,500 CY will accumulate in 5 years.

     Another way to look at this: The pond has 18,100 cubic yards of storage remaining below the outlet elevation, as of the August 2016 survey. Note that this storage computation only considers the storage available in the NW and SE basins, not the N/NE basin, as the N/NE is effectively "off-line" (i.e., flows from the North Branch cannot reach this area).

At a sediment accumulation rate of 300 CY/year, it would take 60 years (from 2016) to completely fill up that area. Using a 600 CY/year accumulation rate (similar to the rate from 1995 – 2016), it would take 30 years to completely fill.

The accumulated sediment should be removed before it completely fills, but it seems dredging could wait quite a few years before it became urgent. On the flip side, the longer we wait, the more accumulated sediment there will be to remove and the cost will increase – particularly since about half of the material is contaminated and will need to be landfilled.

Finally, it might be important to note that the feasibility study looked into resuspension and found that the velocities in the pond are not high enough to cause scour or resuspension. The southeast part of the pond would have to be full/nearly full of sediment before scour and resuspension would occur.

- What is the impact of the pond within the broader Flood Control Project?
  Loss of flood storage. The 1995 pond excavation was part of the Flood Control Project. Excavating the accumulated sediment would return it to its constructed state.

- Would the city still contribute 20% of the project cost if only the accumulated sediment were removed? Or is the deeper dredging highly desired for park improvements?
  The project would be done as part of the city's reinvestment in the park but it's not known yet if creating a fishing location is a high priority of the city. The city is willing to put 20% of the total project costs toward the project, up to a cap of $400,000.

- Are there other city or private projects that are planned for the area or the park at the same time as the dredging project?
  The city is planning to reconstruct the neighborhood to the south in that timeframe. So, they would want hauling on the roads to be done prior to reconstruction. The dead end of 29th Ave will also be removed and planted with grass.

- What were the thoughts/discussions of the Commission when they were originally considering the results of the feasibility study?
  During the April 2017 and May 2017 meetings, Commissioners had lengthy discussions about dredging Winnetka Pond vs. dredging Bassett Creek Park Pond. The primary concern was the extreme difference in the cost per pound of TP removal. It was also noted that dredging Winnetka Pond first made sense because it is upstream from Bassett Creek Park Pond so improvements at Winnetka would mean less sediment ending up downstream. It was noted, however, that Bassett Creek Park Pond would definitely need to be dredged eventually and that costs will only go up over time; that the proposed sediment forebay would allow the city to more regularly dredge and maintain the Pond's function; and that there were other benefits to the project that couldn't be calculated using P8.

B. Receive Update on 50th Anniversary Events and Tour

4. ADJOURNMENT

Future TAC Meeting Agenda items: CIP Maintenance Funding Needs

REQUESTED BCWMC Capital Improvement Program 2021 – 2025 (Gray shading = new proposed projects)

Project Name	City	Number	2019	2020	2021	2022	2023	2024	2025	2026	Totals
Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Project	GV, Crystal, New Hope	BC-2,3,8, 10	~~$1,100,000~~ $1,031,500 [1]	$500,000		$300,000	$1,000,000		$400,000	$900,000	~~$2,900,000~~ $4,131,500
Water quality improvements in Bryn Mawr Meadows, Main Stem Watershed	MPLS	BC-5		$100,000	$400,000						$500,000
Medley Park Stormwater Treatment Facility	GV	ML-12				$200,000	$300,000				$500,000
Restoration and stabilization of historic Bassett Cr channel, Main Stem Watershed	MPLS	BC-9				$500,000					$500,000
Mt. Olivet Stream Restoration Project	PLYM	ML-20			$400,000						$400,000
Dredging of accumulated sediment in Main Stem Bassett Creek just north of Hwy 55, Wirth Park	GV/MPLS	BC-7			$400,000						$400,000
Westwood Lake Water Quality Improvement Project	St. Louis Park	WST-2	~~$300,000~~ $404,500 [2]								$300,000
Stormwater Pond in Jevne Park to alleviate flooding/improve water quality	Medicine Lake	ML-21		$500,000							$500,000
Crane Lake Improvement Project via Ridgedale Drive	Minnetonka	CL-3		$380,000							$300,000
Parkers Lake Drainage Improvement Project	Plymouth	PL-7			$100,000	$300,000					$400,000
Bassett Creek Main Stem Restoration - Regent Ave to Golden Valley Rd	Golden Valley	2021-CR-M						$300,000	$200,000		$500,000
Bassett Creek Park Water Quality Improvement Project	Minneapolis	BC-11						$500,000			$500,000
Ponderosa Woods Stream Restoration	Plymouth	ML-22						$475,000			$500,000
Bassett Creek Park Pond Dredging Project	Crystal	BCP-2 Phase II							$900,000 [3]	$700,000	$1,600,000
Sweeney Lake Water Quality Improvement Project (alum + carp management) [4]	Golden Valley	SL-8		$80,000 [4]	$140,000 [4]						$220,000
TOTAL Estimated Project Cost			**$1,436,000**	**~~$1,400,000~~ $1,560,000**	**~~$1,300,000~~ $1,440,000**	**$1,300,000**	**$1,300,000**	**$1,275,000**	**$1,500,000**	**$1,600,000**	

[1] CWF grant received which lowered levy amount; [2] Actual amount levied after final feasibility study approved; [3] City would put an additional $400,000 toward project; [4] Only added to CIP if grant is awarded. Figures constitute local match required

Project Category: Flood Reduction

Project Title: **Medicine Lake Road and Winnetka Avenue Long Term Flood Mitigation Plan Implementation**

Total Estimated Cost: $4,200,000

BCWMC Project Number: BC-2, 3, 8, 10

Description:

Implementation of the Medicine Lake Road and Winnetka Avenue Long Term Flood Mitigation Plan Study prepared for the cities of Crystal, Golden Valley, and New Hope. Potential projects in this area include rate control facilities with potential water quality features, structural flood proofing and other projects as determined.

Source of Project Funding	2019	2020	2021	2022	2023	2024	2025	2026
CIP Account – BCWMC ad valorem tax levy through Hennepin	$500,000	$1,100,000		$300,000	$1,000,000		$400,000	$900,000

Justification:
The Medicine Lake Road and Winnetka Avenue Flood Mitigation Plan Study identified over $22M in projects that are needed to reduce the effect of repeat flooding on the roadway and adjacent properties. Identified projects will reduce the depth of flooding on the roadways and will lower flood elevations to help protect structures from flood damage. Flood damage reduction and improving water quality in Bassett Creek are consistent with BCWMC goals.

Scheduling and Project Status:
A Feasibility Study will need to be prepared for this project.

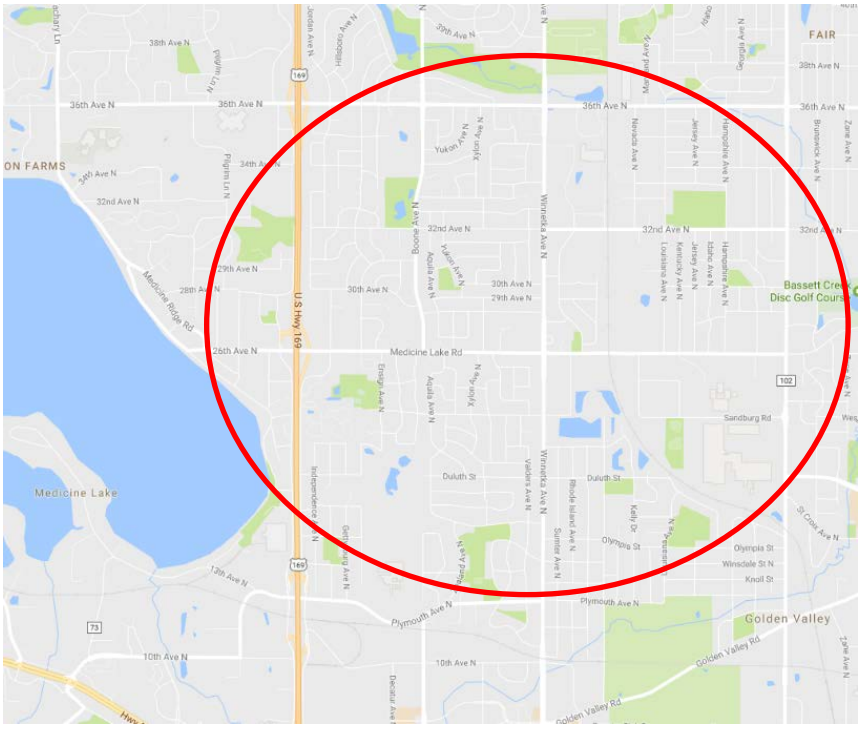
Relationship to BCWMC Plan and Other Projects:

This project is consistent with the goals and policies of the BCWMC Watershed Management Plan. It meets the "gatekeeper" criteria (policy 110) of addressing flooding concerns, and may also improve water quality in a priority waterbody (Bassett Creek). This project also meets the additional criteria (policy 110): addresses an intercommunity drainage issue, the tributary sub watershed includes more than one community, and it addresses significant infrastructure or property damage concerns. The project is one of many that have been identified in the Medicine Lake Road and Winnetka Avenue Long Term Flood Mitigation Plan.

This project is one of many that will work to reduce flooding on Medicine Lake Road and adjacent properties as well as increase water quality entering Bassett Creek.

Effect on Annual Operations Costs:

This project has no effect on BCWMC Annual Operations Costs.



Project Category: Water Quality/Water Capacity

Project Title: Bassett Creek Park Pond Dredging

Total Estimated Cost: $2,000,000 (city contribution = $400,000)

BCWMC Project Number: BCP-2 Phase II

Description:

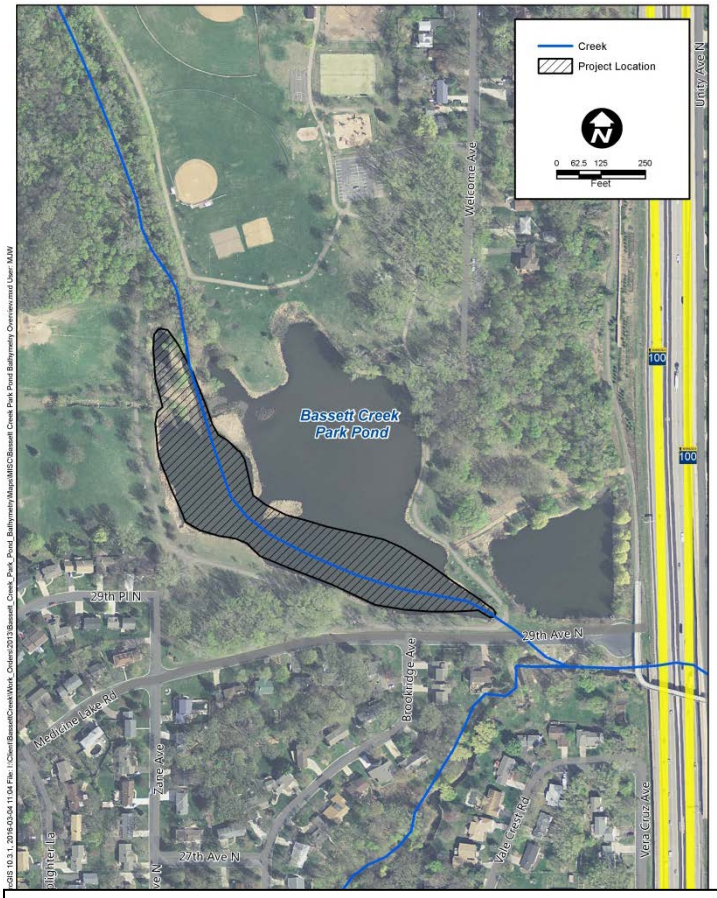
This project in the city of Crystal will remove sediment that has collected in the main channel of the North Branch of Bassett Creek within Bassett Creek Park Pond. The dredging of sediment will improve water quality of the creek downstream. Phase I of this project removed sediment from Winnetka Pond upstream of Bassett Creek Park Pond.

Source of Project Funding	2021	2022	2023	2024	2025
CIP Account – BCWMC ad valorem tax levy through Hennepin County + city contribution					BCWMC = $1,600,000 City = $400,000

Feasibility Study already complete:
(www.bassettcreekwmo.org/index.php?cID=403.)

- P8 model results estimate the total reduction in pollutant loading as a result of deepening Bassett Creek Park Pond to 10 feet (alternative 2) = 1,792 lbs/yr TSS and 7 lbs/year TP
- A native vegetated buffer would filter pollutants such as phosphorus, sediment, and bacteria from stormwater runoff.
- The proposed goose management could help to reduce the bacteria (and phosphorus) loading to the North Branch of Bassett Creek.
- The feasibility-level opinion of cost for implementing the 2018 Bassett Creek Park Pond alternative 2 (deepening to 10 ft) project, along with add-on 1 and add-on 2 (construction of a forebay and native vegetation buffer) is $1,818,000. This cost includes an estimated $1,137,000 in construction costs, $342,000 in construction contingency, and $342,000 in design, permitting, and construction observation costs.
- Cost per pound removal estimated at $19,600/lb TP and $76/lb TSS
- In addition to providing pollutant removal benefits, removing accumulated sediment from Bassett Creek Park Pond (along with the current dredging of Winnetka Pond) is necessary to continue to provide flood storage in these areas along the trunk line of the North Branch of Bassett Creek

The City is committed to bringing 20% ($400,000) of the project cost to the table.



Relationship to General Plan and Other Projects:
Dredging was previously performed during 1995 by the ACOE as part of the Bassett Creek Flood Control Project. Although the dredging was constructed as a betterment, and is not part of the Federal Project, the BCWMC and City included the dredging to improve water quality of Bassett Creek Park Pond and Bassett Creek. This project is consistent with the goals and policies of the BCWMC 2015-2025 Watershed Management Plan and is included in the 10-year CIP (Table 5-3).

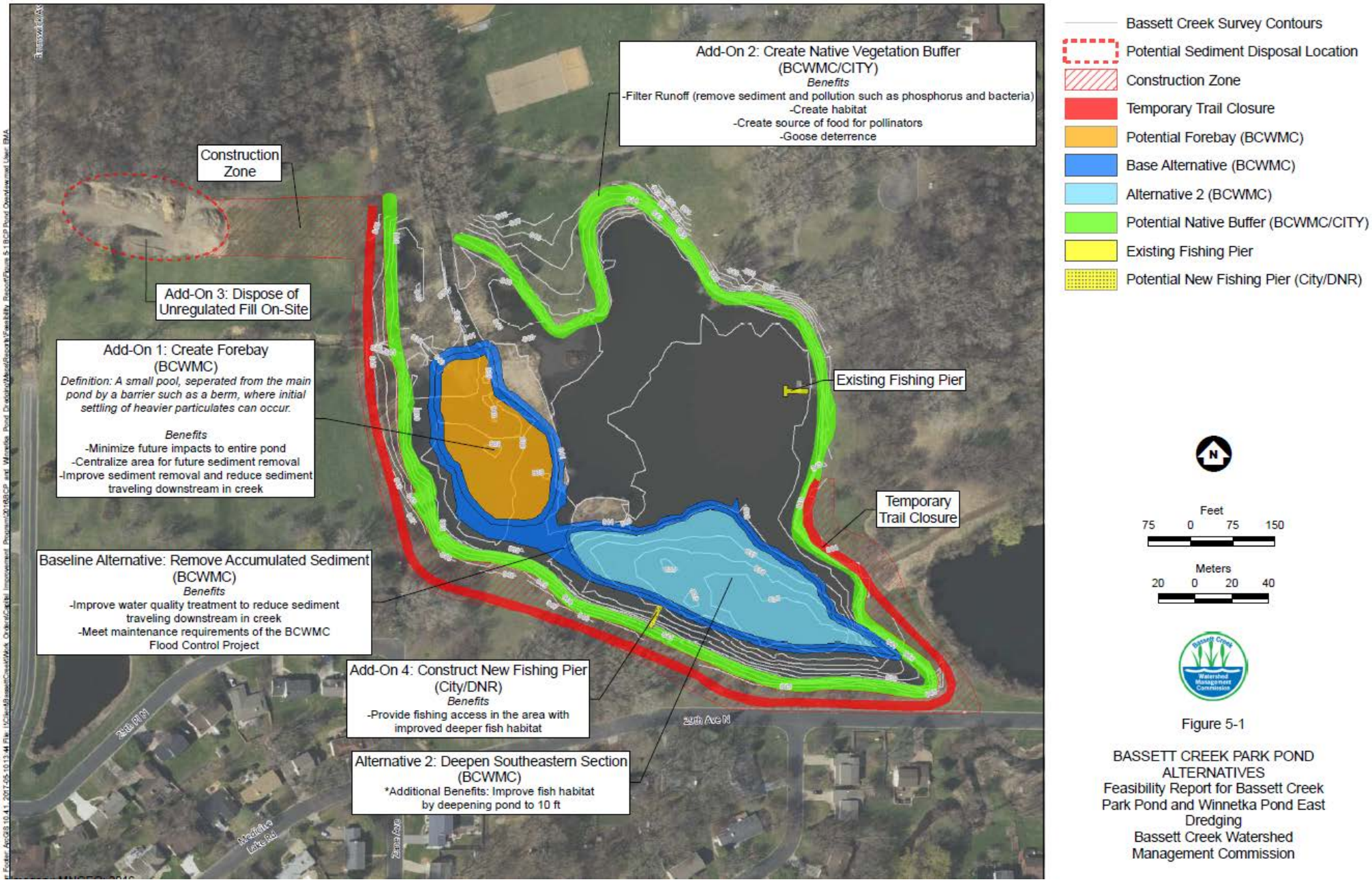


Figure 5-1 [Feasibility Report for Bassett Creek Park Pond and Winnetka Pond East Dredging Project]

Project Category: Water Quality

Project Title: **Sweeney Lake Water Quality Improvement Project**

Total Estimated Cost: **$550,000**

BCWMC Project Number: ML-20

Description:

This project in the city of Golden Valley would only be implemented if grant funding is awarded (applied for 2/26/19). This project includes carp removal and management in Schaper Pond to reduce phosphorus entering Sweeney Lake from the pond, and an alum treatment in Sweeney Lake. Estimated total project cost is $550,000. 40% local match is required or $220,000.

Source of Project Funding	2020	2021	2022	2023	2024	2025
CIP Account – BCWMC ad valorem tax levy through Hennepin County	$220,000 (+ $330,000 grant funds)					

Justification:
This project has the real potential to effectively "flip" the lake from a eutrophic, algae dominated system, to a healthy, clear water system that can fully support aquatic recreation and a balanced ecosystem for aquatic biota. More than 35 watershed BMPs were constructed or improved between the mid-1980s and 2011. The city of Golden Valley recently inventoried more than 17 BMPs that have been implemented within the direct drainage to Sweeney Lake, alone. Watershed modeling completed for the TMDL study confirmed that the Schaper Pond outflow is the most critical source of watershed phosphorus entering Sweeney Lake and in-lake water quality modeling confirmed that the internal phosphorus load (from sediment phosphorus release) accounts for approximately 320 pounds of the summer phosphorus budget for the lake. Implementation of the proposed improvement options will address the final critical sources of internal and external phosphorus loads needed to meet the TMDL wasteload and load allocation objectives, and attain the State and BCWMC goals and standards for Sweeney Lake.

Scheduling and Project Status:
If awarded, the grant funding must be spent between spring 2020 and August 2023.