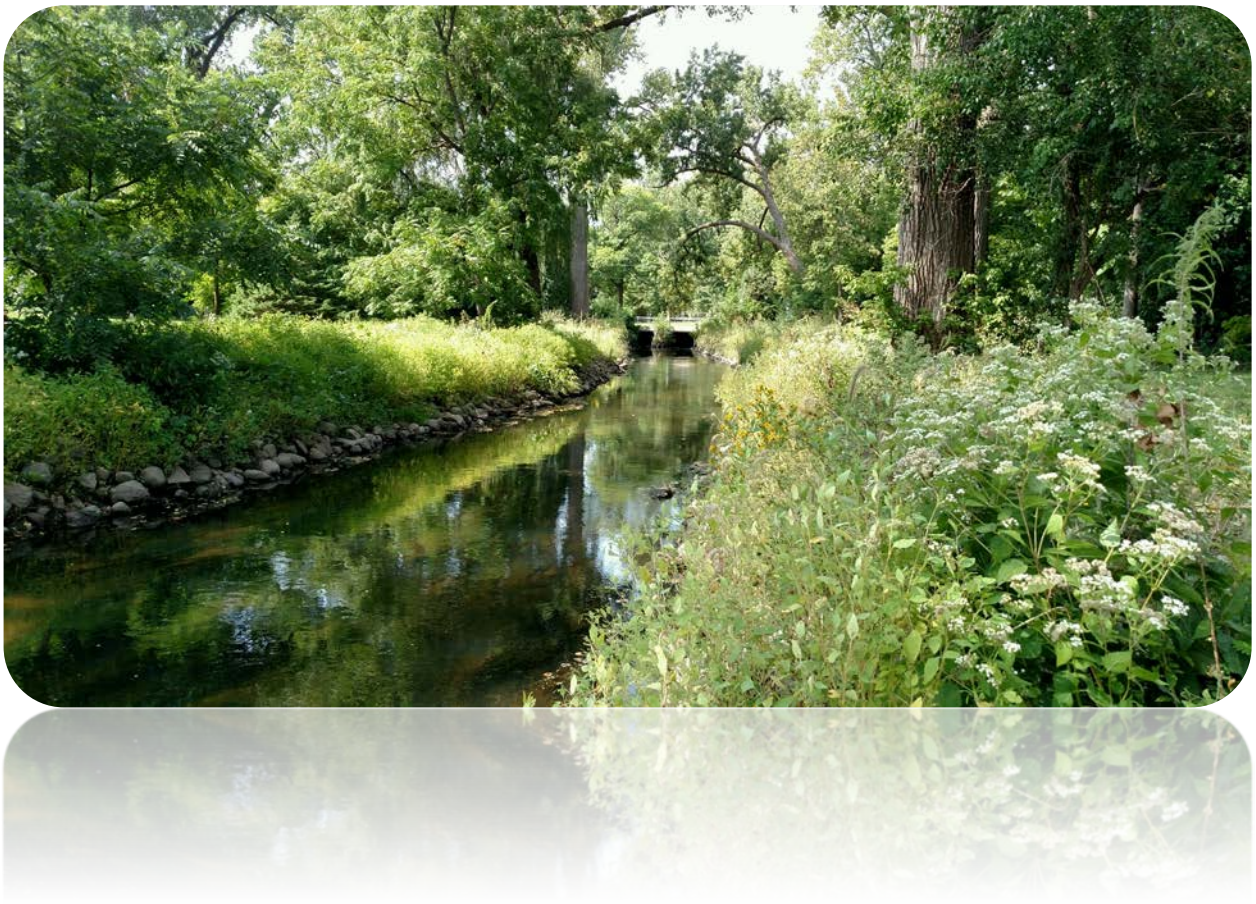
Item 4E.
BCWMC 5-16-19

Bassett Creek Watershed Management Commission



2018 Annual Report

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

May 2019

Bassett Creek Watershed Management Commission
2018 Annual Report

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2018 Activities & Achievements

The BCWMC worked on the following activities in 2018 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.

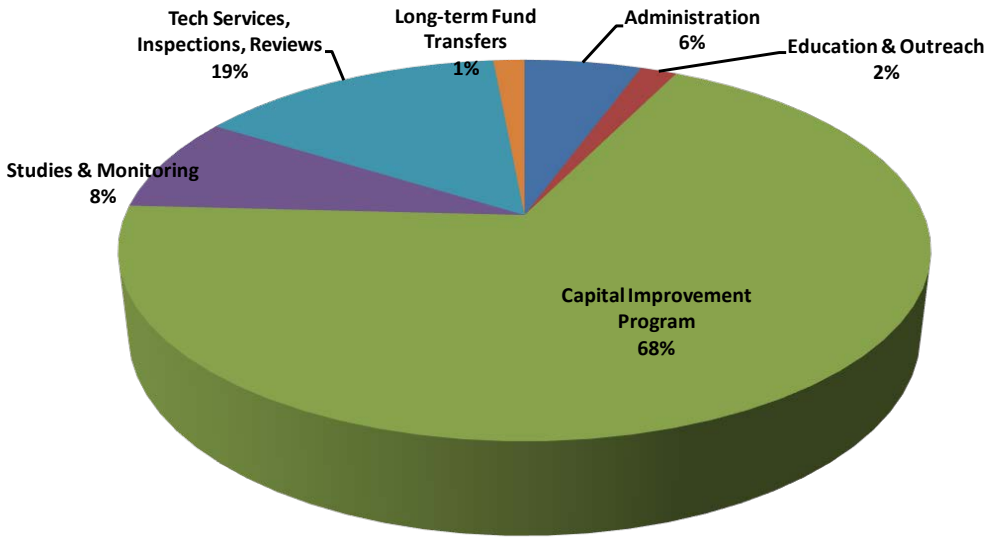
- **Plymouth Creek Restoration Project in Plymouth**. Construction of this project was completed in 2018 including the repair of eroding streambanks and establishment vegetation along Plymouth Creek in Plymouth Creek Park and downstream of Fernbrook Ave. The project received grant funds from Hennepin County and a Clean Water Fund Grant from the MN Board of Water and Soil Resources.

- **Winnetka Pond Dredging Project in Crystal.** Project designs were completed for this project that will remove of 18,400 cubic yards of sediment from the pond, increase flood storage, reduce sediment and phosphorus entering the North Branch of Bassett Creek (estimated 51.7 lbs of total phosphorus and 1,823 lbs of total suspended solids annually), and will improve habitat for wildlife and pollinators with a native buffer and goose management. Construction was completed in early 2019 and the vegetated buffer will be established throughout the 2019 growing season.

- **Westwood Lake Improvement Project in St. Louis Park.** Project designs for this project were completed in 2018. This project is part of a much larger reconstruction of the Westwood Hills Nature Center, a 160-acre park located in St. Louis Park. As part of the city's reconstruction project, the BCWMC will install a linear water feature that captures and treats roof runoff, will design and install an educational sign, and incorporate additional educational features.

Budget

In FY 2018, the BCWMC spent approximately $618,670 on activities and programs and $1.66 million on capital projects. BCWMC income included $515,050 from member cities, $125,000 in grants and reimbursements, and $53,000 in development review fees. Another $1.346 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 2018 expenditures, see the Year End Financial Report in Appendix A or the financial audit online.



2018 BCWMC Expenditures

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

Water Monitoring Activities

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

- Assessed the health of Parkers and Westwood 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 with the help of volunteers
- 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

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. Completed the initial project funded by a Met Council grant and continued with Clean Water grant funded project.
- 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 promotion of the "Pledge to Plant" campaign.
- Provided watershed education to the public at the Golden Valley Arts and Music Festival.
- 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 "Level I Winter Maintenance for Roads Workshop" for fifteen 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 creek crossings in Golden Valley.
- Received Hennepin County AIS Prevention Grant and partnered with Three Rivers Park District to purchase decontamination unit for Medicine Lake to prevent the spread of zebra mussels.
- Engaged local leaders from five lake groups in a facilitated conversation about options for organizing and collaborating.

I. Annual Activity Report

This annual report covers the Bassett Creek Watershed Management Commission's (BCWMC) activities for fiscal year 2018 (February 1, 2018—January 31, 2019). The BCWMC Annual Report was prepared to meet the Annual Reporting Requirements as set forth in Minnesota Rules Chapter 8410.0150, subparts 1, 2, and 3.

A. 2018 Commissioners

Municipality / Term Expiration	Commissioners	Alternates
Crystal February 1, 2021	Guy Mueller (until March 15, 2018) Dave Anderson (starting August 21, 2018)	Vacant
Golden Valley February 1, 2021	Stacy Harwell, Treasurer	Jane McDonald Black
Medicine Lake February 1, 2021	Clint Carlson	Gary Holter
Minneapolis February 1, 2019	Michael Welch	Vacant
Minnetonka February 1, 2019	Michael Fruen	Bill Monk
New Hope February 1, 2019	John Elder	Pat Crough
Plymouth February 1, 2020	Jim Prom, Vice Chair	John Byrnes
Robbinsdale February 1, 2020	Mike Scanlan, Secretary	Wayne Sicora
St. Louis Park February 1, 2020	Jim de Lambert, Chair	Patrick Noon

B. BCWMC Staff and Consultants

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C. Watershed Management Plan, Mission Statement, Goals

The 2015 Bassett Creek Watershed Management Plan was adopted in September 2015. The annual implementation program (Table 5-4), Capital Improvement Program (Table 5-3), monitoring program (Appendix A of the Plan), and education and outreach program (Appendix B of the Plan) are being implemented and progress is being documented and evaluated.

The mission statement of the BCWMC is *the stewardship of water resources to protect and enhance our communities*.

The BCWMC's goals, as stated in its *2015 Watershed Management Plan*, fall under the categories of water quality, flood control, erosion and sediment control, stream restoration, wetland management, groundwater, public ditches, and public involvement and information. The list of nineteen goals can be found in Section 4 of the Watershed Management Plan.

In August 2018, the BCWMC adopted a minor plan amendment to update Table 5-3, the Capital Improvement Program with the following changes:

- Added the Ponderosa Woods Stream Restoration Project (ML-22) to the CIP. This project in the City of Plymouth will reduce erosion, total suspended solids, and phosphorous loading to Medicine Lake.
- Added the Bassett Creek Park Water Quality Improvement Project (BC-11) to the CIP. This project in the City of Minneapolis will include construction of water quality treatment

facilities benefitting the main stem of Bassett Creek in cooperation with a park renovation project by the Minneapolis Park and Recreation Board.

Although not requiring a formal amendment, Table 5-3 was also be updated to:

- Move the "Bryn Mawr Meadows Water Quality Improvement Project (BC-5)" in the City of Minneapolis from 2019 to 2020 to better align with the schedule for design and construction of park improvements by the Minneapolis Park and Recreation Board.
- Schedule the project "Retention of impervious area drainage at Ridgedale area (e.g., bioswales, tree trenches, rain gardens) to reduce phosphorus loading to Crane Lake (CL-3)" for 2020 to coincide with reconstruction of Ridgedale Drive in the City of Minnetonka.
- Schedule the "Main Stem Channel Restoration, Bassett Creek Drive to Golden Valley Road (2021CR-M)" in the City of Golden Valley for 2024. This project in the City of Golden Valley will include bank stabilization measures and erosion repair to reduce phosphorus and sediment loading to the creek.

D. 2018 Activities

The BCWMC conducted the following activities in 2018. Work associated with review of development proposals is listed in Section E. Work related to water quality monitoring is addressed in Section F.

1. Capital Improvements Program (CIP)

The BCWMC continued to implement its capital improvements program. The complete 10-year CIP can be found in Table 5-3 in Section 5.0 of the 2015 Watershed Management Plan. Information, photos, related documents (including final documents of completed projects), and progress on projects can be found at: http://www.bassettcreekwmo.org/projects. In 2018, progress on CIP projects included:

- CONSTRUCTION COMPLETED: In May, construction was completed on the Plymouth Creek Restoration Project in Plymouth, vegetation was planted and will be actively maintained through the project for two years. 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.

- CONSTRUCTION PENDING: Project designs were completed in 2017 for the Main Stem Erosion Repair Project in Minneapolis near the Fruen Mill and downstream of Cedar Ave. Construction was expected in summer 2018 but was delayed until summer 2019 due to the unanticipated need for a field based cultural and historical survey of the project area required by the U.S. Army Corps of Engineers and the preference for Pioneer Paper (a significant landowner and access grantor) for a spring/summer construction window. The cultural and historical survey fieldwork was completed over winter 2018/2019. This project received Environmental Response Funds from Hennepin County.

- CONSTRUCTION BEGUN: Project designs were completed for the Bassett Creek Park Pond Phase I Dredging Project: Winnetka Pond in Crystal and pre-construction meetings occurred at the end of 2018. This project will remove of 18,400 cubic yards of sediment from the pond, increase permanent pool volume, increase sediment storage volume resulting in annual reductions of sediment and phosphorus loading to the North Branch of Bassett Creek (estimated 51.7 lbs of total phosphorus and 1,823 lbs of total suspended solids), and will improve habitat for wildlife and pollinators with a native buffer and goose management.

- UNDERWAY: Feasibility study was nearly completed for the Bryn Mawr Meadows Water Quality Project in Minneapolis (completed in early 2019). Construction will coincide with park reconstruction by Minneapolis Park and Rec Board in 2022.

- UNDERWAY: A feasibility study and design plans for the Westwood Lake Improvement Project in St. Louis Park were completed. This project is part of a much larger project at the Westwood Hills Nature Center (WHNC), a 160-acre park located in St. Louis Park. The city will completely reconstruct the WHNC facilities in 2019. As part of this project, the BCWMC will install a linear water feature that captures and treats roof runoff and provides educational activities.

- UNDERWAY: The feasibility study for the DeCola Ponds B & C Improvement Project in Golden Valley was approved in May 2018. The project will improve flood storage volumes within the project area, develop additional water quality treatment volume, and remove accumulated sediment that has collected in the north end of DeCola Pond B. The project will alleviate local flooding around Medicine Lake Road, will improve water quality downstream, and will improve ecology and wildlife habitat, enhance active and passive recreation opportunities, and provide educational opportunities.

- UNDERWAY: The first draft of the feasibility study for the Crane Lake Water Quality Improvement Project in the City of Minnetonka was reviewed by the Commission.

- UNDERWAY: The Jevne Park Water Quality Improvement Project in the City of Medicine Lake got underway including development of a feasibility study and coordination with the city's team and residents.

- EFFECTIVENESS & NEXT STEPS: The effectiveness of the Schaper Pond Diversion Project began in 2017 and continued in 2018. It was determined that more phosphorus was leaving the pond and entering Sweeney Lake than entering the pond. Additional monitoring and a carp survey in 2018 found that large numbers of carp inhabit the pond, with more than enough biomass to adversely impact water quality, including indications that Schaper Pond represents a place for rearing young-of-year carp. At their September 2018 meeting, the Commission approved a more robust survey of carp to better assess the total population and using radio tags to understand where they are traveling.

2. Grant Administration

- Submitted final project reports for BWSR Clean Water Fund Grant for the Northwood Lake Improvement Project in New Hope. (2015 Grant)
- Submitted grant reports for Met Council Stormwater Grant for Harrison Neighborhood Project.
- Submitted grant reports for Clean Water Fund grant for Community Engagement for Harrison Neighborhood Project.
- Submitted grant reports for Clean Water Fund grant for Plymouth Creek Restoration Project.
- Received Metro Watershed Based Funding for DeCola Ponds B & C Improvement Project, developed work plan and executed agreement.
- Participated in Hennepin County Chloride Consortium funded with Metro Watershed Based Funding

3. Annual Report

The BCWMC prepared the 2017 Annual Report as set forth in the Minnesota Rules Chapter 8410.0150. The report was submitted to the Board of Water and Soil Resources and is available online at the Bassett Creek Watershed Management Commission website at http://www.bassettcreekwmo.org/document/annual-report-budget.

4. Citizen Participation

The BCWMC encourages citizen participation, including providing an opportunity at each monthly BCWMC meeting for the Commission to hear citizen-input about agenda and non-agenda items. The BCWMC posts its meeting calendar, upcoming meeting agendas, meeting materials, and previous meeting minutes on its website (www.bassettcreekwmo.org) to provide citizens an opportunity to attend BCWMC and BCWMC Committee meetings and to monitor BCWMC actions. The BCWMC notified the public and the member cities and held a public hearing on June 21, 2018 regarding a proposed minor plan amendment to update its CIP. The BCWMC held another public hearing on August 16, 2018, regarding the 2019 proposed CIP projects: Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Implementation: DeCola Ponds B & C Improvement Project and Westwood Lake Water Quality Improvement Project. (See Section H below for further information on public involvement and education.)

5. BCWMC Website and Social Media

The BCWMC regularly maintained and updated its website which features easily accessed data and information on the priority lakes and streams and BCWMC Capital Improvement Projects, along with a meeting and event calendar, interactive maps, and a document library. A "latest news" section and "featured project" on the homepage are updated regularly. The BCWMC contracts with HDR, Inc. to host the website and provide technical assistance, as needed. (Appendix D includes website analytics.)

In 2018, the BCWMC contracted with the Lawn Chair Gardener to post weekly information on the BCWMC Facebook page. The BCWMC is working on increasing the number of followers to

further disseminate its news, educational messages, and information. (Appendix D includes social media analytics.)

6. Water Quantity

The BCWMC continued its lake- and stream-gauging program. The lake-gauging program consisted of collecting lake-level readings at Medicine Lake, Sweeney Lake, Parkers Lake, Westwood Lake, Crane Lake (Ridgedale Pond), Northwood Lake and the Theodore Wirth Park storage area (upstream of the Highway 55 control structure). Lake levels were measured once per month.

The stream-gauging program consisted of periodically surveying stages or inspecting the creek during periods of high flow. The BCWMC also participated with the Metropolitan Council on the watershed outlet monitoring program (WOMP) designed to continuously monitor flow and water quality.

7. Watershed Inspections

As of the 2014 fiscal year, the BCWMC no longer performs monthly erosion control inspections of construction sites within the watershed. The watershed inspection program includes BCMWC inspection of sites or sending communications to developers, only at the request of the member cities or the Commission. No inspections were requested or performed in 2018.

8. Flood Control Project Inspections

On October 25, 2018, the BCWMC performed its annual Flood Control Project inspections. The conditions of the flood control features were inspected and erosion, settlement, sedimentation, and structural issues were recorded, compiled into a report dated December 12, 2018, and reported to the Commission at its December 20, 2018 meeting. The BCWMC distributed its findings and recommendations to the Minnesota Department of Natural Resources, the U.S. Army Corps of Engineers (Corps), and staff at the BCWMC member cities.

The Commission engineer coordinated with Corps staff to schedule the Bassett Creek deep tunnel (2nd Street Tunnel) inspection during early November 2018. The water control plan, including lowering the middle pool of the Mississippi River, was not approved and the inspection was cancelled. Based on further coordination with the Corps, the Commission engineer scheduled the tunnel inspection for the week of February 25, 2019 to minimize navigation impacts and minimize disruptions to Xcel Energy's operation of the St. Anthony Falls hydropower dam. The Corp solicited public comments on the proposed drawdown from the local community and stakeholders. Based on public comments received, the Corps suspended its plans to drawdown the middle pool. The Commission engineer will continue to coordinate with the Corps to reschedule the tunnel inspection during 2019.

9. XP-SWMM Phase II Project & FEMA Modeling Project

At their April 16, 2015 meeting, the BCWMC approved the XP-SWMM Phase 2 work, to be phased over BCWMC fiscal years 2015 and 2016. The BCWMC continued to develop the XP-SWMM Phase 2 model during 2016. The work involved updating the watershed-wide XP-SWMM model developed in 2012 by further subdividing the watershed divides, incorporating upstream storage in ponds and wetlands, including the associated storm sewer data, using new

soils data, incorporating Atlas 14 precipitation data, adjusting vertical datum's, performing flow monitoring, calibrating the model, and preparing a report. The preliminary results of the BCWMC XP-SWMM Phase 2 modeling were presented to the BCWMC Commissioners in January 2017 and the final report and the resulting updated floodplain elevations were approved in May 2017. The 2015 Watershed Management Plan was updated to reflect the new floodplain elevations and a fact sheet was developed about the modeling project and updated floodplain elevations.

The XP-SWMM Phase 2 modeling project was partially funded by a Flood Damage Reduction Grant from the MN Department of Natural Resources (MnDNR).

In 2017, the MnDNR approached the BCWMC about updating the Federal Emergency Management Agency (FEMA) hydrologic and hydraulic modeling by leveraging the XP-SWMM Phase 2 model and creating the supporting GIS files for the Bassett Creek watershed with federal grant funds that would be administered through the MnDNR. Early in 2018, the BCWMC entered into an agreement with the MnDNR to perform this work, building on the newly completed XP-SWMM model. Updates to the XP-SWMM Phase 2 model were completed in early 2018 before beginning the FEMA modeling update. The model with the updated hydrology was submitted to the MnDNR, along with a narrative describing the changes to the model to reflect recent developments/projects in the watershed. The MnDNR authorized additional survey work that was completed in December 2018. The model was further updated to incorporate the results of the MnDNR and BCMWC (Barr) surveys. This project will continue through April 2020. The work scope is available here

10. Development Proposals

The following table shows the number of BCWMC development proposals reviewed for conformance to BCWMC policies (including applications submitted in previous years but reviewed during the current year). The BCWMC also reviewed 13 MnDNR appropriations/dewatering permit applications.

Development Proposals Reviewed per Year

2018	2017	2016	2015	2014	2013	2012	2011
38	44	44	38	35	41	37	32

See Section E: Project Reviews.

11. Review and Adoption of Municipal Plans and Adjacent WMO Plans/Plan Amendments

In 2018, the BCWMC reviewed and approved the following six local water management plans, each by resolution and determined that each plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, and that they contained the requirements for a local plan, and were consistent with the Commission's water management plan. (The local plans of the remaining three cities were approved in early 2019.)

City	Date Approved	BCWMC Resolution No.

Crystal	12/20/18	18-10
Golden Valley	9/20/18	18-06
Minneapolis	11/14/18	18-09
Minnetonka	12/20/18	18-11
New Hope	11/14/18	18-07
Plymouth	11/14/18	18-08
Medicine Lake	2/21/19	19-05
Robbinsdale	2/21/19	19-04
St. Louis Park	3/21/19	19-08

12. Aquatic Plant Management and Aquatic Invasive Species

Starting in June 2016 and culminating in June 2017, the BCWMC convened an Aquatic Plant Management/Aquatic Invasive Species (APM/AIS) Committee to determine an appropriate role for the Commission in these issues. In 2018, the Commission continued to implement the approved recommendations of the APM/AIS committee by 1) developing and adopting an AIS Rapid Response Plan, 2) partnering with Three Rivers Park District to control curly-leaf pondweed in Medicine Lake, 3) convening groups of residents from 5 lakes to discuss challenges and opportunities for better organizing, and 4) receiving an AIS Prevention Grant from Hennepin County for the purchase of a decontamination unit for use at Medicine Lake.

13. Technical Advisory Committee

Technical Advisory Committee meetings are open to the public and the meeting times and dates are posted on the BCWMC's website. The BCWMC Technical Advisory Committee (TAC) met twice in 2018 to review and work on the items below. TAC members also participated on the Capital Improvement Program Prioritization Committee (see Section 14).

- Develop the 2020 – 2024 Capital Improvement Program list
- Review a model snow and ice removal ordinance
- Make recommendation for the 2019 operating budget
- Consider requests for use of Channel Maintenance Funds

14. Capital Improvement Program Prioritization Committee

In April, a new committee was formed comprised of the Commission Administrator, Engineer, two TAC members, and six commissioners. The committee met five times during the year. The committee's work centered on determining if and how capital projects in the watershed can be further prioritized for targeted implementation so that the best project gets built in the best location at the best time.

Secondarily, the committee considered how to engage private businesses in the implementation of water quality best practices - particularly when development or redevelopment is planned.

15. Impaired Waters and Total Maximum Daily Loads (TMDL) Studies

The following water bodies in the Bassett Creek Watershed are listed in the Minnesota Pollution Control Agency's (MPCA) Draft 2018 *"Inventory of Impaired Waters"*. The inventory includes listings of (1) impaired waters that require the development of a TMDL study, (2) impaired waters that have an approved TMDL study, but are not yet meeting water quality standards, and (3) impaired waters from natural causes that do not require a TMDL study. The inventory is available at the MPCA's Impaired Waters website: http://www.pca.state.mn.us/water/tmdl/tmdl-303dlist.html.

Water Body (Lake/River ID #)	**Pollutant or Stressor (Year of Listing)**
Bassett Creek from Medicine Lake to Mississippi River (07010206-538)	Fish bioassessments (2004) Fecal coliform (2008) Chloride (2010)

Water Body (Lake/River ID #)	Pollutant or Stressor (Year of Listing)
Plymouth Creek from Headwaters to Medicine Lake (07010206-526)	E. coli (2014) Chloride (2014)[2]
North Branch Bassett Creek from Northwood Lake to Bassett Creek (07010206-552)	E. coli (2014)
Sweeney Lake (27-0035-01)	Nutrient/Eutrophication Biological indicators (2004) Chloride (2014)[2]
Wirth Lake (27-0037-00)	Nutrient/Eutrophication Biological indicators (2002)[3] Mercury in fish tissue (1998)[1] Chloride (2016)[2]
Medicine Lake (27-0104-00)	Nutrient/Eutrophication Biological indicators (2004) Mercury in fish tissue (1998)[1]
Parkers Lake (27-0107-00)	Mercury in fish tissue (1998) Chloride (2014)[2]
Spring Lake (27-0654-00)	Chloride (2014)[2]
Northwood Lake (27-0627-00)	Nutrient/Eutrophication Biological indicators (2004)

[1] The MPCA completed a statewide mercury TMDL that was approved 2007

[2] MPCA proposed several new impairment listings for chloride in September, 2013. Following responses to comments, these listings remained on the 2014 Proposed Impaired Waters List (updated 4/15/2014).

[3] See discussion below for delisting of Wirth Lake for this impairment in 2014

- **Bassett Creek Fish Bioassessment Listing—**In the Final EPA-Approved MPCA *2004 CWA 303(d) List of Impaired Waters*, the Main Stem of Bassett Creek, from Medicine Lake to the Mississippi River, was listed as impaired for fish (biota). In response to this listing, the MPCA completed fish sampling of the creek in 2008. The MPCA is currently reviewing the existing biota standards/listing criteria. The TMDL will be completed as part of the future watershed-wide TMDL (see "Watershed-wide TMDL").
- **Bassett Creek Fecal Coliform Listing and E. coli listings for Plymouth Creek and North Branch, Bassett Creek** –-In the *2008 Final TMDL List Inventory of all Impaired Waters*, Bassett Creek, from Medicine Lake to the Mississippi River, was listed as impaired for fecal coliform. In response to this listing, the BCWMC and the MPCA cooperated in collecting and analyzing E. coli samples of Bassett Creek between July 2008 and June 2010. The samples confirmed the presence of E. coli bacteria. The Bassett Creek watershed is included in the Upper Mississippi River Bacteria TMDL project. Additional data for the Upper Mississippi River E. coli TMDL was collected in 2010 and 2011, and identification of the likely sources of bacteria pollution began in 2011 and continued in 2013. Stakeholder meetings also continued in 2013. The TMDL report incorporated the draft 2014 impaired waters listings for E. coli in Plymouth Creek and North Branch, Bassett Creek, and was approved in 2014. The BCWMC provided a comment letter on the TMDL study in May, 2014, reviewed the TMDL Implementation Plan in 2015, and attended the June 25, 2015 TAC meeting to discuss the plan with MPCA staff. The final TMDL Implementation Plan was approved by the MPCA in February, 2016. The Upper Mississippi River E. coli TMDL project website maintained by the MPCA is at https://www.pca.state.mn.us/water/tmdl/upper-mississippi-river-bacteria-tmdl-project.

- **Sweeney Lake TMDL Study—**In the *Final EPA-Approved MPCA 2004 CWA 303(d) List of Impaired Waters*, Sweeney Lake was listed as impaired due to excess nutrients (phosphorus). The TMDL was approved on August 10, 2011.

- **Wirth Lake TMDL Study—**In the *Final EPA-Approved MPCA 2004 CWA 303(d) List of Impaired Waters*, Wirth Lake was listed as impaired due to excess nutrients (phosphorus in amounts greater than the state's goal of 40 micrograms per liter). The Wirth Lake TMDL and implementation plan were approved October 25, 2010. The implementation plan identified one project—modifying the Wirth Lake outlet structure to prevent flow from Bassett Creek to Wirth Lake during flood periods—to achieve the annual load reductions prescribed in the TMDL. The Wirth Lake Outlet Modification Project is estimated to reduce phosphorus loading to the lake by an average of 55 pounds per year. The project was substantially completed in November 2012. A detailed comparison of the lake water quality during the past ten years with MPCA's eutrophication standards revealed that Wirth Lake was no longer impaired for excess nutrients. A request for re-categorization was submitted to MPCA in October, 2013. In December, 2013 the BCWMC submitted a technical memorandum to MPCA requesting delisting of Wirth Lake for nutrient/eutrophication biological indicators. The memo provided a detailed water quality evaluation for MPCA consideration during the formal comment period for development of the draft 2014 impaired waters list. MPCA responded to the delisting request by removing Wirth Lake from the Impaired Waters list in July, 2014.

- **Medicine Lake TMDL Study—**In the *Final EPA-Approved MPCA 2004 CWA 303(d) List of Impaired Waters*, Medicine Lake was listed as impaired due to excess nutrients (phosphorus). The TMDL and implementation plan were approved on February 8, 2011.
- **Watershed-wide TMDL —**In 2011, the MPCA indicated that funding for a watershed-wide TMDL for the Bassett Creek watershed would be available in 2020 or later. The watershed-wide TMDL would cover the current Bassett Creek and Northwood Lake impairments, along with any future listings between now and 2020
- **Twin Cities Metro Area (TCMA) Chloride Project** —In the *2014 Draft TMDL List Inventory of all Impaired Waters*, MPCA proposed several new impairment listings for chloride in September, 2013. Following responses to comments from BCWMC, five listings (tabulated above) remained on the 2014 Proposed Impaired Waters List (updated 4/15/2014). Based on the available monitoring data for chloride, three BCWMC water bodies—Northeast drainage to Medicine Lake, the Rockford Road drainage to Medicine Lake and Medicine Lake, were placed in a category of high risk waters, which can be viewed as a watch list for future changes. The MPCA recently finalized the TCMA Chloride Management Plan that is intended to balance the public safety needs for deicing with attainment of the chronic and acute water quality standards for chloride. The BCWMC provided comments on the draft TMDL Report and Chloride Management Plan in August 2015. The management plan will include a performance-based approach for meeting chloride TMDLs and is also intended to protect water bodies with water quality that is currently better than the standard. A winter maintenance assessment tool has recently been developed to support TMDL implementation efforts. The Chloride TMDL and road salt/water quality project website maintained by the MPCA is at https://www.pca.state.mn.us/water/road-salt-and-water-quality.

- **TMDL Implementation Reporting** Although the BCWMC is not a MS4, the Wirth Lake, Medicine Lake, and Sweeney Lake TMDLs assigned the BCWMC a role in the implementation of the TMDLs. For example, the Medicine Lake TMDL calls for the BCWMC to serve as the "convener of action for the categorical TMDL, but not as a responsible entity." The BCWMC's interpretation of this role is that the BCWMC should track implementation of the TMDLs, which would likely include the following tasks:
    - Reporting on TMDL implementation activities to the MPCA. TMDL progress reports will be due one year after the MPCA issues the new MS4 permit. However, the new MS4 permit was not issued in 2012, so the BCWMC did not develop the implementation reports. The new MS4 permit became effective on August 1, 2013, which means the TMDL progress reports will be due each year after that, in June.
    - Estimating and reporting progress towards achieving the assigned wasteload allocations. The BCWMC's watershed P8 model, originally completed in 2013 and updated annually, is an essential tool for estimating reductions in phosphorus loading.
    - Monitoring lake water quality on an annual basis. See Section G "2018 Water Quality Monitoring Data and Studies" regarding monitoring of these lakes in 2018.
    - Tracking implementation of projects and quantifying progress towards meeting the TMDL allocations for the MS4s in the impaired watersheds.

E. BCWMC Project Reviews

The following table, *Proposed projects reviewed by BCWMC in fiscal year 2018* includes development proposals, Wetland Conservation Act, and other plans that were submitted to the BCWMC for review. The list does not include review of capital improvement projects and review of MnDNR appropriations/ dewatering permits.

Proposed Projects Reviewed by BCWMC in FY 2018 [1]

Application Form	Project Name	Date Submitted	City	Type
2016-17	Southwest Light Rail Transit (SWLRT) - Resubmittal	1/28/2019	MPLS	Street/ Hwy/ Trails/ Utility/ Municipal
2017-07	212 James Ave N (Leef Bldg.)	3/28/2017	MPLS	Commercial/ Industrial/ Institutional
2017-19	CSAH 66 Culvert Replacement	5/24/2017	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2017-37A	**Mpls Impound Lot Facility Improvements and Temp Surcharge**	**4/27/18**	**MPLS**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2017-37	**Mpls Impound Lot Facility Improvements**	**10/27/2017**	**MPLS**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2017-40	Request for Diversion of Surface Water Runoff for GV 2018 PMP Project	1/2/2018	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2018-01	Fretham 26th Addition	1/31/2018	PLY	Single-family Subdivision
2018-02	Hwy 55 Frontage Road Reconstruction	2/8/2018	PLY	Street/ Hwy/ Trails/ Utility/ Municipal

Application Form	Project Name	Date Submitted	City	Type
2018-03	Buhler Food App Centre Addition	2/14/2018	PLY	Commercial/ Industrial/ Institutional
2018-04	**Golden Valley 2018 PMP**	**2/23/2018**	**GV**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2018-05	Luce Line Regional Trail Reconstruction	3/9/2018	PLY	Street/ Hwy/ Trails/ Utility/ Municipal
2018-06	East Medicine Lake Park	3/9/2018	PLY	Street/ Hwy/ Trails/ Utility/ Municipal
2018-07	Toledo-Scott Ave Reconstruction	3/12/2018	ROB	Street/ Hwy/ Trails/ Utility/ Municipal
2018-08	**Kilmer Park Street Reconstruction**	**3/16/2018**	**PLY**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2018-09	CenterPoint Energy 2018 MBLC	4/9/2018	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2018-10	NW Islamic Community Center	4/11/2018	PLY	Commercial/ Industrial/ Institutional
2018-11	Boone Avenue North Mill (CenterPoint)	4/30/2018	NH	Street/ Hwy/ Trails/ Utility/ Municipal
2018-12	**Bassett Creek Park Playground**	**4/30/2018**	**MPLS**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2018-13	Vicksburg Business Center Parking	5/21/2018	PLY	Commercial/ Industrial/ Institutional
2018-14	Meadowbrook Elementary NW Addition	5/24/2018	GV	Commercial/ Industrial/ Institutional
2018-15	TH 55 West Improvements	5/24/2018	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2018-16	Ridgedale Active Adult Apartments	5/24/2018	MTKA	Multi-residential
2018-17	Mister Car Wash Parking Reconf	5/25/2018	PLY	Commercial/ Industrial/ Institutional
2018-18	2018 MBLC Golden Valley Road (CenterPoint)	5/30/2018	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2018-19	Plymouth Commons Apartments	6/26/2018	PLY	Multi-residential
2018-20	MnDOT Metro Ponds Reconstruction	6/8/2018	MTKA	Street/ Hwy/ Trails/ Utility/ Municipal
2018-21	MCES G.V. Interceptor Rehab	7/13/2018	GV	Street/ Hwy/ Trails/ Utility/ Municipal
2018-22	Sanitary & SS Rehab 15th Ave & TH55	7/26/2018	PLY	Street/ Hwy/ Trails/ Utility/ Municipal
2018-23	Westwood Hills Nature Center	7/30/2018	SLP	Street/ Hwy/ Trails/ Utility/ Municipal
2018-24	**Blue Line LRT**	**8/7/2018**	**GV**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2018-25	Starbucks Building Shell and Future Apartment Building	9/19/2018	PLY	Multi-residential
2018-26	Vicksburg Square	10/2/2018	PLY	Commercial/ Industrial/ Institutional

Application Form	Project Name	Date Submitted	City	Type
2018-27	Neighborhood Drainage Improvements	10/18/2018	PLY	Street/ Hwy/ Trails/ Utility/ Municipal
2018-28	**Ridgedale Exec Apartments**	**10/29/2018**	**MTKA**	**Multi-residential**
2018-29	Starbucks Annapolis Ln Plymouth	11/27/2018	PLY	Commercial/ Industrial/ Institutional
2018-30	Winpark Dr Infrastructure Impr.	12/7/2018	NH	Street/ Hwy/ Trails/ Utility/ Municipal
2018-31	**Rockford Rd/I-494 Interchange**	**1/9/2019**	**PLY**	**Street/ Hwy/ Trails/ Utility/ Municipal**
2018-32	Plymouth Medical Office Bldg.	1/28/2019	PLY	Commercial/ Industrial/ Institutional

[1]Projects in **bold** were presented for BCWMC review and comment at a BCWMC meeting.

F. Water Quality Monitoring Data and Studies

The following water quality monitoring and water quality studies were performed in 2018:

- **Sweeney Lake Aeration Study –** In 2017, the BCWMC began a study of the effects of the Sweeney Lake aeration system on lake water quality that included additional in-lake monitoring, sediment testing, and data analysis. In 2018, the study was completed and an informational meeting was held to review study results with lake residents. (A study fact sheet is included in Appendix B.

- **Schaper Pond Effectiveness Monitoring –** In late 2015, the City of Golden Valley installed a floating water baffle in Schaper Pond to improve the pond's phosphorus removal and reduce the phosphorus loading to Sweeney Lake (BCWMC CIP project SL-3). In 2017, the BCWMC monitored the inflows and outflow from Schaper Pond to understand the impact of the baffle installation on Schaper Pond's ability to remove pollutants. In 2018, the Commission results of the effectiveness monitoring were presented and further analysis of the carp population began.

- **Citizens Assisted Lake Monitoring Program (CAMP) —** The BCWMC participated with the Metropolitan Council Environmental Services (MCES) in its citizen-assisted lake-monitoring program (CAMP). In 2018, citizen volunteers monitored the following lakes: Twin Lake and Sweeney Lake in Golden Valley, Northwood Lake in New Hope, two sites on Medicine Lake in Medicine Lake and Plymouth, Parkers Lake and Lost Lake in Plymouth, and Westwood Lake in St. Louis Park. Reports that include CAMP monitoring results can be found on the Met Council website at: https://metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management/Lake-Monitoring-Analysis.aspx?source=child

- **Bassett Creek WOMP Station**—Stream monitoring was performed in cooperation with the Metropolitan Council Environmental Services (MCES) as part of the stream monitoring and watershed outlet monitoring program (WOMP). The BCWMC contracts with Wenck & Associates to perform monitoring activities at this station. http://www.metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management/Stream-Monitoring-Assessment.aspx?source=child

- BCWMC Stream Monitoring – In 2018, the Commission began a new monitoring program aimed at more fully assessing the flow and water quality in its major creeks. The Commission installed seasonally-permanent monitoring equipment on the North Branch Bassett Creek in Crystal and collected 16 grab samples and 16 composite event samples were collected and analyzed for nutrients, solids, bacteria, chlorides, dissolved oxygen, pH, conductivity, etc. Additionally, biotic index monitoring was performed to correspond with stream water quality monitoring. This included macroinvertebrate monitoring and a habitat survey, macroinvertebrate analyses (microscopic identification/ enumeration), computation of HBI and M-IBI, and trend analyses for the North Branch of Bassett Creek site and 2 sites on the Main Stem of Bassett Creek. Stream monitoring on the North Branch will continue in 2019 with a final report expected in early 2020.

- **Routine Lake Monitoring—**In 2018, the BCWMC monitored the water quality of Parkers Lake in Plymouth and Westwood Lake in St. Louis Park. Water samples were collected from the deepest location in each lake on six occasions from April through September 2018 and analyzed in the laboratory for total phosphorus, soluble reactive phosphorus, total nitrogen, chlorophyll *a*, and chlorides. Dissolved oxygen, temperature, specific conductance, pH, oxidation reduction potential (ORP), Secchi disc transparency (Secchi depth), and turbidity were measured in the field. On five occasions from June through September, water samples were collected and analyzed for phytoplankton (algae) and zooplankton (microscopic crustaceans). An aquatic plant survey was also performed on two occasions, in June and August.

  Reports for each lake are included in Appendix B and are available on the BCWMC website.

- **Monitoring by Partners –** In 2018, Medicine Lake in Plymouth and Wirth Lake in Golden Valley were monitored by the City of Plymouth/Three Rivers Park District and the Minneapolis Park and Rec Board, respectively.

- **River Watch Program**—The BCWMC continues to support the Hennepin County Environmental Services' River Watch Program. The program began in 1995 and uses student volunteers to conduct biological monitoring as a means of monitoring water quality. The grading scale used in River Watch takes into account three major biotic indices used routinely in biological monitoring programs including the Family Biotic Index, EPT (Ephemeroptera, Plecoptera, and Trichoptera), and the number of families.

  Students have been monitoring Bassett Creek since 1999. There were two River Watch sites in the Bassett Creek watershed in 2018. The *Hennepin County River Watch Report 2018* is available here.

G. Watershed Communication/Public Education

In accordance with Minnesota Rules, Chapter 8410.0100, Subpart 4, the BCWMC utilized the following information sources for providing information to the general public:

- **Improvements and Development Requirements—**The document *Requirements for Improvements and Development Proposals*, prepared by the BCWMC (updated in 2017), is posted for use and reference on the BCWMC's website at http://www.bassettcreekwmo.org/developer.

- **Website—**The BCWMC launched a new user-friendly website in 2016 and maintained the information including latest news, contact list, meeting calendar, meeting materials, watershed plan, data, and projects. In 2018, there were 4,356 unique users and over 7,000 sessions. A copy of the website Usage Report from January 1, 2018, through December 31, 2018, is included in Appendix D.

- **BCWMC Meeting Packet—** Each month in 2018 the BCWMC posted electronic all meeting materials on its website, e-mailed the link to approximately 40 parties, and mailed paper copies of materials to those requesting them (approximately 12 people).

- **Publications—**The Commission published its public hearing notices in its official publication, *Finance and Commerce* as well as other publications including the Sun Post and Minneapolis neighborhood newsletters.

- **West Metro Water Alliance (WMWA) Membership** – The BCWMC continued its participation in WMWA along with several watershed management and other water-related organizations in the west Metro area. Through WMWA, these organizations collaborated on educational campaigns including the Watershed PREP program aimed at educating 4th grade students about water resources and the impacts of stormwater. Watershed PREP has three individual lessons meeting State education standards. Lesson 1, What is a Watershed and Why do We Care? provides an overview of the watershed concept and is specific to each school's watershed. It describes threats to the watershed. Lesson 2, Water Cycle - More than 2-dimensional, describes the movement and status of water as it travels through the water cycle. Lesson 3, Stormwater Walk, investigates movement of surface water on school grounds. In 2018, 143 classes totaling 3,593 students participated in Lesson 1. Of those classes, 1,755 students also participated in Lesson 2. In all, 1,734 students in the Bassett Creek Watershed participated in these lessons in 2018. In 2018 WMWA published three newsletters called Water Links. The newsletter was sent via email to hundreds of subscribers across Hennepin County. WMWA also continued its "Pledge to Plant" campaign aimed at engaging residents and businesses in converting turf or hard surfaces to native plantings http://www.westmetrowateralliance.org/ .

- **Metro WaterShed Partners Membership** —The BCWMC participated as a member of the Metro WaterShed Partners as a general supporter of the program and a financial supporter of the Metro Clean Water Minnesota Media Campaign. Metro Watershed Partners maintains a listserve and a website as forums for information sharing, holds monthly meetings for members to collaborate, and displays an exhibit at the State Fair to educate the public about watersheds. In 2018, the Clean Water Minnesota Media Campaign began

featuring monthly, seasonally appropriate stories about metro area residents taking action at home and in their lives to keep water clean. These professionally produced stories and photos were used by partners across a variety of media platforms. The BCWMC used these stories in newsletters and in social media. Find more information at www.cleanwatermn.org .

- **Participation in Community Events and Meetings** – The BCWMC used its educational display materials (including watershed map, banners, and bean bag toss game) and participated in the Golden Valley Arts and Music Festival (September 15th), and a restoration event at Westwood Nature Center. BCWMC volunteers talked with event participants, provided education on water resources, and gave away educational items like dog waste disposal bag dispensers, watershed maps, cups showing the amount of deicer needed for a certain space, native seeds, and written educational materials.

- **Parking Lot & Winter Maintenance Training Course** – On September 26th the BCWMC hosted a free "Level 1 Winter Maintenance for Roads" certification training course. Fifteen city and school district staff the 5-hour course. Participants took an exam to become certified in level one "smart salting."

- **Partnership with Metro Blooms for Harrison Neighborhood Project** – The BCWMC continued its partnership and support of Metro Blooms' Harrison Neighborhood Project. The project aims to engage residents, train youth, and install water quality practices in Crystal' Near North neighborhood. The BCWMC received a $100,000 grant from the Met Council for this project on behalf of Metro Blooms in 2016. The grant funded project was completed in 2018. (See final grant report.) The BCWMC was also awarded a Clean Water Fund grant from the MN Board of Water and Soil Resources to engage businesses in the Harrison Neighborhood and install BMPs. That project got underway in 2018.

- **Commissioner Training Sponsorship** – The BCWMC reimbursed Commissioners for registration costs to attend the Road Salt Symposium, Workshop on the Water Event, Aquatic Invaders Summit, State of the Water Conference, and the Minnesota Association of Watershed Districts Annual Meeting.

- **Social Media** – The BCWMC continued with weekly posts on its Facebook page. The page currently has 245 followers. In 2018, the BCWMC made 106 posts and reached 103,652 people, including a video on AIS produced by the BCWMC and viewed by 6,500 people. BWCMC continues to work on growing its Facebook followers.

  Financial Sponsorship for Organizations – The BCWMC financially sponsored Metro Blooms workshops and the Children's Water Festival.

H. Professional Services Proposal

The BCWMC last solicited letters of interest for legal and engineering/technical consulting services in December 2018. The BCWMC received one proposal from a legal firm and three proposals from engineering firms. The BCWMC did not take action changing its legal firm from Kennedy Graven nor its engineering consultant from Barr Engineering. As per MN State Statute, the BWCMC will solicit proposals again in 2020.

I. Assessment of Changes in Fund Balance

A discussion of the fund balance is included in the BCWMC's annual financial audit report. A copy of the annual audit report is available on the BCWMC website at: http://www.bassettcreekwmo.org/document/annual-report-budget.

J. Wetland Conservation Act

1991 Wetland Conservation Act—The interim program of the 1991 Wetland Conservation Act was effective through December 31, 1993. On January 1, 1994, the permanent program of the 1991 Wetland Conservation Act became effective. Each municipality was required to designate the local government unit (LGU) responsible for administrating the interim program and the permanent program of the 1991 Wetland Conservation Act. The following table indicates the LGU for each municipality.

Municipality	Permanent Program (Effective 1/1/94)
Crystal	Crystal
Golden Valley	Golden Valley
Medicine Lake	BCWMC
Minneapolis	Minneapolis
Minnetonka	Minnetonka
New Hope	New Hope
Plymouth	Plymouth
Robbinsdale	BCWMC
St. Louis Park	BCWMC

BCWMC = Bassett Creek Watershed Management Commission

In 2018, the BCWMC submitted to BWSR its WCA annual reporting form covering all 2018 WCA-related activities within the municipalities for which BCWMC is the LGU. The other municipalities were responsible for submitting the annual reporting form to BWSR for their respective municipality.

Wetland Mitigation Policy—The BCWMC's wetland management policies specify a preference for wetland mitigation to be performed within the same subwatershed as the impacted wetland.

II. 2019 Projected Work Plan

A. Capital Improvements Program (CIP)—The BCWMC will continue to implement its capital improvements program. In 2019, this work will include:

1. **Capital Improvement Program and Prioritization**—The BCWMC will review and update its 5-year capital improvement program, and will finalize its work to improve the process of project prioritization.

2. **Progress on CIP projects**:

- Continue studies of carp that may be impacting the effectiveness of the Schaper Pond Diversion Project.
- Seek alternatives for the Lakeview Park Pond Project (ML-8) in Golden Valley.
- Receive a final report the Main Stem Bassett Creek Restoration Project in Golden Valley (CR2015) 10th Avenue to Duluth St.
- Assess the condition of Twin Lake and determine the possible need for a second dose of alum (Golden Valley) (TW-2)
- Continue vegetation management along of the Plymouth Creek Restoration Project (CR2017-P) in Plymouth from Annapolis Lane extending 2,500 feet upstream and continue submitting Clean Water Fund grant reports.
- Begin construction of the Main Stem Channel Restoration Project (CR2017-M) in Minneapolis from Cedar Lake Road to Irving Ave.
- Construct the Bassett Creek Park Pond Dredging Project, Phase I (BCP-2) in Crystal.
- Begin construction of the Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Project: DeCola Ponds B & C Improvement Project, Golden Valley.
- Begin Construction of the Westwood Lake Improvement Project
- Finalize the feasibility study for water quality improvements in Bryn Mawr Meadows, Main Stem Watershed (BC-5), Crane Lake Improvement Project (CL-3), and Jevne Park Water Quality Improvement Project (ML-21)
- Develop a work plan to implement Federal 319 grant for Sweeney Lake alum treatment and carp management project

3. **Begin feasibility studies for the following BCWMC 2021 CIP projects:**

- Mt. Olivet Stream Restoration Project (ML-20)
- Project to dredge accumulated sediment in Main Stem Bassett Creek just north of Hwy 55, Wirth Park (BC-7)
- Parkers Lake Drainage Improvement Project (PL-7)

4. **Grant Administration:**

   - Submit final grant report for Met Council Stormwater Grant for Harrison Neighborhood Project
   - Submit progress reports for the BWSR Clean Water Fund Grants for the Plymouth Creek Restoration Project and the Harrison Neighborhood Community Engagement Project.
   - Submit interim reports to the MnDNR for the FEMA modeling project for improved floodplain modeling and mapping.
   - Submit interim reports to Hennepin County for the Emergency Response Fund grant for the Main Stem Erosion Repair Project and the Opportunity Grant for the Plymouth Creek Restoration Project.
   - Submit invoices and final report for the Hennepin County AIS Prevention Grant.

B. Watershed Management Plan—In 2019 the BCWMC does not plan to seek a minor or major plan amendment.

C. Additional Monitoring, Studies, and Programs

1. **Water Quantity—**The BCWMC will perform its lake- and stream-gauging program. The lake-gauging program will encompass Medicine Lake, Sweeney Lake, Parkers Lake, Westwood Lake, Crane Lake (Ridgedale Pond), Northwood Lake, Bassett Creek Park Pond and Theodore Wirth Park Storage area upstream of the TH 55 control structure. Two readings per month will be taken during the period April 1 – September 30; one reading per month will be taken outside this period. The stream-gauging program will consist of periodically surveying stages or inspecting the creek during periods of high flow. The program also includes periodic surveys of benchmarks.

2. **Schaper Pond Effectiveness Monitoring –** The BCWMC will finalize the study of the effectiveness of the Schaper Pond Diversion Project and will present results.

3. **Flood Control Project Inspection**—The BCWMC will perform its annual flood control project inspection program, as set forth in the Bassett Creek Flood Control Project Operations and Maintenance Manual.

4. **Municipal Plan Review**—The BCWMC will review of the member cities' local water management plans and plan amendments, and BCWMC review of adjacent WMO plans and plan amendments, as needed.

5. **Water Quality—** Proposed water quality tasks for 2019 include:

   - ***Water Quality Monitoring:*** The BCWMC will perform detailed water quality monitoring as laid out it its Water Monitoring Program http://www.bassettcreekwmo.org/application/files/7914/4676/6436/Appendix_A_Monitoring_Plan.pdf In 2019, the BCWMC will monitor Cavanaugh Pond in Plymouth and Northwood Lake in New Hope. The BCWMC will also continue its

intensive stream monitoring program with a site on the North Branch of Bassett Creek.

- ***Citizens Assisted Monitoring Program (CAMP):*** The BCWMC has entered into an agreement with the Metropolitan Council Environmental Services (MCES) to participate in this program in 2019. Volunteer citizens will monitor the following lakes in 2019: Twin Lake and Sweeney Lake in Golden Valley, two sites of Medicine Lake in the cities of Medicine Lake and Plymouth, Northwood Lake in New Hope, Westwood Lake in St. Louis Park, and Parkers Lake and Lost Lake in Plymouth.

- ***Watershed Outlet Monitoring Program (WOMP):*** The BCWMC is the local sponsor of this monitoring site in cooperation and with funding support from the Metropolitan Council. The Metropolitan Council Environmental Services (MCES) will provide up to $5,000 per year in financial support between January 1, 2018, and December 31, 2019, to the BCWMC for operating the station and maintaining the rating curve. The BCWMC entered into an agreement with a Wenck & Associates to ensure the monitoring equipment is in working order, conduct routine maintenance of the WOMP site and equipment, collect samples, make in-situ field measurements, and coordinate sample delivery to MCES in 2019. BCWMC staff will continue to maintain the rating curve.

- ***River Watch Program:*** The BCWMC will participate in the River Watch program managed by Hennepin County Environmental Services (HCES); up to four sites on Bassett Creek will be sampled. HCES will provide a final report of the sampling results to the BCWMC.

6. **Development Reviews—**The BCWMC will review development proposals in the watershed for conformance to water quality and flooding policies.

7. **Channel Maintenance Fund**—The BCWMC will continue to fund its Creek and Streambank Trunk System Maintenance, Repair and Sediment Removal Fund (the Channel Maintenance Fund). The BCWMC collects $25,000 annually for the fund through an assessment paid by the member cities.

8. **Flood Control Long-Term Maintenance Fund**—The BCWMC established a long-term maintenance fund to be used to repair structures associated with the BCWMC Flood Control Project. The BCWMC collects $25,000 annually for the fund through an assessment paid by the member cities. The fund balance is not to exceed $1 million.

9. **FEMA Modeling Project** – The BCWMC will continue to implement the MnDNR-grant funded project to improve floodplain modeling and mapping for FEMA.

10. **APM/AIS Work** – The BCWMC will implement recommendations of the APM/AIS committee including treating curly-leaf pondweed in Medicine Lake, coordinating with Three Rivers Park District for level II AIS inspectors for French Regional Park.

11. **TMDL Implementation Reporting**— The EPA approved the Wirth Lake TMDL on October 25, 2010, the Medicine Lake TMDL on February 8, 2011, and the Sweeney Lake TMDL on August 10, 2011. These TMDLs assigned categorical waste load allocations, which means a

watershed approach is to be taken in implementing water quality improvement measures in these watersheds. In 2019, the BCWMC will continue tracking the implementation of the Medicine Lake, Sweeney Lake and Wirth Lake TMDLs. The BCWMC role will likely include the following tasks:

- Assisting the cities with reporting on TMDL implementation activities to the MPCA.
- Estimating and reporting progress towards achieving the assigned wasteload allocations. The BCWMC's watershed P8 model, completed in 2013, will be an essential tool for estimating reductions in phosphorus loading.
- Monitoring lake water quality on an annual basis. See "Water Quality" bullet above regarding monitoring of these lakes in 2019.

D. Education and Outreach

The BCWMC will implement its 2019 education and outreach plan (as approved by the Commission). This plan includes financial contributions (and some staff or Commissioner participation in) to the following organizations and programs: Metro WaterShed Partners, River Watch, Citizen Assisted Monitoring Program, Metro Blooms, West Metro Water Alliance (includes staff participation), and the Children's Water Festival. The plan also includes funding for Commissioner registration fees for training or programs, and participation in community events such as the Golden Valley Arts and Music Festival.

The BCWMC will celebrate its 50th anniversary in 2019 with development of a booklet about the Commission's history and its impact over 50 years and with a watershed tour and celebration event on June 27th.

III. Annual Financial Report

The 2018 fiscal year for the Bassett Creek Watershed Management Commission (BCWMC) commenced on February 1, 2018 and ended January 31, 2019.

A. 2018 Approved Budget

The approved operating budget for fiscal year 2018 was $664,050. Each member's contribution toward the annual budget is based 50 percent on the total area of the municipality within the watershed and 50 percent on the tax capacity of the area within the watershed. A copy of the 2018 operating budget, 2018 revenues, and 2018 member-city assessment table are located in Appendix A.

B. Report of Revenues

See the Financial Audit Report available online at http://www.bassettcreekwmo.org/document/annual-report-budget.

C. Report of Expenditures

See the Financial Audit Report available online at http://www.bassettcreekwmo.org/document/annual-report-budget.

D. Financial Audit Report

The annual audit report for the year ending January 31, 2019, was performed by Malloy Montague Karnowski Radosevich & Co., P.A. A copy of the annual audit report is available online at: http://www.bassettcreekwmo.org/document/annual-report-budget.

Appendix A
2018 Financial Information

- 2018 Budget and Notes
- 2018 Expected Revenues
- 2018 Member City Assessments

2018 Operating Budget

Approved August 17, 2017

Bassett Creek Watershed Management Commission

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

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

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

Water Quality Monitoring Tasks and Budget

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

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

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

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

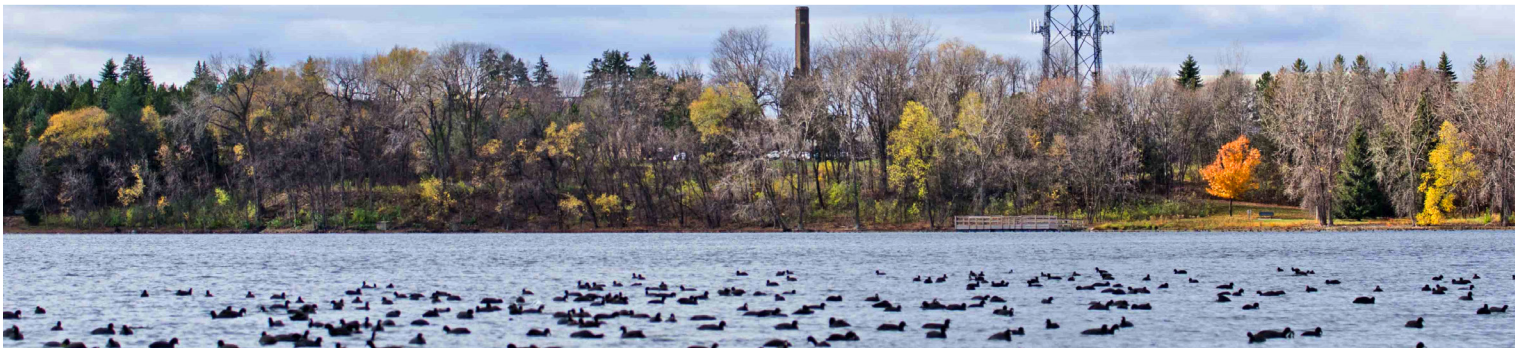
[2] Requires reducing Long Term Flood Control Project Amount by $23,000.

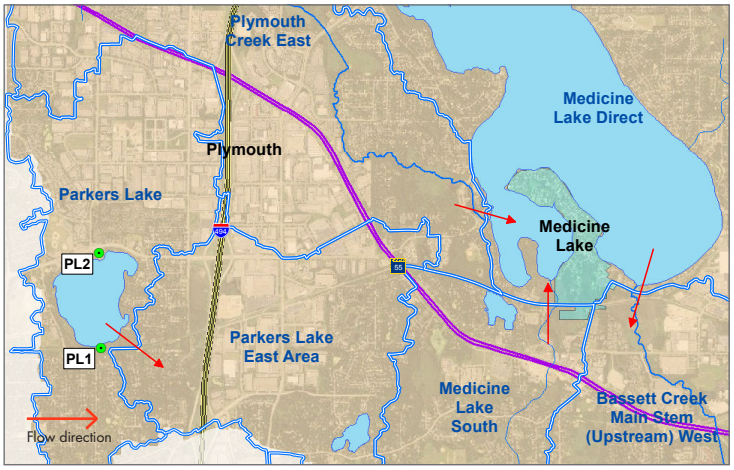
Bassett Creek Watershed Management Commission
2018 Assessments

Community	For Taxes Payable in 2017	2017 Percent	Current Area Watershed	Percent	Average	2012 Assessment	2013 Assessment	2014 Assessment	2015 Assessment	2016 Assessment	2017 Assessment	2018 Assessment
	Net Tax Capacity	of Valuation	in Acres	of Area	Percent	$461,045	$515,016	$490,345	$490,345	$490,345	$500,000	$515,050
Crystal	$7,808,179	5.36	1,264	5.09	5.22	$24,941	$27,424	$25,504	$25,868	$25,771	$25,704	$26,904
Golden Valley	$37,384,452	25.66	6,615	26.63	26.14	$115,080	$129,126	$123,033	$121,964	$127,675	$131,270	$134,649
Medicine Lake	$972,923	0.67	199	0.80	0.73	$3,484	$3,909	$3,479	$3,543	$3,600	$3,561	$3,783
Minneapolis	$9,756,021	6.70	1,690	6.80	6.75	$32,661	$35,236	$32,953	$33,235	$32,885	$33,609	$34,763
Minnetonka	$9,373,403	6.43	1,108	4.46	5.45	$24,920	$28,464	$27,402	$28,121	$27,536	$28,199	$28,053
New Hope	$7,785,981	5.34	1,252	5.04	5.19	$25,533	$27,648	$26,479	$25,681	$25,627	$25,917	$26,740
Plymouth	$62,940,854	43.20	11,618	46.77	44.98	$209,101	$235,310	$224,959	$225,159	$220,974	$224,531	$231,682
Robbinsdale	$2,609,710	1.79	345	1.39	1.59	$8,022	$8,479	$7,743	$7,587	$7,843	$7,747	$8,189
St. Louis Park	$7,067,617	4.85	752	3.03	3.94	$17,303	$19,420	$18,792	$19,184	$18,433	$19,463	$20,287
TOTAL	**$145,699,140**	**100.00**	**24,843**	**100.00**	**100.00**	**$461,045**	**$515,045**	**$490,345**	**$490,345**	**$490,345**	**$500,000**	**$515,050**

Appendix B
2018 Lake Monitoring Reports

Parkers Lake 2018 water quality monitoring





About Parkers Lake

BCWMC classification	Priority-1 deep lake
Watershed area	1,065 acres
Lake size	97 acres
Average depth	12 feet
Maximum depth	37 feet
Ordinary high water level	935.9 feet (NGVD29)
Normal water level	934.2 feet (NAVD88)
Downstream receiving waterbody	Medicine Lake
Location (city)	Plymouth
MPCA impairments	Chloride, mercury in fish tissue
Aquatic invasive species	Eurasian watermilfoil, curly-leaf pondweed
Public access	Yes (boat launch)

Monitoring water quality in Parkers Lake

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes since 1972. This monitoring is done to detect changes or trends in water quality and evaluate the effectiveness of efforts to preserve or improve water quality. A summary of 2018 monitoring efforts on Parkers Lake is provided below; more comprehensive information can be found on pages 2–7.

At a glance: 2018 monitoring results

In 2018, the BCWMC monitored Parkers Lake for:

- Water chemistry (nutrients, chlorophyll *a*, chloride).
- Water measurements (e.g., clarity, dissolved oxygen).
- Phytoplankton and zooplankton (microscopic plants and animals).
- Macrophytes (aquatic plants).

Results indicate that Parkers Lake meets Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for Secchi disc (measure of clarity), total phosphorus, and chlorophyll *a*. The lake failed to meet water quality standards for chloride. According to the Minnesota Department of Natural Resources (MDNR) plant IBI, a measure of aquatic plant health, the lake's plant community did not meet standards in August 2018.

Recommendations

- Identify management measures to reduce chloride runoff from the lake's watershed, particularly on the north side of the lake
- Identify management measures to improve the quality of the lake's plant community and survey vegetation annually to facilitate early detection of aquatic invasive species
- Continue water quality and biological monitoring at a 3-year frequency

Water chemistry monitoring: 2018

Total phosphorus levels

While phosphorus is necessary for plant and algae growth, excessive phosphorus leads to excessive growth, decreased water clarity, and water quality impairment.

- **BCWMC/MPCA standard:** 40 micrograms per liter (µg/L) or less.
- **Range:** Total phosphorus concentrations ranged from a low of 17 µg/L in late August to a high of 39 µg/L in early September.
- **Summer average:** 28 µg/L (met BCWMC/MPCA standard).

Chlorophyll *a* levels

- Chlorophyll *a* is a pigment in algae and generally reflects the amount of algae growth in a lake. Clear lakes generally have chlorophyll *a* levels less than 15 micrograms per liter (µg/L).
- **BCWMC/MPCA standard:** 14 µg/L or less.
- **Range:** Chlorophyll *a* concentrations ranged from a low of 0.5 µg/L in mid-May to a high of 15 µg/L in July and October.
- **Summer average:** 11.8 µg/L (met BCWMC/MPCA standard.

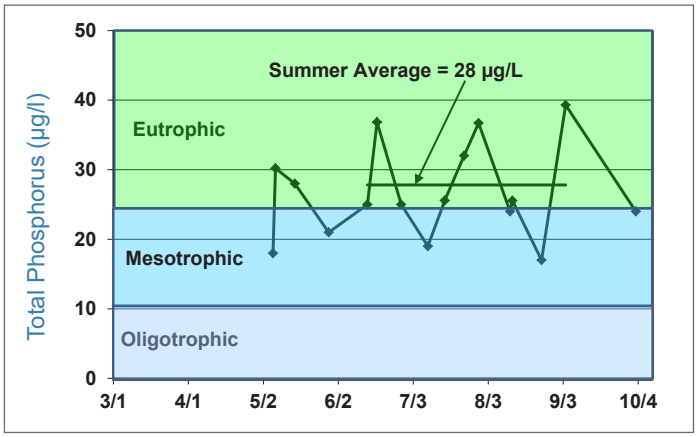
Water clarity

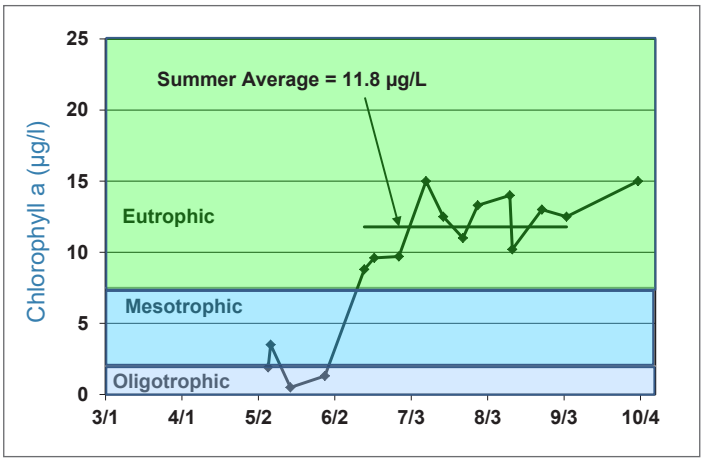
Water clarity is often affected by the amount of algae or other photosynthetic organisms in a lake. It is usually measured by lowering an 8-inch "Secchi" disc into the lake (see bottom photo); the depth at which the disc's alternating black-and-white pattern is no longer visible is considered a measure of the water's transparency.

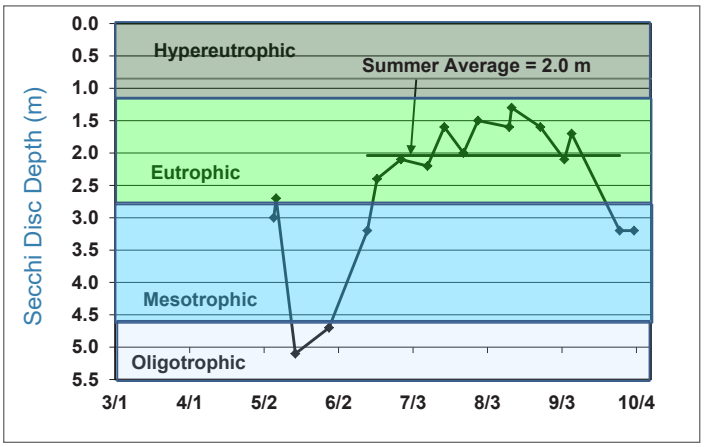
- **BCWMC/MPCA standard:** 1.4 meters or more.
- **Range:** From 5.1 meters in mid-May to 1.3 meters in mid-August.
- **Summer average:** 2.0 meters (met BCWMC/MPCA standard).

Definitions

- **Hypereutrophic:** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low transparency
- **Eutrophic:** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae and other organisms; decay of algae can reduce lake oxygen levels
- **Mesotrophic:** Lake condition characterized by medium levels of nutrients and clear water
- **Oligotrophic:** Lake condition characterized by a low level of dissolved nutrients, high oxygen content, and sparse algae growth







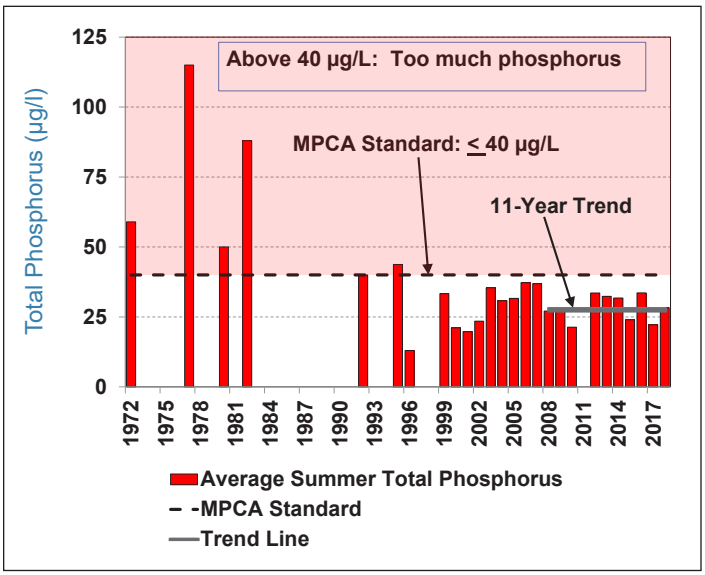
Water chemistry monitoring from 1972–2018: historical trends

Water quality in Parkers Lake has been monitored since 1972. Data includes information collected through the Citizen Assisted Monitoring Program (CAMP). Summer averages (June through September) of total phosphorus, chlorophyll a, and Secchi disc depth from 1972–2018 are shown in the figures at right. At least one of these parameters failed to meet BCWMC/MPCA standards from 1972 through 1999. Since 2000, summer average total phosphorus and Secchi disc values have met the BCWMC/MPCA standard. Summer average chlorophyll a concentrations failed to meet the standard in 2003, 2005, 2007, 2014, and 2015.

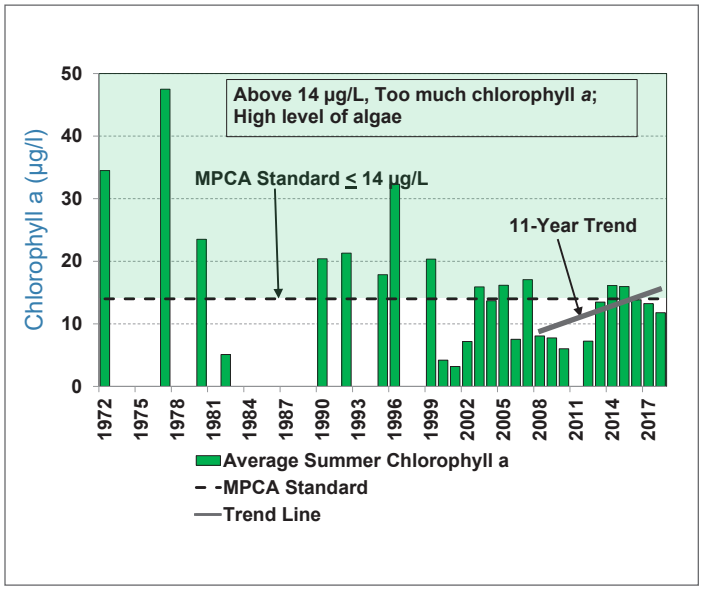
Overall, from 1972 through 2018, 94 percent of summer average Secchi disc depth and 81 and 52 percent of summer average concentrations of total phosphorus and chlorophyll a, respectively, met the BCWMC/MPCA standards. Summer averages of all three parameters met the BCWMC/MPCA standards in 2018.

In summary, trend analyses show no statistically significant change in water quality over the last 11 years as measured by an analysis of changes in summer average total phosphorus, chlorophyll *a*, and Secchi disc depth. While chlorophyll *a* has increased over the past 11 years at an annual rate of about 0.7 µg/L, this increase is not significant at the 95 percent confidence level.

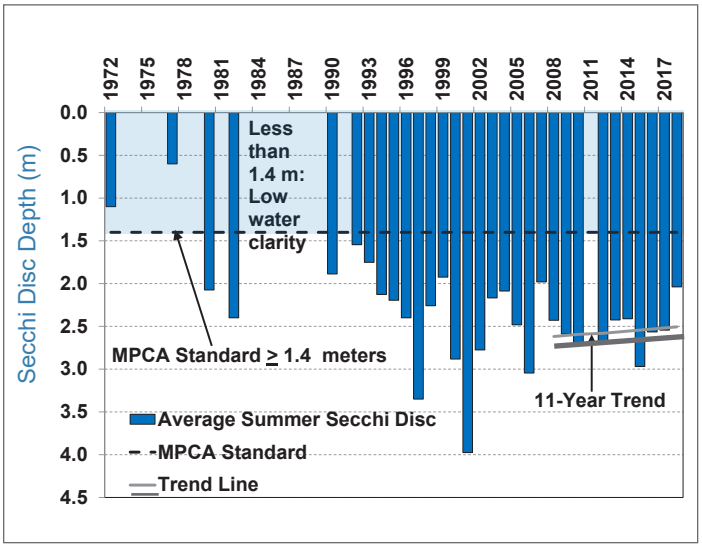
Total phosphorus trends



Chlorophyll *a* trends



Water clarity trends



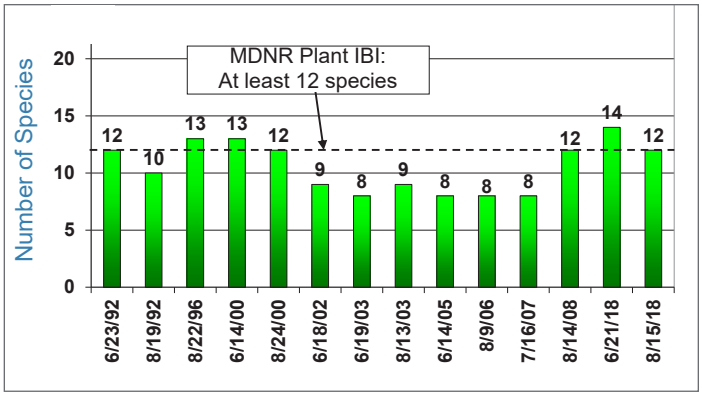
Macrophytes (aquatic plants)

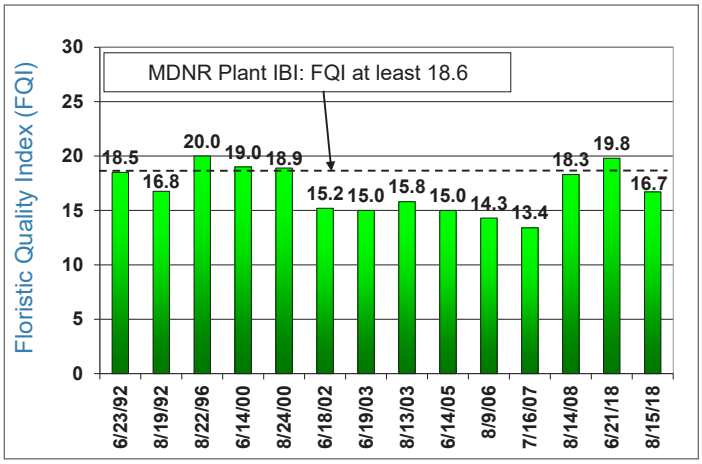
Lake Plant Eutrophication Index of Biological Integrity (IBI)

The MDNR recently developed metrics to determine the overall health of a lake's aquatic plant community. The Lake Plant Eutrophication Index of Biological Integrity (IBI) is used by the MPCA to determine whether a lake is meeting the federal Clean Water Act standards intended to protect aquatic life. The plant IBI includes two metrics: (1) the number of species in a lake and (2) the "quality" of the species, as measured by the floristic quality index (FQI).

Plant survey data from 1992 through 2018 were assessed to determine plant IBI trends. The figures at right show the Parkers Lake number of species and FQI scores for that period compared to the MDNR plant IBI impairment threshold.

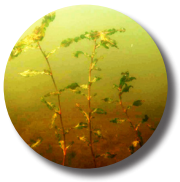
- **Number of species:** A deeper water lake, such as Parkers Lake, is considered impaired when it has fewer than 12 species. During the period examined, the number of species in Parkers Lake ranged from 8 to 14, meeting or exceeding the impairment threshold in June of 1992, August of 1996, both June and August of 2000, August of 2008, and both June and August of 2018. Fewer species were present from 2002 through 2007.
- **FQI values (quality of species):** The impairment threshold for deeper water lakes, as measured by FQI, is a minimum value of 18.6. During the period examined, FQI values ranged from 13.4 to 20.0, exceeding the impairment threshold in August of 1996, both June and August of 2000, and June of 2018. The lake's plant community was of poorer quality between 2002 and 2007.
- **2018 results:** In June both the number of species in the lake and FQI values met or exceeded the minimum IBI thresholds that define impairment. However, in August, the number of species met the minimum IBI threshold, but the FQI value failed to meet the minimum. As such, the waters would be considered impaired for aquatic plants.





Aquatic invasive species

In 2018, two aquatic invasive species were known to be present in Parkers Lake.



Curly-leaf pondweed (*Potamogeton crispus*): In 2018, curly-leaf pondweed (CLP) was found at 39 percent of sample points in June and 4 percent of sample points in August. The frequency reduction in August was due to a natural die-off which generally occurs in late June. In June, 76 percent of the sample points with CLP had a low density of plants (i.e., a density of 1 on a scale of 1–5); the remaining sample points were medium density (i.e., 2–3 on a scale of 1–5). In August, all sample points with CLP were low density. As a result, CLP did not cause problematic conditions for recreational lake users in 2018. However, when CLP dies off in June, it's decay adds phosphorus to the lake, which typically increases algae growth. This is evident in the graphs on page 2.

Eurasian watermilfoil (*Myriophyllum spicatum*): In 2018, Eurasian watermilfoil (EWM) was found at 61 percent of sample points in June and 71 percent of sample points in August. While EWM extent increased between June and August,

the number of sample points with a high EWM density declined. Nearly 20 percent of sample points with EWM in June had a high density of plants (i.e., a density of 4–5 on a scale of 1–5) compared with 10 percent in August. Most areas with EWM were low-to-medium density in both June and August. A medium density of plants (i.e., a density of 2–3 on a scale of 1–5) was observed at 45 percent of points with EWM in June and 49 percent in August. Low density (i.e., a density of 1 on a scale of 1–5) was observed at 38 percent of points with EWM in June and 42 percent in August. Thus, while some areas of the lake had problematic EWM conditions in both June and August, the majority of areas did not cause problematic conditions for recreational lake users.

Suitability of Parkers Lake for aquatic invasive species (AIS)

A large number of AIS currently residing in Minnesota have not, yet, been observed in Parkers Lake, but could be introduced in the future. For example, both zebra mussels and starry stonewort were recently found in nearby Medicine Lake. The risk of inadvertent transport of zebra mussels and starry stonewort from Medicine Lake to Parkers Lake is perceived to be high. To determine whether the water quality of Parkers Lake would support the introduction of six AIS—starry stonewort, zebra mussels, spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish—a suitability analysis for each species was performed.

The analyses compared 2018 water quality in Parkers Lake with the unique water quality conditions required for each species, specifically evaluating total phosphorus, chlorophyll *a*, Secchi disc depth, trophic state index (TSI), water temperature, dissolved oxygen, specific conductance, calcium, magnesium, sodium, alkalinity, hardness, and calcium carbonate.

The results indicate the water quality of Parkers Lake meets the suitability requirements for five of the species: starry stonewort, zebra mussels, rusty crayfish, spiny waterflea, and faucet snail. If these five species were introduced to Parkers Lake, they would be expected to both survive and thrive. The water quality of Parkers Lake partially meets the requirements for the Chinese mystery snail. However, the sodium and specific conductance levels in the lake are too high to be suitable. From the analysis, it appears that if the Chinese mystery snail were introduced to Parkers Lake, it would either not survive or not thrive.

Phosphorus loading from sediment

The release of phosphorus stored in lake-bottom sediments when oxygen levels are low is described as internal phosphorus loading from sediment. Parkers Lake data indicate low oxygen levels (<2 mg/L) were found at depths from about 7 meters to the bottom throughout the 2018 monitoring period (Figure 1). Internal phosphorus loading from sediment during this period caused near-bottom phosphorus concentrations to increase consistently (Figure 2). Because the lake remained stratified (separated into layers) throughout the monitoring period, the high phosphorus concentrations were confined to the bottom of the lake. The surface water phosphorus concentrations remained within a range indicating good water quality and met the MPCA standard throughout the monitoring period.

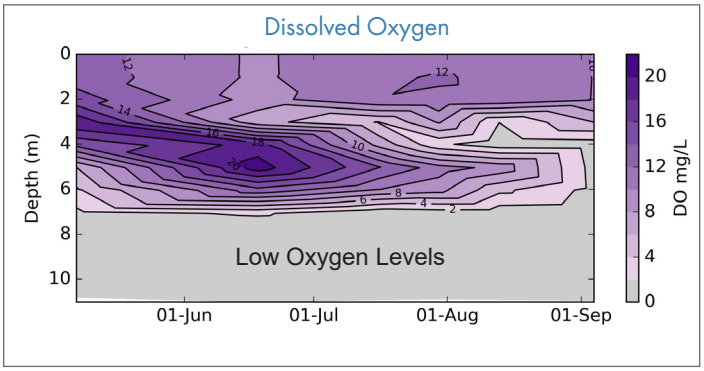


Figure 1

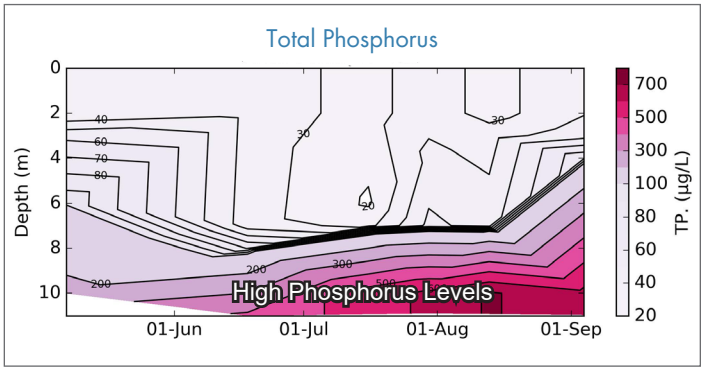


Figure 2

Phytoplankton and Zooplankton

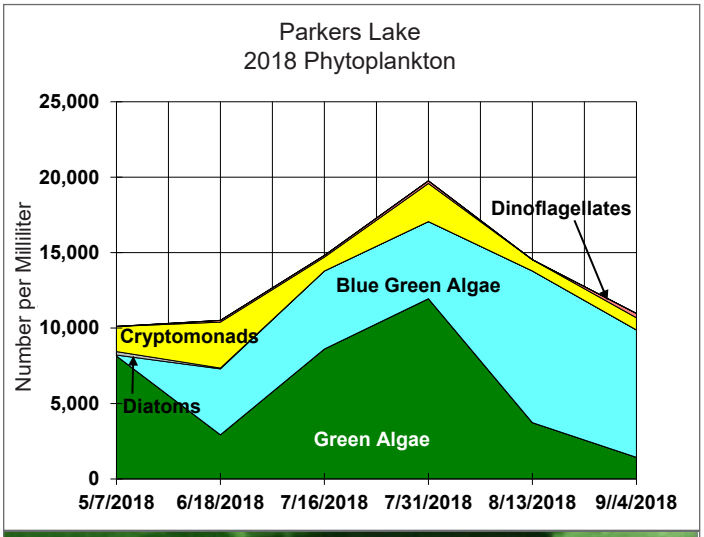
Samples of phytoplankton, microscopic aquatic plants, were collected from Parkers Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). Phytoplankton numbers followed a pattern similar to chlorophyll *a*, both showing increases through mid-summer and decreases in late summer, reflecting the lake's good water quality. Cryptomonads and green algae, good sources of food for the lake's zooplankton, were present throughout the monitoring period and were dominant through mid-summer (see figure at right).

Blue-green algae, which are associated with water quality problems and can be a source of health concerns, were present throughout the monitoring period and were dominant in late summer. The World Health Organization (WHO) has established the following guidelines for assessing the risk posed to lake users by exposure to blue-green algae.

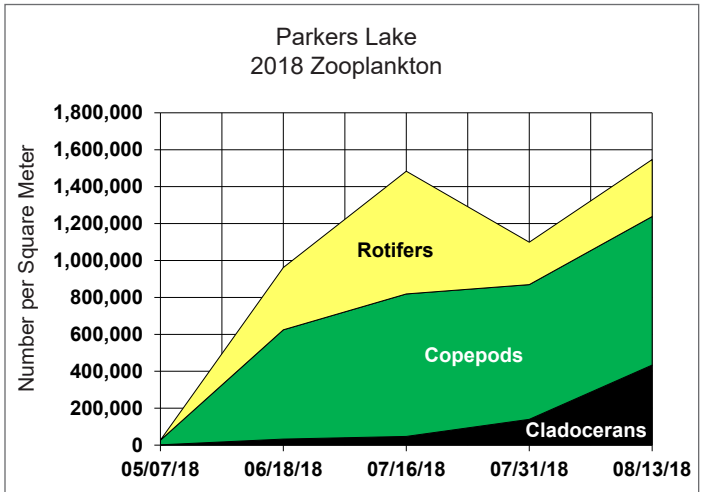
- Lakes with blue-green algae densities less than 20,000 cells per milliliter pose no risk to the health of humans or pets.
- Exposure to lakes with blue-green algae density levels between 20,000 and 100,000 cells per milliliter poses a low risk of adverse health impacts (i.e., skin irritation or allergenic effects such as watery eyes).
- Exposure to lakes with blue-green algae densities greater than 100,000 cells per milliliter poses a moderate health risk (i.e., long-term illness from algal toxins is possible).

In 2018, blue-green algae numbers were always within the no-risk category.

All three groups of zooplankton (rotifers, copepods, and cladocerans) were represented in 2018 (see figure at right). Small rotifers and copepods dominated the community. Because they do not graze as heavily on algae as the larger cladocerans, they generally have limited impact on the lake's water quality. This suggests that future Parkers Lake water quality efforts should focus on phosphorus management to reduce the nutrients that contribute to algae growth.



Chlamydomonas, a type of green algae found Parkers Lake



Keratella quadrata, a rotifer found in Parkers Lake

Chloride Levels

Chloride concentrations in area lakes have increased since the early 1990s when many government agencies switched from sand or sand/salt mixtures to salt for winter road maintenance. When snow and ice melts, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to permanently pollute 5 gallons of water. And, once in the water, there is no way to remove chloride. High levels of chloride are toxic to sensitive organisms and disrupt natural lake mixing, causing lower dissolved oxygen in bottom waters and associated impacts on benthic organisms and nutrient cycling.

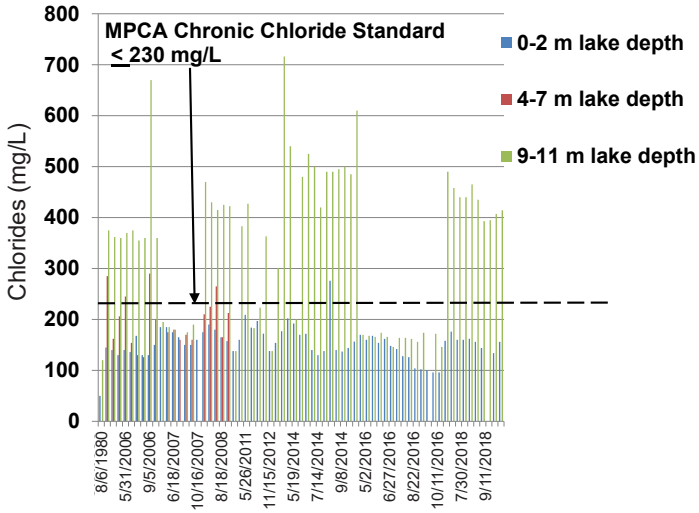
Because high concentrations of chloride can harm fish and plant life, the MPCA has established a chronic exposure chloride standard of 230 mg/L or less.

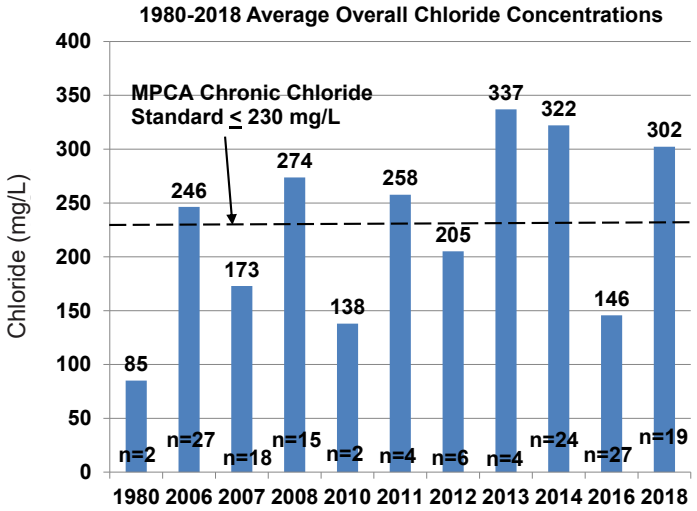
Chloride levels in 2018

- **Range of chloride concentrations in Parkers Lake:** The surface waters ranged from a high of 176 mg/L, measured in June, to a low of 156 mg/L, measured in September. The bottom waters ranged from a high of 490 mg/L in May to a low of 435 mg/L in September
- **Average concentration:** The average surface water concentration was 162 mg/L (meets MPCA chronic exposure standard); the average bottom water concentration was 455 mg/L (does not meet MPCA chronic exposure standard). The average chloride concentration for the entire lake was 302 mg/L, which does not meet the MPCA chronic exposure standard. Thus, Parkers Lake was impaired for chlorides.

Parkers Lake has been listed as impaired for chlorides since 2014. As shown in the figures at right, chloride concentrations in the lake's bottom waters (9–11 meter depths) have failed to meet the MPCA standard the majority of years from 2006 through 2018. When chloride concentrations in the deeper waters have exceeded the MPCA standard, annual chloride averages for the entire lake have also exceeded the MPCA standard. Exceptions occurred in 2007, 2010, 2012, and 2016 when lower chloride concentrations in the lake met the MPCA standard.

A study by the City of Plymouth[1] found that lower watershed chloride loading (or runoff) to Parkers Lake was correlated with lower chloride concentrations in the lake. The study focused on two of the lake's subwatersheds, PL2 in the north and PL1 in the south. The study found that chloride loading was significantly higher from PL2 than from PL1 (see table at right). Land use in PL2 consists primarily of multi-family residential and industrial areas, and 49% of the land is covered with impervious surfaces. These hard surfaces are typically roads and parking lots that receive salt applications in the winter, and the melting snow and rain run quickly off into storm sewers that reach the lake. Conversely, the area in PL1 consists mostly of single-family homes and only 19% of the land is covered with impervious surfaces. Methods should be sought to reduce the use of chlorides throughout the Parkers Lake watershed—particularly to the north.





	PL1		PL2	
Year	Chloride Loading (lbs/year)	Chloride Loading (lbs/acre)	Chloride Loading (lbs/year)	Chloride Loading (lbs/acre)
2013	3,239	12.6	105,991	561
2014	1,158	4.5	55,650	294
2015	1,052	4.1	161,814	856
2016	1,797	7.0	66,855	354
2017	4,904	19.0	122,460	648

[1] Timm, Amy, Justin Valenty, Jonathan Hess, and Brian Vlach. 2017. 2017 Water Quality Report. Prepared for the City of Plymouth by Three Rivers Park District.

A Thank You to Our Volunteers

Each year volunteers from across the watershed participate in the Citizen Assisted Monitoring Program (CAMP) coordinated and funded by the Metropolitan Council with assistance and additional funding from the BCWMC. These volunteers spend hours on their lakes collecting water samples and data that augment data collected through BCWMC routine monitoring. Their work is an important piece of the overall BCWMC monitoring program and their time and dedication are greatly appreciated!

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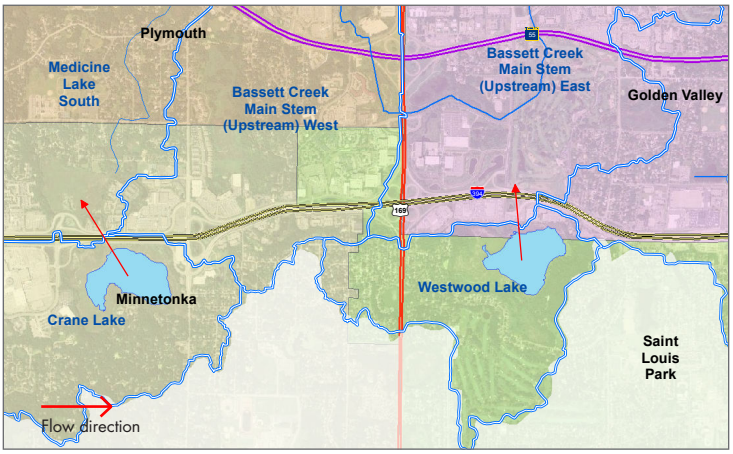
Cleaner, healthier water for a growing community

Westwood Lake 2018 water quality monitoring



About Westwood Lake

BCWMC classification	Priority-1 shallow lake
Watershed area	463 acres
Lake size	38 acres
Average depth	4.2 feet
Maximum depth	6 feet
Ordinary high water level	887.8 feet (NGVD29)
Normal water level	887.6 feet (NAVD88)
Downstream receiving waterbody	Main stem Bassett Creek
Location (city)	St. Louis Park
MPCA impairments	None
Aquatic invasive species	Curly-leaf pondweed, purple loosestrife, narrow-leaved cattail, reed canary grass
Public access	Yes (canoe access in park)

Note: average and maximum depths are based on actual measurements taken during the 2018 plant surveys

Monitoring water quality in Westwood Lake

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes since 1972. This monitoring is done to detect changes or trends in water quality and evaluate the effectiveness of efforts to preserve or improve water quality. A summary of 2018 monitoring efforts on Westwood Lake is provided below; more comprehensive information can be found on pages 2–7.

At a glance: 2018 monitoring results

In 2018, the BCWMC monitored Westwood Lake for:

- Water chemistry (nutrients, chlorophyll *a*, chloride).
- Water measurements (e.g., clarity, dissolved oxygen).
- Phytoplankton and zooplankton (microscopic plants and animals).
- Macrophytes (aquatic plants).

Results indicate that Westwood Lake meets Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for chlorides, Secchi disc (measure of clarity), total phosphorus, and chlorophyll *a*; trend analyses show no significant changes in these parameters over the past 10 years. According to the Minnesota Department of Natural Resources (MDNR) plant IBI, a measure of aquatic plant health, the lake's plant community is relatively healthy.

Recommendations

Because current watershed management practices are adequately protecting Westwood Lake water quality from degradation, the recommendation is to make no changes. Continuation of water quality and biological monitoring at a 3-year frequency is recommended to periodically assess the condition of the lake's water quality and biological community and identify trends. Annual vegetative suveys to monitor for aquatic invasive species are also recommended.

Water chemistry monitoring: 2018

Total phosphorus levels

While phosphorus is necessary for plant and algae growth, excessive phosphorus leads to excessive growth, decreased water clarity, and water quality impairment.

- BCWMC/MPCA standard: 60 micrograms per liter (µg/L) or less.
- Range: Total phosphorus concentrations ranged from a low of 16 µg/L in early July to a high of 28 µg/L in mid-July and late August.
- Summer average: 21 µg/L (met BCWMC/MPCA standard)

Chlorophyll *a* levels

Chlorophyll *a* is a pigment in algae and generally reflects the amount of algae growth in a lake. Clear lakes generally have chlorophyll *a* levels less than 15 micrograms per liter (µg/L).

- BCWMC/MPCA standard: 20 µg/L or less.
- Range: Chlorophyll *a* concentrations ranged from a low of 1.4 µg/L in early May to a high of 8.0 µg/L in late August.
- Summer average: 3.6 µg/L (met BCWMC/MPCA standard).

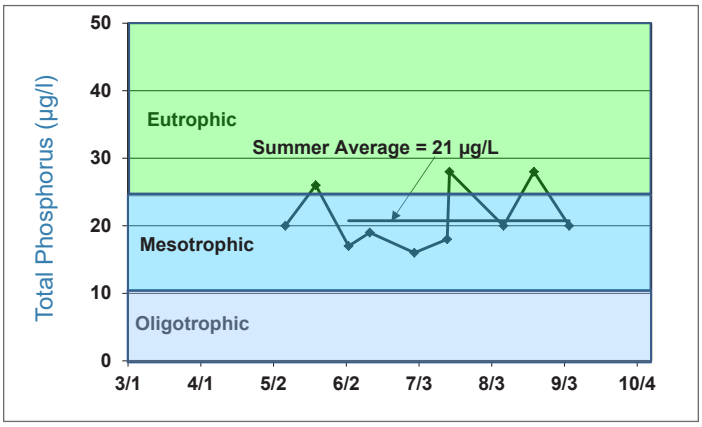
Water clarity

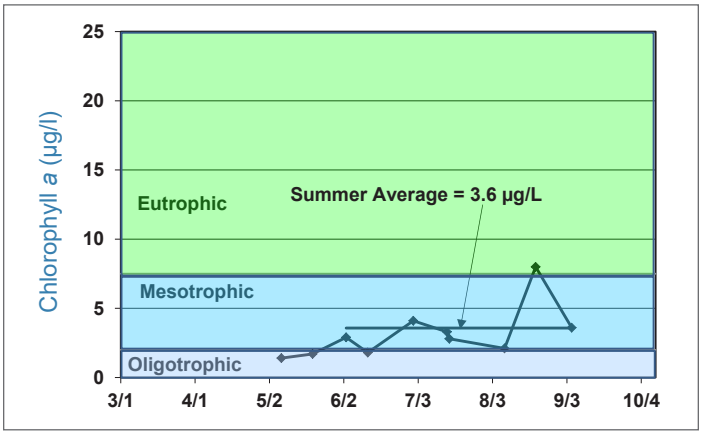
Water clarity is often affected by the amount of algae or other photosynthetic organisms in a lake. It is usually measured by lowering an 8-inch "Secchi" disc into the lake (see bottom photo); the depth at which the disc's alternating black-and-white pattern is no longer visible is considered a measure of the water's transparency.

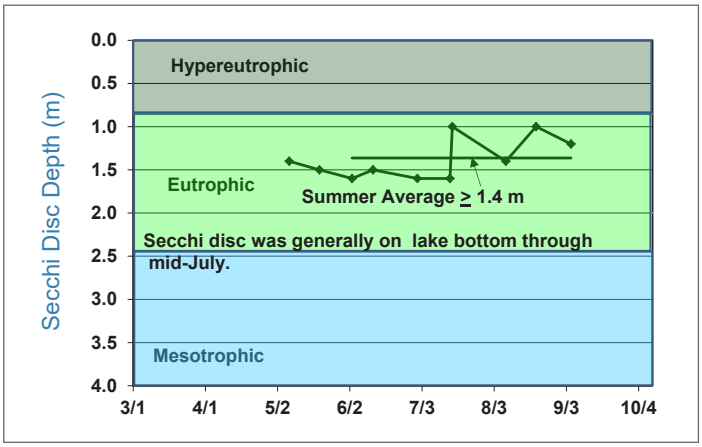
- BCWMC/MPCA standard: 1.0 meter or more.
- Range: From approximately 1.5–1.6 meters (lake bottom) during much of the monitoring period to 1.0 meter in late summer.
- Summer average: greater than 1.4 meters (met BCWMC/MPCA standard).

Definitions

- **Hypereutrophic:** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low transparency
- **Eutrophic:** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae and other organisms; decay of algae can reduce lake oxygen levels
- **Mesotrophic:** Lake condition characterized by medium levels of nutrients and clear water
- **Oligotrophic:** Lake condition characterized by a low level of dissolved nutrients, high oxygen content, and sparse algae growth





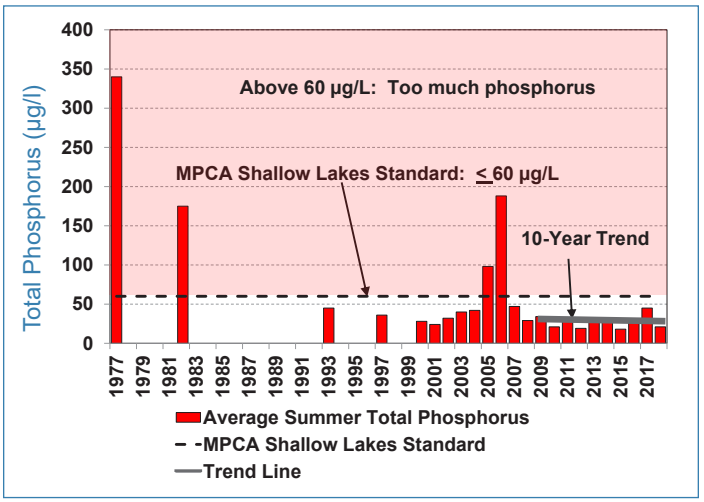


Water chemistry monitoring from 1972–2018: historical trends

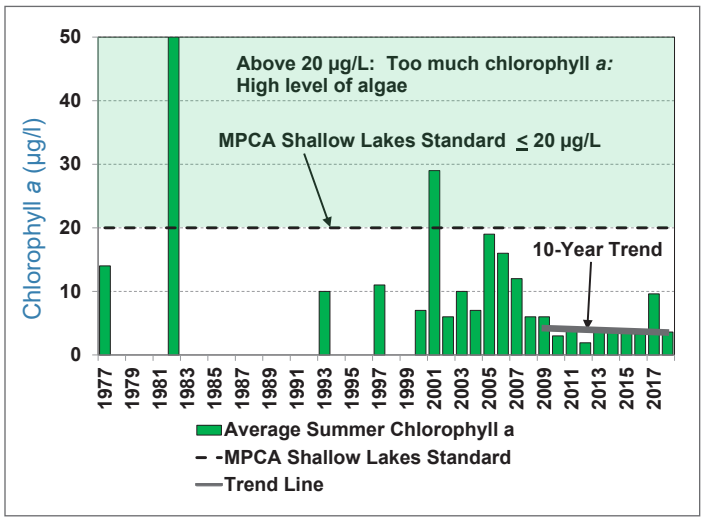
Water quality in Westwood Lake has been monitored since 1977. Data includes information collected through the Citizen Assisted Monitoring Program (CAMP). Summer averages (June through September) of total phosphorus, chlorophyll a, and Secchi disc depth from 1977–2018 are shown in the figures at right. In 1977 and 1982, these averages generally failed to meet BCWMC/MPCA standards; however, standards have generally been met since 1982. Exceptions include a high chlorophyll a value in 2001, high total phosphorus values in 2005 and 2006, and a low Secchi disc depth in 2017. Summer averages for total phosphorus, chlorophyll a, and Secchi depth met the BCWMC/MPCA standards in 2018.

In summary, although water quality appears to be improving slightly since 2009, this change is not significant. An analysis of changes in summer average total phosphorus, chlorophyll *a* concentrations, and Secchi disc depth over the last 10 years were not statistically significant (95-percent confidence level).

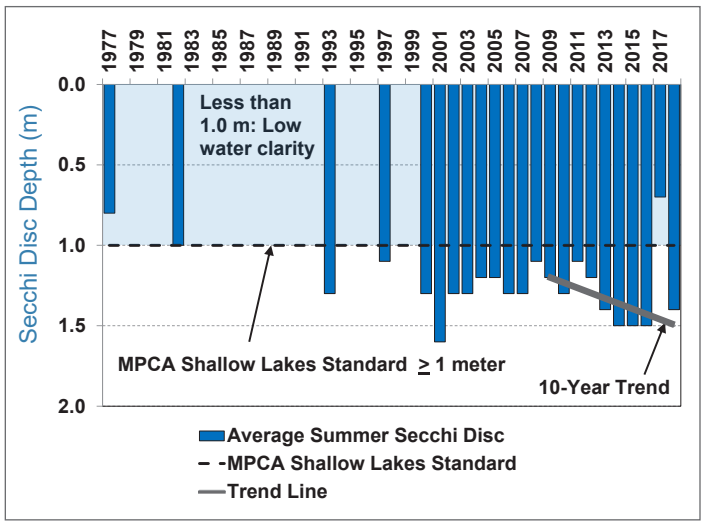
Total phosphorus trends



Chlorophyll *a* trends



Water clarity trends



Macrophytes (aquatic plants)

Lake Plant Eutrophication Index of Biological Integrity (IBI)

The MDNR recently developed metrics to determine the overall health of a lake's aquatic plant community. The Lake Plant Eutrophication Index of Biological Integrity (IBI) is used by the MPCA to determine whether a lake is meeting the federal Clean Water Act standards intended to protect aquatic life. The plant IBI includes two metrics: (1) the number of species in a lake and (2) the "quality" of the species, as measured by the floristic quality index (FQI).

Plant survey data from 1993 through 2018 were assessed to determine plant IBI trends. Trends show an improvement in the plant community that is likely a result of the trend toward improving water quality. The figures at right show the Westwood Lake number of species and FQI scores for that period compared to the MDNR plant IBI impairment threshold.

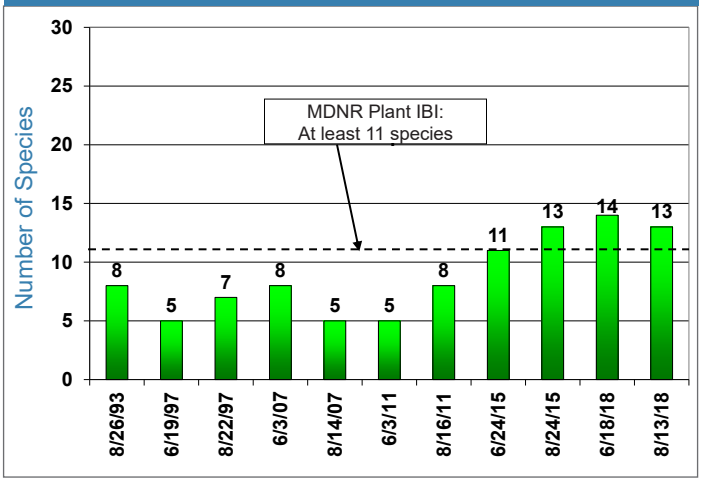
- **Number of species:** A shallow lake is considered impaired when it has fewer than 11 species. During the period examined, the number of species in Westwood Lake ranged from 5 to 14, exceeding the impairment threshold in 2015 and 2018.
- **FQI values (quality of species):** The impairment threshold for shallow lakes, as measured by FQI, is a minimum value of 17.8. During the period examined, FQI values ranged from 9.8 to 19.1, exceeding the threshold during August of 2015 and June and August of 2018.
- **2018 results:** Both the number of species in the lake and FQI values exceeded the minimum IBI thresholds that define impairment. As such, the waters are not currently considered impaired for aquatic plants. 2018 was the first year since monitoring began that the number of species and FQI values exceeded the minimum IBI thresholds during both June and August.

Species richness

<11 species: considered impaired

14 and 13: number of species in Westwood Lake in June and August 2018

Outcome: lake is not impaired and meets standards

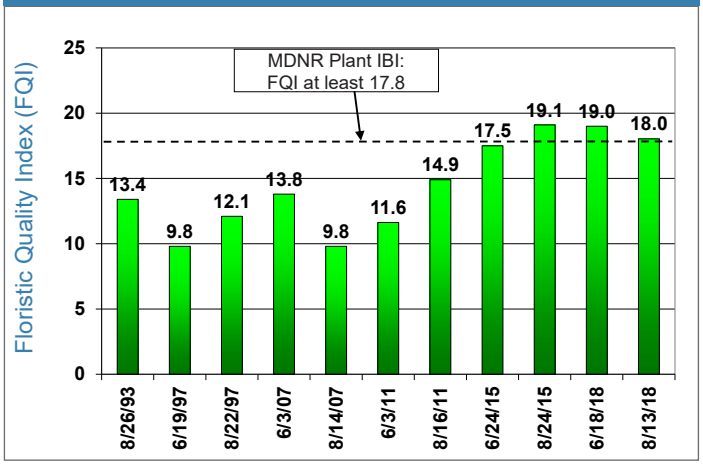


Species quality (FQI values)

17.8: impairment threshhold

19.0 and 18.0: Westwood Lake values, June and August 2018

Outcome: lake is not impaired and meets standards



Bearded stonewort in Westwood Lake

In 2015, *Lychnothamnus barbatus* (bearded stonewort), was first observed in Westwood Lake (and in Minnesota). Bearded stonewort is in the family *Characeae*, an algae that resembles rooted aquatic plants. This species was not seen in North America until 2012 and few populations have been documented in the world. Bearded stonewort obtains all of its nutrients from the water. This nutrient absorber can reduce phosphorus concentrations and improve water quality.

Bearded stonewort

Displacing another species in the *Characeae* family, *Chara contraria* (fetid stonewort), bearded stonewort expanded its extent by approximately an order of magnitude from 2015–2018 and was observed at 34 percent of sample locations in August of 2018. In 2018, giant canopied mats of bearded stonewort were observed in the north half of the lake and satellite clusters in the southern half. Because bearded stonewort obtains all of its nutrients from the water, the dense growth in Westwood Lake is helping improve water quality in the lake.

Aquatic invasive species

In 2018, four aquatic invasive species (AIS) were known to be present in Westwood Lake, although no species was considered problematic.

- Curly-leaf pondweed (*Potamogeton crispus*): Though prevalent, the curly-leaf pondweed coexisted with native plants at relatively low densities.
- Purple loosestrife (*Lythrum salicaria*): This emergent species was found in one location along the north central shoreline and three locations at the northwestern corner of the lake. It was found in six similar locations in August 2015. Galerucella beetles were present in 2015, causing heavy damage to the purple loosestrife plants and managing the infestation. In 2018, Galerucella beetles were again present and by August had killed most of the purple loosestrife plants in the lake.
- Narrow-leaved cattail (*Typha angustifolia*): Narrow-leaved cattail was observed at five locations along the north shoreline. It was observed in similar locations in 2015.
- Reed canary grass (*Phalaris arundinacea*): Reed canary grass was found for the first time since aquatic plant monitoring began in 1993. It was found at three locations along the north shoreline in June, but was only observed at one location in August.

Suitability of Westwood Lake for AIS

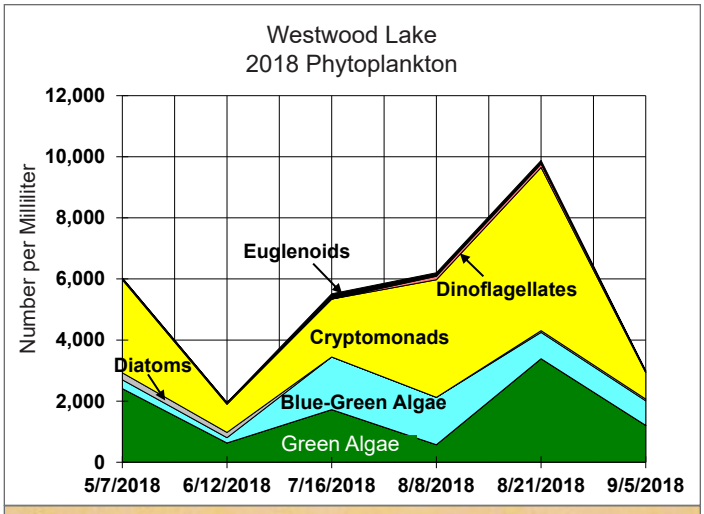
A large number of AIS residing in Minnesota have not, yet, been observed in Westwood Lake, but could be introduced. For example, both zebra mussels and starry stonewort were recently found in nearby Medicine Lake. To determine whether Westwood Lake water quality would support the introduction of six AIS—starry stonewort, zebra mussels, spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish—a suitability analysis for each species was performed.

The analyses compared 2018 lake water quality with the water quality conditions required for each species, specifically evaluating total phosphorus, chlorophyll *a*, Secchi disc depth, trophic state index (TSI), water temperature, dissolved oxygen, specific conductance, calcium, magnesium, sodium, alkalinity, hardness, and calcium carbonate. The results indicate the water quality of Westwood Lake meets the suitability requirements for two of the species: rusty crayfish and faucet snail. These species would likely thrive if introduced to the lake. The lake partially meets the suitability requirements of the Chinese mystery snail, zebra mussels, spiny waterflea, and starry stonewort. If these species were introduced to the lake, they would likely survive, but may not thrive.

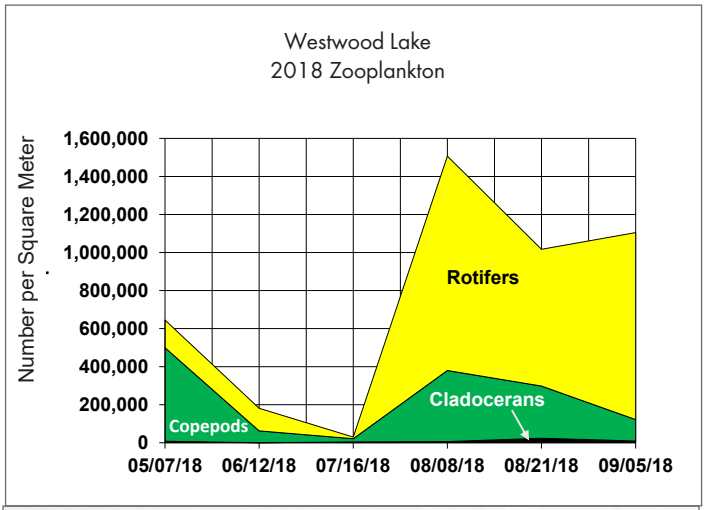
Phytoplankton and zooplankton

Samples of phytoplankton, microscopic aquatic plants, were collected from Westwood Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). Phytoplankton numbers followed a pattern similar to chlorophyll *a*, both reflecting good water quality. These numbers increased between June and August, then decreased in September, as shown in the upper-right figure. Cryptomonads and green algae, good sources of food for the lake's zooplankton, were dominant throughout the summer. Blue-green algae, which are associated with water quality problems and can be a source of health concerns, were present in very low numbers.

The composition of the 2018 zooplankton community was consistent with recent years. All three groups of zooplankton (rotifers, copepods, and cladocerans) were represented (see figure at bottom right). Small rotifers and copepods have generally dominated the community. Because these species do not graze as heavily on algae as the larger cladocerans, they generally have limited impact on the lake's water quality. This suggests that future Westwood Lake water quality efforts should focus on phosphorus management to reduce the nutrients that contribute to algae growth.



Pediastrum boryanum, a type of algae found in Westwood Lake



Lecane, a rotifer found in Westwood Lake

Increased use of chloride for road maintenance has had an impact on chloride levels in Twin Cities metro area lakes.

Chloride levels in 2018

Chloride concentrations in area lakes have increased since the early 1990s when many government agencies switched from sand or sand/salt mixtures to salt for winter road maintenance. When snow and ice melts, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to permanently pollute 5 gallons of water. And, once in the water, there is no way to remove chloride.

Because high concentrations of chloride can harm fish and plant life, the MPCA has established a chronic exposure chloride standard of 230 mg/L or less.

- **Range of chloride concentrations in Westwood Lake:** From a high of 79 mg/L, measured in September, to a low of 57 mg/L, measured in May
- **Average concentration:** 72 mg/L (meets MPCA standard)

A Thank You to Our Volunteers

Each year volunteers from across the watershed participate in the Citizen Assisted Monitoring Program (CAMP) coordinated and funded by the Metropolitan Council with assistance and additional funding from the BCWMC. These volunteers spend hours on their lakes collecting water samples and data that augment data collected through BCWMC routine monitoring. Their work is an important piece of the overall BCWMC monitoring program and their time and dedication are greatly appreciated!

Bassett Creek Watershed Management Commission
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Appendix C
2018 Resolutions

Bassett Creek Watershed Management Commission

RESOLUTION NO. 18-01

Member Carlson introduced the following resolution and moved its adoption:

A RESOLUTION APPROVING THE REIMBURSEMENT TO THE BASSETT CREEK WATERSHED MANAGEMENT COMMISSION 2.0% OF THE TAX LEVY REQUEST TO HENNEPIN COUNTY FOR COLLECTION IN 2017, FOR ADMINISTRATIVE EXPENSES FOR CAPITAL IMPROVEMENT PROGRAM (CIP) PROJECTS AND APPROVING THE TRANSFER OF THE FUNDS FROM THE CIP ACCOUNT TO THE ADMINISTRATIVE ACCOUNT

BE IT RESOLVED by the Bassett Creek Watershed Management Commission of the Cities of Crystal, Golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, Robbinsdale, and St. Louis Park that:

1. The Bassett Creek Watershed Management Commission (BCWMC) will be reimbursed $26,072, which is 2.0% of the BCWMC's September 2016 tax request in the amount of $1,303,600 to Hennepin County for collection in 2017, for administrative expenses for Capital Improvement Projects.

2. The Bassett Creek Watershed Management Commission directs its Deputy Treasurer to transfer the reimbursed funds from the Commission's CIP Account to its Administrative Account.

1/18/2018

Chair Date

Attest:

1/19/18

Secretary Date

The motion for adoption of the foregoing resolution was seconded by Member Welch and upon a vote being taken thereon, the following voted in favor thereof: 6 and the following voted against the same 0 whereupon said resolution was declared duly passed and adopted.

Bassett Creek Watershed Management Commission

RESOLUTION NO. 18-02

Member Carlson introduced the following resolution and moved its adoption:

A RESOLUTION APPROVING THE TRANSFER OF BASSETT CREEK WATERSHED MANAGEMENT COMMISSION FUNDS FROM THE ADMINISTRATIVE ACCOUNT TO THE EROSION/SEDIMENT (CHANNEL MAINTENANCE) ACCOUNT AND LONG-TERM MAINTENANCE ACCOUNT

BE IT RESOLVED by the Bassett Creek Watershed Management Commission that:

1. $25,000 will be transferred from the Bassett Creek Watershed Management Commission's Administrative Account to the Erosion/Sediment (Channel Maintenance Fund) account.

2. $17,200 will be transferred from the Bassett Creek Watershed Management Commission's Administrative Account to the Long-Term Maintenance account which equals the annual $25,000 transfer amount less the estimated cost of the 2017 inspections of the BCWMC Flood Control Project of $7,800.

Chair 1/18/2018 Date

Attest:

Secretary 1/19/18 Date

The motion for adoption of the foregoing resolution was seconded by Member Welch and upon a vote being taken thereon, the following voted in favor thereof: 6 and the following voted against the same Ø whereupon said resolution was declared duly passed and adopted.

RESOLUTION 18-03

Member Carlson introduced the following resolution and moved its adoption:

RESOLUTION DESIGNATING DEPOSITORIES FOR
BASSETT CREEK WATERSHED MANAGEMENT COMMISSION FUNDS

BE IT RESOLVED by the Bassett Creek Watershed Management Commission of the Cities of Crystal, Golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, Robbinsdale, and St. Louis Park that the following are named as depositories for funds, subject to the furnishing of collateral for funds on deposit as provided in the Laws of the State of Minnesota: **RBC Dain Rauscher; Wells Fargo; 4M Fund; U.S. Bank**

BE IT FURTHER RESOLVED that a sweep account will be used for nightly balances.

BE IT FURTHER RESOLVED that the following signatories or alternates are authorized to be signatories on checks drawn on funds deposited:

General Checking: Chair or Vice Chair and Treasurer or Deputy Treasurer
Each check shall require two signatures.

BE IT FURTHER RESOLVED that the following shall be authorized to make investments of the Bassett Creek Watershed Management Commission and shall be authorized to deposit the principal of said investments in the above named depositories as necessary and beneficial to the Bassett Creek Watershed Management Commission: Deputy Treasurer of the Bassett Creek Watershed Management Commission, or Accounting Coordinator for City of Golden Valley.

The Deputy Treasurer shall supply each of the depositories with certified copies of this resolution along with such signature documentation as is required by the depository and the authorizations set forth above.

Adopted by the Board of the Bassett Creek Watershed Management Commission this 15 day of February 2018.

Chair

ATTEST:

Secretary Date

The motion for the adoption of the foregoing resolution was seconded by Member Prom and upon a vote being taken thereon, the following voted in favor thereof: 6 and the following voted against the same 0 whereupon said resolution was declared duly passed and adopted.

A RESOLUTION GRANTING A TEMPORARY VARIANCE FROM THE BCWMC REQUIREMENTS FOR IMPROVEMENTS AND DEVELOPMENT PROPOSALS FOR THE 2018 MINNEAPOLIS IMPOUND LOT FACILITY IMPROVEMENTS

Bassett Creek Watershed Management Commission
Resolution #18-04

WHEREAS, the Bassett Creek Watershed Management Commission (the "BCWMC") has received a request from the City of Minneapolis (the "City") for a temporary variance from Section 5.0(10) of the BCWMC Requirements for Improvements and Development Proposals (the "BCWMC Requirements") in conjunction with its proposed improvements to a City impound lot facility located at 51 Colfax Avenue North and within the Bassett Creek Main Stem subwatershed (the "Project"); and

WHEREAS, the Project includes demolition of existing buildings, construction of a new building, parking lot improvements, stormwater management improvements, and other site improvements that will ultimately result in a 0.77-acre decrease of impervious surfaces at the site; and

WHEREAS, the City and its consulting engineer have studied the options available to meet the BCWMC Requirements for the Project and have determined that, due to the need to place temporary surcharge fill in the 1% annual chance floodplain (1% floodplain), it is not feasible to satisfy Section 5.0(10) of the BCWMC Requirements (that there be no net loss in floodplain storage and no increase in flood level at any point along the Basset Creek trunk system); and

WHEREAS, although the City's initial proposal indicated that the surcharge fill material could be sourced from a nearby filtration basin area in order to prevent a temporary increase to the floodplain, the City's geotechnical engineer has determined that no excavation may occur within 100 feet of the base of the surcharge fill and so that option is no longer feasible; and

WHEREAS, additionally, compensatory storage cannot be created onsite without significant impacts to construction staging, interim property use, potential disturbance and disposal of additional contaminated soil, and unreasonable construction costs; and

WHEREAS, the City's proposed surcharge fill method requiring the variance will be temporary in nature (one year) and may result in a minimal increase in the 1% floodplain of approximately 0.01 feet from the Project site to upstream of the Van White Memorial Boulevard bridge; and

WHEREAS, the Board of Commissioners ("Board"), based on the City's request, the memorandum from Barr Engineering Company and comments from the BCWMC enigineer, attached hereto as Exhibit A and incorporated herein, and the standards for issuing variances contained in Section 3.3(c) of the BCWMC Requirements, finds and determines as follows:

a. The nature of the Project, the site conditions, and the limited area in which the Project will be constructed constitute special circumstances or conditions such that the strict application of the provisions of the standards and criteria would deprive the City of the reasonable use of its impound lot facility and its ability to make improvements thereto;

b. The requested variance is necessary for the preservation and enjoyment of a substantial property right of the applicant in that the City is working to improve its impound lot facility in order to minimize impacts to its property;

c. Granting 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, as it will allow for the construction site to achieve adequate slope failure safety while the surcharge material is in place, thus protecting City employees and customers that visit the property during that time;

d. While the application does relate to a use in the 1% (base flood elevation, 100-year flood) floodplain, the variance does not allow a lower degree of flood protection than the current flood protection. Although an increase of 0.01 feet of the 1% flood elevation may occur in the Bassett Creek Channel adjacent to the site and upstream of the Van White Memorial Boulevard bridge, said minimal result for only a very temporary period of time is not inconsistent with this particular variance requirement. Additionally, said impact is within the reasonable precision of floodplain modeling used for regulatory purposes; and

e. Granting the variance will not be contrary to the intent of taking all reasonable and practical steps to improve water quality within the watershed in that the City will implement all practical and feasible water quality best management practices available in conjunction with this Project, including reducing impervious area and reducing the amount and time that soils near Basset Creek will need to be disturbed, thus reducing the risk and severity of large rainfall events mobilizing soils from disturbed areas that would then discharge into the creek.

NOW, THEREFORE, BE IT RESOLVED, by the Board of the BCWMC that, pursuant to its variance procedure contained in Section 3.3 of the BCWMC Requirements, the findings contained herein, and the record of this matter, it hereby grants the City a temporary one-year variance from Section 5.0(10) of the BCWMC Requirements for the Project, as detailed and described in the memorandum attached hereto as Exhibit A.

Adopted by the Board of Commissioners of the Bassett Creek Watershed Management Commission this 17th day of May, 2018.

_____
Chair

Attest:

_____
Secretary

Resolution No. 18-04: Offered by Commissioner Scanlan, seconded by Commissioner Prom, adopted by a vote of 8-0 at the regular meeting of the Board of Commissioners of Bassett Creek Watershed Management Commission on May 17, 2018.

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-05

A RESOLUTION ORDERING THE 2019 IMPROVEMENTS, DESIGNATING MEMBER CITIES RESPONSIBLE FOR CONSTRUCTION, MAKING FINDINGS PURSUANT TO MINNESOTA STATUTES, SECTION 103B.251, CERTIFYING COSTS TO HENNEPIN COUNTY, AND APPROVING AGREEMENTS FOR CONSTRUCTION OF THE IMPROVEMENTS

WHEREAS, on September 17, 2015, the Commission adopted the *Bassett Creek Watershed Management Commission, Water Management Plan, September 2015* (the "Plan");

WHEREAS, the Plan includes a capital improvement program ("CIP") listing capital projects in Table 5-3 of the Plan;

WHEREAS, the CIP includes the following capital projects for the year 2019 (collectively, the "2019 Projects"):

a) Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Implementation: DeCola Ponds B & C Improvement Project (BC-2,3,8); and

b) Westwood Lake Water Quality Improvement Project (WST-2); and

WHEREAS, the Plan specifies a county tax levy under Minnesota Statutes, section 103B.251 as the source of funding for the 2019 Projects; and

WHEREAS, on August 16, 2018, following published and mailed notice in accordance with the Commission's Joint Power Agreement and Minnesota Statutes, section 103B.251, the Commission conducted a public hearing on the 2019 Projects; and

WHEREAS, the 2019 Projects will be conducive to the public health, promote the general welfare and is in compliance with Minnesota Statutes, sections 103B.205 to 103B.255 (the "Act") and with the Plan as adopted and amended in accordance with the Act.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Commissioners of the Bassett Creek Watershed Management Commission as follows:

1. The 2019 Projects are hereby ordered.

2. The estimated cost of the Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Implementation: DeCola Ponds B & C Improvement Project is Three Million Eight Hundred Thousand Dollars ($3,800,000). Of this amount, One Million Thirty One Thousand Five Hundred Dollars ($1,031,500) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251 levied in 2018 for collection in 2019. Additional funds of up to Five Hundred Thousand ($500,000) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251, levied in 2019 for collection in 2020. Additional funds of Sixty Eight Thousand Five Hundred Dollars ($68,500) will come from a State Grant to the Bassett Creek Watershed Management Commission. Remaining funds will come from State grants, local grants and city funds.

3. The estimated cost of the Westwood Lake Water Quality Improvement Project is Four Hundred Four Thousand Five Hundred Dollars ($404,500). Of this amount, Four Hundred Four Thousand Five Hundred Dollars ($404,500) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251 levied in 2018 for collection in 2019.

4. The total amount certified to Hennepin County for the 2019 Projects is One Million Four Hundred Thirty Six Thousand Dollars ($1,436,000) for payment by the County in accordance with Minnesota Statutes, section 103B.251, subdivision 6.

5. The Commission has received, accepted, and approved the feasibility reports for the 2019 Projects.

6. The costs of the 2019 Projects will be paid by the Commission up to the amount specified in paragraphs 2 and 3 above from proceeds received from Hennepin County pursuant to Minnesota Statutes, section 103B.251 and grant funding, if awarded. Additional costs may be paid by the city constructing the particular project, but no costs will be charged to other members of the Commission.

7. The City of Golden Valley is designated as the member responsible for contracting for the construction of the Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Implementation: DeCola Ponds B & C Improvement Project, and the engineer designated for preparation of plans and specifications is the Golden Valley City Engineer, or other engineers selected and retained by the City of Golden Valley. Contracts for construction shall be let in accordance with the requirements of law applicable to the City of Golden Valley. The Cooperative Agreement with the City of Golden Valley for the construction of the Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Implementation: DeCola Ponds B & C Improvement Project is approved, and the Chair and Secretary are authorized to execute the agreement on behalf of the Commission.

8. The City of St. Louis Park is designated as the member responsible for contracting for the construction of the Westwood Lake Water Quality Improvement Project, and the engineer designated for preparation of plans and specifications is the St. Louis Park City Engineer, or other engineers selected and retained by the City of St. Louis Park. Contracts for construction shall be let in accordance with the requirements of law applicable to the City of St. Louis Park. The Cooperative Agreement with the City of St. Louis Park for the construction of the Westwood Lake Water Quality Improvement Project is approved, and the Chair and Secretary are authorized to execute the agreement on behalf of the Commission.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 16th day of August, 2018.

Chair

ATTEST: _____
Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-06

A RESOLUTION APPROVING THE LOCAL SURFACE WATER MANAGEMENT PLAN PREPARED BY THE CITY OF GOLDEN VALLEY

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of Golden Valley ("City") has prepared and submitted to the Commission the City's local water management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The Golden Valley Surface Water Management Plan dated XXX 2018, is hereby approved.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 20th day of September, 2018.

Chair

ATTEST:

Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-07

A RESOLUTION APPROVING THE LOCAL SURFACE WATER MANAGEMENT PLAN PREPARED BY THE CITY OF NEW HOPE

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of New Hope ("City") has prepared and submitted to the Commission the City's local water management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The New Hope Local Surface Water Management Plan dated November 2018 is hereby approved with the understanding that the final plan may include changes required to respond to comments from other watersheds, but conditioned on those changes not revising the provisions applicable within the Bassett Creek Watershed.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 14th day of November, 2018.

Chair

ATTEST:

Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-08

A RESOLUTION APPROVING THE LOCAL SURFACE WATER MANAGEMENT PLAN PREPARED BY THE CITY OF PLYMOUTH

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of Plymouth ("City") has prepared and submitted to the Commission the City's local water management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The Plymouth Surface Water Resources Management Plan dated December 2018 is hereby approved with the understanding that the final plan may include changes required to respond to comments from other watersheds, but conditioned on those changes not revising the provisions applicable within the Bassett Creek Watershed.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 14th day of November, 2018.

Chair

ATTEST:

Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-09

A RESOLUTION APPROVING THE LOCAL SURFACE WATER MANAGEMENT PLAN PREPARED BY THE CITY OF MINNEAPOLIS

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of Minneapolis ("City") has prepared and submitted to the Commission the City's local water management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The Minneapolis Water Resources Management Plan dated October 2018 is hereby approved with the understanding that the final plan may include changes required to respond to comments from other watersheds, but conditioned on those changes not revising the provisions applicable within the Bassett Creek Watershed.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 14th day of November, 2018.

Chair

ATTEST:

Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-10

A RESOLUTION APPROVING THE LOCAL SURFACE WATER MANAGEMENT PLAN PREPARED BY THE CITY OF CRYSTAL

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of Crystal ("City") has prepared and submitted to the Commission the City's local surface water management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The Crystal Surface Water Management Plan dated December 2018 is hereby approved.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 20th day of December, 2018.

Chair

ATTEST:

~~Secretary~~ Administrator

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
RESOLUTION NO. 18-11

A RESOLUTION APPROVING THE WATER RESOURCES
MANAGEMENT PLAN PREPARED BY THE CITY OF MINNETONKA

WHEREAS, the Bassett Creek Watershed Management Commission ("Commission") is a joint powers watershed management organization established in accordance with Minnesota Statutes, Section 103B.211; and

WHEREAS, the Commission has prepared a water management plan, which has been reviewed by all appropriate state and local agencies and has been approved by the Board of Water and Soil Resources; and

WHEREAS, the Commission's water management plan and Minnesota Statutes require that local water management plans be prepared in accordance with Minnesota Statutes, Section 103B.235 and Minnesota Rules, Chapter 8410; and

WHEREAS, the City of Minnetonka ("City") has prepared and submitted to the Commission the City's local water resources management plan; and

WHEREAS, Minnesota Statutes, Section 103B.235, subdivision 3 authorizes the Commission to review and approve local water management plans and to take other actions necessary to assure that the local plan is in conformance with the Commission's plan and the standards set forth therein; and

WHEREAS, the Commission reviewed the City's plan, considered the comments provided by the Metropolitan Council regarding the plan, and has determined the plan was prepared in accordance with the requirements of Minnesota Statutes, Section 103B.235 and Minnesota Rules, Parts 8410.0160 and 8410.0170, it contains the requirements for a local plan, and is consistent with the Commission's water management plan.

NOW, THEREFORE, BE IT RESOLVED, by the Bassett Creek Watershed Management Commission, as follows:

1. The Minnetonka Water Resources Management Plan dated December 2018 is hereby approved with the understanding that the final plan may include changes required to respond to comments from other watersheds, but conditioned on those changes not revising the provisions applicable within the Bassett Creek Watershed.
2. In accordance with Minnesota Statutes, Section 103B.235, subdivision 4, the City shall adopt and implement its local plan within 120 days of this approval and amend its official controls in accordance with the plan within 180 days.
3. Pursuant to Minnesota Statutes, Section 103B.235, subdivision 5, and to be consistent with the Commission's water management plan, the City shall submit any proposed amendments to its local plan to the Commission for review and approval prior to adoption.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 20th day of December, 2018.

Chair

ATTEST:

~~Secretary~~ Administrator

Appendix D
2018 Website Usage and Social Media Report

Reports

Jan 1, 2018 - Dec 31, 2018

+ Add Widget | Share | Email | Export | Customize Dashboard | Delete Dashboard

All Users
100.00% Sessions

+ Add Segment

Total unique users

4,356

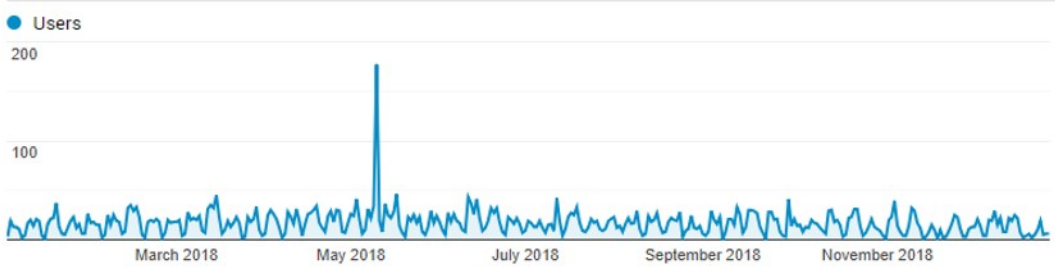
% of Total: 55.38% (7,865)

Total Sessions

7,084

% of Total: 66.53% (10,648)

Users



Avg. Session Duration

00:02:39

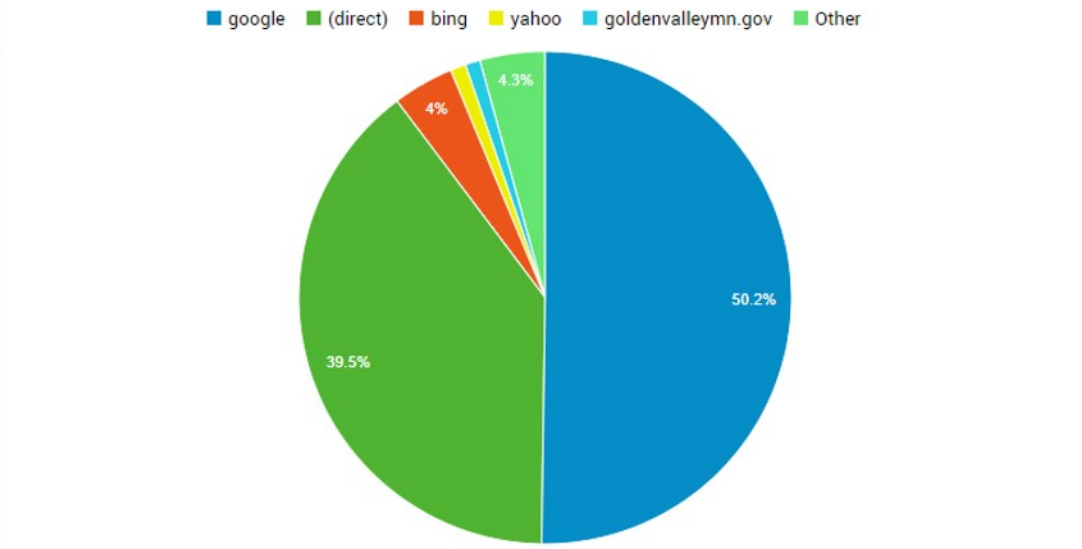
Avg for View: 00:01:49 (46.72%)

Avg. Pages per session

2.91

Avg for View: 2.29 (27.09%)

Traffic source



Sessions By Page

Page	Sessions
/	3,407
/lakes-streams/plymouth-creek	378
/lakes-streams/twin-lake	211
/meeting-events	199
/lakes-streams/sweeney-lake	190
/lakes-streams/medicine-lake	144
/lakes-streams/main-stem-bassett-creek	143
/lakes-streams	137
/lakes-streams/northwood-lake	134
/projects	134

Sessions by City

City	Sessions
Minneapolis	1,354
Golden Valley	722
Eden Prairie	617
Plymouth	570
Saint Paul	358
Edina	347
(not set)	310
Minnetonka	224
Saint Louis Park	157
Richfield	154

Sessions by Browser

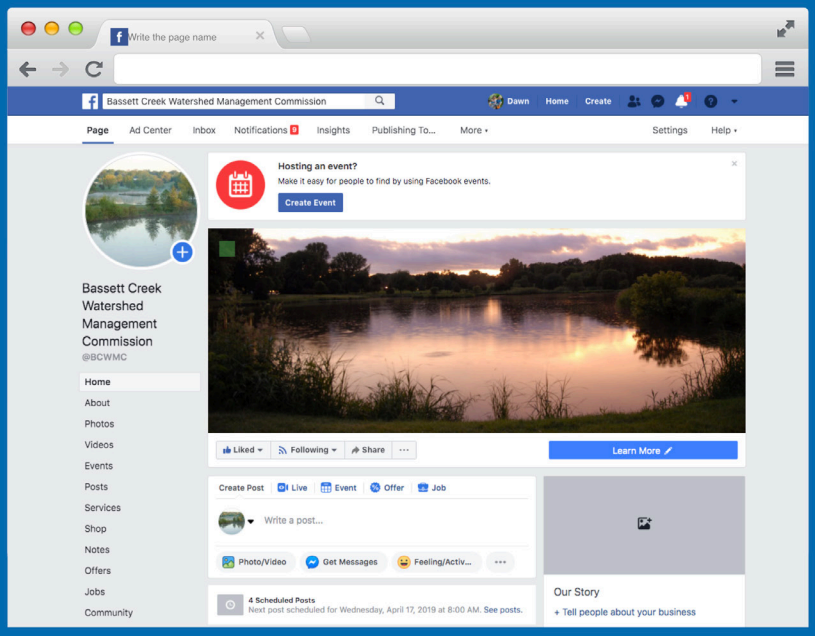
Browser	Sessions
Chrome	4,055
Internet Explorer	1,254
Safari	1,080
Firefox	374
Edge	218
Samsung Internet	43

facebook 2018 Report

01/01/2018 – 12/31/2018

Total Page Likes
214

Increased by
▲14.4%
Last Year



2018 Facebook Page Overview

Last Year - 01/01/2018 – 12/31/2018

106	103,652	34,974	4,247
Number of Posts	Reach	Unique Users (New)	Post Engagements

facebook.com/BCWMC

Published	Post	Type	Targeting	Reach	Engagement	
12/19/2018 9:29 AM	Small animals at the base of the freshwater food			448	2 3	
12/10/2018 2:16 PM	Encourage your place of work and/or worship to			12.9K	2.3K 138	Salt
11/28/2018 10:03 AM	Good to see...			37	1 0	
11/23/2018 7:09 AM	Need a gift for a boater? Interesting invention to			52	2 0	
11/22/2018 9:05 AM	Bassett Creek Watershed Management Commission			58	2 4	
11/14/2018 11:01 AM	Have you been to this traveling exhibition about			53	1 3	
11/07/2018 11:25 AM	Our very own General Mills Cereal is part of the			60	2 3	
11/07/2018	Please reach out to the			7.1K	139	Salt

Published	Post	Type	Targeting	Reach	Engagement	
09/20/2018 8:00 AM	Thanks hometownsource.com for			39	1 1	
09/19/2018 9:50 AM	Salt use is a leading water and public health problem.			3.6K	75 72	Salt
09/09/2018 5:45 PM	Carp are a problem in our watershed too...			66	1 2	
09/06/2018 5:32 PM	"Clean, drain, dry" your watercraft cannot be			9.6K	67 28	AIS
09/06/2018 3:24 PM	Looks like perfect weather to do this family-friendly			30	0 0	
09/06/2018 2:03 PM	Great example of living with the land and			38	2 2	
08/31/2018 4:59 PM	We will be sponsoring Master Water Stewards.			58	1 4	
08/28/2018 3:48 PM	Lots of space still available. Please invite			2K	33 16	
08/21/2018	Check this out!				6	

Published	Post	Type	Targeting	Reach	Engagement
07/09/2018 1:09 PM	Energy use may be our biggest use of water. Who			35	1 3
07/09/2018 1:06 PM	Join us July 11 for Pollinator Field Day, 4-7			3.7K	59 13
07/02/2018 8:08 AM	With the biggest boating holiday around the corner,			224	12 10
06/30/2018 6:49 AM	FAQ Friday? What's a raingarden? Shallow			478	51 13
06/29/2018 8:00 AM	FAQ Friday? What's a raingarden? Shallow			142	19 11
06/22/2018 8:00 AM	FAQ Friday! Where do I find native plants for			24	0 0
06/19/2018 4:49 PM	Tired of depressing news? Read this. It will make you			37	0 0
06/15/2018 8:00 AM	FAQ Friday! When are BCWMC meetings? On			24	0 0

Pledge to Plant for Pollinators and Clean Water

Published	Post	Type	Targeting	Reach	Engagement
03/08/2018 2:54 PM	Update: There is a bill number in the House (HF			44	0 3
03/08/2018 7:29 AM	These kids are sad about oversalting! This salt			139	29 12
03/07/2018 10:06 AM	PLEASE take 30 seconds to contact your legislators			5.8K	367 50
03/02/2018 8:01 AM	FAQ Friday Zebra mussels are small,			97	12 2
03/01/2018 2:18 PM	Please consider registering for the State of			8	0 3
02/23/2018 8:25 AM	FAQ Friday What is BCWMC doing to control			38	1 2
02/20/2018 4:55 PM	Minnesotans Call For New Legislation To Promote			33	0 2
02/16/2018 10:11 AM	Wow. This is amazing work. We need more of			30	0 3
02/16/2018	FAQ Friday! Sadly, zebra				

Salt