Bassett Creek Watershed Management Commission

2016 Annual Report

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

May 2017

Bassett Creek Watershed Management Commission
2016 Annual Report

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Cover photo: Northwood Lake, New Hope

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2016 Activities & Achievements

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

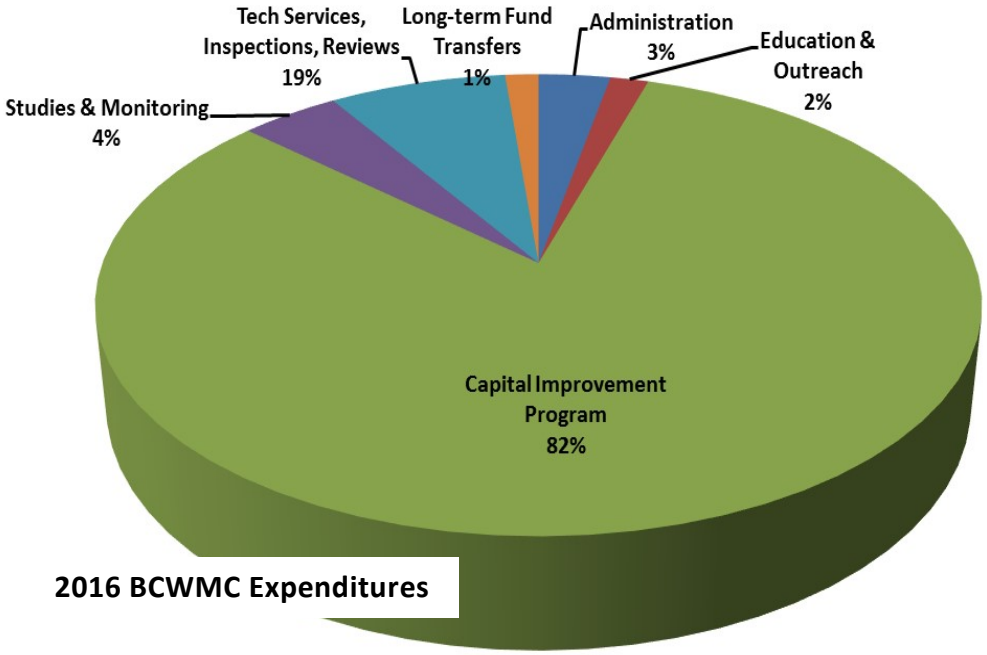
Major Projects (Capital Improvement Program)

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

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

Budget

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



2016 BCWMC Expenditures

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

Water Monitoring Activities

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

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

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

Education & Outreach Activities

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

I. Annual Activity Report

This annual report covers the Bassett Creek Watershed Management Commission's (BCWMC) activities for fiscal year 2016 (February 1, 2016—January 31, 2017). 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. 2016 Commissioners

Municipality / Term Expiration	Commissioners	Alternates
Crystal February 1, 2018	Guy Mueller, Vice Chair	Vacant
Golden Valley February 1, 2018	Stacy Hoschka, Secretary/Treasurer	Jane McDonald Black
Medicine Lake February 1, 2018	Clint Carlson	Gary Holter
Minneapolis February 1, 2019	Michael Welch	Lisa Goddard
Minnetonka February 1, 2019	Michael Fruen	Jacob Millner
New Hope February 1, 2019	John Elder	Pat Crough
Plymouth February 1, 2017	Ginny Black	David Tobelmann
Robbinsdale February 1, 2017	Wayne Sicora	Mike Scanlan
St. Louis Park February 1, 2017	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. There were no plan amendment requests in 2016.

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.

D. 2016 Activities

The BCWMC conducted the following activities in 2016. 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 2016, progress on CIP projects included:

- NEARLY COMPLETE: The Northwood Lake Improvement Project in New Hope's Northwood Park was constructed in 2016 with finishing touches to be completed in 2017. The project includes an underground 160,000-gallon tank that will capture storm water runoff so that it can be used to irrigate ballfields. Raingardens and a storm water pond were also constructed. The project was partially funded with city funds, a Clean Water Fund grant from the MN Board of Water and Soil Resources, and a Clean Water Partnership grant from the MN Pollution Control Agency.

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- UNDERWAY: Feasibility studies were completed for the Plymouth Creek Restoration Project (Plymouth) and the Main Stem Erosion Repair Project (Minneapolis). These projects will be designed in 2017. A feasibility study for the Bassett Creek Park Pond Project got underway in 2016.

- ON HOLD - Four Seasons Mall Area Water Quality Project in Plymouth: Although project plans were approved in 2013, this project was delayed due to significant concerns from local residents. Alternatives were evaluated in 2014 and 2015. In August and December 2016, a prospective developer of the Four Seasons Mall site approached the BCWMC and presented concepts for partnering on storm water management for the site. The Commission will take action in 2017.

2. Grant Administration

- Submitted project reports for MPCA Clean Water Partnership Grant for the Northwood Lake Improvement Project in New Hope. (2015 Grant)

- Submitted project reports for BWSR Clean Water Fund Grant for the Northwood Lake Improvement Project in New Hope. (2015 Grant)

- Submitted project report for DNR Flood Damage Reduction Grant for XP-SWMM Phase II Project. (2015 Grant)

- Received grant from Met Council for Harrison Neighborhood Project, developed work plan and executed agreement.

3. Annual Report

The BCWMC prepared the 2015 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 September 15, 2016, regarding the proposed CIP projects: Plymouth Creek Restoration Project and the Main Stem Erosion Repair Project. (See Section H below for further information on public involvement and education.)

5. BCWMC Website and Social Media

In early 2016, the BCWMC launched its new website. The website 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 2016, 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.

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 twice per month between April and September, and once per month outside this period.

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 2016.

8. Flood Control Project Inspections

On October 20, 2016, the BCWMC performed its annual Flood Control Project inspection. The conditions of the flood control features were inspected and erosion, settlement, sedimentation, and structural issues were recorded, compiled into a report, and reported to the Commission at its December 15, 2016 meeting. The BCWMC distributed its findings and recommendations to the Minnesota Department of Natural Resources, the Army Corps of Engineers, and staff at the BCWMC member cities.

9. Development of Responsibilities and Funding Mechanisms for Rehabilitation and Replacement of Flood Control Project Features

In 2015, the BCWMC authorized staff to perform a study to determine responsibilities for major rehabilitation and replacement of the Flood Control Project features and establish the associated funding mechanisms as per policy in the 2015 Watershed Management Plan. The BCWMC Technical Advisory Committee reviewed background information and discussed alternatives and Commission Engineer recommendations at two meetings in 2015 and three meetings in 2016. At their May and July 2016 meetings, the Commission took action on a variety of policies regarding the inspections, maintenance, and funding of long term maintenance for the Flood Control Project features. Policies, maps, and background documents will be available online in 2017.

10. XP-SWMM Phase II 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. This project was partially funded by a Flood Damage Reduction Grant from the MN Department of Natural Resources.

11. Development Proposals

The BCWMC reviewed 44 development proposals in the watershed for conformance to water quality and flooding policies. As a comparison, the BCWMC reviewed 38, 35, 41, 37 and 32 development proposals respectively in 2015, 2014, 2013, 2012 and 2011. See Section E: Project Reviews.

12. Review of Municipal Plans and Adjacent WMO Plans/Plan Amendments

In 2016, the BCWMC did not receive any municipal plans nor adjacent WMO plans/plan amendments for review. The BCWMC received and commented on proposed revised floodplain ordinances for the Cities of Golden Valley and 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 directed its Technical Advisory Committee (TAC) to meet six times during the 2016 fiscal year to review and work on the following items:

- Study of the roles, responsibilities, and funding mechanisms for long term maintenance and replacement of BCWMC Flood Control Project

- Develop the 2018 – 2022 Capital Improvement Program list
- Recommend submissions to BWSR's Biennial Budget Request
- Discuss possible revisions to BCWMC performance standards for linear projects
- Receive and update on P8 model results and uses
- Provide input on a process for use of requests for proposals
- Provide input on possible shoreland and habitat monitoring program

14. Resolutions and Policy Manual

The BCWMC passed nine business-related resolutions in 2016 and 2 resolutions of appreciation - to Commissioner Ginny Black and Commission Engineer Len Kremer. (Appendix C)

In 2016, the BCWMC Administrative Services Committee worked on refining and updating the BWCMC Policy manual which was adopted by the Commission at their meeting in December 2016. The policy manual covers internal governance policies and external/operational policies. The manual also includes a records retention policy that was adopted by resolution, along with data practices act procedures. The policy manual is available online at: http://www.bassettcreekwmo.org/application/files/8314/9202/1213/BCWMC_Policies_2016_Revisions.pdf.

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 2014 *"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)
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 (07010206-526)	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 (2014)[2]
Medicine Lake (27-0104-00)	Nutrient/Eutrophication Biological indicators (2004) Mercury in fish tissue (2004)[1]

Water Body (Lake/River ID #)	Pollutant or Stressor (Year of Listing)
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 "2015 Water Quality Monitoring Data and Studies" regarding monitoring of these lakes in 2015.

E. BCWMC Project Reviews

The following table, *Proposed projects reviewed by BCWMC in fiscal year 2016* 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 preliminary review of the Blue Line and Southwest LRT projects.

Proposed Projects Reviewed by BCWMC in FY 2016 [1]

Appl Form	Project Name	Date Submitted	City	Type
2015-14	**Plymouth Ice Ctr./Life Time Parking Lot Expansion**	**5/28/2015**	**PLY**	**Public Agency**
2015-33	**TH 169 Drainage Imp (SP 2772-111)**	**11/13/2015**	**PLY**	**Street/Public Agency**
2015-34	Waterford Innovation Center	10/15/2015	PLY	Commercial
2015-36	10th Ave-UP Rail Culvert Repairs (prelim)	1/22/2016	GV	Street/Public Agency
2016-01	Theo. Wirth Adventure and Welcome Ctr	2/1/2016	GV	Public Agency
2016-01A	Theo. Wirth Golf Course	2/1/2016	GV	Public Agency
2016-02	**2016 Northwood Lake Improvements**	**2/2/2016**	**NH**	**Public Agency**
2016-03	**2016 Northwood South Area Infrastructure**	**2/2/2016**	**NH**	**Public Agency**
2016-04	**Three Rivers PD BC Regional Trail**	**2/5/2016**	**NH**	**Public Agency**
2016-05	Arlington Row East Apts	2/22/2016	SLP	Multi-residential
2016-06	**GV 2016 PMP STH 169-Plymouth Ave**	**2/25/2016**	**GV**	**Street/Public Agency**
2016-07	Gardendale Development	3/1/2016	CRY	Single Family Development
	Blue Line LRT	3/24/2016	ROB/GV MPLS	WCA LGU
2016-08	Morries Lincoln of SLP (see 2014-19)	3/28/2016	SLP	Commercial
2016-09	Four Seasons Mall Demo	3/31/2016	PLY	Commercial
2016-10	Old Rockford Rd Overlay & Trail	4/11/2016	PLY	Public Agency
2016-11	Armstrong HS Baseball Field Imp.	4/13/2016	PLY	Institutional
2016-12	Pilgrim Lane Elementary Additions	4/13/2016	PLY	Institutional
2016-13	Little Newtons Addition	4/29/2016	PLY	Commercial
2016-14	Mortenson Hdqrts Addition	4/29/2016	GV	Commercial
2016-15A	SP 2772-104 TH 169 16th St/Ramp Closure	5/2/2016	SLP	Street/Public Agency
2016-15B	SP 2772-105 TH 169 Pavement Project	5/2/2016	SLP/Ply GV/Mtka	Street/Public Agency
2016-16	1143 S Shore Dr - Med Lk WCA	4/12/2016	ML	WCA LGU
2016-17	**SWLRT Minneapolis**	**5/3/2016**	**MPLS**	**Street/Public Agency**
2016-18	Beacon Academy	5/6/2016	CRY	Commercial
2016-19	Ply PW Campus Facility Add	5/20/2016	PLY	Public Agency
2016-20	Cherrywood Pointe	5/23/2016	MTKA	Multi-residential
2016-21	Tennant Co. Dock/Plaza - HOLD	5/24/2016	GV	Commercial
2016-22	**Theo Wirth Utility Improvements**	**5/27/2016**	**GV**	**Linear**
2016-23	**Daugherty 2860 Evergreen Ln**	**6/23/2016**	**PLY**	**Single Family**
2016-24	Luther Support Center	6/24/2016	GV	Commercial
2016-25	10715 S Shore Dr-Med Lake WCA	7/5/2016	ML	WCA LGU
2016-25	Hutton House (10715 S Shore Dr)	8/10/2016	ML	Commercial
2016-26	226 Peninsula Road - WCA	7/28/2016	ML	WCA LGU
2016-26	**226 Peninsula Road**	**10/27/2016**	**ML**	**Single Family**

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

Appl Form	Project Name	Date Submitted	City	Type
2016-27	Brookview Community Ctr	7/29/2016	GV	Public Agency
2016-28	Liberty Crossing Flood Mitigation	8/2/2016	GV	Public Agency/ Commercial
2016-29	@glenwood Campus	8/19/2016	MPLS	Commercial
2016-30	Fretham 24 Second Add (Lots 1-3)-	8/18/2016	PLY	Single Family Lots
2016-31	GV Tank Mound Project	8/26/2016	GV	Commercial
2016-32	CSAH 24 Reconstruction Project	1/27/2017	PLY	Street/Public Agency
2016-33	Twin City Outdoor Services	9/28/2016	PLY	Commercial
2016-34	Ridgedale Corner Shoppes	10/4/2016	MKTA	Commercial
2016-35	Mpls Marriott West	10/13/2016	SLP	Commercial
2016-36	Berger Financial Group Addition	10/14/2016	PLY	Commercial
2016-37	Crest Ridge Senior Housing	12/23/2016	MTKA	Multi-residential
2016-38	**Northwood N. Infrastructure Imp**	**1/3/2017**	**NH**	**Street/Public Agency**
2016-39	**French Regional Park Pavement**	**1/13/2017**	**PLY**	**Street/Public Agency**

[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 2016:

- **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 2016, 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

- **Detailed stream monitoring at 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

- **Routine Lake Monitoring—**In 2016, the BCWMC monitored the water quality of Northwood Lake in New Hope, Medicine Lake in Plymouth, and Crane Lake in Minnetonka. Water samples were collected from the deepest location in each lake on six occasions from April through September 2016 and analyzed in the laboratory for total phosphorus, soluble reactive phosphorus, total nitrogen, and chlorophyll *a*. 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.

- **Stormwater flow monitoring and in-stream water quality monitoring** in the watersheds of Parkers Lake (three sites), Medicine Lake (two on Plymouth Creek), and Northwood Lake (one site) was performed on behalf of the City of Plymouth by the Three Rivers Park District (TRPD). Water quality monitoring reports are available on the City of Plymouth's website at: http://www.plymouthmn.gov/index.aspx?page=258.

- **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 four River Watch sites in the Bassett Creek watershed in 2016. The *Hennepin County River Watch Report 2016* is available on the Hennepin County website at http://www.hennepin.us/business/work-with-henn-co/riverwatch .

G. Local Plan Adoption

The following table shows the status of the surface water management plan preparation for each municipality.

Municipality	Local Plan Status	Comments
Crystal	Completed	Local plan was approved by the BCWMC in January 2010. Resolution 10-02.
Golden Valley	Completed	Revised plan was approved by the BCWMC in September 2008. Resolution 08-06.
Medicine Lake	Completed	Local plan was approved by the BCWMC in January 2010. Resolution 10-05.
Minneapolis	Completed	Local plan was approved by the BCWMC in September 2006. Resolution 2006-04.
Minnetonka	Completed	Revised local plan was approved by the BCWMC in September 2008. Resolution 08-05.
New Hope	Completed	Revised plan was approved by the BCWMC in October 2008. Resolution 08-08.
Plymouth	Completed	Local plan conditionally approved by the BCWMC in February 1999. Resolution 99-3. Revised plan was approved by the BCWMC in November 2008. Resolution 08-09.
Robbinsdale	Completed	Local plan was approved by the BCWMC in October 1996; reconfirmed in April 1997. Resolution 97-5. Local plan was reviewed as part of the city's comprehensive plan review in 2008. Revised plan was submitted to the BCWMC for review in December 2009. Resolution 10-04.
St. Louis Park	Completed	Revised plan was approved by the BCWMC in September 2009. Resolution 09-06.

H. 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 2015), 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 FY2016, there were approximately 10,497 sessions with 27,392 page views. A copy of the website Usage Report from February 1, 2016, through January 31, 2017, is included in Appendix D.

- **BCWMC Meeting Packet—** Each month in 2016 the BCWMC posted electronic meeting packets on its website and e-mailed the link to approximately 40 parties. Additionally, each month the BCWMC mailed a hard copy of meeting packet to approximately 12 interested parties. The packets included the BCWMC meeting agenda, meeting minutes, and meeting materials about the issues on the monthly meeting agenda.

- **Publications—**The Commission published its public hearing notice in a variety of Twin Cities metro-area publications including *Finance & Commerce*, and the *Sun Sailor*.

- **West Metro Water Alliance (WMWA)** – 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. WMWA also contracted with Metro Blooms to develop a campaign aimed at engaging residents and businesses in converting turf or hard surfaces to native plantings called "Pledge to Plant – 10,000 Plantings by 2025." http://www.westmetrowateralliance.org/.

- **Metro WaterShed Partners—**The BCWMC participated as a member of the Metro WaterShed Partners as a general supporter of the program and also as a 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. The Clean Water Minnesota Media Campaign is a stormwater education collaboration that develops and delivers stormwater educational materials to a broad audience through television, radio, and billboard campaigns as well as through its website www.cleanwatermn.org**.**

- **Participation in Community Events and Meetings –** In 2016, the BCWMC participated in the Plymouth Home Expo with an information booth and display. Water-related education materials and information was disseminated by watershed Commissioners during the two-day event. Also in 2016, the BCWMC participated in the Golden Valley Arts and Music Festival by manning an information booth and display where materials and maps were disseminated and participated in the Westwood Nature Center restoration event with Great River Greening where Commissioners gave a brief overview of the BCWMC and provided other educational materials and information.

- **Blake School of Minneapolis Project** – In 2016, The Blake School approached the BCWMC with a request for assistance on a project by photography and environmental students to learn about and photograph BCWMC projects. BCWMC staff and city staff provided information and logistical support for a fieldtrip to four BCWMC CIP projects and posted the students' final product of virtual tours on the BCWMC project webpages.

- **Harrison Neighborhood Project** – In 2016, 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 Minneapolis' Near North neighborhood. The BCWMC received a $100,000 grant from the Met Council for this project on behalf of Metro Blooms in 2016 and was awarded a Clean Water Fund grant from the MN Board of Water and Soil Resources that will be executed in 2017.

- **Watershed Tour** – In 2016, the BCWMC hosted a tour for Commissioners, local elected and appointed officials, and others. The tour included stops at three project sites plus demonstrations of macroinvertebrate collections and winter maintenance equipment.

- **Educational Display Materials** – In 2016, the BCWMC consulted with the Lawn Chair Gardener to develop new educational display materials including a free standing watershed map, banners, and a bean bag toss game.

- **Additional Educational Activities and Organizations –** In addition to the above-mentioned programs, the BCWMC financially sponsored Metro Blooms and the Children's Water Festival, and reimbursed registration costs to Commissioners to attend the Road Salt Symposium, Clean Water Summit, and Minnesota Association a Watershed District's Annual meeting.

I. Professional Services Proposal

The BCWMC solicited letters of interest for legal and engineering/technical consulting services in December 2016. The BCWMC received one proposal from a legal firm and four 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 2018.

J. 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.

K. 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 2016, the BCWMC submitted to BWSR its WCA annual reporting form covering all 2016 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.

Resolution—In 2016, the BCWMC adopted a resolution delegating WCA decision making authority to staff for exemptions, no-loss, and wetland boundary and type applications. This resolution was submitted to BWSR on March 1, 2016.

II. 2017 Projected Work Plan

A. Capital Improvements Program (CIP)—The BCWMC will continue to implement its capital improvements program. In 2017, this work will include:

1. **Capital Improvement Program and Prioritization**—The BCWMC will review and update its 5-year capital improvement program, will request a minor plan amendment to make changes to the CIP, and will work to improve the process of project prioritization.

2. **Progress on CIP projects**:

- Continue vegetation management for Schaper Pond Diversion Project and monitor the effectiveness of the project - (SL-3) in Golden Valley.
- Seek alternatives for the Lakeview Park Pond Project (ML-8) in Golden Valley.
- Execute agreements with the City of Plymouth and Rock Hill Management to implement innovative storm water management features on the redevelopment site (Agora) and implement a wetland restoration project on the city-owned parcel to the south. These projects will improve the quality of Northwood Lake and the North Branch of Bassett Creek.
- Establish and maintain vegetation along the Main Stem Bassett Creek Restoration Project in Golden Valley (CR2015) 10th Avenue to Duluth St.
- Finalize construction and establish vegetation along the Honeywell Pond Expansion Project (BC-4) in Golden Valley.
- Finalize construction of the Northwood Lake Water Quality Improvement Project (NL-1) in New Hope.
- Assess the condition of Twin Lake and determine the possible need for a second dose of alum (Golden Valley) (TW-2)
- Finalize construction designs for Plymouth Creek Restoration Project (CR2017-P) in Plymouth from Annapolis Lane extending 2,500 feet upstream and begin construction in winter 2017-2018.
- Finalize construction designs for Main Stem Channel Restoration Project (CR2017-M) in Minneapolis from Cedar Lake Road to Irving Ave.
- Finalize feasibility study and order Bassett Creek Park Pond Dredging Project, Phase I (BCP-2) in Crystal.

3. Begin feasibility studies for the following BCWMC 2019 CIP projects:

- Medicine Lake Rd and Winnetka Ave Long Term Flood Mitigation Plan Project (BC-2,3,8)

- Water quality improvements in Bryn Mawr Meadows, Main Stem Watershed (BC-5)

- Westwood Lake Water Quality Improvement Project (WST-2)

4. Grant Administration:

- Submit final reports and requests for payment for the BWSR Clean Water Fund Grants and the MPCA Clean Water Partnership Grant for the Northwood Lake Improvement Project (NL-1).

- Submit final report and request for payment for DNR Flood Damage Reduction grant for XP-SWMM Phase II modeling project.

- Develop work plans, executing agreements (and subagreements) and submitting reports for BWSR Clean Water Fund Grants for Plymouth Creek Restoration Project and Harrison Neighborhood Project.

- Develop work plans, executing agreements (and subagreements) and submitting reports for Hennepin County Opportunity grant for Plymouth Creek Restoration Project and Hennepin County Environmental Response Fund grant for Main Stem Erosion Repair Project.

B. Watershed Management Plan—In 2017 the BCWMC will seek a minor plan amendment to revise its Capital Improvements Program. A plan amendment may also be sought to update funding mechanisms for Flood Control Project maintenance and rehabilitation. Other than those changes, the BCWMC will implement its annual water quality and flood control programs as described in the 2015 BCWMC *Watershed Management Plan*.
http://www.bassettcreekwmo.org/document/wmp-plans

C. Additional Monitoring, Studies, and Programs

1. **Watershed-wide XP-SWMM Model—** The BCWMC will finalize the XP-SWMM Phase 2 model. The BCWMC may officially revise the flood elevations in areas within its jurisdiction (along the BCWMC Trunk System) to reflect results of the model. The modeling work involves 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 datums, performing flow monitoring, calibrating the model, and preparing a report.

2. **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.

3. **Sweeney Lake Aeration Study –** The BCWMC will study the effect of year-round aeration on Sweeney Lake to determine if the activity improves or degrades water quality.

4. **Schaper Pond Effectiveness Monitoring –** The BCWMC will study the quality of water entering and leaving Schaper Pond, just upstream of Sweeney Lake to determine the effectiveness of the 2015 CIP project to divert storm water flows within the pond.

5. **Chloride Source Assessment –** The BCWMC will use available data to identify "hot spots" in the watershed where high levels of deicers may be impacting water resources.

6. **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.

7. **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.

8. **Water Quality—** Proposed water quality tasks for 2017 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 2017, the BCWMC will execute a contract with Wenck Associates to perform monitoring on Twin Lake, Sweeney Lake, and Lost Lake. In addition to collection of samples for chemical analysis, phytoplankton and zooplankton samples will be collected and analyzed, and an aquatic plant survey will be performed on two occasions.

    - ***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 2017. Volunteer citizens will monitor the following lakes in 2017: 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, 2016, and December 31, 2017, 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 2017. BCWMC staff will continue to maintain the rating curve.

- ***Wirth Lake and Spring Lake*** will be monitored by MPRB.

- ***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.

- ***Stormwater flow monitoring and in-stream water quality monitoring*** in the Parkers Lake, Medicine Lake and Northwood Lake watersheds will be performed by the TRPD, on behalf of the City of Plymouth.

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

10. **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.

11. **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.

12. **XP-SWMM Phase II Report** – The BCWMC will complete its XP-SWMM Phase II hydrologic modeling project, will publish the report, and will consider adopting new flood elevations for areas within its jurisdiction.

13. **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 2017, 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 2016.

D. Education and Outreach

The BCWMC will implement its 2017 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, hosting a sidewalk and parking lot winter maintenance program, and participation in community events such as the Plymouth Home Expo and Golden Valley Arts and Music Festival.

III. Annual Financial Report

The 2016 fiscal year for the Bassett Creek Watershed Management Commission (BCWMC) commenced on February 1, 2016 and ended January 31, 2017.

A. 2016 Approved Budget

The approved operating budget for fiscal year 2016 was $609,400. 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 2016 operating budget, 2016 revenues, and 2016 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, 2017, 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
2016 Financial Information

- 2016 Budget and Notes
- 2016 Expected Revenues
- 2016 Member City Assessments

2016 Operating Budget

Bassett Creek Watershed Management Commission

Item	2013 Budget	2013 Actual	2014 Budget	2014 Actual	2015 Budget	2016 Budget	
ENGINEERING & MONITORING							
Technical Services	120,000	133,347	120,000	109,391	120,000	120,000	
Development/Project Reviews (funded by fees)	60,000	62,902	65,000	52,643	65,000	65,000	(A)
Non-fee and Preliminary Reviews					15,000	15,000	(B)
Commission and TAC Meetings	14,250	17,390	16,000	15,984	14,500	13,000	(C)
Surveys and Studies	10,000	11,380	20,000	7,446	20,000	25,000	(D)
Water Quality / Monitoring	40,000	39,913	45,000	74,090	63,000	76,000	(E)
Shoreland Habitat Monitoring						6,000	(F)
Water Quantity	11,000	10,250	11,000	12,100	11,500	11,500	
Assistance on Erosion Control Inspections	7,000	4,790	1,000	225	1,000	1,000	(G)
Annual Flood Control Project Inspections	15,000	3,024	20,000	17,031	10,000	10,000	(H)
Municipal Plan Review	2,000	0	2,000	764	2,000	2,000	(I)
Watershed Outlet Monitoring Program (WOMP)	17,000	12,757	17,000	13,917	17,000	17,000	(J)
Subtotal Engineering & Monitoring	**$296,250**	**$295,754**	**$317,000**	**$303,591**	**$339,000**	**$361,500**	
PLANNING							
Watershed-wide XP-SWMM Model	0	488	0	0	-	-	
Watershed-wide XP-SWMM Phase II						-	(K)
Watershed-wide P8 Water Quality Model	0	9,967	0	0	-	-	
Next Generation Plan Development	40,000	43,394	40,000	55,198	30,000	-	
Subtotal Planning	**$40,000**	**$53,849**	**$40,000**	**$55,198**	**$30,000**	**$0**	
ADMINISTRATION							
Administrator	50,000	48,310	60,000	53,917	62,000	62,000	
Legal	18,500	17,570	18,500	22,269	18,500	18,500	
Financial Management	3,045	3,119	3,045	3,045	3,200	3,200	
Audit, Insurance & Bond	15,225	13,000	15,500	12,476	15,500	15,500	
Digitize Historic Paper Files/Data Management					2,500	5,000	(L)
Meeting Catering Expenses	2,750	1,821	3,000	1,836	2,500	2,200	
Admin Services (Rec Sec+Printing+Postage)	40,000	31,157	35,800	22,763	32,000	25,000	(M)
Subtotal Administration	**$129,520**	**$114,977**	**$135,845**	**$116,306**	**$136,200**	**$131,400**	
OUTREACH & EDUCATION							
Publications / Annual Report	2,000	1,948	2,000	2,272	4,000	2,500	(N)
Website	2,500	201	2,000	0	12,000	3,500	(O)
Demonstration/Education Grants	0	0	0	0	-	-	
Watershed Education Partnerships	15,000	11,200	15,500	11,100	15,500	15,500	(P)
Education and Public Outreach	14,775	12,788	15,000	20,292	17,000	22,500	(Q)
Public Communications	3,000	1,867	3,000	1,198	3,000	2,500	
Subtotal Outreach & Education	**$37,275**	**$28,004**	**$37,500**	**$34,862**	**$51,500**	**$46,500**	
MAINTENANCE FUNDS							
Erosion/Sediment (Channel Maintenance)	25,000	25,000	25,000	25,000	25,000	25,000	(R)
Long-Term Maint. (Flood Control Project)	25,000	25,000	25,000	25,000	25,000	25,000	(S)
Subtotal Maintenance Funds	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	
TMDL WORK							
TMDL Implementation Reporting	10,000	-	20,000	20,000	20,000	20,000	(T)
Subtotal TMDL Work	**$10,000**	**$0**	**$20,000**	**$20,000**	**$20,000**	**$20,000**	
GRAND TOTAL	**$563,045**	**$542,584**	**$600,345**	**$579,957**	**$626,700**	**$609,400**	

NOTES

(A) Majority of costs are covered by review fees

(B) 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.). This allows the Commission to better track how well the fees they receive for reviews match up with the costs of those reviews.

(C) Engineer attendance at BCWMC meetings and TAC meetings. 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)

(D) For Commission-directed surveys and studies. Past work has included watershed tours, Medicine Lake outlet work, etc. $5,000 of this item will be used to develop an aquatic plant management task force to study and develop policies for future Commission involvement in aquatic plant management.

(E) Detailed monitoring of Medicine Lake, Crane Lake and Northwood Lake ($66,000), and for general water quality requests ($10,000); lake monitoring includs monitoring two locations on Medicine Lake, and one location each at Crane Lake and Northwood Lake on 12 occsasions (Medicine Lake) or 6 occasions (Crane Lake and Northwood Lake) for selected parameters (total phosphorus, soluble reactive phosphorus, total nitrogen, pH and chlorophyll a), sample analysis, phytoplankton and zooplankton collection and analysis, an aquatic plan survey (two occasions), and preparation of final report. Estimate includes lowered costs due to cooperation with TRPD and City of MTKA. See Budget Detail Document for further details.

(F) New line item in 2016 for shoreland habitat monitoring program (after consideration and program development through Commission and TAC input). Program (if so ordered) could monitor Northwood Lake (to dovetail with water quality monitoring) and may include components such as evaluating habitat quality in submergent, emergent, and upland zones, identifying shoreline erosion, etc. See Budget Detail Document for further details.

(G) After recommendations from the TAC and Budget Committee,the Commission 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), and for inspecting projects such as County highway and MnDOT projects.

(H) 2016 budget includes usual inspection (as it did in 2015). 2014 budget Included inspection of double box culvert (performed once every 5 years), and assumed City of Minneapolis will assist with access. (2013 budget included sediment survey of Bassett Creek Park Pond.)

(I) 2016 assumed budget to address municipal and adjacent WMO plan amendments;reviews of updated/revised local controls and updated/revised municipal plans not likely in 2016, most likely in 2017.

(J) BCWMC is reimbursed $5,000 from Met Council. $17,000 includes $11,000 for Wenck or similar contractor + $6,000 for Barr's data management and analyses

(K) Work on the XP-SWMM phase II project will being in 2015 with $103,000 coming fro the Long Term Maintenance Funds (as directed by the Commission at their April 16, 205 meeting). For the remainder of the work on this project (happening in 2016), the Budget Committee recommends the use of $158,000 from Long Term Maintenancae Funds. Any State or Federal funding secured for this pojrect will offset the withdrawals from the Long Term Maintenance Fund.

(L) Place holder for records and data management project to begin in 2015.

(M) Recording Secretary and printing/postage based on 2014 actual expenses.

(N) Lowered from 2015 because press release writing is being charged within recording secretary or administrator time.

(O) Website maintenance and hosting fees.

(P) Includes CAMP ($5,000), River Watch ($2,000), Metro Watershed Partners ($3,500), Metro Blooms ($3,000), Freshwater Society ($2,000) [Freshwater Society is a new addition and replaces Blue Thumb which is merging with Metro Blooms.]

(Q) Includes funding for West Metro Water Alliance at $13,000 plus funding for other educational supplies and materials and up to $4,000 for road signs at creek crossings.

(R) Will be transferred to Channel Maintenance Fund

(S) Will be transferred to Long-Term Maintenance Fund

(T) Task includes reporting on TMDL implementation and updating P8 model to include new BMPs.

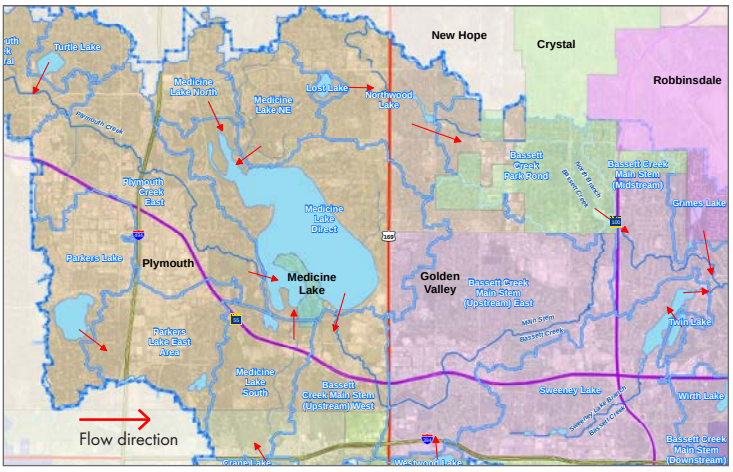
2015 Financial Information			
Audited Fund Balance as of January 31, 2015		$	388,206
Expected income from assessments in 2015	+	$	490,345
Expected interest income in 2015	+	$	-
Expected income from project review fees	+	$	60,000
Expected income from CIP Administrative Funds	+	$	25,000
Expected transfer from Long-term Maint Fund for Flood Control Project	+	$	10,000
Expected income from WOMP reimbursement	+	$	5,000
Estimated funds available for fiscal year 2015		$	978,551
Estimated expenitures for fiscal year 2015	-	$	626,700
Estimated fund balance as of January 31, 2016		$	351,851
2016 Budget Details			
Expected Income			
Assessments to cities	+	$	490,345
Use of fund balance	+	$	27,000
CIP Administrative Funds (1.4% of $1.222M levy)	+	$	17,055
Project review fees	+	$	60,000
Transfer from Long-term Maint Fund for Flood Control Proj Inspections	+	$	10,000
WOMP reimbursement	+	$	5,000
Interest income in 2016	+	$	-
		$	609,400
Expected Expenses			
Total operating budget		$	609,400
Fund Balance Details			
Beginning Fund Balance (Jan 31, 2016)		$	351,851
Use of Fund Balance (see income above)	-	$	27,000
Remaining Fund Balance (Jan 31, 2017)		$	324,851

Bassett Creek Watershed Management Commission
2016 Assessments

Community	For Taxes Payable in 2015	2015 Percent	Current Area Watershed	Percent	Average	2012 Assessment	2013 Assessment	2014 Assessment	2015 Assessment	2016 Assessment
	Net Tax Capacity	of Valuatio	in Acres	of Area	Percent	$461,045	$515,016	$490,345	$490,345	$490,345
Crystal	$7,008,868	5.42	1,264	5.09	5.26	$24,941	$27,424	$25,504	$25,868	$25,771
Golden Valley	$32,888,059	25.45	6,615	26.63	26.04	$115,080	$129,126	$123,033	$121,964	$127,675
Medicine Lake	$862,204	0.67	199	0.80	0.73	$3,484	$3,909	$3,479	$3,543	$3,600
Minneapolis	$8,543,009	6.61	1,690	6.80	6.71	$32,661	$35,236	$32,953	$33,235	$32,885
Minnetonka	$8,750,862	6.77	1,108	4.46	5.62	$24,920	$28,464	$27,402	$28,121	$27,536
New Hope	$6,995,669	5.41	1,252	5.04	5.23	$25,533	$27,648	$26,479	$25,681	$25,627
Plymouth	$56,041,783	43.36	11,618	46.77	45.07	$209,101	$235,310	$224,959	$225,159	$220,974
Robbinsdale	$2,339,439	1.81	345	1.39	1.60	$8,022	$8,479	$7,743	$7,587	$7,843
St. Louis Park	$5,804,289	4.49	752	3.03	3.76	$17,303	$19,420	$18,792	$19,184	$18,433
TOTAL	**$129,234,182**	**100.00**	**24,843**	**100.00**	**100.00**	**$461,045**	**$515,045**	**$490,345**	**$490,345**	**$490,345**

Appendix B
2016 Lake Monitoring Reports

Medicine Lake 2016 water quality monitoring



About Medicine Lake

BCWMC classification	Priority-1 deep lake
Watershed area	11,014 acres
Lake size	902 acres
Average depth	17.5 feet
Maximum depth	49 feet
Ordinary high water level	889.1 feet
Normal water level	887.7 feet
Downstream receiving waterbody	Bassett Creek
Location (city)	Medicine Lake, Plymouth
MPCA impairments	Mercury in fish tissue, nutrients
Aquatic invasive species	Eurasian watermilfoil, curly-leaf pondweed
Public access	Yes (boat launch)

Monitoring water quality in Medicine Lake

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes and six ponds 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 2016 monitoring efforts on Medicine Lake is provided below; more comprehensive information can be found on pages 2–7.

At a glance: 2016 monitoring results

In 2016, the BCWMC monitored Medicine Lake for:

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

Results indicate that Medicine Lake does not meet applicable Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for lakes. Trend analyses indicate chlorophyll *a* concentrations have increased significantly over the past 20 years.

Recommendations

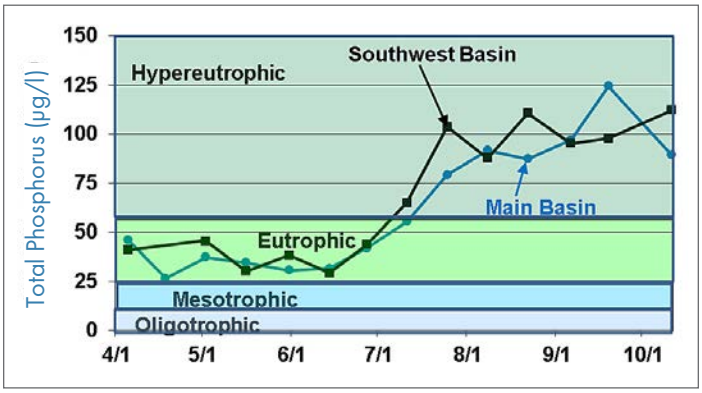
- Implement management measures to reduce the internal phosphorus load from sediment (about one-third of the lake's annual phosphorus load). Alum treatment would reduce internal phosphorus load from sediment and improve water quality.
- Continue water quality and biological monitoring.

Water chemistry monitoring: 2016

Total phosphorus levels

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

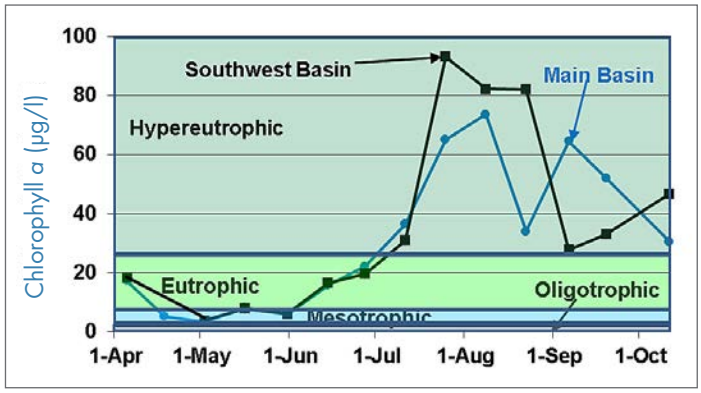
- BCWMC/MPCA standard: 40 micrograms per liter (µg/L) or less.
- Range: Total phosphorus concentrations for Medicine Lake were in the eutrophic category from April to mid-June and increased through September. The low was 27 µg/L in April, and the high was 124 µg/L in September.
- Summer average: 76 µg/L in the Main Basin and 79 µg/L in the Southwest Basin; did not meet BCWMC/MPCA standard.



Chlorophyll *a* levels

Chlorophyll *a* is a pigment in algae and generally reflects the amount of algae growth in a lake. Lakes which appear clear generally have chlorophyll *a* levels less than 15 µg/L.

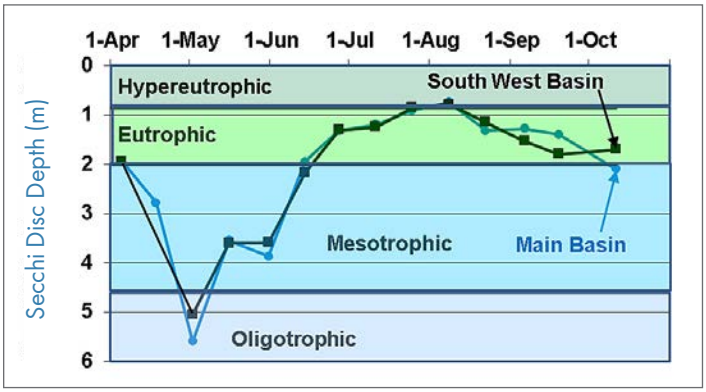
- BCWMC/MPCA standard: 14 micrograms per liter (µg/L) or less.
- Range: Chlorophyll *a* concentrations ranged from a low of 3 µg/L in May to a high of 93 µg/L in July. From July through October, concentrations were in the hypereutrophic range.
- Summer average: 46 µg/L in the Main Basin and 48 µg/L in the Southwest Basin; did not meet BCWMC/MPCA standard.



Water clarity

Water clarity is often affected by the abundance of algae or other photosynthetic organisms in a lake. It is usually measured by lowering an 8-inch "Secchi" disc into the lake; 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: Secchi disc depth declined from 5.6 meters in early May to 0.7 meters in early August.
- Summer average: 1.4 meters in the Southwest Basin (met BCWMC/MPCA standard) and 1.3 meters in the Main Basin (did not meet standard).



Definitions

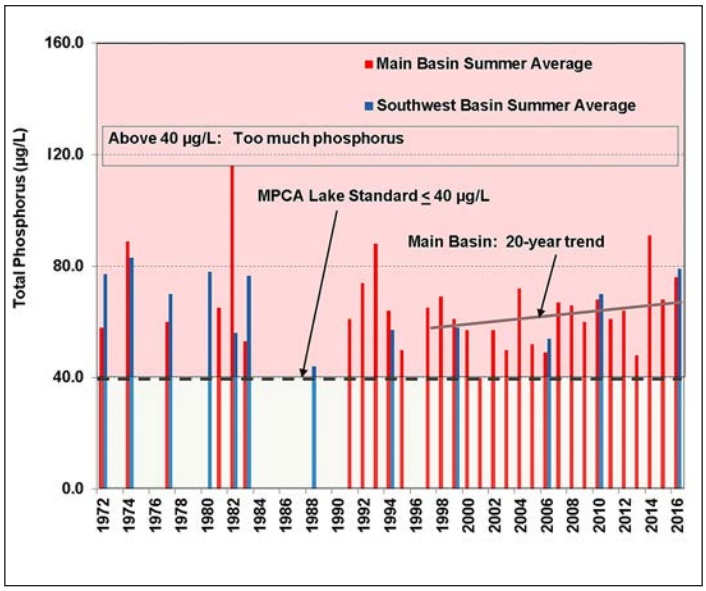
- ***Eutrophic:*** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae and other organisms; decay of algae can reduce lake oxygen levels
- ***Hypereutrophic:*** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low transparency
- ***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 1972–2016: historical trends

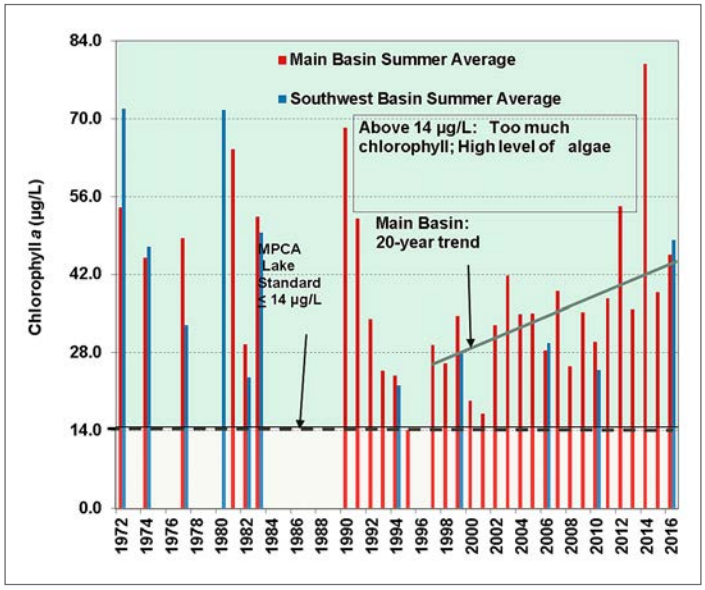
Water quality in Medicine Lake has been monitored since 1972. Summer averages (June through September) of total phosphorus, chlorophyll *a*, and Secchi disc transparency for the Main Basin and Southwest Basin from 1972–2016 are shown in the figures to the right. Summer averages for total phosphorus and chlorophyll *a* have not met the BCWMC/MPCA standard throughout this period. However, Secchi disc summer averages have met the BCWMC/MPCA standard 66 percent of the time in the Main Basin and 73 percent of the time in the Southwest Basin.

Trend analyses of the Main Basin show statistically significant (95 percent confidence level) increases in chlorophyll *a* concentrations during the past 20 years. These increases correspond with significant increases in algal levels. Summer average total phosphorus concentrations and Secchi disc depths have also increased during the past 20 years, but these increases are not statistically significant.

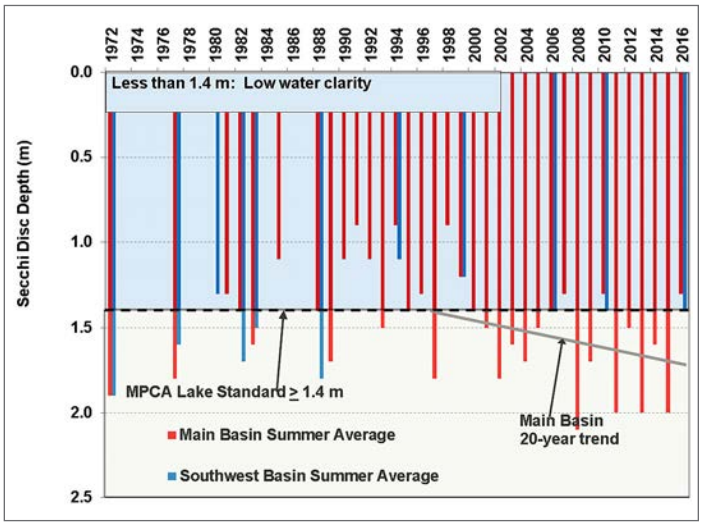
Total phosphorus trends

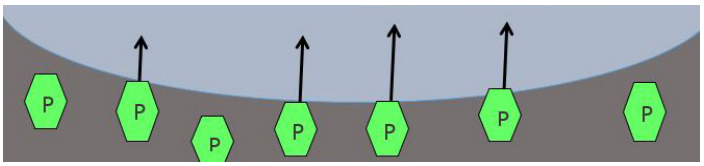


Chlorophyll *a* trends



Water clarity trends





Phosphorus loading from sediment (2016)

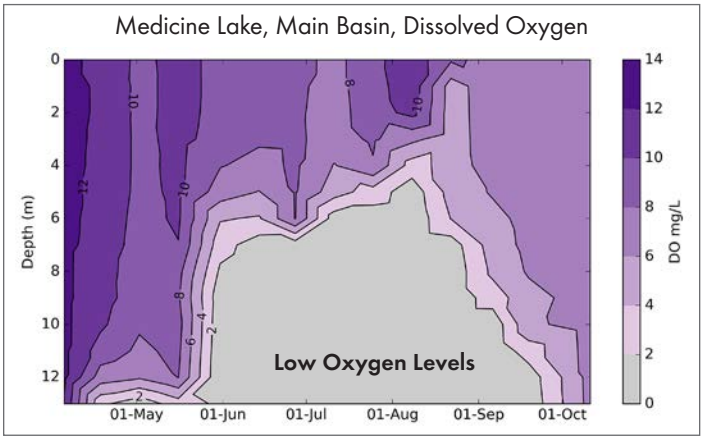
The release of phosphorus stored in lake-bottom sediments when oxygen levels are low is described as "internal phosphorus loading from sediment." The Medicine Lake total maximum daily load (TMDL) study (LimnoTech 2010) found internal phosphorus loading from sediment to be a significant source of lake phosphorus—about one-third of the lake's total annual phosphorus load. According to the study, phosphorus from Medicine Lake's sediment is conveyed to the surface either by diffusion or wind mixing. Wind-mixing events completely mix the water column several times each year, typically in July, August, and September.

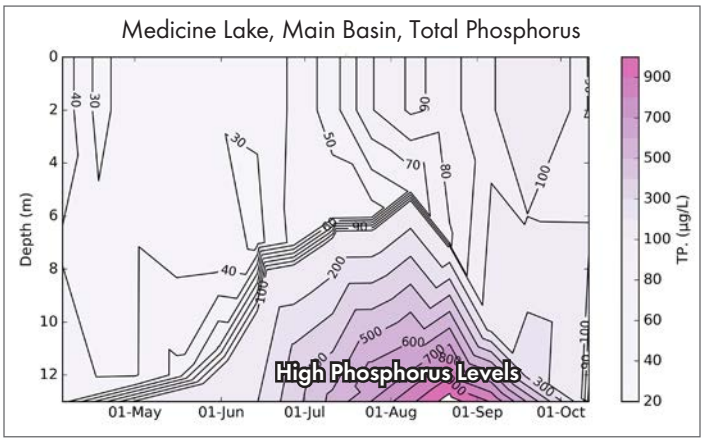
The 2016 data are consistent with the TMDL findings. Near-bottom oxygen levels in Medicine Lake were low in both the Main and Southwest Basins from June through September. Internal phosphorus loading from sediment during this period caused near-bottom phosphorus concentrations to increase consistently; this was correlated with increasing phosphorus concentrations in surface water. Temperature and dissolved oxygen data indicate that wind-mixing events occurred in late June, August, and September of 2016, resulting in increased surface water phosphorus concentrations.

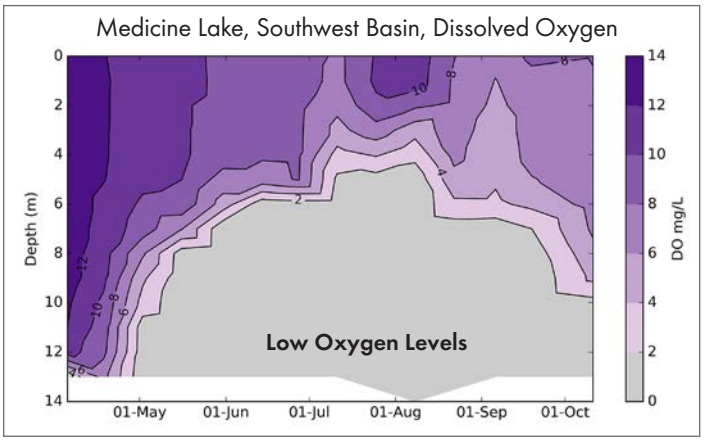
Chloride levels in 2016

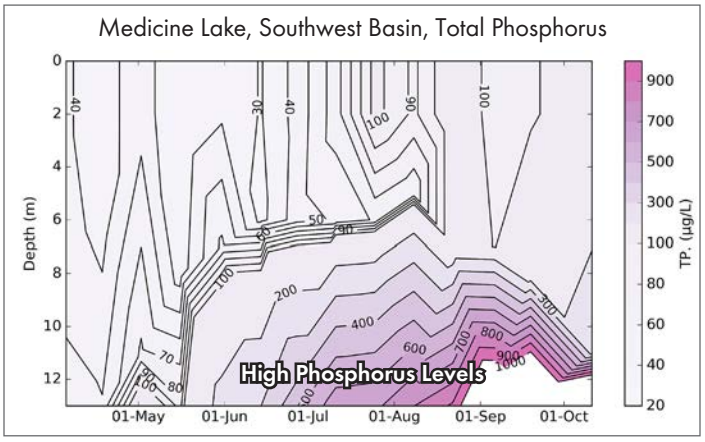
Chloride present in deicing chemicals applied to streets and parking lots in the Medicine Lake watershed is conveyed to the lake by snowmelt and rainfall runoff. Excessive chloride concentrations have been linked to decreased biodiversity in water bodies.

- **MPCA chronic exposure standard:** 230 mg/l or less.
- **Range:** Concentrations in the Main Basin ranged from 116 mg/L to 148 mg/L; concentrations in the Southwest Basin ranged from 108 mg/L to 150 mg/L.
- **Average:** 140 mg/L in the Main Basin, 148 mg/L in the Southwest Basin; both met MPCA standards.







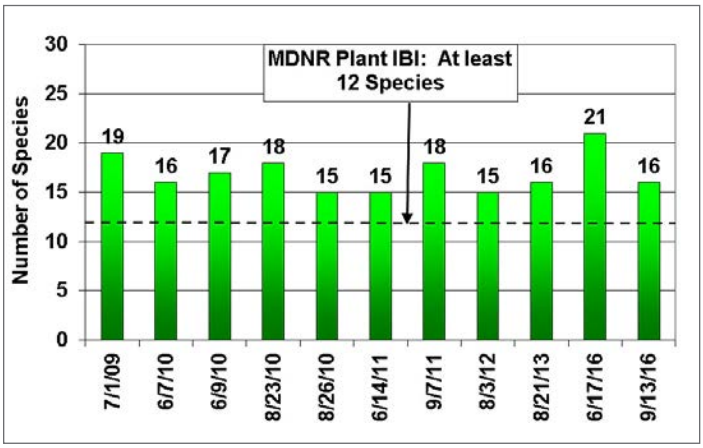


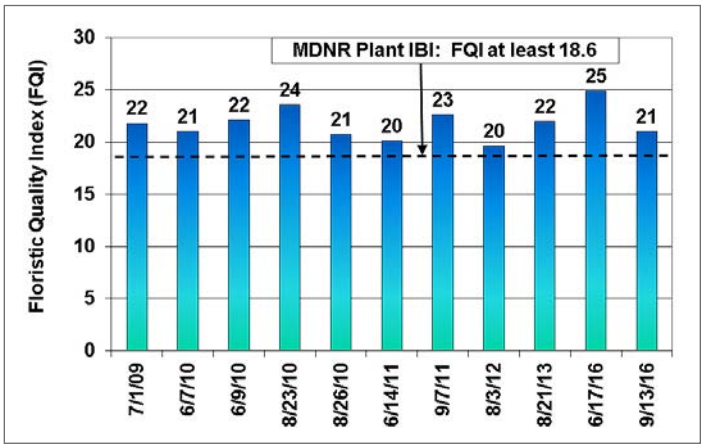
Macrophytes (aquatic plants)

Lake Plant Eutrophication Index of Biological Integrity (IBI)

The Minnesota Department of Natural Resources (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).

Medicine Lake plant survey data from 2009 through 2016 were assessed to determine plant IBI. The figures below show the number of species and FQI for that period compared to the MDNR plant IBI impairment threshold. During the period examined, the number of species in Medicine Lake has ranged from 15 to 21, exceeding the impairment threshold of at least 12 species. FQI values ranged from 20 to 25, which also exceeds the impairment threshold (18.6 minimum). This means that Medicine Lake is not considered impaired in terms of its ability to support aquatic plant life.





Aquatic invasive species

In 2016, two aquatic invasive species were known to be present in Medicine Lake:

- Eurasian watermilfoil (*Myriophyllum spicatum*)
- Curly-leaf pondweed (*Potamogeton crispus*)

Eurasian watermilfoil was not problematic in 2016, ranging in frequency from 10 to 14 percent of the lake's vegetation. From 2004 through 2012, Eurasian watermilfoil frequency has ranged from 3 to 70 percent.

Curly-leaf pondweed has been a consistent problem in Medicine Lake; from 2004 through 2012 it has comprised between 15 and 87 percent of the lake's vegetation. With the exception of 2007, the herbicide endothall has been used to control the plant each year since 2004. The 2010 TMDL implementation plan for Medicine Lake specified that curly-leaf pondweed should continue to be managed annually to prevent it from exceeding 2006 levels (22 percent).

In 2016, 37 acres of curly-leaf pondweed were treated with herbicide; in June, the plant's frequency was 22 percent, near the low end of the historical range and equal to the TMDL threshold. Because die-off of curly-leaf pondweed is an internal source of nutrients for Medicine Lake, control of the plant helps reduce the lake's internal phosphorus loading.


Eurasian watermilfoil


Curly-leaf pondweed

Microscopic plants and animals

Phytoplankton in 2016

Samples of phytoplankton, microscopic aquatic plants, were collected from Medicine Lake in 2016 to evaluate water quality, determine the quality of food available to the lake's zooplankton (microscopic animals), and estimate the public health risk posed by blue-green algae, which produce toxins.

Phytoplankton numbers followed a pattern similar to chlorophyll *a*, increasing from June through early August and decreasing in late August and September. As shown in the figures on page 7, green algae, a good food source for the lake's zooplankton, dominated the spring community while blue-green algae, a poor food source for zooplankton, were dominant during the summer.

Medicine Lake is subject to significant "internal phosphorus loading" during the summer, meaning that phosphorus from the lake's sediment is released to the surface water. This increase in phosphorus encourages phytoplankton growth, particularly blue-green algae.

Blue-green algae can produce natural toxins; in high concentrations, these toxins can be harmful to pet and human health. 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 2016, blue-green algae numbers were generally within the no-risk category. However, on August 8, densities in both the Main Basin (35,036 cells per milliliter) and Southwest Basin (23,893 cells per milliliter) were both in the low-risk category. As noted, this change was correlated with increasing surface water phosphorus concentrations.

Zooplankton in 2016

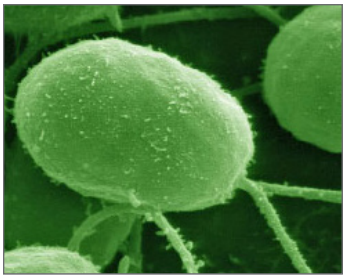
The size and composition of the lake's zooplankton community, as illustrated by the figures on page 7, was consistent with previous years. All three groups of zooplankton (rotifers, copepods, and cladocerans) were represented; however, small rotifers and copepods (which have limited impact on the lake's water quality) generally dominated.

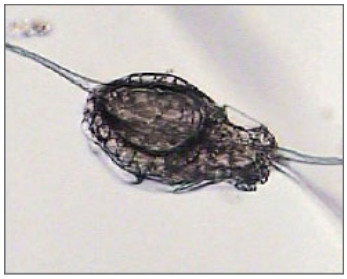
The zooplankton data illustrate the interconnectedness of a lake's food web and its water quality. Of particular interest in 2016 were the large-bodied cladoceran. The numbers of these zooplankton increased from April through mid-June, then declined rapidly and remained at low levels until late summer/early fall when numbers again began to rise. In general, periods with increased cladoceran presence correlated with decreases in chlorophyll *a* concentrations and increases in Secchi disc depth (i.e., better water quality). In the early summer period, chlorophyll *a* was reduced by two-thirds and Secchi disc transparency more than doubled. This is because the large-bodied zooplankton graze on algae.

While large-bodied cladoceran can improve lake water quality, fish predation limits their impact much of the summer. Another limiting factor is the predominance of blue-green algae, a poor food source for zooplankton.

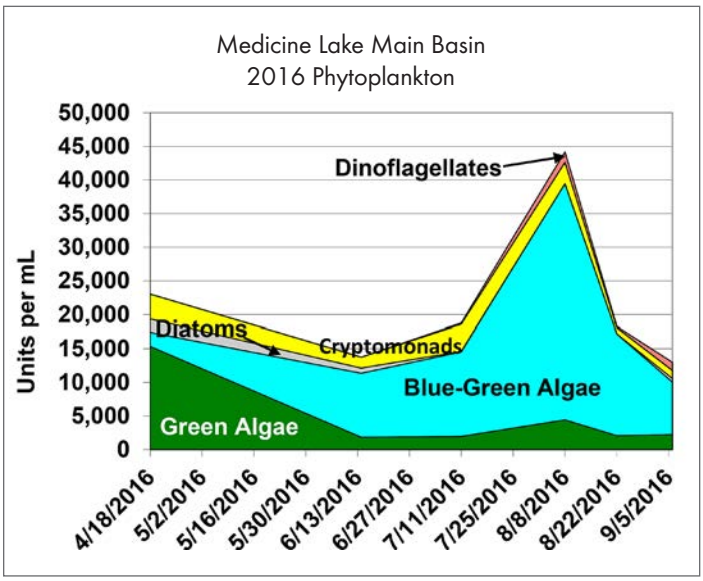
The importance of monitoring

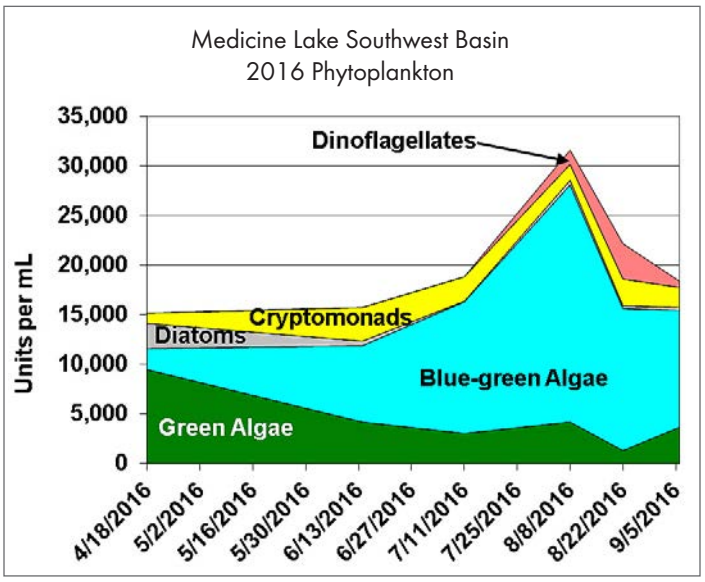
Both the phytoplankton and zooplankton data affirm the importance of reducing phosphorus loading to the lake to prevent increases in blue-green algae. The data also highlights the importance of monitoring the phytoplankton community to ensure that blue-green algae density levels do not threatened the health of lake users.

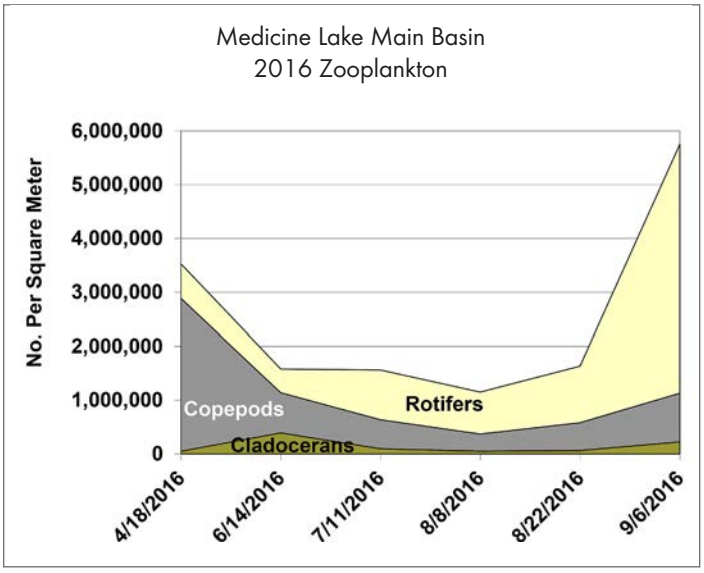


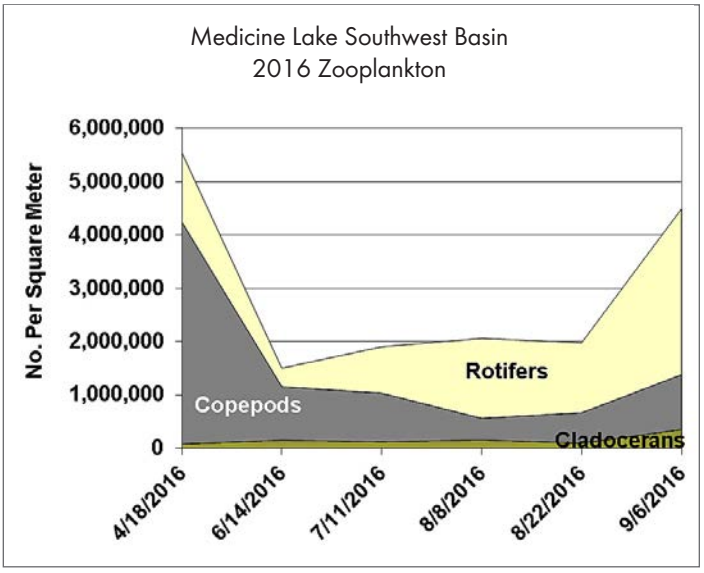


Above: Left—Chlamydomonas, a type of green algae found in Medicine Lake. Right—Filinia longiseta, a rotifer found in Medicine Lake; the phytoplankton and zooplankton communities in Medicine Lake are represented in the figures on page 7.









Medicine Lake fish

According to MDNR surveys, Medicine Lake is home to walleye, yellow perch, and northern pike (as shown). Lake species also include black bullhead, black crappie, bluegill, brown bullhead, channel catfish, green sunfish, hybrid sunfish, largemouth bass, pumpkinseed, white crappie, yellow bullhead, bowfin (dogfish), common carp, goldeye, white sucker, banded killifish, blacknose shiner, bluntnose minnow, brook silverside, golden shiner, spottail shiner.

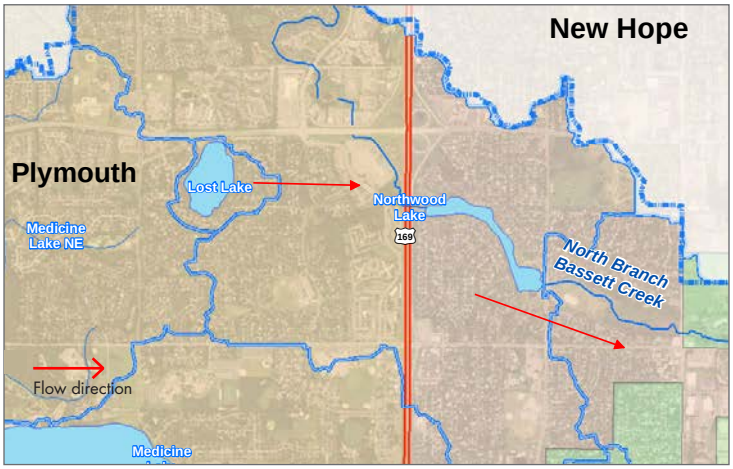
Fish Index of Biotic Integrity

Similar to aquatic plants, the MDNR recently developed a method to evaluate environmental conditions in a lake based on assessments of fish populations. The resulting index of biotic integrity (IBI) score is used to determine whether the lake is meeting the standard value of 45 (i.e., the impairment threshold). The MPCA is likely to begin using fish IBI scores to determine impairments for fish during its 2020 watershed assessment process. Using the most recent fish survey data from 2012, Medicine Lake's current fish IBI score is 25; thus, the lake would be considered impaired for fish.

Bassett Creek Watershed Management Commission
952.270.1990
bassettcreekwmo.org

Cleaner, healthier water for a growing community

Northwood Lake 2016 water quality monitoring



About Northwood Lake

BCWMC classification	Priority-1 shallow lake
Watershed area	1,294 acres
Lake size	15 acres
Average depth	2.7 feet
Maximum depth	5 feet
Ordinary high water level	885.5 feet
Normal water level	884.4 feet
Downstream receiving waterbody	Bassett Creek
Location (city)	New Hope
MPCA impairments	Nutrients
Aquatic invasive species	Curly-leaf pondweed, purple loosestrife, hybrid cattail, reed canary grass
Public access	Yes

Monitoring water quality in Northwood Lake

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes and six ponds 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 2016 monitoring efforts on Northwood Lake is provided below; more comprehensive information can be found on pages 2–6.

At a glance: 2016 monitoring results

In 2016, the BCWMC monitored Northwood 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 of 2016 monitoring show that Northwood Lake did not meet applicable Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for lakes. Trend analyses indicate that water clarity has significantly declined over the past 17 years. In addition, the plant community does not meet the Minnesota Department of Natural Resources (MDNR) plant index of biotic integrity (IBI) standards (see page 4). However, the plant community has consistently improved since 2000 and the number of species in the lake is close to meeting the minimum impairment threshold.

Recommendations

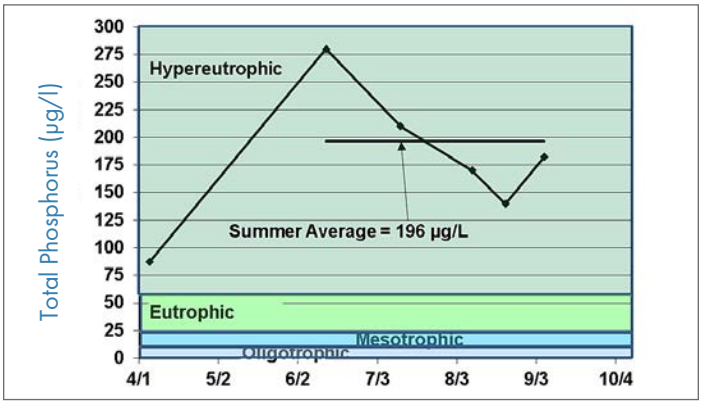
- Continue efforts to improve the lake's water quality.
- Continue water quality and biological monitoring.
- Continue to implement best management practices and capital improvement projects in the lake's watershed.

Water chemistry monitoring: 2016

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.

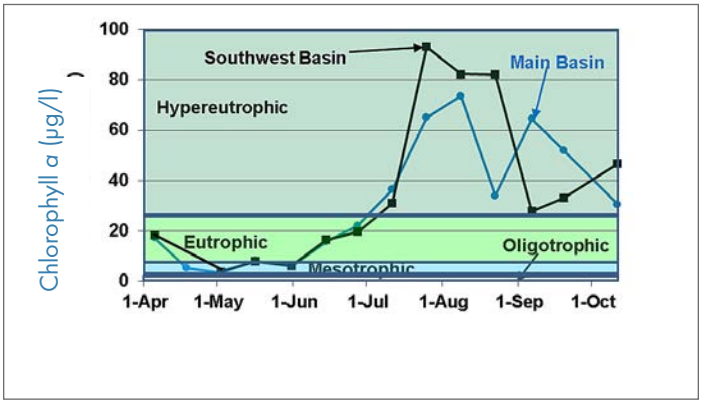
- BCWMC/MPCA standard: 60 micrograms per liter (µg/L) or less.
- Range: Total phosphorus concentrations ranged from a low of 87 µg/L in April to a high of 280 µg/L in June. All concentrations were within the hypereutrophic category (high nutrient content).
- Summer average: 196 µg/L (did not meet BCWMC/MPCA standard).



Chlorophyll *a* levels

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

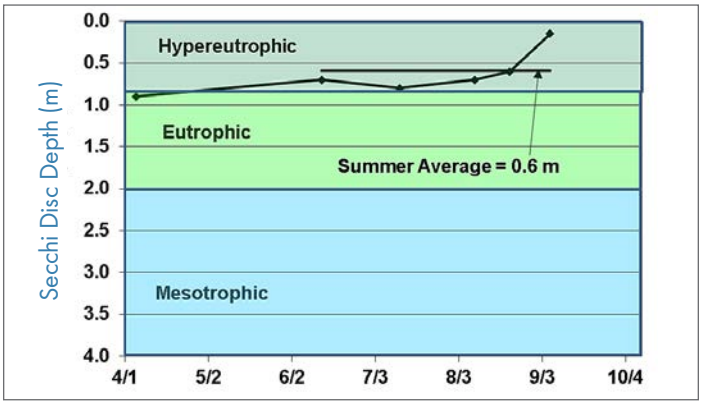
- BCWMC/MPCA standard: 20 µg/L or less.
- Range: Chlorophyll *a* concentrations ranged from a low of 7.9 µg/L in September to a high of 41.9 µg/L in April. Throughout 2016, chlorophyll *a* concentrations were in the hypereutrophic or eutrophic category, indicating poor water quality.
- Summer average: 22.5 µg/L (did not meet BCWMC/MPCA standard).



Water clarity

Water clarity is often affected by sediment and 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; 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 meters or more.
- Range: From 0.9 meters in April to 0.2 meters in September, corresponding with high quantities of sediment in the lake.
- Summer average: 0.6 meters (did not meet BCWMC/MPCA standard).



Definitions

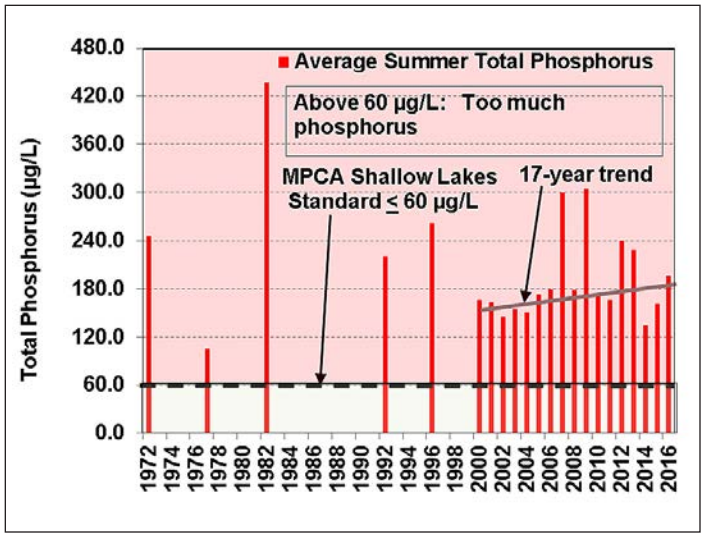
- ***Eutrophic:*** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae and other organisms; decay of algae can reduce lake oxygen levels
- ***Hypereutrophic:*** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low transparency
- ***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 1972–2016: historical trends

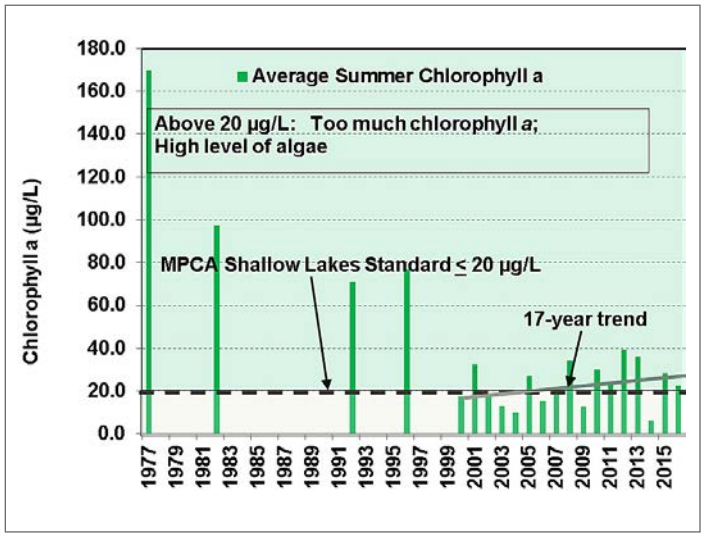
Water quality in Northwood Lake has been monitored since 1972. Summer averages (June through September) of total phosphorus, chlorophyll a, and Secchi disc depth from 1972–2016 are shown in the figures at right. Summer averages for phosphorus have failed to meet BCWMC/MPCA standards for the entire period of record. Chlorophyll *a* concentrations and Secchi disc depth failed to meet the standard 67 and 38 percent of the time, respectively.

Trend analyses show declining water quality with statistically significant decreases (95 percent confidence level) in Secchi disc depth over the last 17 years. Total phosphorus and chlorophyll *a* concentrations have also increased during this period, but not at statistically significant levels.

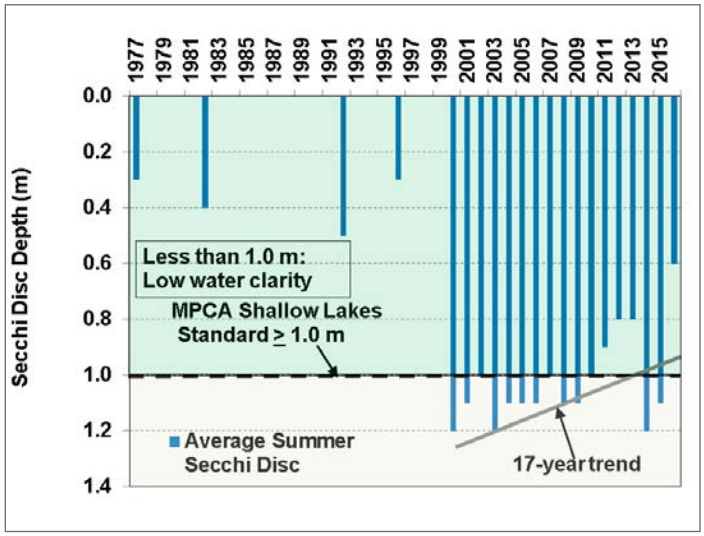
Total phosphorus trends



Chlorophyll *a* trends



Water clarity trends



Macrophytes

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 2016 were assessed to determine plant IBI trends. The figures below show the Northwood Lake FQI scores and number of species for that period compared to the MDNR plant IBI impairment threshold.

- **Number of species:** The number of species in Northwood Lake has increased from four species in 2000 to 10 species in 2016. Some of the most commonly seen plants are shown below. The increase is attributed to a management technique implemented by the city of New Hope in 2000. From 2000 to 2003 the city placed barley straw at predetermined locations throughout the lake. As barley straw decays, it inhibits algal growth. This increases the water's transparency, allowing sunlight to reach the lake's bottom and aquatic plants to become established. Despite the effectiveness of this treatment, Northwood Lake is still below the impairment threshold minimum of 11 species.
- **FQI values (quality of species):** The impairment threshold, as measured by FQI, is a minimum value of 17.8. Similar to the number of species, FQI values for Northwood Lake have increased from 11 in 2005 to 14 in 2016, but still fail to meet the threshold.
- **2016 results:** Because both the number of species in the lake and FQI values are below impairment thresholds, Northwood Lake may be considered impaired for aquatic plants.

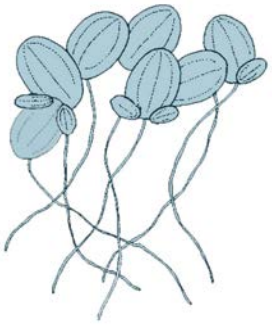
Commonly found aquatic species

Coontail
Ceratophyllum demersum

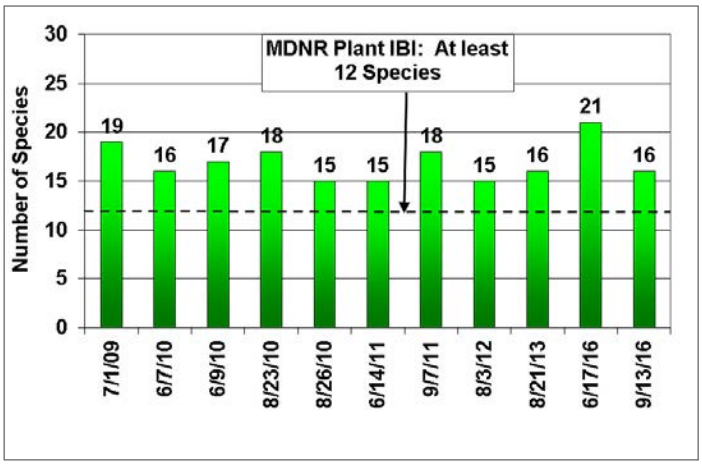
Canadian waterweed
Elodea canadensis

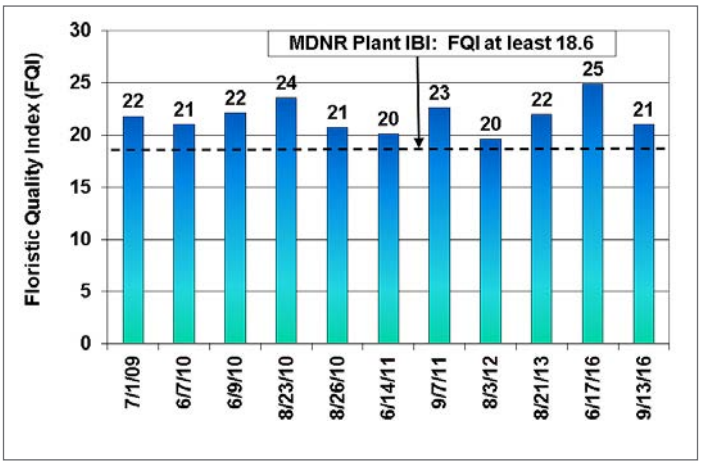
Flatstem pondweed
Potamogeton zosteriformis

Curly-leaf pondweed
Potamogeton crispus



Common duckweed
Lemna minor

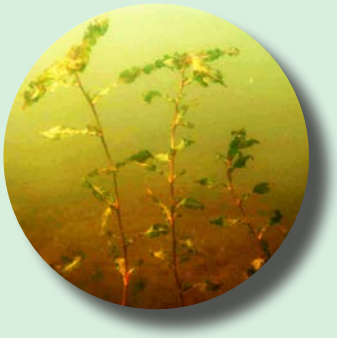




Aquatic invasive species

In 2016, four invasive species were known to be present in Northwood Lake; 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 scattered around the lake. Most plants appeared to suffer damage from beetles introduced to control the purple loosestrife population, suggesting that the beetles are having the desired effect.
- **Hybrid cattail (*Typha glauca*):** Hybrid cattail was observed at a couple locations along the shoreline.
- **Reed canary grass** (*Phalaris arundinacea*): Reed canary grass was common in unmowed areas.



Curly-leaf pondweed

Purple loosestrife

Hybrid cattail

Reed canary grass

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

Chloride levels in 2016

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.

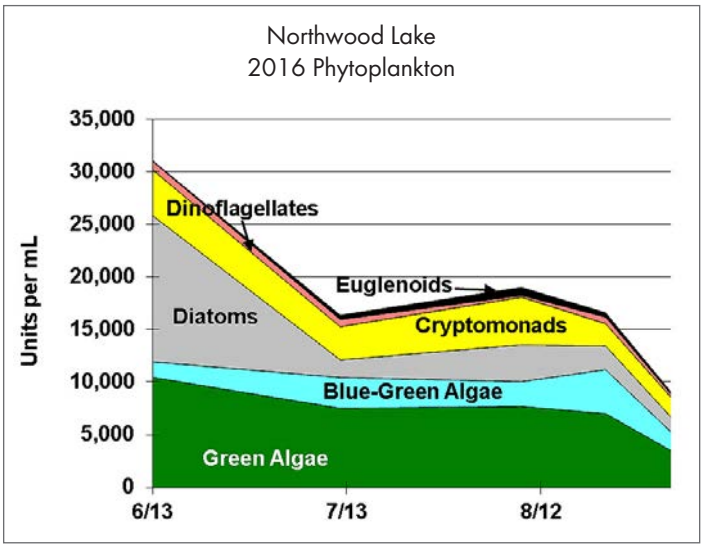
Because high concentrations of chloride can harm fish and plant life, the MPCA has established a chronic exposure chloride standard of 230 mg/l or less.

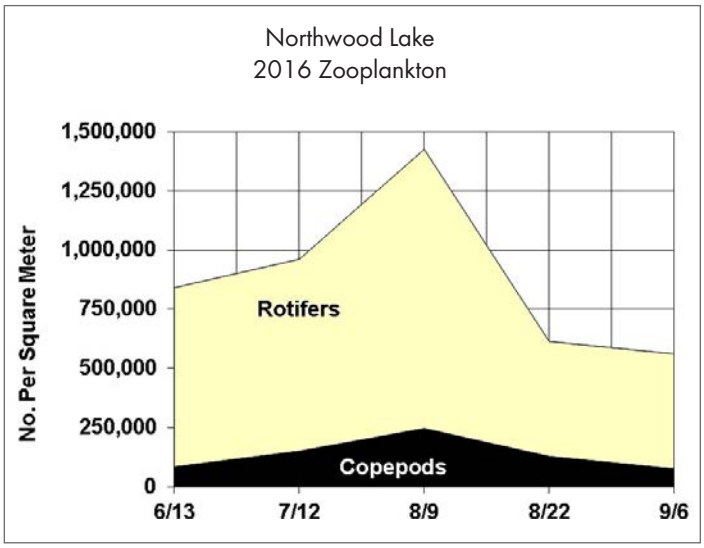
- **Range of chloride concentrations in Northwood Lake:** From a high of 274 mg/L , measured in April, to a low of 43 mg/L, measured in August
- **Average concentration:** 110 mg/L (meets MPCA standard)

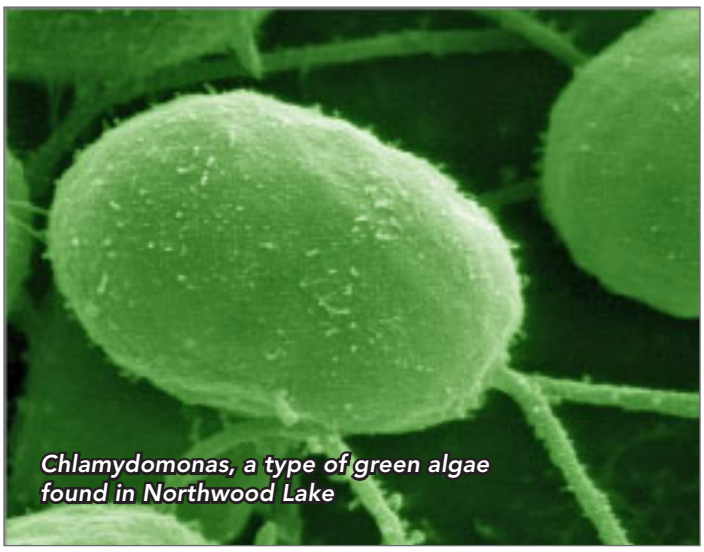
Phytoplankton and zooplankton

Samples of phytoplankton, microscopic aquatic plants, were collected from Northwood Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). As shown in the figure below, phytoplankton numbers declined in July, increased in early August, and declined again in late August and September. The community was dominated by green algae, diatoms, and cryptomonads—all considered a good source of food for the lake's zooplankton. Blue-green algae, which is associated with water quality problems and can be a source of health concerns, was present in very low numbers.

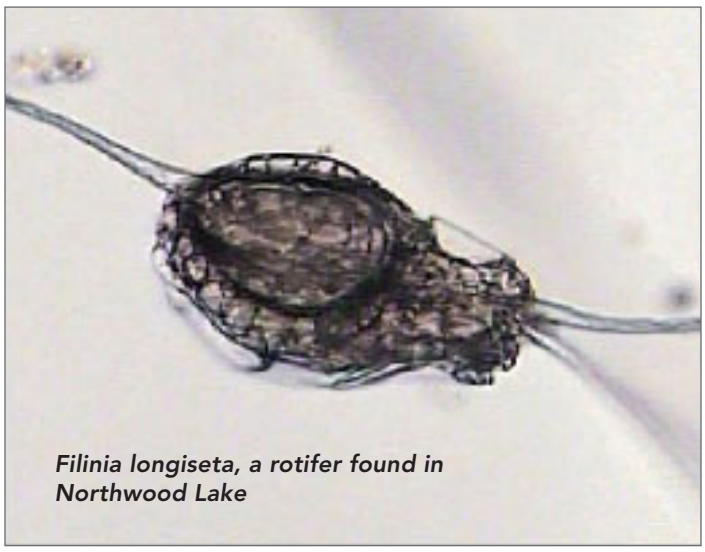
Unlike phytoplankton, zooplankton do not produce their own food. As "filter feeders," they eat millions of small algae; given the right quantities and species they can filter the volume of an entire lake in a matter of days. They are also a valuable food source for planktivorous fish and other organisms. The numbers and community composition of zooplankton in Northwood Lake were consistent with previous years. Small rotifers and copepods were prevalent throughout the summer, while cladocerans were observed only in June (5,040/mL) and September (4,281/mL); their numbers were so low they are not visible on the figure below.







Chlamydomonas, a type of green algae found in Northwood Lake



Filinia longiseta, a rotifer found in Northwood Lake

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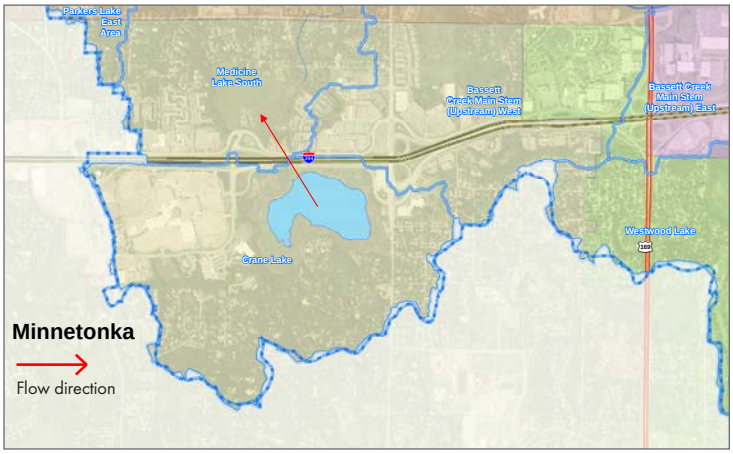
Cleaner, healthier water for a growing community

Crane Lake 2016 water quality monitoring



About Crane Lake

BCWMC classification	Priority-2 shallow lake
Watershed area	591 acres
Lake size	30 acres
Average depth	3.3 feet
Maximum depth	5 feet
Ordinary high water level	920.5 feet
Normal water level	917.1 feet
Downstream receiving waterbody	Medicine Lake
Location (city)	Minnetonka
MPCA impairments	None
Aquatic invasive species	Curly-leaf pondweed, purple loosestrife, hybrid cattail
Public access	No

Monitoring water quality in Crane Lake

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes and six ponds 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 2016 monitoring efforts on Crane Lake is provided below; more comprehensive information can be found on pages 2–7.

At a glance: 2016 monitoring results

In 2016, the BCWMC monitored Crane 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 Crane Lake does not meet applicable Minnesota Pollution Control Agency (MPCA) water quality standards for chlorides. However, Crane Lake does meet MPCA and BCWMC water quality standards for total phosphorus and chlorophyll *a*; trend analyses show no significant changes in these parameters or Secchi disc depth (measure of clarity) over the past 20 years. According to the Minnesota Department of Natural Resources (MDNR) plant IBI, the lake's plant community is not impaired.

Recommendations

- Work with cities, businesses, and Hennepin County to improve winter maintenance practices and reduce the chloride load conveyed to Crane Lake from streets and parking lots in its watershed.
- Continue water quality and biological monitoring.

Water chemistry monitoring: 2016

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 11 µg/L in July to a high of 31 µg/L in April.
- Summer average: 15 µg/L (met BCWMC/MPCA standard).

Chlorophyll *a* levels

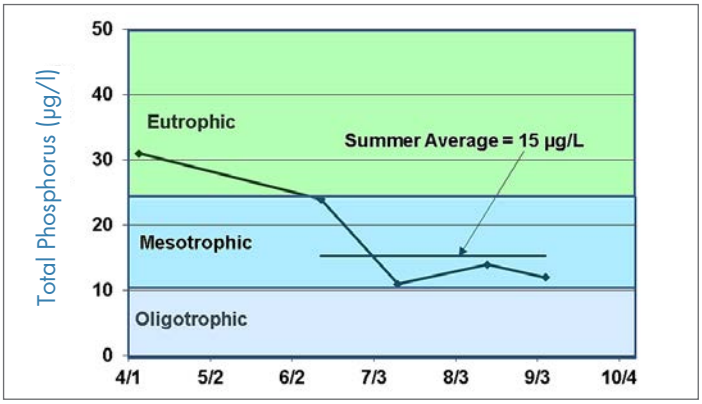
Chlorophyll *a* is a pigment in algae and generally reflects the amount of algae growth in a lake. Lakes which appear clear generally have chlorophyll *a* levels less than 15 micrograms per liter (µg/L).

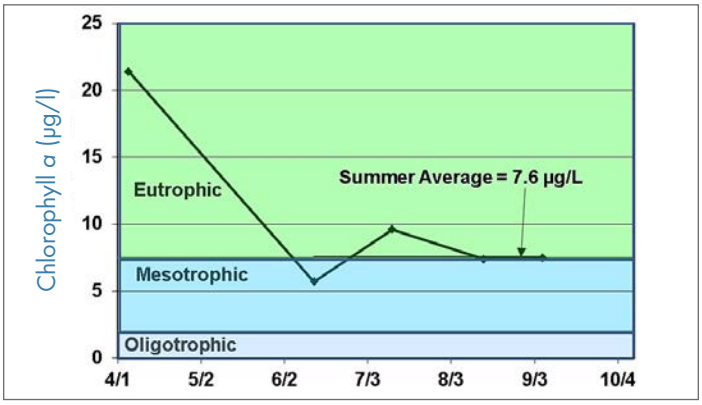
- BCWMC/MPCA standard: 20 µg/L or less.
- Range: Chlorophyll *a* concentrations ranged from a low of 6 µg/L in June to a high of 21 µg/L in April.
- Summer average: 7.6 µg/L (met BCWMC/MPCA standard).

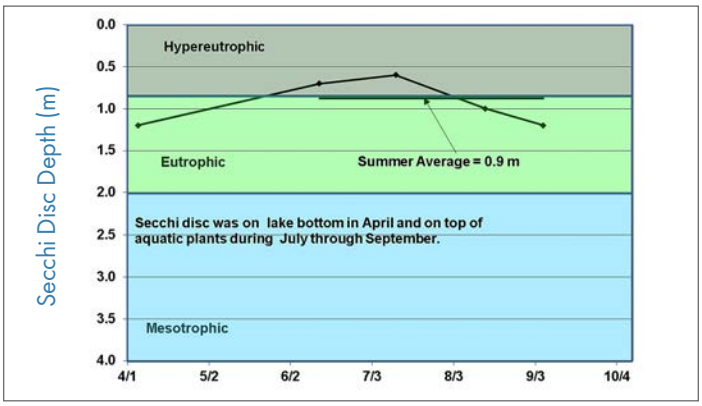
Water clarity

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; 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 meters or more.
- Range: From 1.2 meters (down to the lake bottom) in April to 0.6 meters in July.
- Summer average: 0.9 meters; did not meet BCWMC/MPCA standards; however, clarity was limited by dense aquatic plant growth rather than poor water quality.







Definitions

- ***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
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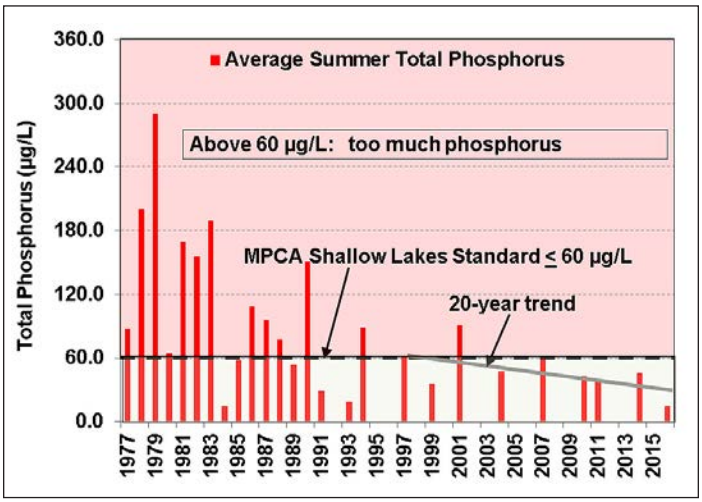
- ***Mesotrophic:*** Lake condition characterized by medium levels of nutrients and clear water
- ***Oligotrophic:*** Lake condition characterized by a low level of dissolved nutrients, high oxygen content, and sparse algae growth

Water chemistry monitoring from 1977–2016: historical trends

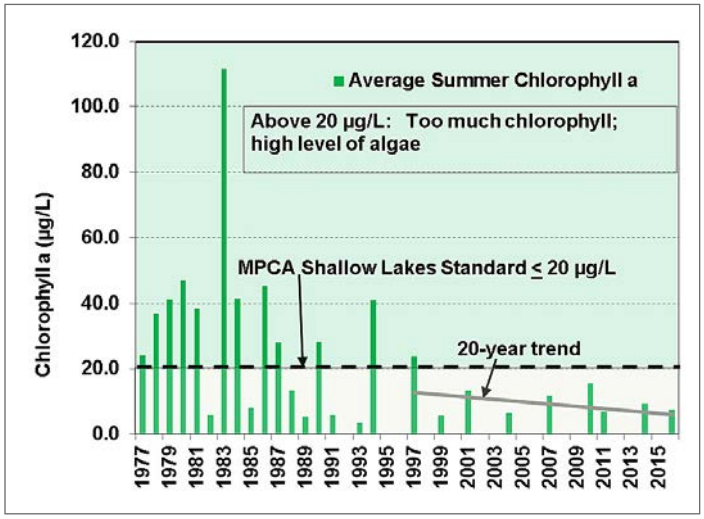
Water quality in Crane Lake has been monitored since 1977. Summer averages (June through September) of total phosphorus, chlorophyll *a*, and Secchi disc depth from 1977–2016 are shown in the figures at right. From 1977–2001 these averages regularly failed to meet BCWMC/MPCA standards, but have generally met standards since 2004. Total phosphorus and chlorophyll *a* concentrations have met the standard each year since 2004. Water clarity, measured by Secchi disc depth, has met the standard all years since 2004—except 2016 when dense plants restricted Secchi disc visibility.

In summary, trend analyses show improvements in water quality over the last 20 years as measured by decreases in summer average total phosphorus and chlorophyll *a* concentrations; these, however, are not statistically significant (95 percent confidence level). There has been no change in Secchi disc depth. Chloride concentrations, which may impact the lake's zooplankton, have increased (see page 6).

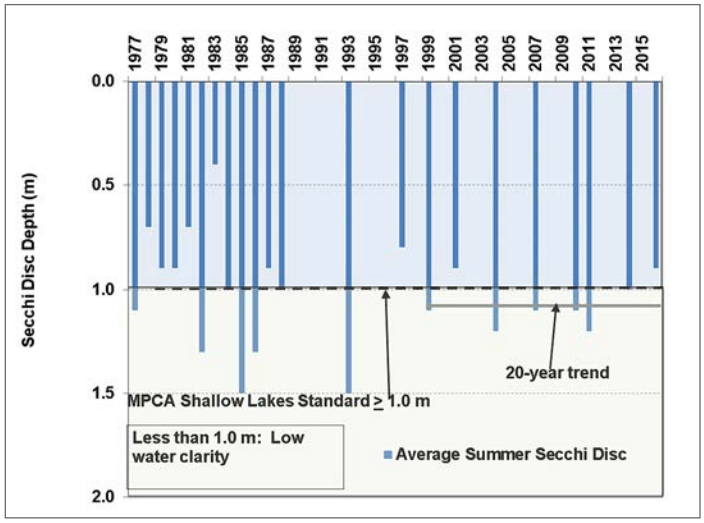
Total phosphorus trends



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 2016 were assessed to determine plant IBI trends. The figures below show the Crane Lake FQI scores and number of species for that period compared to the MDNR plant IBI impairment threshold.

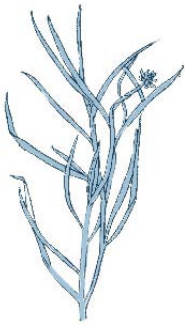
- **Number of species:** A shallow lake is considered impaired when it has fewer than 11 species. During the period examined, the number of species in Crane Lake ranged from 5 to 15, exceeding the impairment threshold half of the time.
- **FQI values (quality of species):** The impairment threshold for shallow lakes, as measured by FQI, is a minimum value of 17.8. During the period examined, FQI values ranged from 10.7 to 20.3, exceeding the threshold 42 percent of the time.
- **2016 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.

Commonly found aquatic species

Coontail
Ceratophyllum demersum

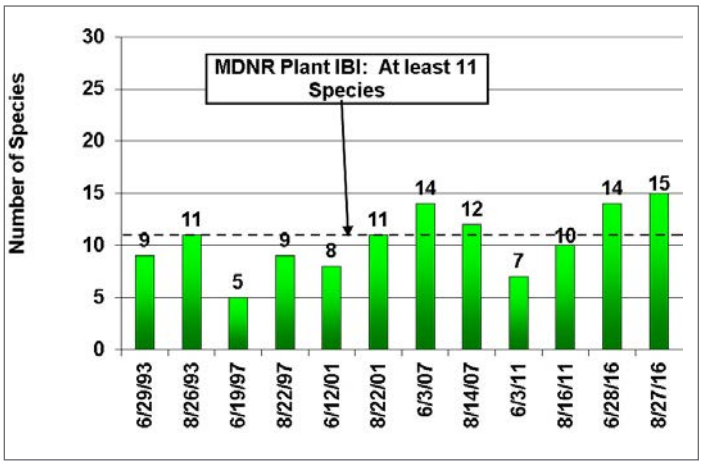
Star duckweed
Lemna triscula

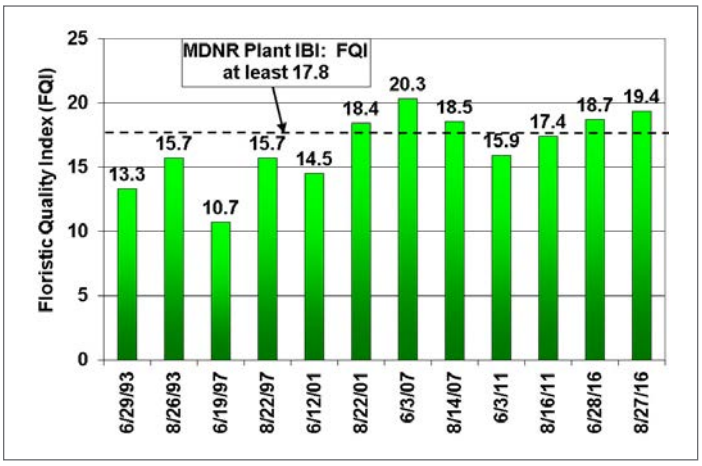
Flatstem pondweed
Potamogeton zosteriformis



Water stargrass
Heteranthera dubia

Fries' pondweed
Potamogeton friesii





Bearded stonewort in Crane Lake

In 2016, *Lychnothamnus barbatus* (bearded stonewort), a desirable plant, was observed in Crane Lake for the first time. This plant was observed in nearby Westwood Lake (and Minnesota) for the first time in 2015. 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

In 2016, bearded stonewort grew densely throughout the lake, dominating the lake's plant community. Nonetheless, the lake supported a diverse plant community that met plant IBI standards. Because bearded stonewort obtains all of its nutrients from the water, the dense growth in Crane Lake removed substantial quantities of nutrients and improved water quality. Phosphorus and chlorophyll *a* concentrations were lower in 2016 than 2011. However, the dense plant growth restricted Secchi disc depth to the top of the plants.

Aquatic invasive species

In 2016, three aquatic invasive species were known to be present in Crane Lake: Curly-leaf pondweed (*Potamogeton crispus*), purple loosestrife (*Lythrum salicaria*), and hybrid cattail (*Typha glauca*). No species was considered problematic.

Curly-leaf pondweed

Purple loosestrife

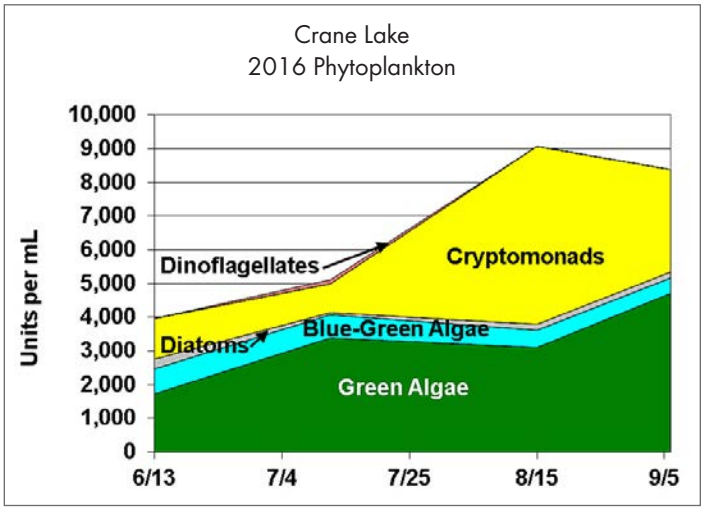
Hybrid cattail

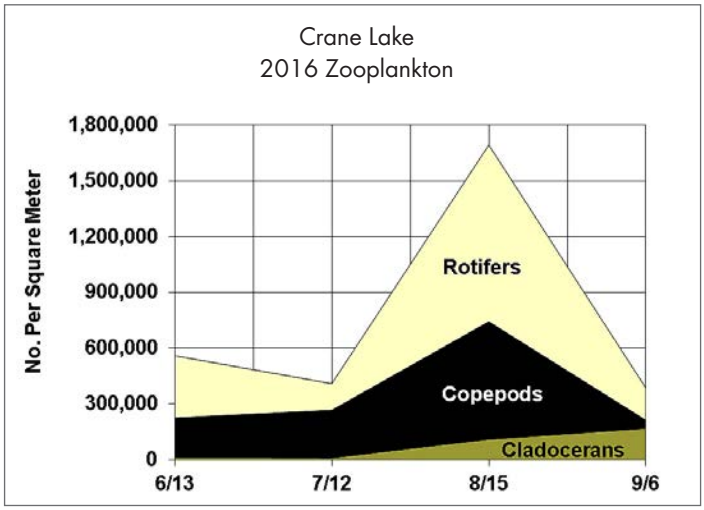
Phytoplankton and zooplankton

Samples of phytoplankton, microscopic aquatic plants, were collected from Crane 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 slightly in September, as shown in the figure below. Cryptomonads and green algae, good sources of food for the lake's zooplankton, were dominant throughout the summer. Blue-green algae, which is associated with water quality problems and can be a source of health concerns, was present in very low numbers.

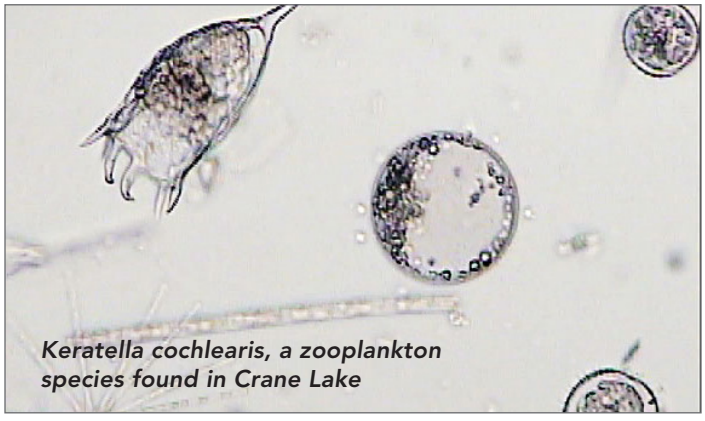
The number of zooplankton species found in Crane Lake has decreased since 1980. This corresponds to increased chloride concentrations in lake water (see page 7). Because elevated chloride has been linked to decreased biodiversity in Minnesota lakes, the MPCA has established a chronic exposure chloride standard of 230 mg/l or less. The 2016 summer average for Crane Lake was 314 mg/L, well above the standard. Continued monitoring and assessment of the zooplankton community will help assess the impacts of high chloride concentrations on the lake's food web.

The composition of the 2016 zooplankton community was consistent with recent years. All three groups of zooplankton (rotifers, copepods, and cladocerans) were represented (see figure below). Small rotifers and copepods have generally 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 Crane 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 in Crane Lake



Keratella cochlearis, a zooplankton species found in Crane Lake

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

Chloride and biodiversity in Crane Lake

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. Ultimately, chloride applied to streets is conveyed to water bodies by snowmelt and rainfall runoff. Because increased chloride concentrations have been linked to decreased biodiversity in Minnesota lakes, the MPCA has established a chronic exposure chloride standard of 230 mg/l or less.

Chloride concentrations in Crane Lake have increased between 1980 and 2016. While this matches a pattern seen in 38 other Twin Cities metro area lakes[1], as shown in Figure 1, the 2016 chloride concentrations in Crane Lake are more than three times higher than the average of the other metro-area lakes. From April through August of 2016, Crane Lake chloride concentrations ranged from 317 mg/L to 379 mg/L, well above the MPCA standard. Concentrations did decrease to 198 mg/L in September, but the 2016 average of 314 mg/L was still above the standard.

Zooplankton data collected in Crane Lake since 1980 were compiled and analyzed to assess whether elevated chloride concentrations were negatively impacting aquatic life. The total number of species detected during three sampling periods in each year was calculated and plotted against the average chloride concentration recorded during sampling. As shown in Figure 2, the number of zooplankton species detected has decreased since 1980, as chloride concentrations have increased. A low of six species was recorded in 2011; seven species were documented in 2016.

Based on this data, increased chloride concentrations may be influencing the zooplankton in Crane Lake. However, the decrease in total number of species preceded the increase in chloride concentrations, suggesting there may be other factors contributing to the overall decrease in the lake's biodiversity.

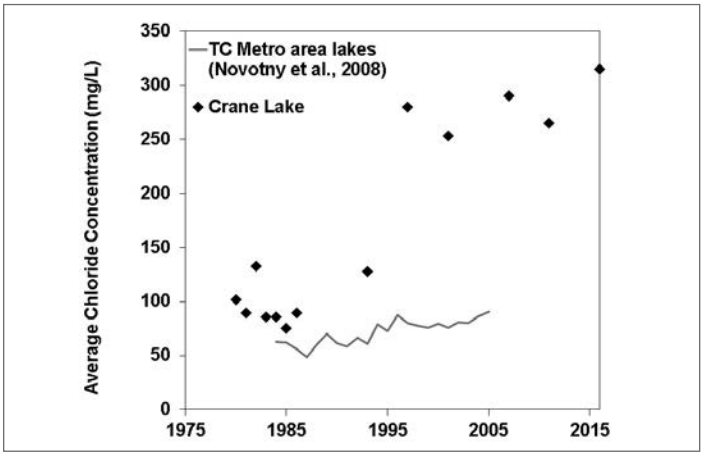


Figure 1

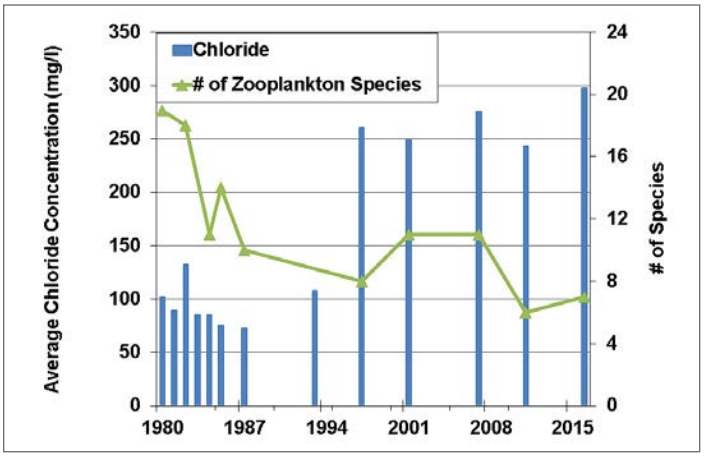
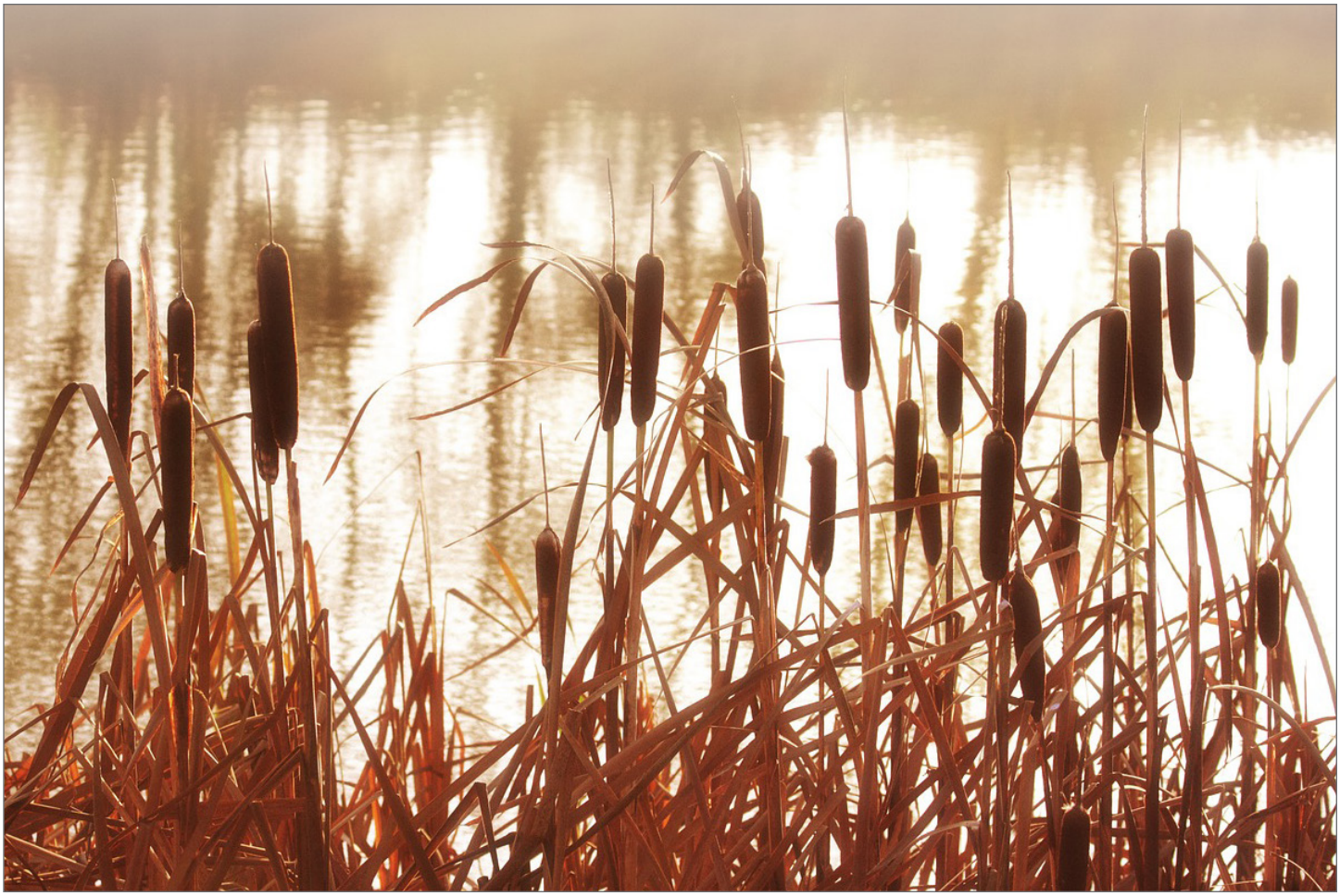


Figure 2

[1]Novotny, E.V., Murphy D., Stefan, H.G. 2008. *Increase of Urban Lake Salinity by Road Deicing Salt.* Science of the Total Environment. 406, 131–144.



Bassett Creek Watershed Management Commission
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Cleaner, healthier water for a growing community

Appendix C
2016 Resolutions

Bassett Creek Watershed Management Commission

RESOLUTION NO. 16-01

Member Mueller introduced the following resolution and moved its adoption:

A RESOLUTION APPROVING THE REIMBURSEMENT TO THE BASSETT CREEK WATERSHED MANAGEMENT COMMISSION 2.5% OF THE TAX LEVY REQUEST TO HENNEPIN COUNTY FOR COLLECTION IN 2015, 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 $25,000, which is 2.5% of the BCWMC's September 2014 tax request in the amount of $1,000,000 to Hennepin County for collection in 2015, 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.

Chair 1/21/2016
Date

Attest:

Secretary 2-9-16
Date

The motion for adoption of the foregoing resolution was seconded by Member Elder and upon a vote being taken thereon, the following voted in favor thereof: 7 and the following voted against the same Ø whereupon said resolution was declared duly passed and adopted.

Bassett Creek Watershed Management Commission

RESOLUTION NO. 16-02

Member Mueller 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. $18,400 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 cost of the 2015 inspections of the BCWMC Flood Control Project of $6,600

Chair 1/21/2016
Date

Attest:
Secretary 2-9-16
Date

The motion for adoption of the foregoing resolution was seconded by Member Elder and upon a vote being taken thereon, the following voted in favor thereof: 7 and the following voted against the same Ø whereupon said resolution was declared duly passed and adopted.

RESOLUTION 16-03

Member Welch 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**

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.

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 18th day of February 2016.

Chair

ATTEST:

Secretary Date

The motion for the adoption of the foregoing resolution was seconded by Member Elder and upon a vote being taken thereon, the following voted in favor thereof: 8 and the following voted against the same 0 whereupon said resolution was declared duly passed and adopted.

A RESOLUTION DELEGATING AUTHORITY REGARDING THE ADMINISTRATION OF THE MINNESOTA WETLAND CONSERVATION ACT

Bassett Creek Watershed Management Commission
Resolution #16-04

WHEREAS, the Bassett Creek Watershed Management Commission has accepted the authority and administrative responsibility to implement the Wetland Conservation Act (WCA) for certain cities within the legal boundaries of the Bassett Creek Watershed that have delegated WCA authority to the Bassett Creek Watershed Management Commission including the cities of Medicine Lake, Robbinsdale, and St. Louis Park, in accordance with Minnesota Rules, Chapter 8420; and

WHEREAS, the Bassett Creek Watershed Management Commission is authorized by Minnesota Rules, part 8420.0200, subpart 2, Item C, to delegate certain functions with regard to implementation of WCA to its staff.

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

1. Final decision-making authority for WCA exemptions, no-loss, and wetland boundary and type applications is hereby delegated to its staff, which includes the Commission Engineer and the Commission Administrator. The authority delegated pursuant to this Resolution includes the authority to determine the completeness of applications, to identify what additional information is needed in order to make an application complete, and to provide related notices to applicants as needed.

2. A final decision of staff made pursuant to this Resolution may be appealed to the Board of Commissioners by filing a written notice of appeal with the Commission Administrator within 14 days of the date of the final decision. The notice of appeal must describe the alleged error, identify any applicable legal authority in support of the allegation, and describe the relief being sought. The Board of Commissioners will take up the appeal at a regular meeting and allow the person bringing the appeal an opportunity to be heard regarding the matter. The decision of the Board of Commissioners on the appeal will be issued in writing and shall be final.

Adopted by the Board of Commissioners of the Bassett Creek Watershed Management Commission this 18th day of February, 2016.

Chair

Attest:

Secretary

Resolution No. 16-04 : Offered by Commissioner Welch, seconded by Commissioner McDonald Black adopted by a vote of 7-0 at the regular meeting of the Board of Commissioners of Bassett Creek Watershed Management Commission on February 18, 2016.

A RESOLUTION APPROVING A DIRECT CONNECTION TO THE NEW BASSETT CREEK TUNNEL AS PART OF THE SOUTHWEST LIGHT RAIL TRANSIT PROJECT

Bassett Creek Watershed Management Commission
Resolution #16-05

WHEREAS, the Bassett Creek Watershed Management Commission ("BCWMC") received a letter from the City of Minneapolis ("City") requesting approval for the Metropolitan Council to construct a direct connection to what is commonly known as the new Bassett Creek Tunnel ("New Tunnel") to address drainage in the Glenwood Avenue area as part of the Southwest Light Rail Transit Project ("SWLRT Project");

WHEREAS, the construction of the New Tunnel was a cooperative effort and involved a number of agreements, including a Joint and Cooperative Agreement for Boundary Change dated September 28, 2000 and entered into between the BCWMC, the City, and the Middle Mississippi Watershed Management Organization ("Agreement");

WHEREAS, Section 6.1.2 of the Agreement indicates the City is prohibited from adding connections or outlets to the New Tunnel without the written approval of the BCWMC;

WHEREAS, the Board of Commissioners ("Board") of the BCWMC previously approved the City to connect to the New Tunnel as part of the Twins stadium construction project; and

WHEREAS, while the Board generally discourages requests to connect to the New Tunnel, it recognizes that in certain limited circumstances it is appropriate to allow a direct connection, provided the connection is made in accordance with the terms and conditions of the Agreement.

NOW, THERFORE, BE IT RESOLVED, by the Board of Commissioners of the BCWMC that, pursuant to the Agreement, it hereby grants approval to the City to make a direct connection to the New Tunnel associated with the SWLRT Project, conditioned on:

1. The BCWMC engineer reviewing the plans for the proposed direct connection to ensure consistency with the provisions of the Agreement;

2. Mitigating storage at the Bassett Creek Valley Station must be provided prior to completion of the direct connection to the New Tunnel. If additional mitigation is needed upon final evaluation (100% design plans), the City will work with the SWLRT and the BCWMC engineer to achieve the necessary mitigation;

3. Final plans and documentation must be submitted to the BCWMC engineer for administrative review and approval. These submittals should include the 100% design plans, updated XP-SWMM modeling, and the digital watershed divides; and

4. Drawings and supporting information must be submitted to the BCWMC engineer for separate review as part of the BCWMC review program.

Adopted by the Board of Commissioners of the Bassett Creek Watershed Management Commission this 17th day of March, 2016.

Chair

Attest:

Secretary

Resolution No.16-05: Offered by Commissioner Welch, seconded by Commissioner Alternate Commissioner Noon, adopted by a vote of 7 - 0 at the regular meeting of the Board of Commissioners of Bassett Creek Watershed Management Commission on March 17, 2016.

A RESOLUTION GRANTING A VARIANCE FROM WATER QUALITY TREATMENT REQUIREMENTS FOR THE 2016 GOLDEN VALLEY PAVEMENT MANAGEMENT PROGRAM

Bassett Creek Watershed Management Commission
Resolution #16-06

WHEREAS, the Bassett Creek Watershed Management Commission ("BCWMC") received a letter from the City of Golden Valley ("City") requesting a variance from the BCWMC water quality treatment requirements, known as the Minimal Impact Design Standards ("MIDS") performance goals, for the 2016 Golden Valley Pavement Management Program ("Project");

WHEREAS, the City and its consulting engineer have studied the options available to meet the MIDS treatment standards for the Project and have determined that it is not feasible to satisfy the standards as part of the Project because of the linear nature of the Project, the existence of poor soils in the Project area that are not conducive to volume reduction, and the confined right-of-way area in which the Project will be constructed;

WHEREAS, the City will construct all practical and feasible water quality best management practices available in conjunction with this Project, including reducing impervious area and installing sump manholes with SAFL baffles, but despite these efforts the Project will not meet the MIDS performance goals including the three flexible treatment options;

WHEREAS, the City can provide equivalent offsite treatment to meet the MIDS performance goals for the Project by the end of 2018; and

WHEREAS, the Board of Commissioners ("Board") has considered the request, the standards for issuing variances in the BCWMC's Requirements for Improvements and Development Proposals, and finds and determines as follows:

a. The linear nature of the Project, the poor soils, 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 right-of-way and its ability to construct improvements;

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 right-of-way for the benefit of the public;

c. Granting the variance will not be detrimental to the public welfare or injurious to the other property in the territory of the right-of-way being improved in that the Project will be increasing safety and addressing existing surface water issues;

d. The Project does not relate to a use in the 1% (base flood elevation, 100-year flood) floodplain set forth in Table 2-9 of the Plan;

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 installing sump manholes with SAFL baffles.

NOW, THEREFORE, BE IT RESOLVED, by the Board of the BCWMC that, pursuant to its variance procedure the BCWMC Requirements for Improvements and Development Proposals, the findings contained herein, and the record of this matter, it hereby grants the City a variance from the MIDS performance goals for the Project conditioned on compliance with each of the following:

1. The City shall implement all practical and feasible water quality best management practices, including reducing impervious area and installing sump manholes with SAFL baffles, related to the construction of the Project; and

2. The City shall provide offsite treatment to meet the MIDS performance goals for the Project by the end of 2018 or as soon thereafter as is reasonably possible.

Adopted by the Board of Commissioners of the Bassett Creek Watershed Management Commission this 17th day of March, 2016.

Chair

Attest:

Secretary

Resolution No.16-06: Offered by Commissioner Hoschka, seconded by Alternate Commissioner Tobelmann, adopted by a vote of 7 - 0 at the regular meeting of the Board of Commissioners of Bassett Creek Watershed Management Commission on March 17, 2016.

A RESOLUTION APPROVING AND RATIFYING AN AMENDMENT TO THE PROJECT BUDGET FOR NORTHWOOD LAKE IMPROVEMENT PROJECT

Bassett Creek Watershed Management Commission
Resolution #16-07

WHEREAS, the Bassett Creek Watershed Management Commission ("BCWMC") entered into a cooperative agreement ("Agreement") with the City of New Hope ("City") on August 20, 2015 to provide funding for a water quality improvement project described as the Northwood Lake Improvement Project (NL-1) within the City (the "Project");

WHEREAS, the original estimated cost for the Project was $1,422,140, but as the Project progressed the estimated cost increased to $1,710,140;

WHEREAS, in order to respond to the cost increase, and to reflect the fact the BCWMC received for the Project a $400,000 grant in addition to a previous $300,000 grant from the from the Minnesota Board of Water and Soil Resources and the Minnesota Pollution Control Agency, respectively, the BCWMC and the City executed a first amendment to the Agreement dated February 18, 2016 to increase the total amount of the potential reimbursement payments from the BCWMC to the City for the Project to $1,433,740; and

WHEREAS, the BCWMC auditor indicated that in addition to having executed a written amendment to the Agreement to provide for the adjusted reimbursement amount for the Project, the BCWMC Board of Commissioners also needs to act by resolution to formally amend the budget for the Project.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Commissioners ("Board") of the BCWMC as follows:

1. The Board hereby approves and ratifies an amendment to budget for the Project to increase the total not to exceed amount to be reimbursed to the City for the Project to $1,433,740.

2. The Board authorizes and directs the BCWMC Administrator and the BCWMC Deputy Treasurer to take such additional actions as may be needed to document and account for the amendment to the Project budget as may be needed to respond to the auditor's recommendations.

Adopted by the Board of Commissioners of the Bassett Creek Watershed Management Commission this 18th day of August, 2016.

Chair

Attest:

Secretary / Administrator

Resolution No. 16-07 : Offered by Commissioner Black, seconded by Commissioner McDonald Black, adopted by a vote of 7-0 at the regular meeting of the Board of Commissioners of Bassett Creek Watershed Management Commission on August 18, 2016.

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION

RESOLUTION NO. 16-08

A RESOLUTION ORDERING 2017 IMPROVEMENTS,
DESIGNATING MEMBERS
RESPONSIBLE FOR CONSTRUCTION, MAKING FINDINGS
PURSUANT TO MINNESOTA STATUTES, SECTION 103B.251,
CERTIFYING COSTS TO HENNEPIN COUNTY, AND APPROVING AGREEMENTS
FOR CONSTRUCTION OF IMPROVEMENTS

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

WHEREAS, the Plan includes a Capital Improvement Program ("CIP") listing capital projects in Table 5-3 of the Plan; and

WHEREAS, the CIP includes the following capital projects for the year 2017:

(a) Plymouth Creek Restoration Project (2017CR-P); and

(b) Main Stem Channel Restoration (Erosion Repair) Project (2017CR-M)

(hereinafter collectively referred to as the "2017 Projects"); and

WHEREAS, the Plan specifies a county tax levy under Minnesota Statutes, section 103B.251 as the source of partial funding for the 2017 Projects; and

WHEREAS, on September 15, 2016, 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 2017 Projects.

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

1. The 2017 Projects will be conducive to the public health and promote the general welfare and are 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. The 2017 Projects are hereby ordered.

2. The estimated cost of the Plymouth Creek Restoration Project is Eight Hundred Sixty Three Thousand Five Hundred Seventy-three Dollars ($863,573). Of this amount, Five Hundred Eighty Thousand Nine Hundred Thirty Dollars ($580,930) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251 levied in 2016 for collection in 2017. Remaining funds of up to Two Hundred Eighty Two Thousand Six Hundred

Forty-three Dollars ($282,643) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251, levied in 2017 for collection in 2018.

3. The estimated cost of the Main Stem Restoration Project is One Million Sixty Four Thousand Four Hundred Seventy-two Dollars ($1,064,472). Of this amount, Four Hundred Thousand Dollars ($400,000) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251 levied in 2016 for collection in 2017. Remaining funds of up to Six Hundred Sixty Four Thousand Four Hundred Seventy-two Dollars ($664,472) will be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251, levied in 2017 for collection in 2018.

4. The cost of Northwood Lake Improvement Project (NL-1) was partially paid from a county tax levy collected in 2016 totaling Four Hundred Eleven Thousand Seventy Dollars ($411,070), State grants totaling Seven Hundred Thousand Dollars ($700,000), and contributions from the City of New Hope totaling Two Hundred Seventy-six Thousand Four Hundred Dollars (276,400). The remaining estimated cost of the project is Three Hundred Twenty-two Thousand, Six Hundred Seventy Dollars ($322,670) to be paid from funds received from a county tax levy pursuant to Minnesota Statutes, section 103B.251 levied in 2016 for collection in 2017.

5. Of the costs of the 2017 Projects, the Commission hereby certifies costs to Hennepin County in accordance with Minnesota Statutes, section 103B.251 of Five Hundred Eighty Thousand Nine Hundred Thirty Dollars ($580,930) for the Plymouth Creek Restoration Project, Four Hundred Thousand Dollars ($400,000) for the Main Stem Channel Restoration Project, and Three Hundred Twenty-two Thousand Six Hundred Seventy Dollars ($322,670) for the remaining costs of the Northwood Lake Improvement Project. The total amount certified to Hennepin County for these Projects is One Million Three Hundred Three Thousand Six Hundred Dollars ($1,303,600) for payment by the county in accordance with Minnesota Statutes, section 103B.251, subdivision 6.

6. The Commission has received, accepted and approved the feasibility reports for the 2017 Projects.

7. The costs of each of the 2017 Projects will be paid by the Commission up to the amounts specified in paragraphs 2 through 4 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 cities constructing the Projects, but no costs will be charged to other members of the Commission.

8. The City of Plymouth is designated as the member responsible for contracting for the construction of the Plymouth Creek Restoration Project, and the engineer designated for preparation of plans and specifications is the Plymouth City Engineer, or other engineers selected and retained by the City of Plymouth. Contracts for construction shall be let in accordance with the requirements of law applicable to the City of Plymouth. The Cooperative Agreement with the City of Plymouth for the construction of the Plymouth Creek Restoration

Project is approved, and the Chair and Secretary are authorized to execute the agreement on behalf of the Commission.

9. The City of Minneapolis is designated as the member responsible for contracting for the construction of the Main Stem Channel Restoration Project, and the engineer designated for preparation of plans and specifications is the Minneapolis City Engineer, or other engineers selected and retained by the City of Minneapolis. Contracts for construction shall be let in accordance with the requirements of law applicable to the City of Minneapolis. The Cooperative Agreement with the City of Minneapolis for the construction of the Main Stem Channel Project is approved, and the Chair and Secretary are authorized to execute the agreement on behalf of the Commission.

10. The City of New Hope remains designated as the member responsible for construction of the Northwood Lake Project, the New Hope City Engineer remains the engineer designated, and the cooperative agreement entered into with the City of New Hope remains in effect.

Adopted by the Board of Commission of the Bassett Creek Watershed Management Commission the 15th day of September 2016.

Chair

ATTEST:

Stacy Harschka

Secretary

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION

RESOLUTION NO. __16-09_____

A RESOLUTION ADOPTING A RECORDS RETENTION SCHEDULE

WHEREAS, the Bassett Creek Watershed Management Commission ("BCWMC") is a joint powers watershed management organization formed by the cities of Crystal, golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, Robbinsdale, and St. Louis Park under Minnesota Statutes, sections 103B.201 to 103B.253;

WHEREAS, the BCWMC creates and comes into possession of "government records," as that term is defined in Minnesota Statutes, section 138.17, subdivision 1(b)(1), in the normal course of conducting its business;

WHEREAS, under Minnesota Statutes, section 138.225, government records may not be destroyed except by the authority of the state's records disposition panel;

WHEREAS, the state's records disposition panel, established pursuant to Minnesota Statutes, section 138.17, allows for the destruction of government records by local governments and public authorities pursuant to a schedule adopted by the public authority and approved by the panel, provided the destruction is accomplished in accordance with the schedule and state law;

WHEREAS, the Board of Commissioners has not previously adopted a records retention schedule for the BCWMC; and

WHEREAS, the Board of Commissioners determines adopting a records retention schedule is in the BCWMC's best interests to help ensure the preservation of government documents while respecting the practical limitations of storage space, administrative time, and costs associated with attempting to indefinitely retain all such documents.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Commissioners hereby adopts the attached Records Retention Schedule ("Schedule") for the BCWMC with the following understandings:

1. The list of documents on the Schedule shall be interpreted broadly to reduce the number of documents considered to be not on the Schedule. To the extent a government document obtained or created by the BCWMC is not included in the Schedule, the BCWMC shall refer to and apply the General Records Retention Schedule for Minnesota Cities as it may be updated and amended from time to time with respect to the particular document. If a governmental record in the BCWMC's possession is not found in either schedule, the BCWMC will either amend its Schedule to list the document or it will submit an Application for Authority to Dispose of Records (PR-1 Form) to receive authority before destroying it;

2. The BCWMC is subject to the Data Practices Act (the "Act") and nothing in this Resolution or the Schedule modifies the application of the Act to the BCWMC's government records. Any government record in the BCWMC's possession classified by the Act as not public shall not be made available to the public except as provided by the Act and when they are disposed

of in accordance with the Schedule they shall be destroyed in a way that prevents their contents from being determined;

3. The BCWMC considers the preservation of "government records" as defined in Minnesota Statutes, section 138.17, subd. 1 (b)(1) in accordance with the Schedule as sufficient to satisfy its obligation under Minnesota Statutes, section 15.17 to preserve records as necessary to provide a full and accurate knowledge of the BCWMC's official activities. Documents and data that do not constitute "government records" shall not be subject to this Schedule and the BCWMC may keep or destroy such items as it determines is appropriate or as may otherwise be required by law;

4. The Schedule applies only to original documents and data. Non-originals shall be retained or destroyed as the BCWMC determines is appropriate without regard to the Schedule;

5. The BCWMC shall retain records using such methods and in such locations as it determines is most appropriate under the circumstances and in accordance with its obligations under law;

6. Government records identified in the Schedule as having archival value must be preserved and may be transferred to the State Archives or other appropriate repository with the specific, written permission of the State Records Disposition Panel as needed; and

7. The Board of Commissioners may amend the Schedule at such times in the future as it determines is necessary.

BE IT FURTHER RESOLVED, that the Administrator is authorized and directed, at such times as are convenient, to destroy all government records in accordance with the Schedule and to create and retain a report on all such destruction activities which lists the types of records destroyed; and

BE IT FINALLY RESOLVED, that the Administrator is authorized and directed to send a copy of this Resolution together with notification of the BCWMC's adoption of the Schedule to the Minnesota Historical Society (State Archives) for review and approval, and to take such additional steps, and to make edits to the Schedule, as may be required to obtain approval.

Adopted this 15th day of December, 2016.

BY THE BOARD OF
COMMISSIONERS

Chairperson

Attest:

Secretary

490574v1 TJG BA295-1

Appendix D
2016 Website Usage Report

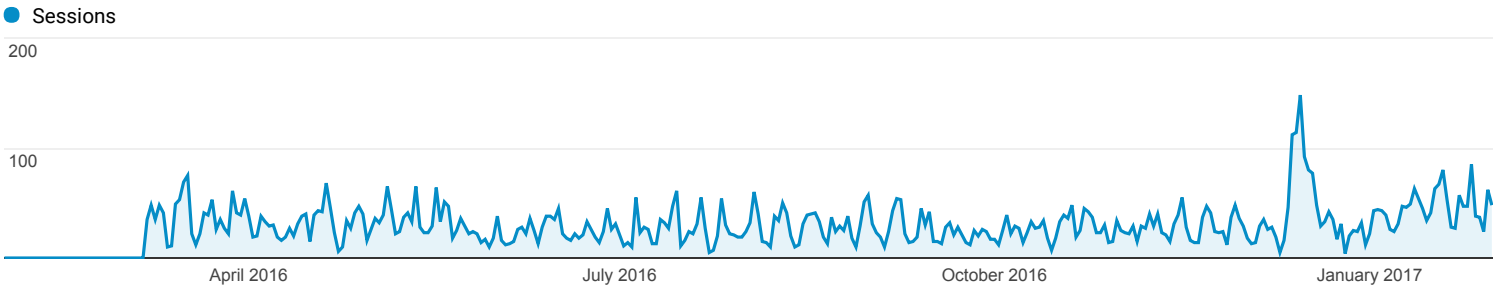
Audience Overview

Feb 1, 2016 - Jan 31, 2017

You are using a filtered view, which may cause your Users count to be inaccurate. Learn more

All Users
100.00% Sessions

Overview



Sessions	Users	Pageviews
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Pages / Session	Avg. Session Duration	Bounce Rate
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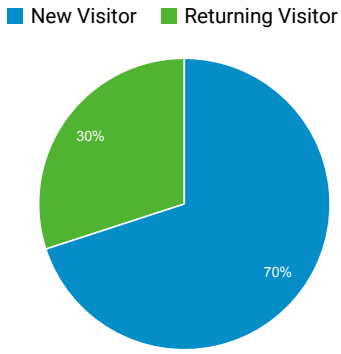
% New Sessions
69.96%



	Language	Sessions	% Sessions
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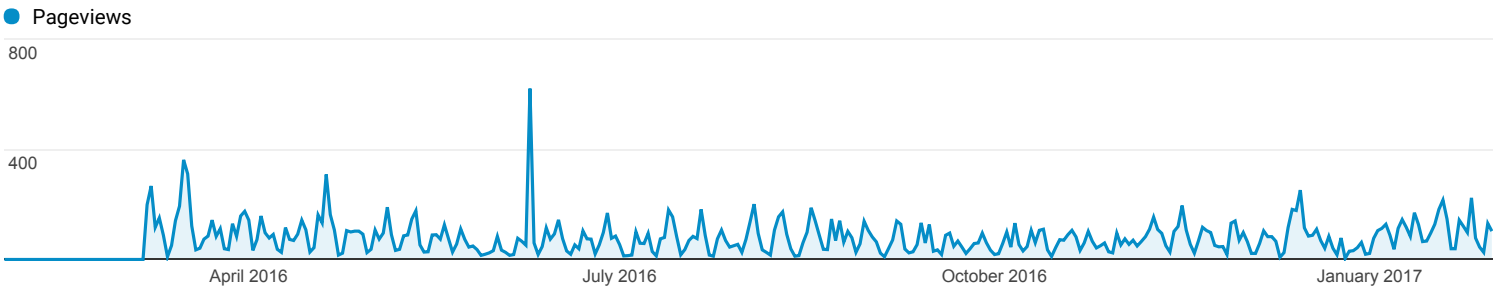
2.	ru	1,584	15.09%
3.	c	1,445	13.77%
4.	ru-ru	439	4.18%
5.	(not set)	377	3.59%
6.	Secret.google.com You are invited! Enter only with this ticket URL. Copy it. Vote for Trump!	126	1.20%
7.	pt-br	113	1.08%
8.	en	64	0.61%
9.	en-gb	15	0.14%
10.	fr	12	0.11%

Pages

Feb 1, 2016 - Jan 31, 2017

All Users
100.00% Pageviews

Explorer



	Page Title	Pageviews ▼	Pageviews ▼
		27,392 % of Total: 100.00% (27,392)	27,392 % of Total: 100.00% (27,392)
1.	Bassett Creek Watershed Management Commission :: Home	5,603	20.45%
2.	(not set)	2,673	9.76%
3.	Bassett Creek Watershed Management Commission :: Page Not Found	1,965	7.17%
4.	Bassett Creek Watershed Management Commission :: Meeting Materials & Minutes	1,771	6.47%
5.	Bassett Creek Watershed Management Commission :: Projects	1,206	4.40%
6.	Bassett Creek Watershed Management Commission :: Meetings & Events	936	3.42%
7.	Bassett Creek Watershed Management Commission :: Lakes & Streams	879	3.21%
8.	Bassett Creek Watershed Management Commission :: Our Members	653	2.38%
9.	Bassett Creek Watershed Management Commission :: Standards & Requirements	643	2.35%
10.	Bassett Creek Watershed Management Commission :: Watershed Management Plan	599	2.19%
11.	Bassett Creek Watershed Management Commission :: Documents	579	2.11%
12.	Bassett Creek Watershed Management Commission :: Contact	506	1.85%
13.	Bassett Creek Watershed Management Commission :: Main Stem Bassett Creek	415	1.52%
14.	Bassett Creek Watershed Management Commission :: About	400	1.46%
15.	Bassett Creek Watershed Management Commission :: For Developers	355	1.30%
16.	Bassett Creek Watershed Management Commission :: Learn & Participate	348	1.27%
17.	Bassett Creek Watershed Management Commission :: Login	319	1.16%
18.	Bassett Creek Watershed Management Commission :: Review Process	308	1.12%
19.	Bassett Creek Watershed Management Commission :: Sweeney Lake	288	1.05%
20.	Bassett Creek Watershed Management Commission :: Northwood Lake Water Quality Improvement Project	266	0.97%
21.	Bassett Creek Watershed Management Commission :: Search	266	0.97%
22.	sharebutton.to	266	0.97%
23.	Bassett Creek Watershed Management Commission :: Permit Application	263	0.96%

Active Users

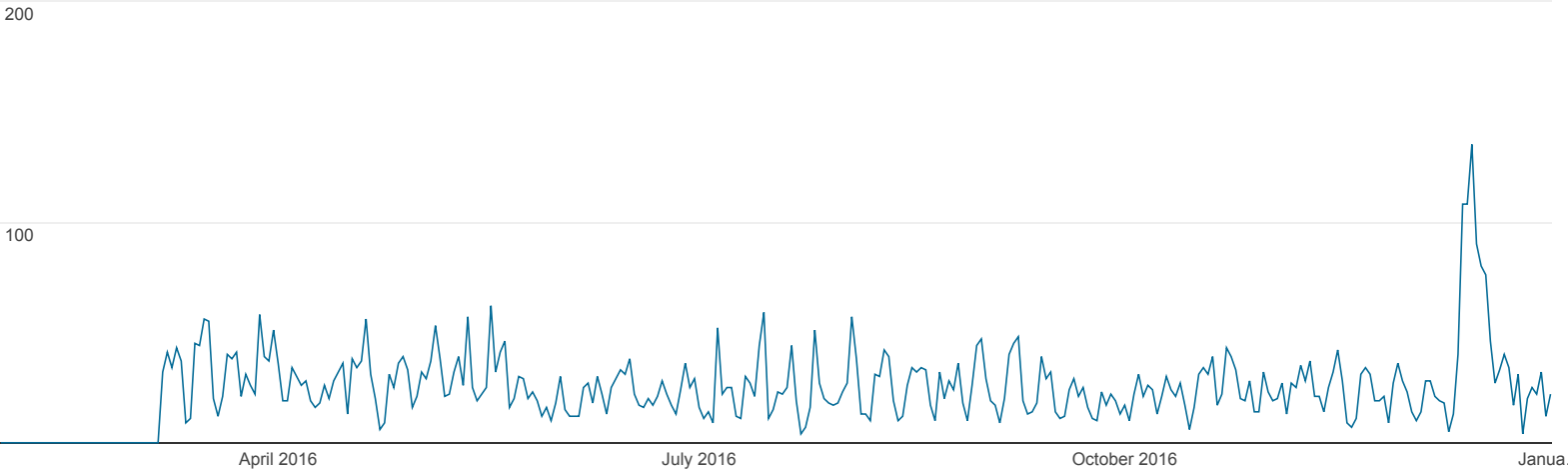
Feb 1, 2016 - Jan 1, 2017

You are using a filtered view, which may cause your Users count to be inaccurate. Learn more

All Users
100.00% Users

Active Users

1 Day Active Users | 7 Day Active Users | 14 Day Active Users | 30 Day Active Users



1 Day Active Users	7 Day Active Users	14 Day Active Users	30 Day Active Users
22	131	349	1,068
% of Total: 100.00% (22)	% of Total: 100.00% (131)	% of Total: 100.00% (349)	% of Total: 100.00% (1,068)