Bassett Creek Watershed Management Commission

Regular Meeting
Thursday, July 17, 2025
8:30 a.m.
Council Conference Room
Golden Valley City Hall
7800 Golden Valley Rd., Golden Valley MN

AGENDA

1. **CALL TO ORDER and ROLL CALL**

2. **PUBLIC FORUM ON NON-AGENDA ITEMS –** *Members of the public may address the Commission about any item not contained on the regular agenda. A maximum of 15 minutes is allowed for the Forum. If the full 15 minutes are not needed for the Forum, the Commission will continue with the agenda. The Commission will take no official action on items discussed at the Forum, except for referral to staff or a Commissions Committee for a recommendation to be brought back to the Commission for discussion/action.*

3. **APPROVAL OF AGENDA**

4. **CONSENT AGENDA (10 minutes)**
   - A. Approval of Minutes – June 18, 2025 Commission Meeting
   - B. Acceptance of July Financial Report
   - C. Approval of Payment of Invoices
     - i. Keystone Waters, LLC – June 2025 Administration
     - ii. Keystone Waters, LLC – June 2025 Administrative Expenses
     - iii. Barr Engineering – June 2025 Engineering Services
     - iv. Triple D Espresso – July Meeting Catering
     - v. City of Plymouth – June 2025 Accounting Services
     - vi. Kennedy & Graven – Legal Services
     - vii. Stantec – WOMP Services
     - viii. Bolton and Menk – Parkers Lake Chloride Reduction Project
     - ix. S Kennedy – Reimbursement for MN Watersheds Summer Tour
   - D. Approval to Set September 18th Public Hearing
   - E. Approval of Commissioner Attendance at Annual Salt Symposium

5. **BUSINESS**
   - A. Consider Approval of 50% Design Plans for Main Stem Bassett Creek Restoration Project and Discuss Project Budget (2024-CRM) (20 min)
   - B. Consider Plan Steering Committee Recommendation to Submit Draft Watershed Plan for 60-day Review (20 min)
   - C. Receive Presentation on 2024 Water Quality Monitoring Results (40 min)
     - i. Cavanaugh Lake
     - ii. Parkers Lake
     - iii. Westwood Lake
     - iv. Medicine Lake

D. Appoint Delegates to MN Watersheds Annual Meeting on Resolutions (10 min)
E. Receive Report on MN Watersheds Summer Tour (10 min)

6. COMMUNICATIONS (15 minutes)

A. Administrator's Report
   i. Update on FEMA grant application
   ii. Administrator Approval of Archeological Survey Scope for Bassett Creek Restoration Project within Contingency Budget
B. Engineer
   i. Update on Fruen Mill Variance Request
   ii. Update on Schaper Pond Monitoring
C. Legal Counsel
D. Chair
E. Minnesota Watersheds
F. Commissioners
G. TAC Members
   i. Appoint Liaison to Aug 6th TAC Meeting
H. Committees
   i. Education Committee Meeting July 21st

7. INFORMATION ONLY (Information online only)

A. Administrative Calendar
B. CIP Project Updates www.bassettcreekwmo.org/projects
C. Grant Tracking Summary and Spreadsheet
D. WCA Notices Minnetonka and Golden Valley
E. Starry Trek Event
F. MN Watersheds Newsletter June 2025
G. We Are Water MN Exhibit and Events, Minneapolis

8. ADJOURNMENT

Upcoming Meetings & Events

- Metro Watersheds Quarterly Meeting: Tuesday, July 15th, 7:00 p.m. on Zoom
- Dakota Plant Walk with Tanağidaŋ To Wiŋ: Saturday, July 19th, 10:00 – 11:00 a.m., Stormwater Park and Learning Center (2522 Marshall St NE, Minneapolis)
- BCWMC Education Committee Meeting: Monday, July 21st, 4:00 p.m., Brookview
- BCWMC Technical Advisory Committee Meeting: Wednesday, August 6th, 10:30 a.m., Brookview
- BCWMC Commission Meeting: Thursday, August 21st, 8:30 a.m., Golden Valley City Hall

Bassett Creek Watershed Management Commission

AGENDA MEMO
Date: July 10, 2025
To: BCWMC Commissioners
From: Laura Jester, Administrator
RE: Background Information for 7/17/25 BCWMC Meeting

1. **CALL TO ORDER and ROLL CALL**
2. **PUBLIC FORUM ON NON-AGENDA ITEMS**
3. **APPROVAL OF AGENDA – ACTION ITEM with attachment**

4. **CONSENT AGENDA**
   A. Approval of Minutes – June 18, 2025 Commission Meeting- **ACTION ITEM with attachment**

   B. Acceptance of July Financial Report - **ACTION ITEM with attachment**

   C. Approval of Payment of Invoices **- ACTION ITEM attachments available upon request –** *I reviewed the following invoices and recommend payment. Commission Treasurer Polzin reviewed Keystone Waters invoices.*
      i. Keystone Waters, LLC – June 2025 Administration
      ii. Keystone Waters, LLC – June 2025 Administrative Expenses
      iii. Barr Engineering – June 2025 Engineering Services
      iv. Triple D Espresso – July Meeting Catering
      v. City of Plymouth – June 2025 Accounting Services
      vi. Kennedy & Graven – Legal Services
      vii. Stantec – WOMP Services
      viii. Bolton and Menk – Parkers Lake Chloride Reduction Project
      ix. S Kennedy – Reimbursement for MN Watersheds Summer Tour

   D. Approval to Set September 18th Public Hearing – **ACTION ITEM no attachment** – *The Commission should hold a public hearing to receive comments on the 2026 Double Box Culvert Repair Project before officially ordering the project and setting the final 2026 levy. The Commission needs to provide a public hearing notice of 45-days to member cities. Staff recommends setting the hearing for the September 18th Commission meeting.*

   E. Approval of Commissioner Attendance at Annual Salt Symposium – **ACTION ITEM with attachment** – *The annual Salt Symposium offers a wide range of information on chloride reduction strategies, new technologies, and education efforts. The event is scheduled for August 5th, online only, with a registration cost of $200. Staff recommends approving attendance by any commissioner or alternate commissioner with funding coming from the Education and Public Outreach budget.*

5. **BUSINESS**

   A. Consider Approval of 50% Design Plans for Main Stem Bassett Creek Restoration Project and Discuss Project Budget (2024-CRM) (20 min) – **ACTION ITEM with attachment** – *The feasibility study for this CIP project was approved in June 2023. An agreement with the City of Golden Valley that assigned project design and engineering services to the Commission was approved in December 2024. Since then, Commission Engineers have been developing project designs in collaboration with me and city staff, assisted with a public open house, and have been working on permitting issues. A memo describing the 50% designs and changes from the 2023 feasibility study is attached with meeting materials. Certain*

elements of the 50% design plans are posted online separately. Construction costs (including contingency) in the feasibility study were estimated at $1,568,700. Unfortunately, due to expanded areas of erosion (almost 1,200 feet), rising construction costs over the last two years, buffer requirements, and some desired expansion of vegetation management, the updated construction cost estimate (including contingency) is now $2,592,000. While staff recommends approval of the 50% designs, the Commission should discuss options for cost reductions, grant opportunities, and/or requesting additional levy.

B. Consider Plan Steering Committee Recommendation to Submit Draft Watershed Plan for 60-day Review (20 min) – **ACTION ITEM with attachment** (complete documents and appendices online) – *At their meeting on July 7th, the Plan Steering Committee reviewed the entire draft watershed management plan. Although some minor items still need to be adjusted or added, the committee recommends that the Commission approve the submittal of the draft plan for the official 60-day review period. More information is included in the memo with meeting materials. Please review the main body of the draft plan and appendices (posted separately).*

C. Receive Presentation on 2024 Water Quality Monitoring Results (40 min) – **INFORMATION ITEM with attachments** – *The Commission had a busy monitoring season last year! The results of the monitoring in four priority lakes are included here. The Commission Engineers will present these findings and recommendations at this meeting.*
   i. Cavanaugh Lake
   ii. Parkers Lake
   iii. Westwood Lake
   iv. Medicine Lake

D. Appoint Delegates to MN Watersheds Annual Meeting on Resolutions (10 min) – **ACTION ITEM with attachment** – *MN Watersheds will meet virtually on August 25th at 10:00 to consider and act upon proposed Legislative Platform updates and proposed Resolutions, including the resolution from BCWMC. The Commission should appoint two delegates and one alternate to attend the meeting. Please see the meeting materials attached.*

E. Receive Report on MN Watersheds Summer Tour (10 min) – **INFORMATION ITEM with no attachment** – *Alternate Commissioner Kennedy and I attended the MW Summer Tour in Roseau, MN late last month. We will provide a verbal report at this meeting.*

6. COMMUNICATIONS (15 minutes)

A. Administrator's Report
   i. Update on FEMA grant application
   ii. Administrator Approval of Archeological Survey Scope for Bassett Creek Restoration Project within Contingency Budget

B. Engineer
   i. Update on Fruen Mill Variance Request
   ii. Update on Schaper Pond Monitoring

C. Legal Counsel

D. Chair

E. Minnesota Watersheds

F. Commissioners

G. TAC Members
   i. Appoint Liaison to Aug 6th TAC Meeting

H. Committees

i. Education Committee Meeting July 21st

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Item 4A.
BCWMC 7-17-25

Bassett Creek Watershed Management Commission

DRAFT Minutes of Regular Meeting & Plan Development Workshop
Wednesday, June 18, 2025
8:30 a.m.
3400 Plymouth Blvd, Plymouth MN

1. CALL TO ORDER and ROLL CALL

On June 18, 2025 at 8:31 a.m. Chair Cesnik called the Bassett Creek Watershed Management Commission (Commission) to order.

Commissioners, city staff, and others present

City	Commissioner	Alternate Commissioner	Technical Advisory Committee Members (City Staff)
Crystal	Joan Hauer	Terry Schultz (online)*	Jesse Struve
Golden Valley	Paula Pentel	Wendy Weirich	Drew Chirpich
Medicine Lake	*Absent*	Shaun Kennedy	*Absent*
Minneapolis	*Absent*	*Vacant*	Liz Stout
Minnetonka	*Vacant*	Stacy Harwell	*Absent*
New Hope	Jere Gwin-Lenth	*Absent*	Nick Macklem
Plymouth	Catherine Cesnik	*Absent*	Ben Scharenbroich
Robbinsdale	Wayne Sicora (online)*	*Vacant*	Jenna Wolf
St. Louis Park	*Absent*	David Johnston	*Absent*
Administrator	Laura Jester, Keystone Waters, LLC		
Engineers	Stephanie Johnson, Josh Phillips, Jim Herbert, Karen Chandler - Barr Engineering Co.		
Recording Secretary	*Vacant Position*		
Legal Counsel	Dave Anderson, Kennedy & Graven		
Guests/Public	Greg Koch, Winston Wildebush, Brett Emmons, Stu Grubb – Graffiti Mill LLC		

*Commissioners/alternates attending online do not participate in the meeting

2. PUBLIC FORUM ON NON-AGENDA ITEMS

None.

3. APPROVAL OF AGENDA

Administrator Jester requested an additional agenda item as the new 5A: Consider Approval to Increase Budget for Engineering Services for the Bassett Creek Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024) for Wetland Delineation and Architectural Survey

MOTION: Commissioner Pentel moved to approve the agenda as revised. Commissioner Gwin-Lenth seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

4. CONSENT AGENDA

Items 4D and 4E were removed from the consent agenda.

MOTION: Commissioner Pentel moved to approve the revised consent agenda. Alternate Commissioner Kennedy seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

The following items were approved as part of the consent agenda.

- Approval of Minutes – May 15, 2025 Commission Meeting
- Acceptance of June Financial Report
- Approval of Payment of Invoices
  - Keystone Waters, LLC – May 2025 Administration
  - Keystone Waters, LLC – May 2025 Administrative Expenses
  - Barr Engineering – May 2025 Engineering Services
  - Triple D Espresso – June Meeting Catering
  - City of Plymouth – May 2025 Accounting Services
  - Kennedy & Graven – Legal Services
  - Stantec – WOMP Services
  - Metro Conservation Districts – Children's Water Festival
  - League of Minnesota Cities – Insurance
  - LB Carlson LLP – 2024 Financial Audit
- Approval of Conditional License Agreement with MnDOT for Use of Hydrologic Model

Item 4E: Approval of Resolution of Appreciation for Stacy Harwell

Chair Cesnik read the resolution of appreciation for Alternate Commissioner Harwell noting her 11 years representing the City of Golden Valley and 2 years representing the City of Minnetonka. Alternate Commissioner Harwell reported that after living the watershed her entire life, she is now moving out of the watershed. She indicated she is sad to be leaving and enjoyed her time on the Commission. Multiple commissioners and Chair Cesnik expressed their appreciation for Harwell's time and expertise.

MOTION: Although there was no official motion, Chair Cesnik called for a vote to approve the resolution. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

Item 4D: Approval of Commercial Insurance Proposal

Commissioner Hauer noted the expense of the insurance and indicated this might be a good time to seek alternate vendors. She noted that perhaps a higher deductible could result in a lower premium. Commissioner Attorney Anderson reported that, like cities, the BCWMC is insured through the League of MN Cities and that no better rate is likely available. He indicated he could discuss with the broker for next year but the premium payment is due next week for this year.

MOTION: Commissioner Gwin-Lenth moved to approve the commercial insurance proposal for this year and to direct staff to review options for lowering the insurance premium for next year. Commissioner Hauer seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

Alternate Commissioner Kennedy noted that potential savings could be used up by staff time reviewing options. He recommended that staff time related to this issue is limited to a reasonable amount.

DRAFT

5. BUSINESS

A. Consider Approval to Increase Budget for Engineering Services for the Bassett Creek Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024) for Wetland Delineation and Architectural Survey

Commission Engineer Chandler apologized for bringing this item to the Commission at the last minute rather than waiting until the July meeting. She reported that the engineering team for the Bassett Creek Restoration Project was just informed by the U.S. Army Corps of Engineers (ACOE) that the necessary ACOE permit for the project will require a wetland delineation and an architectural survey, neither of which were expected nor budgeted for in the design and engineering scope. She noted the longer timeline now needed for permitting and hoped to get started on these surveys right away. Engineer Chandler walked through the tasks related to these surveys and requested that an additional $31,400 be added to the engineering services budget. She noted that results of the surveys are not expected to impact the project design.

There were some questions related to the architectural survey. Engineer Chandler noted that the project triggered a Section 106 permit which includes this survey in certain cases. She indicated that staff are not recommending a change to the overall project budget at this time (because bids for the project could also have a large impact on the overall projected cost), only an increase to the engineering services budget from $603,000 to $634,400.

MOTION: Alternate Commissioner Harwell moved to approve the scope and budget for the wetland delineation and architectural survey and adding $31,400 to the engineering services budget for the Bassett Creek Restoration Project. Alternate Commissioner Johnston seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

Commission Engineer Chandler gave an update on the project noting that a public open house was recently held with positive feedback from residents and that 50% designs are being developed and should be presented at the July Commission meeting. She also noted that a separate permit, one from the MPCA, may have a longer timeline than desired.

B. Receive Presentation on Redevelopment Plans and Potential Future Variance Request at Fruen Mill

The owner of Graffiti Mill LLC, Greg Koch, introduced himself along with engineering consultants Stu Grubb and Brett Emmons with EOR, Inc., and Winston Wildebush with Graffiti Mill. Mr. Koch presented information about the historic and iconic Fruen Mill including a brief history of its use and his plans for redevelopment of the site. He reported that he purchased the property a few years ago and has done considerable work to clean out considerable debris and hazardous materials from the basement and other floors of the mill. He noted the mill basement has been flooded for years but has been temporarily dewatered in recent times as part of the cleanup efforts. His redevelopment plans include using the basement as a spa along with other hospitality businesses in the floors above.

Mr. Koch's presentation included examples of previous redevelopment projects he's spearheaded around the world and awards his developments have received for innovative stormwater practices, among others. He noted his approach to blending natural spaces with industrial elements and creating attractive outdoor environments. He indicated his desire to keep the Fruen Mill's historic character and that the project is supported by the Minneapolis Mayor Frey and the Minneapolis Community Planning and Economic Development department.

Mr. Koch noted the likely need for a variance from BCWMC floodplain standards and welcomed feedback. EOR representatives presented the technical aspects of the project including challenges and opportunities. They noted that groundwater monitoring wells and soil borings have provided good data on conditions at the site and that ongoing dewatering keeps the basement dry by pumping surficial groundwater, likely originating from the creek, back into the creek. They noted they are working with dewatering specialists and currently pumping about 30 gallons per minute. It was noted that the project is expected to meet FEMA floodplain and floodway requirements but would require a variance from BCWMC floodplain standards to allow the lowest floor opening to be below the required 2 feet above floodplain.

Chair Cesnik indicated she's interested in the long-term protection of the site and wondered if the basement should be filled in in order to meet floodplain standards. Alternate Commissioner Harwell noted the FEMA floodplain will likely match the BCWMC floodplain in the future. She also noted that the dewatering practice may be acting as a filtration system for the creek. There was discussion about the parking needed for the hospitality that's planned.

Mr. Koch noted that he is at a point financially where a level of certainty is needed on the question of the variance before he moves to further design. Commission Engineer Herbert noted that the City of Minneapolis will need to provide a signature on any formal variance request application. Alternate Commissioner Harwell recommended building in resiliency and using future conditions projections in analyses.

When asked his opinion, Engineer Herbert indicated that the proposed redevelopment is complicated, involves multiple BCWMC policies, and may also require legal review, but that some flexibility in applying the policies may be available.

Overall, there was general support from commissioners on the project, despite the challenges, with many indicating they liked the redevelopment concept and would like to see the site redevelop.

[Chair Cesnik called for a 5 minute break.]

C. Consider Approval of Double Box Culvert Repair Project Feasibility Study (FCP-1)

Commission Engineer Phillips reminded commissioners about the presentation on many of the findings of the feasibility study presented at the last meeting. He noted that not a lot has changed and he's here to present the final report and estimated project costs. He noted the feasibility study represents about 30% project designs. He reviewed the various repairs that are needed, which includes some improvements for accessing areas within the tunnel which the city agrees are appropriate. There was discussion about dewatering during the project and security on the inlet if the grate is removed. Engineer Phillips reported that the final design would include a requirement for appropriate security and safety and that the contractor would decide on appropriate dewatering techniques.

Engineer Phillips reviewed the breakdown of the total estimated project cost of $1,410,000 which include significant costs with mobilization, lighting, water control, etc.

MOTION: Alternate Commissioner Harwell moved to approve the feasibility study and the $1,410,000 project budget. Commissioner Pentel seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

D. Set Maximum 2026 Levy

Administrator Jester reviewed her recommendations for the maximum levy request which is due to Hennepin County later in the month. She indicated that parts of three CIP projects are slated for 2026 levy funds including the Bassett Creek Restoration Project, Regent Ave. to Golden Valley Rd; the Plymouth Creek Restoration Project, Dunkirk Lane to Plymouth Ice Center; and the Double Box Culvert Repair Project as just described in Item 5C.

MOTION: Commissioner Pentel moved to approve a maximum 2026 levy of $2,503,500. Commissioner Gwin-Lenth seconded the motion. Upon a vote the motion carried 7-0. The cities of Minneapolis and Robbinsdale were absent from the vote.

[Alternate Commissioner Harwell leaves the meeting.]

E. Review Watershed Plan Development Progress Tracker and Receive Report on Plan TAC Meeting

Plan Steering Committee Chair Kennedy reported on the latest work of the committee which included reviewing input gathered at the May Commission workshop. Administrator Jester reported on feedback provided by state and

local agencies at a recent Plan TAC meeting.

2. COMMUNICATIONS

A. Administrator's Report
   i. Request for Ideas for Website Updates – A request for feedback on the BCWMC website will be sent to all commissioners, alternates, and TAC members to help the Education Committee develop a list of website updates for the website consultants.
   ii. Update on Lost and Northwood Lake TMDLs – A project kick off meeting was held with MPCA, Commission Engineers, and representatives from the MS4s (cities, county, MnDOT). Commission Engineers recently began sediment coring work and will start pollutant modeling soon.
   iii. Update on Sweeney Lake AIS – Report on the good news that a recent vegetation survey of the lake did not find any Eurasian watermilfoil in the lake. An AIS detection training event will be held with lake residents soon.

B. Engineer
   i. Update on Bassett Creek Restoration Project Design and Permitting – 50% designs are underway; public open house held June 5th; city and commission staff engaging with permitting agencies.
   ii. Update on Street Sweeping Prioritization Project – Draft report on the project recently presented to the TAC; a final report is expected in August.

C. Legal Counsel – MN law regarding participation in meetings from remote locations now allows participants to be in non-public spaces. Commission Attorney Anderson still discourages remote participation but could explore options.

D. Chair – Chair Cesnik indicated Alternate Commissioner Harwell expressed concern about the license agreement approved in the consent agenda. Engineer Johnson explained why the changes were necessary for MnDOT's use of the Commission's hydrologic model.

E. Minnesota Watersheds – Resolutions committee is meeting soon to consider multiple resolutions, including the Commission's. It was noted the TAC should have an opportunity to review the resolutions as well. Administrator Jester and Alternate Commissioner Kennedy will attend the Summer Tour in Roseau.

F. Commissioners
   i. Report on St. Louis Park Ecotacular Event – No report.

G. TAC Members
   i. Update on Four Seasons Water Quality Improvement Project – Construction is substantially complete; vegetation establishment will begin soon.
   ii. Update on Plymouth Creek Restoration Project – City of Plymouth is contracting with an engineering firm with 60% designs expected at the September meeting and construction starting this winter.

H. Committees

3. INFORMATION ONLY (Information online only)

A. Administrative Calendar
B. CIP Project Updates www.bassettcreekwmo.org/projects
C. Grant Tracking Summary and Spreadsheet
D. WCA Notices, Minnetonka and Golden Valley

7. **ADJOURNMENT –** The meeting adjourned at 11:10 a.m.

DRAFT

Bassett Creek Watershed Management Commission
Statement of Financial Position as of 6/30/2025
Unaudited

	400 Capital Improvement Projects	100 General Fund	TOTAL
ASSETS			
Current Assets			
Checking/Savings			
· 102 · 4MP Fund Investment	3,501,986.62	515,595.54	4,017,582.16
· 103 · 4M Fund Investment	4,285,527.88	1,020,018.38	5,305,546.26
104 · US Bank Checking	-0.00	-942.59	-942.59
Total Checking/Savings	7,787,514.50	1,534,671.33	9,322,185.83
Accounts Receivable			
· 111 · Accounts Receivable	0.00	0.00	0.00
· 112 · Due from Other Governments	0.00	0.00	0.00
· 113 · Delinquent Taxes Receivable	20,785.08	0.00	20,785.08
Total Accounts Receivable	20,785.08	0.00	20,785.08
Other Current Assets			
· 114 · Prepaids	0.00	3,910.00	3,910.00
· 116 · Undeposited Funds	0.00	0.00	0.00
Total Other Current Assets	0.00	3,910.00	3,910.00
Total Current Assets	7,808,299.58	1,538,581.33	9,346,880.91
TOTAL ASSETS	7,808,299.58	1,538,581.33	9,346,880.91
LIABILITIES & EQUITY			
Liabilities			
Current Liabilities			
Accounts Payable			
· 211 · Accounts Payable	75,937.70	88,087.58	164,025.28
Total Accounts Payable	75,937.70	88,087.58	164,025.28
Other Current Liabilities			
· 212 · Unearned Revenue	200,000.00	0.00	200,000.00
· 251 · Unavailable Rev - property tax	20,785.08	0.00	20,785.08
Total Other Current Liabilities	220,785.08	0.00	220,785.08
Total Current Liabilities	296,722.78	88,087.58	384,810.36
Total Liabilities	296,722.78	88,087.58	384,810.36
Equity			
· 311 · Nonspendable prepaids	0.00	3,910.00	3,910.00
· 312 · Restricted for improvements	4,562,582.00	0.00	4,562,582.00
· 314 · Res for following year budget	0.00	149,700.00	149,700.00
· 315 · Unassigned Funds	0.00	256,519.07	256,519.07
· 32000 · Retained Earnings	3,285,157.91	620,746.98	3,905,904.89
Net Income	-336,163.11	419,617.70	83,454.59
Total Equity	7,511,576.80	1,450,493.75	8,962,070.55
TOTAL LIABILITIES & EQUITY	7,808,299.58	1,538,581.33	9,346,880.91

Bassett Creek Watershed Management Commission

Statement of Revenues, Expenditures, and changes in Fund Balance - General Fund

6/30/2025

Unaudited

	Annual Budget	June	July	Year to Date	Budget Balance
Ordinary Income/Expense					
Income					
411 · Assessments to Cities	662,888.00	0.00	0.00	662,887.00	1.00
412 · Project Review Fees	70,600.00	1,500.00	0.00	12,773.50	57,826.50
413 · WOMP Reimbursement	5,000.00	0.00	0.00	4,500.00	500.00
414 · Grants	0.00	0.00	0.00	0.00	0.00
415 · Investment earnings	44,000.00	32,773.35	0.00	165,458.79	-121,458.79
416 · Transfer from CIP and LT Accounts	50,570.00	0.00	0.00	0.00	50,570.00
Total Income	833,058.00	34,273.35	0.00	845,619.29	-12,561.29
Expense					
1000 · Engineering					
1010 · Technical Services	133,000.00	9,915.00	6,426.00	63,082.50	69,917.50
1020 · Development/Project Reviews	82,500.00	2,057.50	8,936.50	25,528.50	56,971.50
1030 · Non-fee and Preliminary Review	23,000.00	2,769.50	1,041.50	8,832.00	14,168.00
1040 · Commission and TAC Meetings	10,700.00	1,791.50	1,075.00	8,365.90	2,334.10
1050 · Surveys and Studies	7,000.00	0.00	0.00	0.00	7,000.00
1060 · Water Quality / Monitoring	133,500.00	15,396.10	23,907.75	58,665.00	74,835.00
1070 · Water Quantity	8,250.00	495.00	2,206.50	4,613.60	3,636.40
1080 · Annual Flood Control Inspectior	45,000.00	1,033.00	2,010.50	10,399.50	34,600.50
1090 · Municipal Plan Review	2,000.00	0.00	0.00	0.00	2,000.00
1100 · Watershed Outlet Monitoring Pro	29,300.00	4,699.32	3,218.41	13,539.37	15,760.63
1110 · Annual XP-SWMM Model Update	0.00	0.00	0.00	0.00	0.00
1120 · APM/AIS Work	40,000.00	0.00	0.00	0.00	40,000.00
Total 1000 · Engineering	514,250.00	38,156.92	48,822.16	193,026.37	321,223.63
2000 · Plan Development					
2010 · Next Gen Plan Development	75,000.00	18,392.50	7,804.50	52,082.50	22,917.50
Total 2000 · Plan Development	75,000.00	18,392.50	7,804.50	52,082.50	22,917.50
3000 · Administration					
3010 · Administrator	75,088.00	4,212.00	7,600.63	28,446.13	46,641.87
3015 · Additional Staff	10,000.00	0.00	0.00	0.00	10,000.00
3020 · MAWD Dues	7,500.00	0.00	0.00	7,500.00	0.00
3030 · Legal	24,300.00	2,773.50	1,440.00	10,695.00	13,605.00
3040 · Financial Management	18,150.00	1,416.03	1,374.00	7,089.31	11,060.69
3050 · Audit, Insurance & Bond	22,000.00	12,834.00	0.00	12,834.00	9,166.00
3060 · Meeting Catering	2,200.00	197.53	197.53	1,185.18	1,014.82
3070 · Administrative Services	4,015.00	336.45	111.74	1,111.15	2,903.85
Total 3000 · Administration	163,253.00	21,769.51	10,723.90	68,860.77	94,392.23
4000 · Education					
4010 · Publications / Annual Report	1,300.00	0.00	0.00	929.50	370.50
4020 · Website	12,000.00	0.00	0.00	0.00	12,000.00
4030 · Watershed Education Partnersh	14,850.00	350.00	0.00	3,850.00	11,000.00
4040 · Education and Public Outreach	27,000.00	0.00	1,067.02	16,487.45	10,512.55
4050 · Public Communications	1,200.00	0.00	0.00	0.00	1,200.00
Total 4000 · Education	56,350.00	350.00	1,067.02	21,266.95	35,083.05
5000 · Maintenance					
5010 · Channel Maintenance Fund	25,000.00	0.00	0.00	0.00	25,000.00
5020 · Flood Control Project Long-Terr	35,000.00	0.00	0.00	0.00	35,000.00
Total 5000 · Maintenance	60,000.00	0.00	0.00	0.00	60,000.00
6000 · Special Projects					
6010 · Medicine Lake TMDL Assess	31,033.00	0.00	0.00	30,981.50	51.50
6020 · Street Sweeping Prioritization P	48,494.00	12,325.00	3,431.50	38,906.00	9,588.00
6030 · Bassett Creek Valley Floodplain	85,400.00	0.00	358.00	3,921.00	81,479.00
6040 · Northwood & Lost Lake TMDL A	39,500.00	1,076.00	15,880.50	16,956.50	22,543.50
Total 6000 · Special Projects	204,427.00	13,401.00	19,670.00	90,765.00	113,662.00
Total Expense	1,073,280.00	92,069.93	88,087.58	426,001.59	647,278.41

Bassett Creek Watershed Management Commission

Statement of Revenues, Expenditures, and changes in Fund Balance - Construction Fund

6/30/2025

Unaudited

	Project Budget	July	Year to Date	Inception to Date Expense	Remaining Budget
Ordinary Income/Expense					
· 1000 · Engineering	0.00	0.00	0.00	0.00	0.00
· 2024CR-M · CIP-BS Main Stem Restore	1,941,000.00	44,253.60	121,916.40	220,095.79	1,720,904.21
· 2026CR-P · Plymouth Creek Restor Dunk	2,600,000.00	0.00	0.00	108,261.58	2,491,738.42
· BC-12 · CIP-CostShare Pur High Eff St S	150,000.00	0.00	0.00	2,500.00	147,500.00
· BC-14 · CIP-Sochacki Pk Wter Quality Im	600,000.00	0.00	0.00	7,500.00	592,500.00
· BC-238 · CIP-DeCola Ponds B&C	1,600,000.00	0.00	19,473.61	1,527,458.92	72,541.08
· BC-2381 · CIP-DeCola Ponds/Wildwood P	1,300,000.00	0.00	0.00	84,049.39	1,215,950.61
· BC-5 · CIP-Bryn Mawr Meadows	1,835,000.00	0.00	0.00	755,689.56	1,079,310.44
· BC-7 · CIP-Main Stem Lagoon Dredging	2,759,000.00	0.00	0.00	1,589,533.34	1,169,466.66
· BCP-2 · CIP- Basset Cr Pk & Winnetka	1,123,351.00	0.00	0.00	1,075,698.32	47,652.68
· ML-12 · CIP-Medley Park Stormwater	1,500,000.00	0.00	118,890.48	1,358,137.20	141,862.80
· ML-21 · CIP-Jevne Park Stormwater Mgmt	500,000.00	0.00	0.00	56,390.75	443,609.25
· ML-22 · CIP-Ponderosa Wood Strm Resto	352,000.00	0.00	0.00	72,657.31	279,342.69
· NL-2 · CIP-Four Seasons Mall	990,000.00	0.00	0.00	209,680.56	780,319.44
· PL-7 · CIP-Parkers Lake Stream Restore	485,000.00	2,667.50	6,632.50	244,199.12	240,800.88
· SL-3 · CIP-Schaper Pond	612,000.00	14,522.80	15,630.30	554,160.26	57,839.74
· SL-8 · CIP-Sweeney Lake WQ Improveme	568,080.00	0.00	0.00	568,064.13	15.87
· TW-2 · CIP-Twin Lake Alum Treatment	163,000.00	0.00	0.00	91,037.82	71,962.18
· CL-4 · CIP-Crane Lake Chloride Reductio	0.00	1,689.20	8,705.80	60,476.24	-60,476.24
· FCP-1 · CIP-Flood Control Project Double	0.00	12,804.60	44,914.02	44,914.02	-44,914.02
Total Expense	19,078,431.00	75,937.70	336,163.11	8,630,504.31	10,447,926.69

Bassett Creek Watershed Management Commission									
Long Term Accounts - General Fund									
Unaudited			Total Project Alloc.	June	July	Year to-Date	Prior Years	Inception to Date	Remaining Project Funds
Income	·	Fld1 · Flood Control Long Term Maint		0.00	0.00	0.00	224,421.90	224,421.90	
Expense	·	Fld2 · Flood Control Long Term Exp	699,980.00	0.00	0.00	0.00	503,776.41	503,776.41	
Total			699,980.00	0.00	0.00	0.00	-279,354.51	-279,354.51	420,625.49
Income	·	Flood1 · Emergency FCP Income		0.00	0.00	0.00	-	0.00	
Expense	·	Flood2 · Emergency FCP Expense	500,000.00	0.00	0.00	0.00	-	0.00	
Total			500,000.00	0.00	0.00	0.00	-	0.00	500,000.00
Income	·	Gen · Next gen Plan Development Income		0.00	0.00	0.00	38,000.00	38,000.00	
Expense	·	Gen1 · Next gen Plan Development Exp	0.00	0.00	0.00	0.00	38,000.00	38,000.00	
Total			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Income	·	Qual · Channel Maintenance Fund		0.00	0.00	0.00	595,000.00	595,000.00	
Expense	·	Qual1 · Channel Maintenance Expense	0.00	0.00	0.00	0.00	265,837.70	265,837.70	
Total			0.00	0.00	0.00	0.00	329,162.30	329,162.30	329,162.30
Income	·	410 · Special Projects Fund	0.00	32,773.35	0.00	165,458.79	726,989.69	892,448.48	
Expense	·	410 · Special Projects Fund	248,427.00	13,401.00	19,670.00	90,765.00	61,554.55	152,319.55	
Total			-248,427.00	19,372.35	-19,670.00	74,693.79	665,435.14	740,128.93	740,128.93

SALT SYMPOSIUM
An LSiD™ Event by Bolton & Menk

2025 Salt Symposium
August 5th

Virtual Event Only

BOLTON & MENK
Real People. Real Solutions.

Beginning at: 7:00 am CDT	*Log in early to test your connection and visit our Sponsors*	
8:00 am CDT	**Welcome from Connie Fortin** Bolton & Menk, Inc.	
8:10 am CDT	**Alycia Overbo** Minnesota Department of Health	Chloride Updates, Initiatives, and Funding
8:40 am CDT	**Carolyn Dindorf** Bolton & Menk, Inc.	Optimizing Water Softeners for Chloride Reduction
9:10 am CDT	**Bruce D. Lindsey** U.S. Geological Survey	Increasing salinization of groundwater in the United States and its secondary effects
9:40 am CDT	**Mid-morning break**	
10:00 am CDT	**Eric Faulkner and Tyler Buerger** Vaisala and City of Oak Creek, WI	Storm Severity Index: Leveraging Technology to Reduce Salt Use
10:30 am CDT	**Lorna Murison** Credit Valley Conservation, Ontario	Liquid Anti-icing on Permeable and Asphalt Parking Lot Surfaces
11:00 am CDT	**Sujay Kaushal** University of Maryland	Saltwater Intrusion From Land and Sea
11:30 am CDT	**Rick Nelson** AASHTO	5 MINUTE UPDATE: Standardizing Winter Maintenance Terminology
11:40 am CDT	**Mid-day break for lunch**	
12:10 pm CDT	**Connie Fortin** Bolton & Menk, Inc.	Low Salt Design
12:40 pm CDT	**David Veneziano** Iowa State University	Designing Pedestrian Safety Countermeasures for Winter Maintenance
1:10 pm CDT	**Carl Rosen** University of Minnesota	Chloride Cycling in Agricultural Cropping Systems
1:40 pm CDT	**Afternoon break**	
2:00 pm CDT	**Wyatt Weatherson** Toronto Metropolitan University, Ontario	Evaluating Municipal Perspectives on the Influence of Climate Change on Winter Road Maintenance
2:30 pm CDT	**Andy Erickson** St. Anthony Falls Laboratory, MN	5 MINUTE UPDATE: Cold Climate Center of Excellence Update
2:40 pm CDT	**Allison Madison** Wisconsin Salt Wise	Winter Salt Week: Raising Awareness Around Salt Pollution and Reduction Solutions
3:10 pm CDT	**Erica Sniegowski & Elizabeth Boor** Nine Mile Creek Watershed District, MN	Addressing Chloride Reduction through Education, Collaboration, Funding, and Regulation
3:40 pm CDT	**Conclusions**	

Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co.
Subject: Item 5A: Consider Approval of 50% Design Plans for Bassett Creek Main Stem Restoration, Regent Avenue to Golden Valley Road (CR-M 2024) – Golden Valley, MN
BCWMC July 17, 2025 Meeting Agenda
Date: July 10, 2025
Project: 23272114.00

5A Consider Approval of 50% Design Plans for Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024), Golden Valley, MN

Summary:

Proposed Work: Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024), Golden Valley
Basis for Review at Commission Meeting: 50% Design Plans Review
Change Impervious Surface Area: N/A
Recommendations for Commission Action:

1) Consider approval of 50% design plans
2) Authorize Commission Engineer to continue design and bring 90% design to a future Commission meeting
3) Consider options for reducing the estimated construction cost or revising project budget

At the September 21, 2023 meeting, the Commission passed resolution 23-06 officially ordering the Bassett Creek Main Stem Restoration Project (2024 CIP Project CR-M), at an estimated cost of $2,241,000. The project's funding sources include:

- Up to $1,741,000 available to the Commission through a Hennepin County tax levy on watershed taxpayers (CIP levy), with $434,000 levied in 2024, $653,500 levied in 2025, and an estimated $653,500 to be levied in 2026.
- Up to $200,000 from the Commission's Closed Project Account.
- $200,000 from the City of Golden Valley's portion of the Commission's Channel Maintenance Fund.
- Up to $100,000 from the City of Golden Valley's capital improvement program.

The Commission executed a cooperative agreement with the City of Golden Valley (City) that specifies the Commission will provide engineering services for the project and the City will bid, award, and administer construction of the project, and provide long term maintenance. In March 2025, the Commission approved a scope of work for engineering services to be provided by the Commission Engineer including project design, preparation of bid documents, assistance with community engagement, preparation of exhibits for necessary property rights, permitting and environmental review,

construction observation, environmental oversight, and inspections, all in cooperation and close coordination with the City. Per a June 2025 Commission-approved amendment to the engineering services scope, the Commission Engineer's services also include performing a field wetland delineation, an architectural survey, and corresponding reports.

The Commission Engineer completed the 50% design plans which must be reviewed and approved by the Commission. The remainder of this memo presents information about the prior feasibility study, work completed since March, the design features of the 50% plans, cost, schedule and approval/permitting needs.

Feasibility Study and Selected Project

The Commission completed a feasibility study in June 2023 (Feasibility Report for Bassett Creek Main Stem Restoration, Regent to Golden Valley Road, June 2023) that identified, mapped, and prioritized stream sections in need of restoration along a 7,000-foot section of Bassett Creek (known as Ȟaȟá Wakpádaŋ in the Dakota language) in Golden Valley from Regent Avenue to Golden Valley Road (see attached figure). The feasibility report and further project information can be found online at Bassett Creek Watershed Management Commission :: Bassett Creek Restoration Project: Regent Ave. to Golden Valley Rd.

The approximately 7,000-foot reach is located on a combination of privately-owned and publicly-owned properties, including portions of land owned by Golden Valley, and operated in partnership with Three Rivers Park (TRPD) through the Sochacki Park Joint Powers Agreement. The creek maintains a steady base flow year-round and meanders through neighborhoods and wooded backyards and alongside a wooded reach of Sochacki Park. Erosion of the stream banks varies along the reach from mild to severe, with eroding bank heights varying from 2.5 to approximately 8 feet. The goal of the study and the project was to identify methods to reduce sediment load and associated nutrient and contamination loading to Bassett Creek, preserve and enhance in-stream and riparian habitats, and prevent future channel erosion.

The feasibility study identified 79 unique locations for stabilization, which were grouped into 40 restoration areas within the approximate 7,000-foot assessed reach. The restoration areas included a variety of stream restoration methods such as grading, vegetation establishment (plantings, fascines, etc.), riprap, j-hook vanes, cross vanes, and toe wood. The restoration areas were ranked from low to high priority depending on several factors, including the severity of erosion, protection of existing infrastructure, and public vs. private ownership. The Commission Engineer developed three alternatives using the ranked restoration areas:

- Alternative 1 – completing restoration in high priority areas only
- Alternative 2 – completing restoration in high and medium priority areas
- Alternative 3 – completing restoration in high, medium, and low priority areas

At their June 15, 2023 meeting, the Commission approved the implementation of Alternative 3, to stabilize all eroding streambanks including those ranked high, medium, and low priority. The project is expected to reduce pollution in Ȟaȟá Wakpádaŋ / Bassett Creek and downstream in the Mississippi River by an estimated 82 lbs. of total phosphorus and 165,000 lbs. of total suspended solids on an average annual basis.

Work Completed Since Feasibility Study

At their March 20, 2025 meeting, the Commission approved the Commission Engineer's scope and budget for design and construction oversight.

After the approval in March, the Commission Engineer began fieldwork, starting with a drone flight to collect elevation data along the stream reach. The drone technology can collect elevation data along the banks but cannot collect elevation data below the creek water level. The Commission Engineer supplemented data collected by the drone with a survey grade Real-Time Kinematic Global Positioning System (RTK-GPS) unit to collect elevation data below the water level, such as the toe of the banks and thalweg (flow path) of the channel. The elevation data collected by the drone and RTK GPS unit provided detailed surface information for the Commission Engineer to develop the 50% plan drawings and hydraulic model velocities and water levels throughout the reach.

During the field elevation data collection, the field team collected other data, including changes in erosion since the feasibility study, potential design modifications, and locations of existing utilities (power poles, manholes, etc.). The Commission Engineer's final field task completed as part of the 50% design plan development was to walk the stream reach with City staff to assess potential construction access routes. The Commission Engineer used data gathered from the fieldwork to update the concept plans from the feasibility study to reflect restoration design changes and proposed construction access routes.

On June 5, 2025, the City and Commission hosted a public open house to get feedback from the community on the in-progress 50% design plans. The Commission Engineer prepared 12 boards that described project background, the updated proposed restoration methods, and revised potential construction access along the reach. Forty-one individuals signed in at the public meeting and approximately half of those individuals filled out comment cards. The comment cards requested feedback on the design, willingness to allow construction access, and whether the homeowner wanted to be added to a project information email list. Overall, attendees expressed support for the proposed project, engaged in conversation and provided feedback on several topics, including:

- Opinions on restoration methods such as riprap vs. alternative stream restoration methods
- Desire to maintain existing riprap that homeowners installed
- Vegetation management and establishment including what it will look like, how it will be maintained, and some specific species suggestions
- Trees (falling into creek, tree removal, tree preservation, species of replacement trees)
- Desire to maintain ability to kayak in channel
- Public foot-traffic access such as new pathways to creek
- Construction access for the project including what it will entail and how it will be restored
- Construction-related concerns such as road closures, noise, types of equipment, etc.

During the feasibility study, the desktop environmental review identified a fuel oil release at ISD 281 Noble Elementary school. For the 50% environmental review, the Commission Engineer reviewed the MPCA regulatory files related to the fuel release and the Commission Engineer concluded that the fuel release is not expected to have migrated offsite and is not expected to impact Bassett Creek. Therefore, the Commission Engineer does not recommend additional record review or investigation at this time.

As part of the 50% design, the Commission Engineer communicated with permitting agencies including US Army Corps of Engineers (USACE), Minnesota State Historic Preservation Office (SHPO), and Minnesota Pollution Control Agency (MPCA) to verify permit application requirements. City staff, the BCWMC Administrator, and Commission Engineer held a pre-filing meeting with the MPCA in June as part of the Clean Water Act Section 401 Water Quality Certification process.

Three tasks not included in the base engineering and design scope were identified for completion as part of the permitting process: field wetland delineation, archaeological survey, and architectural survey.

Wetland Delineation

USACE staff informed the Commission Engineer that based on preliminary review, a field wetland delineation will be required for the proposed project. The Commission approved an amended scope and budget for the field wetland delineation at the June 18, 2025 BCWMC meeting. The field wetland delineation survey is tentatively scheduled for mid to late-July.

The field wetland delineation survey will also be used to evaluate the applicability of the City of Golden Valley's buffer ordinance requirements for the proposed project. The Commission Engineer will work with the City of Golden Valley staff to ensure the project meets the City's buffer requirements.

Archaeological and Architectural Surveys

SHPO and USACE staff recommended completing archaeological and architectural surveys based on their preliminary review of the project and anticipated permit requirements once we apply for the permits. The archaeological survey will be completed in late July or August as part of the initial project contingency scope. As authorized at the March meeting, BCWMC Administrator approved the scope and budget for the archeological survey on June 27, 2025. The Commission approved an amended scope and budget for the architectural survey at the June 18, 2025 BCWMC meeting, and that work is anticipated to begin in mid-July.

50% Design Features

The project design is underway. In addition to comments from the Commission Administrator and the public during the feasibility study, the 50% design incorporated recent comments and direction from the City.

Similar to the feasibility study, the main components of the 50% design include:

- Stream bank grading and establishing vegetation
- Protecting existing utility infrastructure with rock riprap armoring and/or in-stream rock cross vanes to maintain stream bed elevation
- Installing a variety of stream bank stabilization elements including riprap, root wads and toe wood, coir logs, rock j-hook vanes and cross vanes, fascines, and live stakes
- Enhancing protection near pipe outfalls and street crossings
- Stabilizing channels that carry parking lot runoff
- Establishing new vegetation in areas disturbed by construction

Updates to the feasibility study as part of the 50% design include:

- Updating vegetation management (increasing buffer widths and removing invasive species for a total vegetation enhancement area of 7.1 acres)

- Removing j-hook vanes in some areas
- Extending stabilization elements to protect areas where erosion has increased since the feasibility study
- Modifying protection or restoration methods in areas where erosion has increased (e.g., revising design from grading with vegetation to toe wood or riprap)
- Revising construction access routes based on field walk with City of Golden Valley staff

The table below highlights changes from the feasibility study to the 50% design plans for construction cost, restoration length, pollutant removal, and tree removal:

Item	Feasibility Study	50% Plans
Construction Cost with Contingency	$1,568,700	$2,592,000
Length of Restoration	7,370 feet	8,585 feet
Annual Pollutant Removal [1]	82.4 pounds total phosphorus 164,820 pounds total suspended solids	86.1 pounds total phosphorus 172,180 pounds total suspended solids
Tree Removals [2]	88	57

[1] Pollutant removal changes noted for the 50% design plans are directly related to the increased length of bank stabilization (thereby reducing phosphorus and total suspended solids loading downstream). For the 90% design plans review, pollutant removals will be calculated with additional detail related to changes in bank erodibility categories between the October 2022 feasibility study site visit and the April 2025 design site visit.
[2] Tree removal quantities do not include the removal of buckthorn or dead/dying trees.

Opinion of Cost for 50% Design Plans

Description	Estimated Cost
Mobilization / Demobilization	$182,000
Traffic Control	$30,000
Erosion & Sediment Control	$91,000
Removals (clearing / grubbing, trees, excavation)	$202,000
Stream Restoration (grading, installing structures, etc.)	$958,000
Restoration and Vegetation Management [1]	$697,000
Estimated Construction Cost	**$2,160,000**
Construction Contingency (20%)	**$432,000**
Total Estimated Construction Cost	**$2,592,000**

[1] This work will be completed under a separate bid and contract and includes mobilization, demobilization, traffic control and other items in addition to restoration and vegetation management

The detailed cost estimates are attached.

The total estimated project costs including design and engineering are currently over the total budget allocated for this project. As shown above, the estimated construction costs for the feasibility study were $1,568,700, while the estimated construction costs for the 50% design plans are $2,592,000, an increase of $1,023,300. The estimated construction costs have increased since the feasibility study for multiple reasons, including:

- The feasibility study used construction pricing/bids that are now over two years old, and construction and material costs have increased.

- The stream restoration length increased by approximately 1,200 feet due to increased erosion since the Fall 2022 feasibility study field work.
- The 50% design plans incorporate more vegetation management (removal of invasives, establishment of native buffers) than proposed in the feasibility study. The vegetation management component of this project was expanded based on communications with City staff to enhance riparian health while complying with city buffer codes. In some situations (e.g., public land), native vegetation is proposed beyond the required city buffer width.

There are options for reducing the estimated construction costs as we proceed with developing the 90% design plans. For example, the Commission Engineer can re-prioritize the stream restoration areas based on the more recent field work and remove proposed construction in low priority areas. In addition, the 50% design assumes that all landowners will allow construction on their property, however, this may not be the case and stream restoration areas may have to be removed from those properties as part of the 90% plans. The Commission could pursue grant funding such as a Minnesota Department of Natural Resources (MDNR) Conservation Partners Legacy (CPL) grant to cover a portion of the increased construction costs. The Commission could also decide to revise the project budget by requesting additional levy funds in 2027 (the 2026 maximum levy has already been set).

Schedule

The table below outlines the previous tentative schedule included in the engineering services work scope approved at the March 20, 2025 BCWMC meeting. At that meeting, the Commission engineer noted that the schedule was subject to change based on various factors such as permitting, design changes, and unforeseen circumstances. The Commission Engineer recommends revising the schedule as outlined below to account for anticipated delays related to permitting and to take advantage of a more favorable bidding environment in late winter or early spring of next year, rather than this fall.

Tasks and milestones	Previous Tentative Schedule	Recommended Revised Schedule
Design – complete 50% plans for review and permitting	Summer 2025	July 2025
Permitting	Summer / Fall 2025	Now through January 2026
Public Meeting #2	Not set	September 2025
Design – complete 90% plans for review	Fall 2025	October 2025
Design – complete 100% plans for review	Fall 2025	November 2025
Bidding	Fall 2025	January/February 2026
Construction	Fall 2025 / Winter 2025/2026	Late Summer / Fall 2026
Restoration, Planting and Vegetation Establishment	2026-2028	2026-2030 (Spring 2027 planting)
Record construction drawings, final restoration, project closeout	Fall 2025 / Winter 2026	Late 2026 / Early 2027

Approvals/permits required

In addition to Commission approval of the plans, other permits/approvals will be required for this project, including the following:

- Compliance with the Minnesota Wetland Conservation Act (WCA)

- USACE Permit (Section 404 permit, Section 401 Certification, and Section 106)
- MDNR Public Waters Work Permit
- Minnesota Pollution Control Agency (MPCA) Construction Stormwater General Permit
- City of Golden Valley Right-of-Way Permit
- City of Golden Valley Stormwater Permit
- City of Golden Valley Buffer Ordinance Requirements
- Bassett Creek Watershed Management Commission Floodplain Requirements

Anticipated Work for 90% Plans

If the Commission approves the 50% plans and directs the Commission Engineer to move forward with 90% designs the following tasks will be necessary:

- Update plans to 90% design
- Update cost estimates for the 90% design
- Develop construction/technical specifications
- Host a second public meeting
- File permit applications
- Assist the City with easement acquisition
- Develop proposed conditions hydraulic model to demonstrate no net loss in floodplain storage and no increase in flood level because of the project

Recommendation for Commission Action

1) Consider approval of 50% design plans
2) Authorize Commission Engineer to continue design, provide options for cost reductions, and bring 90% design to a future Commission meeting.
3) Consider options for reducing the estimated construction cost or revising project budget

Bassett Creek
5-Foot Contour
Lakes and Ponds
Parcel Boundary
Park Boundary

Project Location
New Hope
Crystal
Plymouth Creek
North Branch Bassett Creek
Hennepin
Medicine Lake
Bassett Creek
South Branch Bassett Creek
St Louis Park
Bassett Creek Tunnel

Briarwood Bird Sanctuary
Sochacki Park
Sochacki Park (Rice Lake Nature Area)
Sochacki Park (Mary Hills Nature Area)
Glenview Terrace/Valley View Park
Scheid Park
Sweeney Lake Park
Sweeney Lake
Theodore Wirth Park / Parkway

Dawnview Ter
Dona La
W Marie La
E Marie La
Scott Ave N
Quail Ave N
Perry Ave N
Noble Ave N
Major Ave N
June Ave N
Hampton Rd
Merribee Dr
Kyle Ave N
Lee Ave N
Unity Ave N
Minnaqua Dr
Minnaqua DR
Markay Rdg
Bassett Creek Dr
Legend La
Legend Dr
Indiana Ave N
Dresden La
Kewanee Way
Byrd Ave N
Nair Dr
Terrace La
Crestview Ave
Manor Dr
Wasatch La
Mary Hills Dr
Bonnie La
Windsor Way
Orchard Ave N
Spruce Ln
Ordway
West Bend Rd
Greenview La
Golden Valley RD
Valley Rd
Major CIR
Kyle Pl
Sorell Ave
Regent Ave N
Duluth ST
Toledo Ave N
Quail Ave
Spring Valley Cir
Major Dr
Frontenac Ave
St Croix AVE N
Spring Valley Rd
St Croix Cir
Noble DR
Bridgewater RD
Waterford CT
Hidden Lakes PKWY
Theodore Wirth PKWY

66
94
169
55
12
394
494
100
52

0 300 600
Feet

Bassett Creek Watershed Management Commission

PROJECT LOCATION
Main Stem
Restoration Feasibility Study
BCWMC

FIGURE 1-1

BARR

Imagery: Hennepin Co. 2021

Barr Footer: ArcGISPro 3.1, 2023-04-11 12:17 File: I:\Client\BassettCreek\Work_Orders\2022\Main_Stem_Restoration_Feas\Maps\Reports\Feasability Study March 2023\Feasability Study March 2023.aprx Layout: Fig1-1 Project Location User: MRQ

PREPARED BY: BARR ENGINEERING COMPANY

			SHEET:	1	OF	1
			CREATED BY:	ADB2	DATE:	5/20/2025
ENGINEER'S OPINION OF PROBABLE PROJECT COST			CHECKED BY:	JCO	DATE:	6/29/2025
PROJECT:	Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024)		APPROVED BY:	JCO	DATE:	7/9/2025
LOCATION:	City of Golden Valley	ISSUED:	FOR REVIEW		DATE:	7/9/2025
PROJECT #:	23272114.00	ISSUED:			DATE:	
PHASE ONE EARTHWORK AND STRUCTURES - 50% PRELIMINARY DESIGN OPINION OF COST - SUMMARY		ISSUED:			DATE:	

Section Title	Item Code	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	ITEM COST	NOTES
GENERAL							
	A	MOBILIZATION/DEMOBILIZATION	LS	1	$132,000	$ 132,000.00	1,2,3,4,5,6
	B	CONTROL OF WATER	LS	1	$50,000	$ 50,000.00	1,2,3,4,5,6
	C	TRAFFIC CONTROL	LS	1	$30,000	$ 30,000.00	1,2,3,4,5,6
EROSION CONTROL AND REMOVALS							
	D	CONSTRUCTION ENTRANCE	EA	19	$2,500	$ 47,500.00	1,2,3,4,5,6
	E	SILT FENCE	LF	2,275	$4	$ 9,100.00	1,2,3,4,5,6
	F	SEDIMENT CONTROL LOG	LF	2,980	$4	$ 11,920.00	1,2,3,4,5,6
	G	INLET PROTECTION	EA	14	$200	$ 2,800.00	1,2,3,4,5,6
	H	TEMPORARY STREAM CROSSING	EA	5	$4,000	$ 20,000.00	1,2,3,4,5,6
	I	CLEARING AND GRUBBING TREES/SHRUBS LESS THAN 12" DIAMETER (MEDIUM DENSITY)	LS	1.0	$15,000	$ 15,000.00	1,2,3,4,5,6
	J	SELECT TREE REMOVAL AND SALVAGE WITH ROOT WAD (<12")	EA	55.0	$250	$ 13,750.00	1,2,3,4,5,6
	K	SELECT TREE REMOVAL AND SALVAGE WITH ROOT WAD (>12")	EA	23.0	$300	$ 6,900.00	1,2,3,4,5,6
	L	COMMON EXCAVATION - EXCAVATE, HAUL, AND DISPOSE OFFSITE	CY	1,852	$90	$ 166,635.71	1,2,3,4,5,6
CIVIL							
	M	GRADING (P)	SY	4,390	$15	$ 65,850.00	1,2,3,4,5,6
	N	FURNISH AND INSTALL GRANULAR FILTER	TON	390	$121	$ 47,190.00	1,2,3,4,5,6
	O	FURNISH AND INSTALL FIELDSTONE RIPRAP	TON	1,560	$120	$ 187,200.00	1,2,3,4,5,6
	P	FURNISH AND INSTALL CROSS VANE	LF	675	$120	$ 81,000.00	1,2,3,4,5,6
	Q	FURNISH AND INSTALL J-HOOK VANE	EA	59	$2,000	$ 118,000.00	1,2,3,4,5,6
	R	FURNISH AND INSTALL FASCINES	LF	505	$56	$ 28,406.25	1,2,3,4,5,6
	S	FURNISH AND INSTALL TOE WOOD (INCLUDES 173 ROOT WADS)	LF	1,645	$75	$ 123,375.00	1,2,3,4,5,6
	T	FURNISH AND INSTALL ROOTWAD FROM OFF SITE SOURCE	EA	146	$294	$ 42,887.50	1,2,3,4,5,6
	U	INSTALL ROOTWAD FROM ON SITE SOURCE	EA	78	$235	$ 18,330.00	1,2,3,4,5,6
	V	FURNISH AND INSTALL VRSS LIFTS	LF	3,340	$68	$ 225,450.00	1,2,3,4,5,6
	W	FURNISH AND INSTALL RAIN GARDEN	LS	1	$20,000	$ 20,000.00	1,2,3,4,5,6
		CONSTRUCTION SUBTOTAL				$1,463,000	1,2,3,4,5,6,7
		CONSTRUCTION CONTINGENCY (20%)				$293,000	1,4,8
		ESTIMATED CONSTRUCTION COST				**$1,756,000**	1,2,3,4,5,6,7
ESTIMATED ACCURACY RANGE			-10%			$1,581,000	1,2,3,4,5,6,7
			15%			$2,020,000	1,2,3,4,5,6,7

Notes

[1] Quantities based on Design Work Completed (50%).

[2] Unit Prices Based on Information Available at This Time.

[3] Limited Soil Boring and Field Investigation Information Available.

[4] This design level (Class 2, 30-70% design completion per ASTM E 2516-11) cost estimate is based on concept designs, alignments, quantities and unit prices. Costs will change with further design. Time value-of-money escalation costs are not included. A construction schedule is not available at this time. Contingency is an allowance for the net sum of costs that will be in the Final Total Project Cost at the time of the completion of design, but are not included at this level of project definition. The estimated accuracy range for the Total Project Cost as the project is defined is -10% to +15%. The accuracy range is based on professional judgement considering the level of design completed, the complexity of the project and the uncertainties in the project as scoped. The contingency and the accuracy range are not intended to include costs for future scope changes that are not part of the project as currently scoped or costs for risk contingency. Operation and Maintenance costs are not included.

[5] Estimate assumes that projects will not be located on contaminated soil.

[6] Estimate costs are to construct the project. The estimated costs do not include maintenance, monitoring or additional tasks following construction.

[7] Estimate costs are reported to nearest thousand dollars.

BARR

PREPARED BY: BARR ENGINEERING COMPANY

			SHEET:	1	OF	1
			CREATED BY:	ADB2	DATE:	5/20/2025
ENGINEER'S OPINION OF PROBABLE PROJECT COST			CHECKED BY:	JCO	DATE:	6/25/2025
PROJECT:	Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024)		APPROVED BY:	JCO	DATE:	7/9/2025
LOCATION:	City of Golden Valley	ISSUED:	FOR REVIEW		DATE:	7/9/2025
PROJECT #:	23272114.00	ISSUED:			DATE:	
PHASE TWO RESTORATION - 50% PRELIMINARY DESIGN OPINION OF COST - SUMMARY		ISSUED:			DATE:	

Section Title	Item Code	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	ITEM COST	NOTES
GENERAL							
	A	MOBILIZATION/DEMOBILIZATION	LS	1	$64,000	$ 64,000.00	1,2,3,4,5,6
	B	TRAFFIC CONTROL	LS	1	$5,000	$ 5,000.00	1,2,3,4,5,6
LANDSCAPE AND RESTORATION							
	C	INVASIVE PLANT REMOVAL AND HERBICIDE APPLICATION	ACRE	5.6	$6,400	$ 35,840.00	1,2,3,4,5,6
	D	IMPORT AND PLACE TOPSOIL	CY	27.0	$80	$ 2,160.00	1,2,3,4,5,6
	E	FURNISH AND PLANT TREES	EA	200	$500	$ 100,000.00	1,2,3,4,5,6
	F	FURNISH AND INSTALL SHRUBS	EA	1,368	$100	$ 136,800.00	1,2,3,4,5,6
	G	FURNISH AND INSTALL PLUGS	EA	16,940	$8	$ 135,520.00	1,2,3,4,5,6
	H	FURNISH AND INSTALL SEED MIX	ACRE	7.1	$4,500	$ 31,950.00	1,2,3,4,5,6
	I	FURNISH AND INSTALL LIVE STAKES	EA	3,340	$20	$ 66,800.00	1,2,3,4,5,6
	J	FURNISH AND INSTALL EROSION CONTROL BLANKET	SY	17,169	$3	$ 51,506.00	1,2,3,4,5,6
	K	ANNUAL VEGETATION ESTABLISHMENT AND MAINTENANCE	EA	3	$22,500	$ 67,500.00	1,2,3,4,5,6
		CONSTRUCTION SUBTOTAL				$697,000	1,2,3,4,5,6,7
		CONSTRUCTION CONTINGENCY (20%)				$139,000	1,4,7
		ESTIMATED CONSTRUCTION COST				**$836,000**	1,2,3,4,5,6,7
ESTIMATED ACCURACY RANGE			-10%			$753,000	1,2,3,4,5,6,7
			15%			$962,000	1,2,3,4,5,6,7

Notes

[1] Quantities based on Design Work Completed (50%).

[2] Unit Prices Based on Information Available at This Time.

[3] Limited Soil Boring and Field Investigation Information Available.

[4] This design level (Class 2, 30-70% design completion per ASTM E 2516-11) cost estimate is based on concept designs, alignments, quantities and unit prices. Costs will change with further design. Time value-of-money escalation costs are not included. A construction schedule is not available at this time. Contingency is an allowance for the net sum of costs that will be in the Final Total Project Cost at the time of the completion of design, but are not included at this level of project definition. The estimated accuracy range for the Total Project Cost as the project is defined is -10% to +15%. The accuracy range is based on professional judgement considering the level of design completed, the complexity of the project and the uncertainties in the project as scoped. The contingency and the accuracy range are not intended to include costs for future scope changes that are not part of the project as currently scoped or costs for risk contingency. Operation and Maintenance costs are not included.

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[7] Estimate costs are reported to nearest thousand dollars.

Bassett Creek Watershed Management Commission

MEMO

To: BCWMC Commissioners and Alternates
From: Administrator Jester on behalf of Plan Steering Committee
Date: July 10, 2025

RE: Recommendation to Submit Draft Watershed Management Plan for 60-day Review

The Plan Steering Committee has been developing the draft watershed plan since September 2023 including identifying and prioritizing issues, developing issue statements, expressing desired future conditions, drafting 10-year measurable goals, developing policies, updating implementation tools, and crafting the 10-year activity and program schedule and 10-year capital improvement program.

Of course, this work has been accomplished with much input and feedback along the way including initial input from the public and partners (details found in Appendix F), feedback from the TAC and the Plan TAC (which includes review agencies and other partners), and review and input at six Commission Workshops.

At this time, the Plan Steering Committee seeks feedback on the complete plan from the Commission. Barring no serious concerns or issues, the committee recommends that the Commission approve submitting the draft plan for a formal 60-day review – from approximately August 1 to September 29, 2025. The draft plan would be submitted to state, local, and regional review agencies; partners such as TRPD and MPRB; member cities; lake groups; Minneapolis neighborhood associations; and interested residents. A press release and content for city newsletters or social media will be drafted to announce the review period and solicit comments.

At the end of the 60-day review, the Commission is obligated to respond in writing to every comment it receives. A public hearing on the plan is slated for this November with a subsequent 90-day review period that will extend into next year. Staff anticipates plan adoption sometime next spring.

There are a few minor adjustments and additions that should be made before 60-day submittal including:

- Add photo credits throughout
- Add references in Section 5.0
- Add Section 4.6 outlining how progress toward goals will be assessed and reported
- Adjust creek labels on Figure 2-1 (and in Appendix A, as needed)
- Add acronyms lists to each appendix
- Update section numbering in Appendix B
- Add references to sections, tables, and figures where currently missing
- Adjust formatting for readability

Item 5B.
BCWMC 7-17-25
Full document and appendices online

Watershed Management Plan

2026-2035

Prepared for
Bassett Creek Watershed Management Commission

60-Day Review Draft – July 2025

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600
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Appendix B	Monitoring Plan
Appendix C	Education and Engagement Plan
Appendix D	BWSR Performance Level Review (PRAP)
Appendix E	Plan Gaps Analysis
Appendix F	Summary of Plan Engagement
Appendix G	Joint Powers Agreement

Acronyms

AIS	Aquatic Invasive Species
BCWMC	Bassett Creek Watershed Management Commission BMPs Best Management Practices
BWSR	Minnesota Board lof Water and Soil Resources
CAMP	Community Assisted Monitoring Program
CFS	Cubic Feet per Second
CIP	Capital Improvement Program
CWA	Clean Water Act
DEIA	Diversity, Equity, Inclusion, Access
DWSMA	Drinking Water Supply Management Area
EWM	Eurasian Watermilfoil
FCP	Flood Control Project
FEMA	Federal Emergency Management Agency
FQI	Floristic Quality Index
GW	Groundwater
H&H	Hydrologic and Hydraulic Model
JPA	Joint Powers Agreement
LGU	Local Government Unit
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MIBI	Macroinvertebrate Index of Biological Integrity
MIDS	Minimal Impact Design Standards
MG/L	Milligrams per liter
ML	Milliliters
MLCCS	Minnesota Land Cover Classification System
MnRAM	Minnesota Rapid Assessment Method
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency

MPRB	Minneapolis Parks and Recreation Board
MS4	Municipal Separate Storm Sewer System
MUSA	Metropolitan Urban Service Area
MWMO	Mississippi Watershed Management Organization
NFIP	National Flood Insurance Program
NOAA	National Oceanographic and Atmospheric Administration
NWI	National Wetland Inventory
P8	Program for Predicting Polluting Particle Passage through Pits, Puddles and Ponds
SSTS	Subsurface (Individual) Sewage Treatment Systems
SWA	Subwatershed Assessment
SWMM	Storm Water Management Model
TAC	Technical Advisory Committee
TCMA	Twin Cities Metropolitan Area
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
TRPD	Three Rivers Park District
ug/L	Micrograms per liter
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VIC	Voluntary Investigation and Cleanup
WCA	Wetland Conservation Act
WHPP	Wellhead Protection Plan
WMC	Watershed Management Commission
WMO	Watershed Management Organization
WMWA	West Metro Watershed Alliance
WOMP	Watershed Outlet Monitoring Program
WRAPS	Watershed Restoration and Protection Strategy
WWTP	Wastewater Treatment Plant

Executive Summary

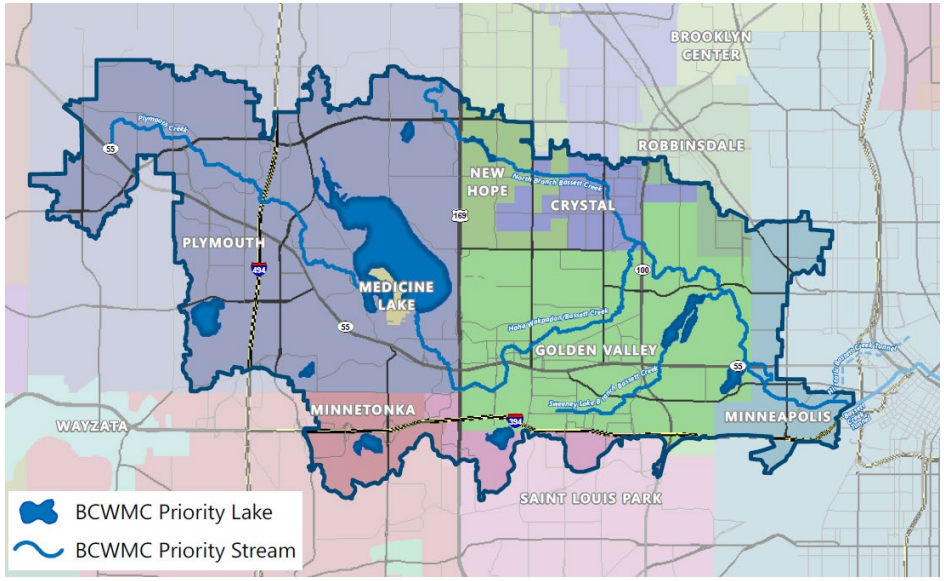
This BCWMC Watershed Management Plan (Plan) guides the management of water resources within the boundaries of the BCWMC to achieve the organization's vision and goals for the next ten years. It was developed with significant input from watershed residents, member cities, partners, and state and local agencies. The Plan provides data and background information; identifies watershed-wide and resource-specific issues; sets measurable goals; and describes applicable tools, policies, and activities aimed at achieving the goals.

The Bassett Creek Watershed Management Commission (BCWMC) established the following vision to provide strategic direction to its work.

Stewardship of the Ȟaȟá Wakpádaŋ / Bassett Creek Watershed to reduce flood risk and improve ecosystem health.

About Us – who we are

The BCWMC is a special purpose unit of local government that manages surface water resources, like lakes and streams, within 40 square miles in the northwestern area of the Twin Cities. It encompasses all the land that ultimately drains to Ȟaȟá Wakpádaŋ / Bassett Creek, including all or part of nine cities. The largest portion of the watershed lies in the cities of Plymouth and Golden Valley. The watershed also includes parts of New Hope, Crystal, Robbinsdale, Minneapolis, St. Louis Park, and Minnetonka, and the entire small city of Medicine Lake. There are ten priority lakes and four priority streams in the watershed. The final 1.7 miles of the creek flows under downtown Minneapolis in the Bassett Creek tunnel.



The BCWMC acknowledges that the waterways of the Ȟaȟá Wakpádaŋ / Bassett Creek encompass the homeland of the Dakota peoples, who nurtured the land and waters as relatives. The streams, lakes, and wetlands are living waters that are part of a broader ecosystem.

The BCWMC was originally formed as a joint powers organization among the nine cities as the Bassett Creek Flood Control Commission in 1968 to address significant flooding along the

creek. In 1984, the Flood Commission revised its joint powers agreement and became the BCWMC in accordance with provisions of the 1982 Metropolitan Surface Water Management Act. Much of the significant flooding in the watershed has been corrected, primarily through the extensive Bassett Creek Flood Control Project. And while flooding remains a concern and an area of focus for the BCWMC, much of our work is now centered on protecting and improving the quality of water in priority lakes and streams.

The BCWMC is managed by a nine-member Board of Commissioners – one commissioner and one alternate appointed from each member city. Each city also appoints a staff person to the Commission's technical advisory committee (TAC). The TAC provides recommendations on technical aspects of studies and projects, and provides input on budgets, policies, etc.

Work of the BCWMC is primarily funded with an operating budget and capital improvement program funds. Operating funds come mostly from assessments to the nine member cities, while capital improvement projects are funded through a tax on all watershed properties levied by Hennepin County on the BCWMC's behalf. State and local grant funds and development review fees often augment the BCWMC budgets, becoming an important source of current and future funding.

Purpose of Watershed Management Organizations (WMOs)

Because water does not follow political boundaries, the 1982 Surface Water Management Act required the formation of WMOs across the Twin Cities.

Purposes of WMOs include:

1. Protect, preserve, and use natural surface and groundwater storage and retention systems.
2. Minimize public capital expenditures needed to correct flooding and water quality problems.
3. Identify and plan for means to effectively protect and improve surface and groundwater quality.
4. Establish more uniform local policies and official controls for surface and groundwater management.
5. Prevent erosion of soil into surface water systems.
6. Promote groundwater recharge.
7. Protect and enhance fish and wildlife habitat and water recreational facilities.
8. Secure the other benefits associated with the proper management of surface and groundwater.

Priority Issues & Goals – what we're working on

Many of the lakes and streams in the watershed have degraded water quality and habitats, impacting aquatic life and recreation opportunities. Significant pollutants, coming mainly from stormwater runoff, include chloride (i.e., salt from winter deicers), nutrients, sediment, and bacteria. In addition, water quantity concerns – including flooding and drought conditions – also impact water resources and watershed communities.

To focus work for the next ten years, the BCWMC identified discrete watershed issues early in the planning process through input from state and local agencies and member cities, commissioner workshops, an online public survey, and a public open house. Issues were grouped into four categories: Waterbody and Watershed Quality, Flooding and Climate Resilience, Education and Engagement, and Organizational Effectiveness. Each issue was assigned a priority level of high, medium, or low. Some issues span multiple areas of watershed management, including the intent

to deliver projects and programs with an emphasis on diversity, equity, inclusion, and access. While specific issues regarding equity are categorized as a "medium" priority, helping to address current or past inequities will be incorporated across all BCWMC work – from representation on the Board of Commissioners, to building relationships with diverse audiences and selecting projects in vulnerable communities.

Once issues were identified and prioritized, goals were developed to describe the change or desired outcome expected by the end of 10 years. A process of adaptive management will be used to track progress and adjust activities depending on new data or changing conditions.

The high priority issues and associated goals include:

Category	High Priority Issue	High Priority Goal(s)
Waterbody and Watershed Quality	Impaired waters (degraded water quality)	Improve water quality in Medicine Lake such that it is removed from impaired waters list for nutrients (WQ1)
		Significantly improve water quality in Lost Lake and Northwood Lake (WQ2)
		Improve/maintain water quality and ecology in all other priority lakes and streams (WQ3 – WQ9)
	Chloride pollution (salt from winter deicers)	Reduce chloride pollution to lakes and streams (CHL1)
		Reduce chloride concentrations in Ȟaȟá Wakpádaŋ / Bassett Creek by 10% (CHL2)
Flooding and Climate Resilience	Impact of climate change on hydrology, water levels, and flood risk	Reduce flood risk in vulnerable areas (FLD1 – FLD4)
		Enhance climate resiliency (FLD5)
	Bassett Creek Valley flood risk reduction and stormwater management opportunities	Collaborate on regional improvements in Bassett Creek Valley (BCV1)
Organizational Effectiveness	Organizational capacity and staffing	Assess organizational structure, staffing needs, and funding mechanisms; implement recommendations (ORG1 – ORG2; FUND1 – FUND3)
	BCWMC funding mechanisms	
	Progress assessment	Assess progress toward plan goals (PA1 – PA2)

Issues that were assigned medium or low priority levels are also addressed in this Plan. However, these issues may receive lower levels of resources and effort, and may be primarily addressed in collaboration with partners, or as opportunities arise. These issues include:

- Aquatic invasive species
- Erosion
- Groundwater
- Ditch management
- Education
- Equity
- Wetlands
- Riparian areas and uplands
- Recreation
- Carbon footprint

Primary Tools and Activities – the work we're doing

The BCWMC uses various tools to make progress toward its goals including policies and requirements, education and engagement, and construction of capital improvement projects. Other important activities include inspection and maintenance of the Bassett Creek Flood Control Project structures; monitoring water quality and quantity; performing studies; mapping floodplains; and assisting with aquatic invasive species (AIS) management. Much of the work performed by the BCWMC is done in collaboration with partners such as member cities, Hennepin County, Three Rivers Park District, Minneapolis Park and Recreation Board, state and local agencies, lake groups, and others.

Over the next 10 years, the BCWMC will build on the success of many existing programs and activities with few changes. However, some new or expanded tools and activities will be used to better address priority issues and make accelerated progress toward goals. New activities are shown in red in the graphic below. The implementation schedule of the activities and capital improvement program can be found in Table 4-5 and Table 4-6, respectively, although the timing of some programs and projects may shift with a change in opportunities, partnerships, and available funds. While many of the activities are performed on a regular, routine basis, other discrete projects and studies are one-time activities and are scheduled in order to inform future work. Examples include sub-watershed assessments that are used to target and prioritize capital improvement projects or other programs to improve conditions in a specific waterbody. Similarly, development of a social vulnerability index will help prioritize work in areas where it is most needed and most impactful.

The annual budget (in 2025 dollars) is estimated to be between $1 million and $1.3 million for programs and activities (Table 4-5) and an average of $5 million per year for capital improvement projects (Table 4-6).

The implementation schedule and corresponding budget is ambitious. A shift in organizational structure and/or an expansion of funding mechanisms may be needed to realize full implementation potential and desired outcomes. Options for significant changes to the operations of the BCWMC will be analyzed through comprehensive assessments early in the life of the plan (See Table 4-5, activities EA-4 and EA-5).

CAPITAL IMPROVEMENT PROJECTS

- Up to 36 projects scheduled over 10 years
- Projects start with feasibility study
- Examples: streambank restoration, pond creation or expansion, flood risk reduction, stormwater reuse
- Use Indigenous land/water care practices, where appropriate (new activity)
- Public-private partnerships (potential new activity)

DEVELOPMENT REQUIREMENTS

- Appropriate stormwater management – infiltration and treatment
- No impacts to 100-year floodplain
- Stream and wetland buffer requirements
- Winter maintenance plans required (new activity)
- Construction erosion control

EDUCATION & ENGAGEMENT

- Build communication and engagement with diverse communities (new emphasis)
- Partner with West Metro Water Alliance and Hennepin County
- Watershed map, displays, educational materials
- Signage and Indigenous art (new activity)
- Trainings for commissioners and local officials (expanded activity)
- Volunteer opportunities

MONITORING, MODELING, STUDIES

- Routine, comprehensive monitoring of priority waters
- Hydrologic modeling (water flow and quantity after rainfall and snowmelt)
- Floodplain mapping
- Surveys and assessments to target future work (expanded activity)

FLOOD CONTROL PROJECT

- Routine inspections of structures
- Minor maintenance by cities
- Major repair by BWCMC, as needed

OTHER TOOLS

- Administration, operations, technical assistance
- Inter-agency planning and collaboration
- Aquatic invasive species (AIS) management
- Evaluation and reporting

Member City Responsibilities

As noted earlier, portions of nine cities lie within the Ȟaȟá Wakpádaŋ / Bassett Creek Watershed and the BCWMC exists as a joint powers organization among these "member cities." Member cities are very involved in the work of the BCWMC, and they have corresponding responsibilities. Each city appoints a BCWMC board commissioner, alternate commissioner, and technical advisory committee member. Each city contributes funds to the BCWMC operating budget through "city assessments" which are based on the area of land in the watershed and the tax valuation of that land. In many cases, the BCWMC enters agreements with cities to construct and maintain BCWMC capital improvement projects. The technical advisory committee, comprised of city staff, often reviews and makes recommendations to the Board of Commissioners on technical studies, projects, budgets, etc.

Actual requirements of member cities are the same or similar to requirements included in the 2015 watershed management plan.

Subject Area	Policy No.	Requirement
Local Plans/ Controls	5	Member cities must update their local water management plans to incorporate consistency with BCWMC goals, policies, and requirements. The BCWMC will review city local water management plans for consistency with BCWMC goals.
Local Plans/ Controls	6	Member cities must inform the BCWMC regarding updates to city ordinances or comprehensive plans that will affect stormwater management.
Development Requirements	9	Member cities must incorporate standards and requirements included in the Requirements document into their official controls (e.g., ordinances). Member cities must inform developers and other project applicants regarding BCWMC requirements.
Development Requirements	12	Member cities shall not issue construction permits, or other approvals relevant to controls intended to protect water resources, until the BCWMC has approved the project.
Development Requirements	13	For projects subject to BCWMC review and erosion and sediment control standards, the BCWMC requires that member cities perform regular erosion and sediment control inspections.
Data submission	19	Upon request (typically annually), member cities shall provide the BCWMC with information on development, redevelopment, and BMPs constructed within their city such that the BCWMC can appropriately update the models.
Aquatic Invasive Species	20	The BCWMC requires that member cities annually inspect wetlands classified as Preserve (or equivalent) for terrestrial and emergent aquatic invasive vegetation, such as buckthorn and purple loosestrife, and attempt to control or treat invasive species, where feasible.
Flood Control Project	25	Member cities must formally notify the Commission Engineer regarding their completed maintenance and repair actions on any of the FCP project features.
Flood Control Project	25	Member cities are responsible for routine maintenance and repair of FCP features as outlined in Table 4-4.

Item 5Ci.
BCWMC 7-17-25

Cavanaugh Lake
2024 Water Quality Monitoring



The Bassett Creek Watershed Management Commission

Stewardship of the Ȟaȟá Wakpádaŋ/Bassett Creek Watershed
to improve ecosystem health and reduce flood risk

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes since 1972. This monitoring is performed to detect changes or observe trends in water quality, inform pollution modeling and studies, and target future projects and programs. A summary of 2024 monitoring efforts on Cavanaugh Lake is provided below.

At a glance: 2024 monitoring results

In 2024, the BCWMC monitored Cavanaugh Lake (also called Sunset Pond) for the following:

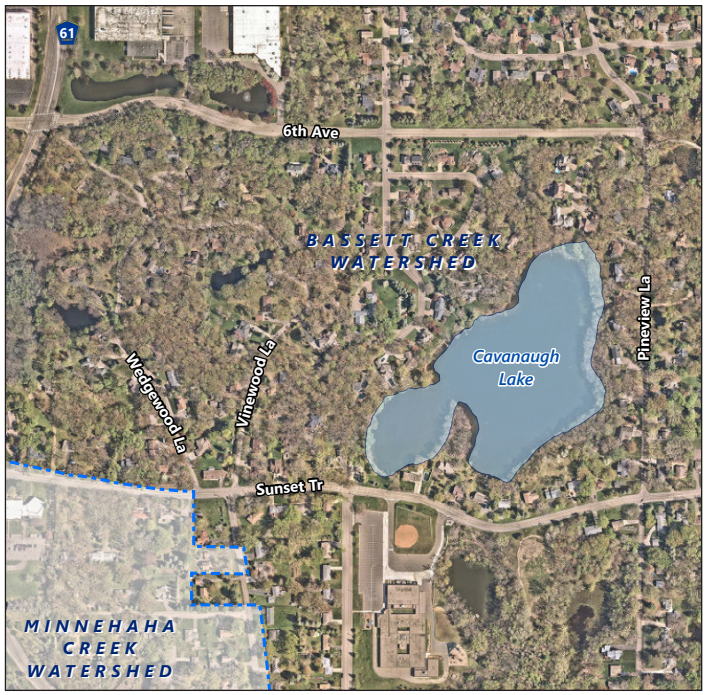
- Water chemistry (nutrients, chlorophyll *a*, chloride)
- Water clarity and dissolved oxygen
- Phytoplankton and zooplankton (microscopic plants and animals)
- Macrophytes (aquatic plants)

Results of 2024 monitoring show that Cavanaugh Lake met the applicable Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for chlorides, Secchi disc (a measure of clarity), and total phosphorus but did not meet the MPCA and BCWMC standard for chlorophyll *a*. Other results include the following:

- The number of plant species observed in the lake was better than the Minnesota Department of Natural Resources (MNDNR) Plant Index of Biotic Integrity (IBI) threshold in June and August; the highest number of species observed in the lake by the BCWMC was during this monitoring period.
- Floristic Quality Index (FQI) values, a measure of plant species quality, were better than the MNDNR Plant IBI threshold in June and August. The June value was the highest value observed in the historical monitoring record.
- Aquatic invasive species (AIS) observed in 2024 were curly-leaf pondweed (CLP), purple loosestrife, and reed canary grass; none were at problematic levels.
- The 2024 phytoplankton summer average was lower than summer averages from 1994 to 2019.
- The reduction in phytoplankton, available food for zooplankton, and fish predation reduced zooplankton numbers. Consequently, the 2024 zooplankton summer average was lower than summer averages in 1994 and 2019 (the highest summer averages measured during the monitored period) but higher than the summer average of 1998 (the lowest summer average measured).
- The results of an AIS suitability analysis indicate that the water quality of Cavanaugh Lake meets the suitability requirements for rusty crayfish and spiny waterflea, but only partially meets the suitability requirements for Chinese mystery snail, faucet snail, zebra mussel, and starry stonewort.

About Cavanaugh Lake

BCWMC classification	Priority-2 shallow lake
Watershed area	126 acres
Lake size	13 acres
Average depth	5.3 feet
Maximum depth	10.8 feet
Downstream receiving waterbody	Plymouth Creek (during large rain events)
Location (city)	Plymouth
MPCA impairments	None
Aquatic invasive species	Curly-leaf pondweed, purple loosestrife, reed canary grass
Public access	No



Recommendations

- Continue to provide education and information to lake users to reduce the chance of AIS introduction
- Continue water quality and biological monitoring at a 5-year frequency

2024 water chemistry

2024 was a very wet year. According to data from the Minnesota Department of Natural Resources, the April through June period was the wettest on record for Minnesota. During this period, the Twin Cities received 17.3 inches of precipitation, 5.9 inches above normal. March, July, and August were also wet, with 13.5 inches of precipitation in the Twin Cities—3.4 inches above normal. As shown in the figures to the right, phosphorus and chlorophyll a concentrations in Cavanaugh Lake increased and Secchi disc depth decreased over the course of the 2024 monitoring season. Above normal precipitation in 2024 increased stormwater runoff which carried additional total phosphorus to the lake. The additional total phosphorus caused increased chlorophyll a concentrations in the lake which decreased water clarity.

Total phosphorus levels

While phosphorus is necessary for plant and algae growth, excessive phosphorus leads to excessive algae growth, decreased water clarity, and water quality impairment. Some common sources of phosphorus are fertilizers, leaves and grass clippings, atmospheric deposition, soil erosion, and aquatic plant die-off (such as CLP). Phosphorus can also be released from lake sediments when dissolved oxygen concentrations are very low.

- BCWMC/MPCA standard: Summer average of 60 micrograms per liter (µg/L) or less
- Observed range: Low of 20 µg/L in March to a high of 73 µg/L in early August (see figure at right and on page 3)
- Summer average: 57 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 that appear clear generally have chlorophyll *a* levels of less than 15 micrograms per liter (µg/L).

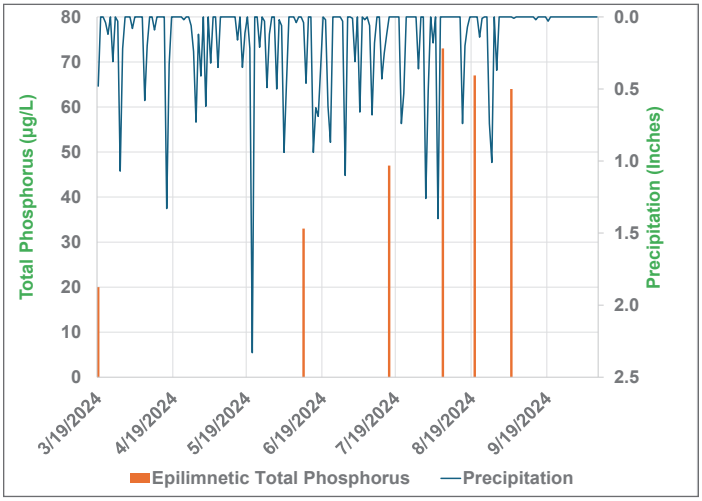
- BCWMC/MPCA standard: Summer average of 20 µg/L or less
- Observed range: Low of 4.0 µg/L in March to a high of 50.7 µg/L in early September (see figure at right and on page 3)
- Summer average: 35.3 µg/L (failed to meet BCWMC/MPCA standard)

Water clarity

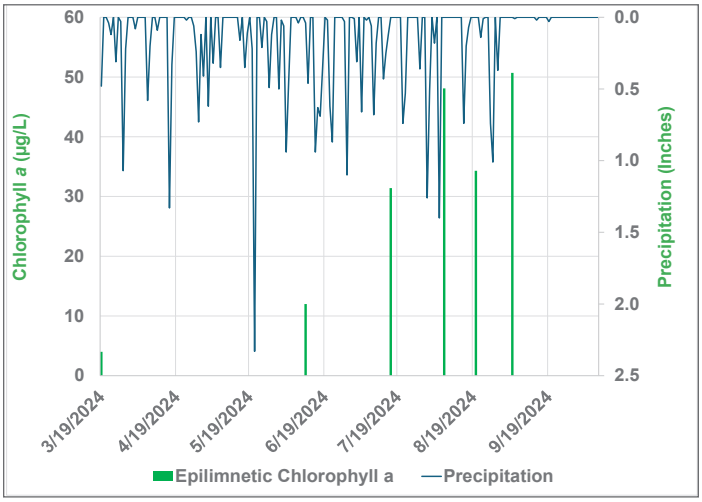
Water clarity is often affected by the number of algae or other photosynthetic organisms in a lake. It is usually measured by lowering an 8-inch “Secchi” disc into the lake; the depth at which the disc’s alternating black-and-white pattern is no longer visible is considered a measure of the water’s clarity.

- BCWMC/MPCA standard: Summer average of 1.0 meter or more
- Observed range: From a high of 2.4 meters in March to a low of 0.6 meters in early September (see figure below and on page 3)
- Summer average: 1.0 meter (met BCWMC/MPCA standard)

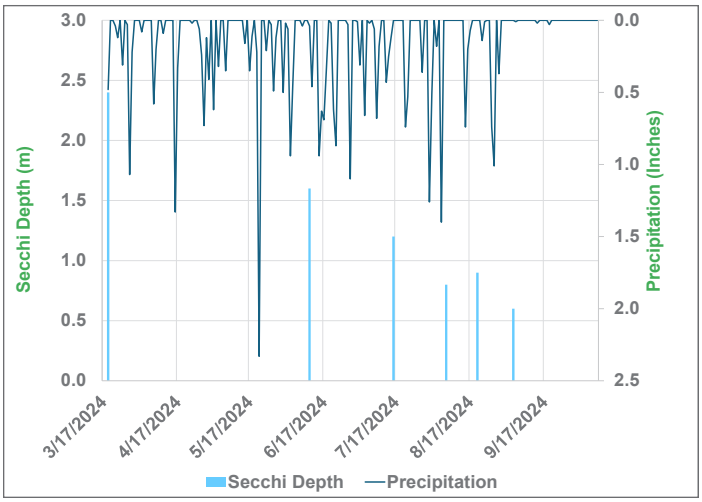
2024 precipitation and total phosphorus



2024 precipitation and chlorophyll *a*

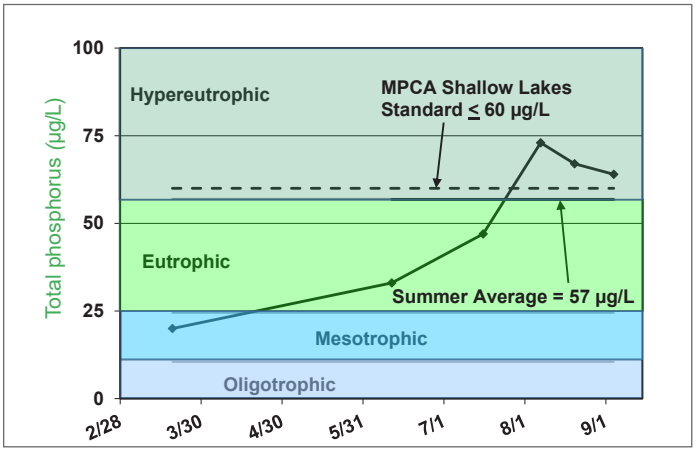


2024 precipitation and water clarity

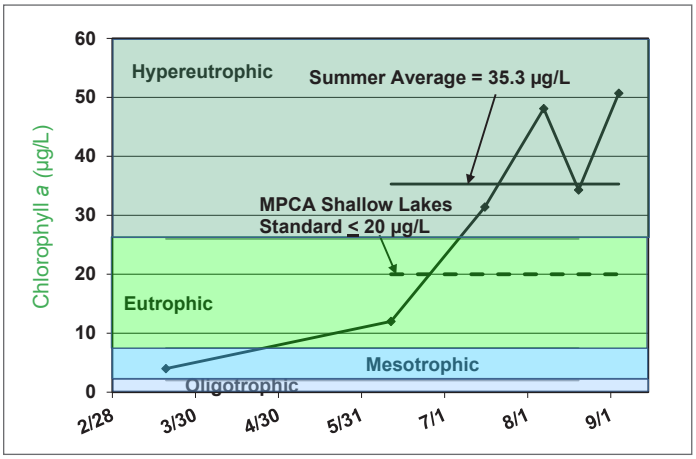


2024 water chemistry monitoring, cont.

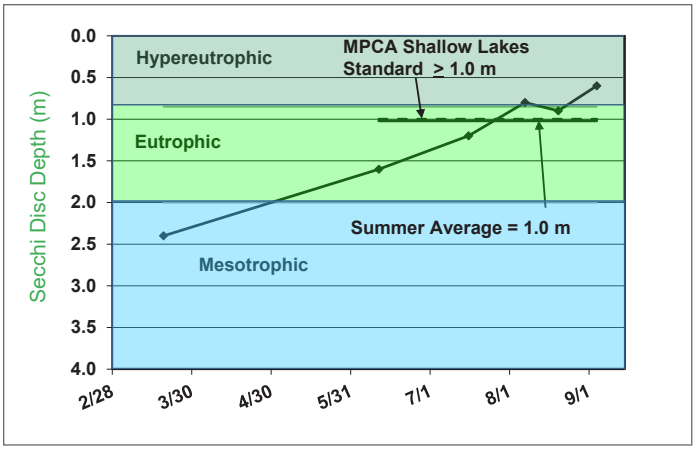
2024 total phosphorus trends



2024 chlorophyll *a* trends



2024 water clarity (Secchi depth) trends



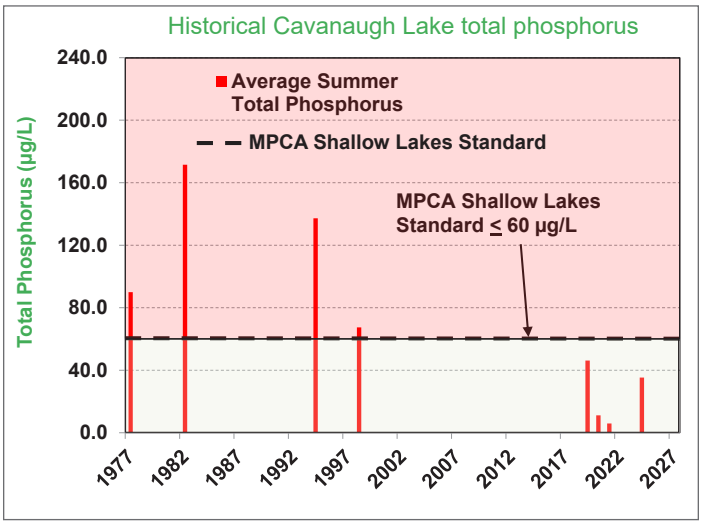
Definitions

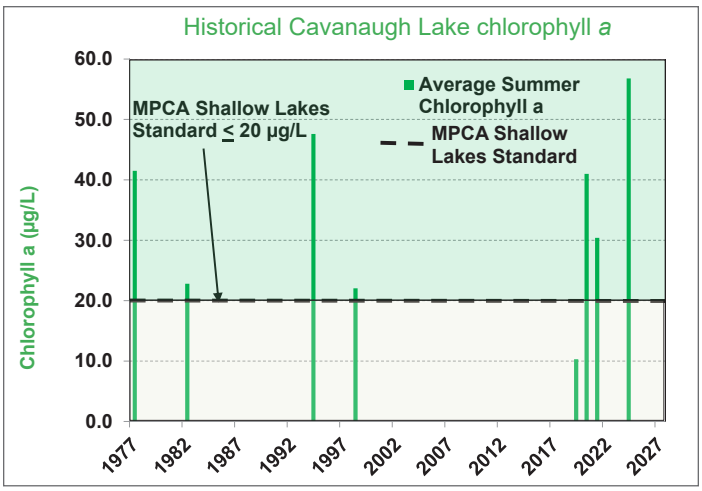
- **Hypereutrophic:** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low water clarity; excessive algae can significantly reduce lake oxygen levels
- **Eutrophic:** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae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

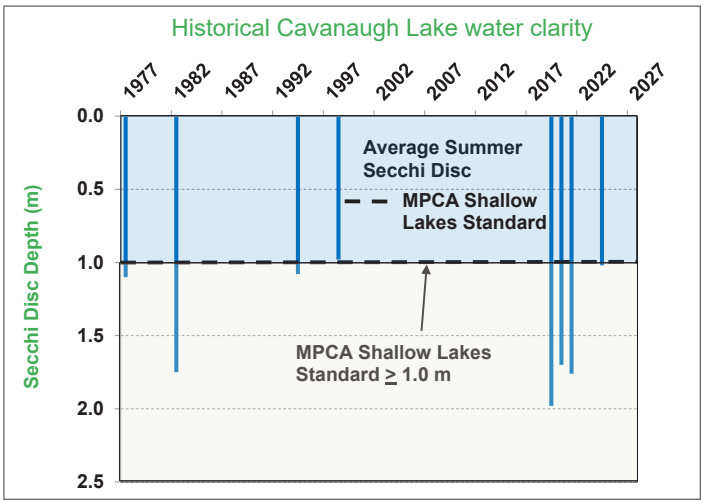


Water chemistry monitoring: 1977–2024

Summer water quality in Cavanaugh Lake has been monitored since 1977. The figures below show summer averages (June through September) of total phosphorus, chlorophyll *a*, and Secchi disc depth from 1977–2024. Summer averages for total phosphorus and chlorophyll *a* failed to meet the MPCA/BCWMC standard in 1977, 1982, 1994, and 1998, and chlorophyll *a* failed to meet the standard in 2024. Secchi disc depth met the standard in all years except 1998. In recent years chlorophyll a concentrations have increased and Secchi disc transparency has declined despite declining total phosphorus concentrations. The cause of these water quality changes is not apparent from review of the available data.





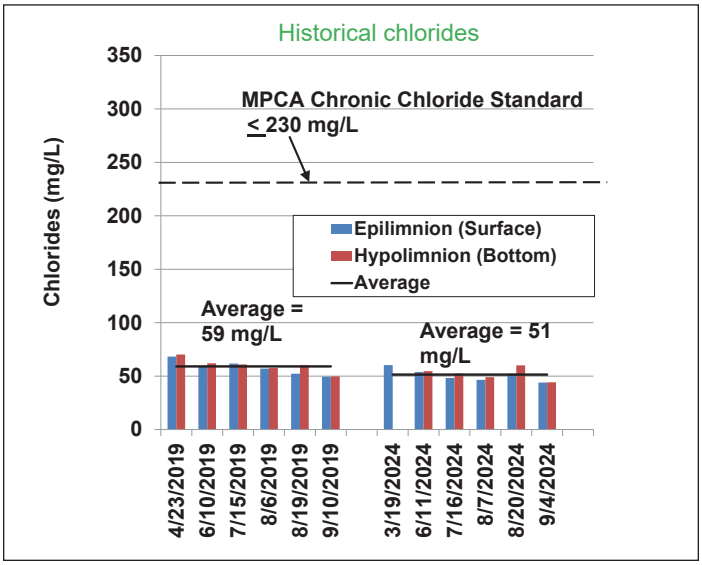


Chloride levels in 2019 and 2024

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 melt, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to pollute 5 gallons of water so that it can no longer support freshwater life. The pollution is essentially permanent, as there is no easy or affordable way to remove chloride from water.

Because high chloride concentrations can harm fish, zooplankton, and plant life, the MPCA has established maximum and chronic chloride standards. The maximum standard is the highest concentration of chloride that aquatic organisms can be exposed to for a brief time with zero-to-slight mortality. The chronic standard is the highest chloride concentration that aquatic life can be exposed to indefinitely without causing chronic toxicity. Chronic toxicity is defined as a stimulus that lingers or continues for a long period, often one-tenth of the life span or more. Chronic effects can include mortality, reduced growth, reproduction impairment, harmful changes in behavior, and other nonlethal effects. A lake is considered impaired for chlorides if two or more measurements exceed the chronic criterion (230 mg/L) within a 3-year period or if one measurement exceeds the maximum criterion (860 mg/L).

All chloride measurements in Cavanaugh Lake in 2019 and 2024 were well below both the maximum and chronic chloride standards. The 2024 average annual chloride concentration (51 mg/L) was slightly lower than the 2019 average (59 mg/L).



Macrophytes (aquatic plants)

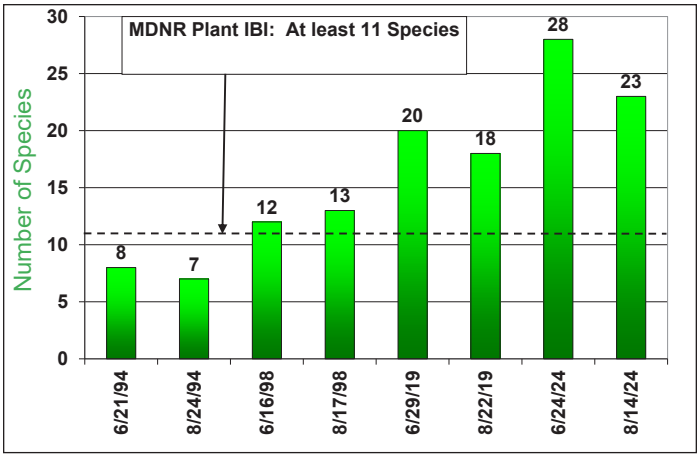
Lake Plant Eutrophication Index of Biological Integrity (IBI)

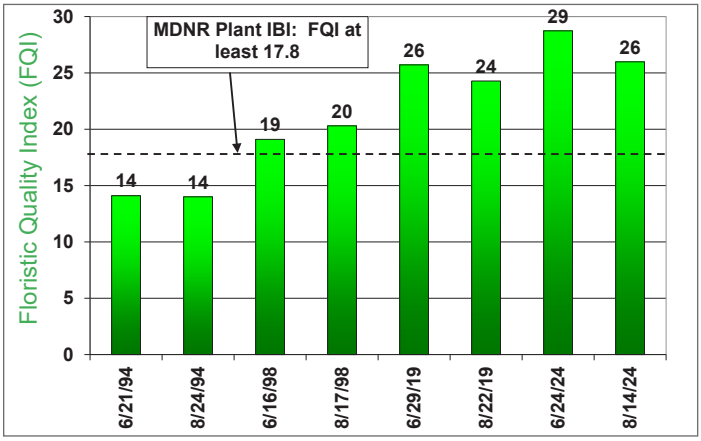
Eutrophication (excessive nutrients) can have detrimental effects on a lake, including reducing the quantity and diversity of plants. The MNDNR developed a Lake Plant Eutrophication Index of Biological Integrity (IBI) to measure the response of a lake plant community to eutrophication. The Lake Plant Eutrophication 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). The MNDNR has determined a threshold for each metric. Lakes that score below the thresholds contain degraded plant communities and are likely stressed from anthropogenic (human-caused) eutrophication.

Cavanaugh Lake plant survey data from 1993 to 2024 were assessed to determine Plant IBI trends. The figures at right show the number of species and the FQI scores for that period compared to the MNDNR Plant IBI thresholds.

- **Number of species:** A shallow lake, such as Cavanaugh Lake, meets the MNDNR Plant IBI threshold if it has at least 11 species. During the period examined, the number of species in Cavanaugh Lake ranged from seven to 28, exceeding the MNDNR Plant IBI threshold from 1998 through 2024. Twenty-three to 28 species were observed in the lake in 2024, the highest number of the historical record.
- **FQI values (quality of species):** The MNDNR Plant IBI threshold for shallow lakes, as measured by FQI, is a minimum value of 17.8. During the period examined, FQI values in Cavanaugh Lake ranged from 14 to 29, exceeding the MNDNR Plant IBI threshold from 1998 through 2024. In 2024, FQI scores ranged from 26 in August to 29 in June, the highest score to date.







Phytoplankton and Zooplankton

Samples of phytoplankton, microscopic aquatic plants, were collected from Cavanaugh Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). Phytoplankton numbers fluctuated over the 2024 sampling season—increasing in June, decreasing in July, increasing in August, and decreasing in September—but consistently reflected good water quality (see figure on page 6). Green algae, a good food source for the lake's zooplankton, were dominant in March, July, and September. Blue-green algae were dominant in June and August. Although blue-green algae are associated with water quality problems and can be a source of health concerns, the low numbers of blue-green algae in the lake throughout the monitored period are consistent with good water quality and no health concerns.

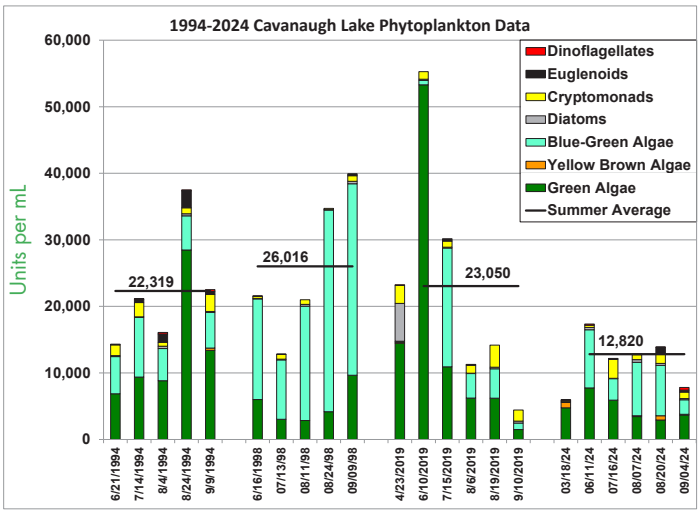
The 2024 phytoplankton summer average of 12,820 units per milliliter was lower than the summer averages from 1994 to 2019, ranging from 22,319 to 26,016 units per milliliter.

Unlike phytoplankton, zooplankton do not produce their own food. As "filter feeders," they eat millions of small algae; given the right quantity and species, they can filter the volume of an entire lake in a matter of days. They are also valuable food for planktivorous fish and other organisms.

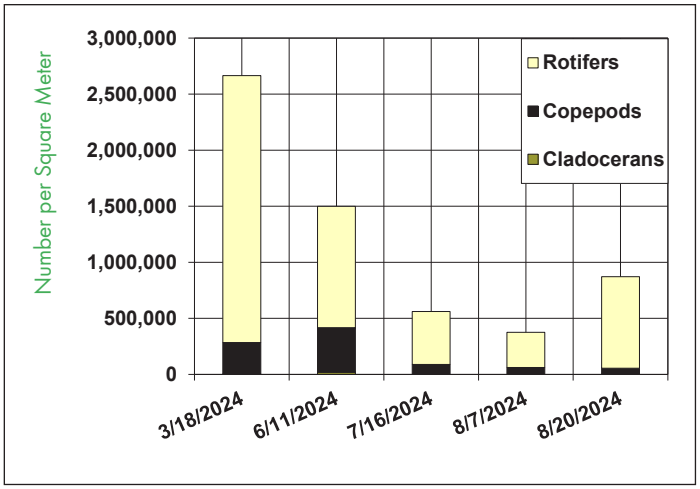
The 2024 zooplankton composition reflects the impact of fish predation on the community. Zooplankton numbers were highest in spring, before the spring hatch of fish, and declined quickly when the newly hatched fish began feeding. Small rotifers dominated the zooplankton community throughout the monitored period; copepods were consistently present, but cladocerans were not observed from July through September. The absence of cladocerans during mid-to-late summer was likely due to fish predation. Fish generally select the largest zooplankters they see and prefer cladocerans to copepods because they swim slowly and lack the copepods' ability to escape predation by jerking or jumping out of the way. Rotifers are the least preferred food for fish. Because rotifers and copepods do not graze as heavily on algae as the larger cladocerans, they generally have a limited impact on the lake's water quality. This suggests that future Cavanaugh Lake water quality improvement efforts should focus on phosphorus management to reduce the nutrients contributing to algae growth.

Zooplankton are limited by food availability and predation. Good quality food (green algae) was consistently present in 2024; however, the lower numbers of phytoplankton reduced the quantity of food available to the zooplankton (see historical phytoplankton and zooplankton figures at right). This reduction in available food and fish predation reduced zooplankton numbers in 2024. Consequently, the 2024 summer average (938,182) was lower than summer averages in 1994 (1,118,342) and 2019 (1,097,616)—the highest summer averages measured during the monitored period. However, the 2024 summer average was higher than the 1998 average (187,324), when reductions in good quality food and fish predation reduced zooplankton numbers to the lowest summer average measured during the monitored period.

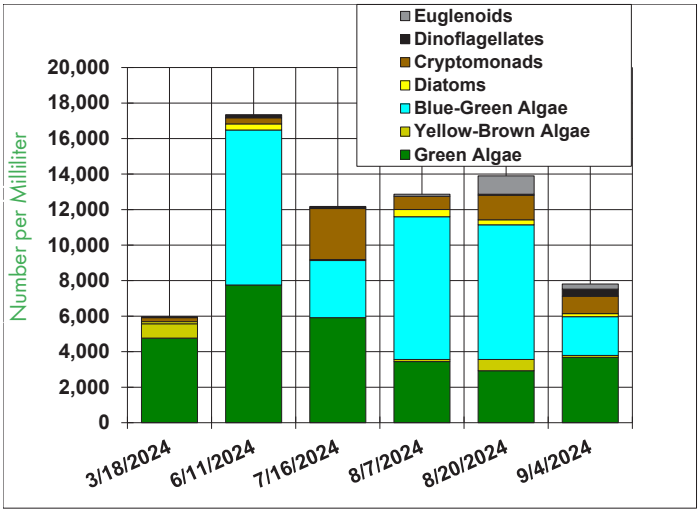
Cavanaugh Lake
historical phytoplankton



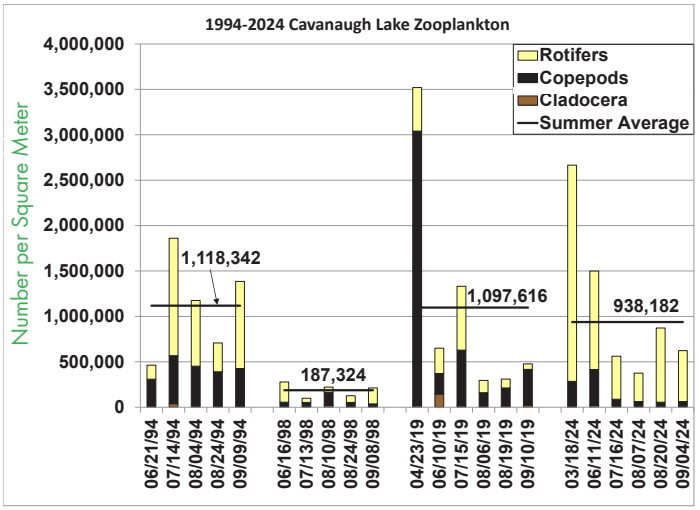
Cavanaugh Lake
2024 zooplankton



Cavanaugh Lake
2024 phytoplankton



Cavanaugh Lake
historical zooplankton





Aquatic invasive species

In 2024, three aquatic invasive species (AIS) were found to be present in Cavanaugh Lake but were not considered problematic.

- **Curly-leaf pondweed (Potamogeton crispus):** Curly-leaf pondweed (CLP) was first sighted in June 2019, when low-density growth was observed at two southwest bay sample sites. In June 2024, CLP was seen at three southwest bay sample sites. It was not problematic in 2024 because only a few scattered plants were found.
- **Purple loosestrife (Lythrum salicaria):** During a prior year's sampling in 2019, purple loosestrife was not observed in June, but was observed in a few scattered clumps along the northern shoreline in August. In June 2024, this emergent species was found at one location along the northwestern shoreline but was not observed in the August monitoring.
- **Reed canary grass (Phalaris arundinacea):** Reed canary grass was observed at a single location along the north shoreline in June and August of 2019. In 2024, reed canary grass was observed at two locations along the eastern shoreline and one in the southwest bay in June; it was observed at one location in the southwest bay in August.

Suitability of Cavanaugh Lake for other AIS

Many aquatic invasive species (AIS) in Minnesota have not yet been observed in Cavanaugh Lake, but could be introduced. For example, both zebra mussels and starry stonewort are present in nearby Medicine Lake but have not yet been observed in Cavanaugh Lake. A suitability analysis was performed to evaluate whether Cavanaugh Lake water quality would support the introduction of six AIS (starry stonewort, zebra mussels, spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish).

The analysis compared 2024 water quality in Cavanaugh Lake with the water quality conditions required for each species, specifically evaluating total phosphorus, chlorophyll a, Secchi disc depth, trophic state index (TSI), water temperature, dissolved oxygen, specific conductance, pH, calcium, magnesium, sodium, alkalinity, hardness, and calcium carbonate. The results indicate that the water quality of Cavanaugh Lake meets the suitability requirements for rusty crayfish and spiny waterflea, but only partially meets the suitability requirements for Chinese mystery snail, faucet snail, zebra mussel, and starry stonewort. Hence, these species would likely survive but may not thrive in Cavanaugh Lake.

Item 5Cii.
BCWMC 7-17-25

Parkers Lake

2024 Water Quality Monitoring



The Bassett Creek Watershed Management Commission

Stewardship of the Ȟaȟá Wakpádaŋ/Bassett Creek Watershed
to improve ecosystem health and reduce flood risk

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes since 1972. This monitoring is performed to detect changes or observe trends in water quality, inform pollution modeling and studies, and target future projects and programs. A summary of 2024 monitoring efforts on Parkers Lake is provided below.

At a glance: 2024 monitoring results

In 2024, the BCWMC monitored Parkers Lake for the following:

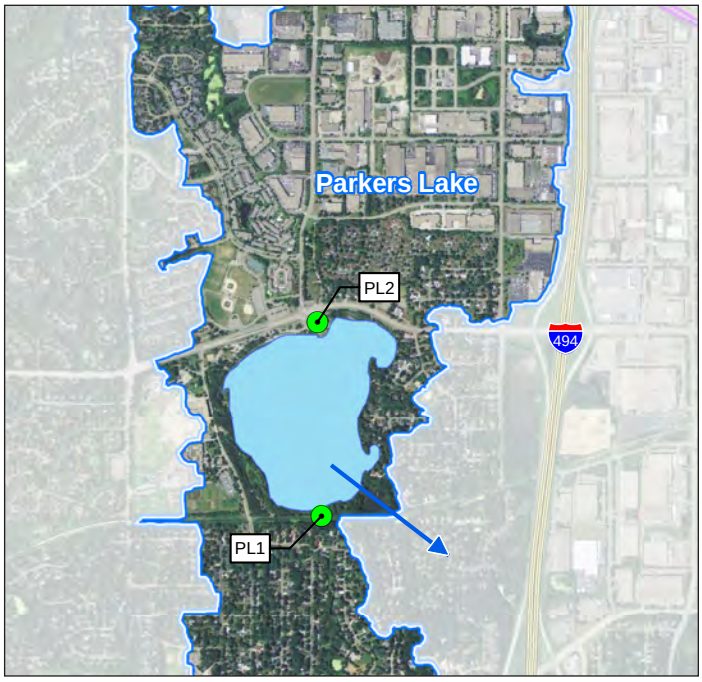
- Water chemistry (nutrients, chlorophyll *a*, chloride)
- Water clarity and dissolved oxygen
- Phytoplankton and zooplankton (microscopic plants and animals)
- Macrophytes (aquatic plants)

Results of 2024 monitoring show Parkers Lake met the applicable Minnesota Pollution Control Agency (MPCA) and Bassett Creek Watershed Management Commission (BCWMC) water quality standards for chlorides, Secchi disc (a measure of clarity), total phosphorus, and chlorophyll *a.* Trend analyses show no statistically significant change in water quality over the last 10 years as measured by an analysis of changes in summer average total phosphorus, chlorophyll *a*, and Secchi disc depth. The 2024 average chloride concentration was lower than average concentrations measured from 2018 through 2023, a positive change for the lake. Other results include the following:

- Both the number and quality of plant species observed in the lake, as measured by the Floristic Quality Index (FQI), were better than the Minnesota Department of Natural Resources (MNDNR) Plant Index of Biotic Integrity (IBI) thresholds.
- Curly-leaf pondweed (CLP) was found more frequently in 2024 than in 2021 (the last time the lake was monitored), but density was similar during the two years.
- Eurasian watermilfoil (EWM) was observed less frequently and at a lower density in 2024 than in 2021.
- The 2024 phytoplankton and zooplankton numbers were within the range observed since 1982.
- An Aquatic Invasive Species (AIS) Suitability Analysis indicates the water quality of Parkers Lake meets the suitability requirements for rusty crayfish, faucet snail, zebra mussels, starry stonewort, and spiny waterflea. However, the sodium and specific conductance levels were too high to be suitable for the Chinese mystery snail. Hence, this species would likely survive but may not thrive in Parkers Lake.

About Parkers Lake

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



Recommendations

- Continue working with cities, businesses, and Hennepin County to improve winter maintenance practices and reduce the chloride load conveyed to Parkers Lake from streets and parking lots in the watershed
- Continue to provide education and information to lake users to reduce the chance of AIS introduction
- Continue water quality and biological monitoring at a 3-year frequency

2024 water chemistry

2024 was a very wet year. According to data from the MNDNR, April through June was the wettest on record for Minnesota. During this period, the Twin Cities received 17.3 inches of precipitation, 5.9 inches above normal. March, July, and August were also wet, with 13.5 inches of precipitation in the Twin Cities—3.4 inches above normal. As shown in the figures to the right:

- Increases in phosphorus concentrations on June 4, July 2, and August 27 were associated with recent rainstorms.
- Increases in chlorophyll *a* concentrations on June 17, July 2, August 13, August 27, and September 3 were associated with recent rainstorms.
- Secchi disc depth declined from June through August when above normal precipitation occurred.

Total phosphorus levels

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

- BCWMC/MPCA standard: Summer average of 40 micrograms per liter (µg/L) or less
- Observed range: Low of 22 µg/L in mid-September to a high of 53 µg/L in early June and early July following storm events (see figure at right and on page 3)
- Summer average: 38 µg/L (met BCWMC/MPCA standard)

Chlorophyll *a* levels

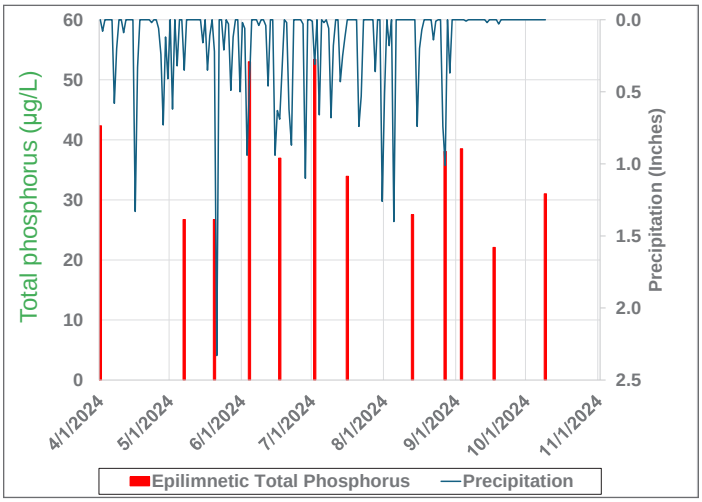
Chlorophyll *a* is a pigment in algae and generally reflects the amount of algae growth in a lake. Lakes that appear clear generally have chlorophyll *a* levels of less than 15 micrograms per liter (µg/L).

- BCWMC/MPCA standard: Summer average of 14 µg/L or less
- Observed range: Low of 0.2 µg/L in late July to a high of 26.5 µg/L in early July (see figure at right and on page 3)
- Summer average: 10.7 µg/L (met BCWMC/MPCA standard)

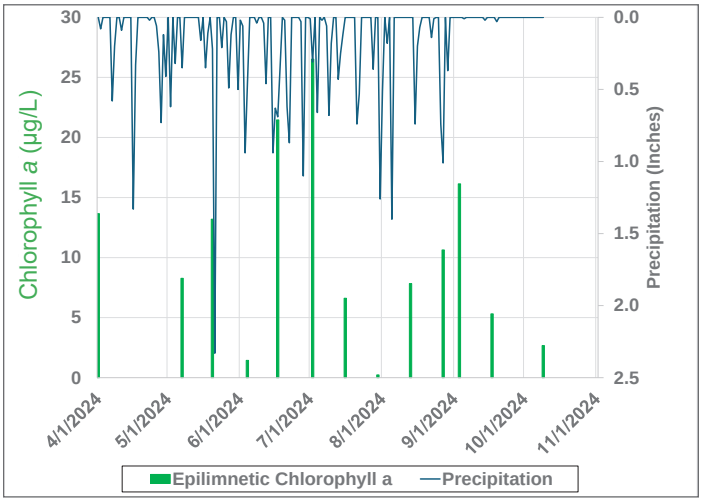
Water clarity

- Water clarity is often affected by the number 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 clarity.
- BCWMC/MPCA standard: Summer average of 1.4 meters or more
- Observed range: From 1.5 meters in early September to 4.1 meters in early June (see figure below and on page 3)
- Summer average: 2.5 meters (met BCWMC/MPCA standard)

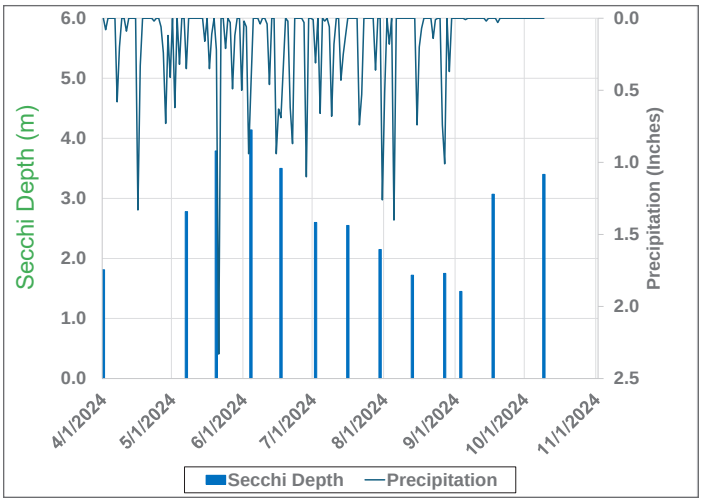
2024 precipitation and total phosphorus



2024 precipitation and chlorophyll *a*



2024 precipitation and water clarity



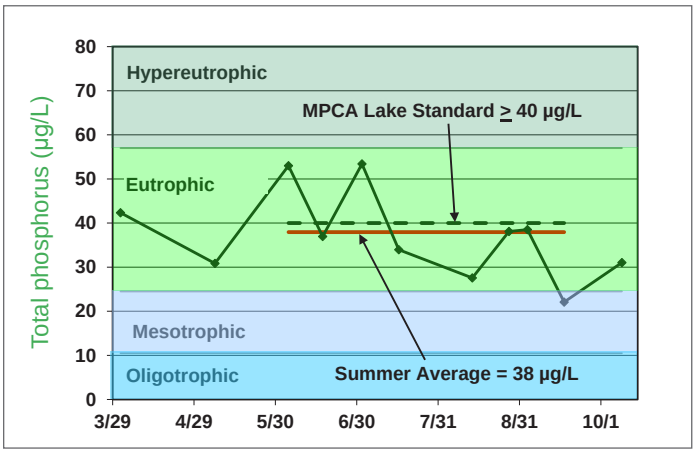
Definitions

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

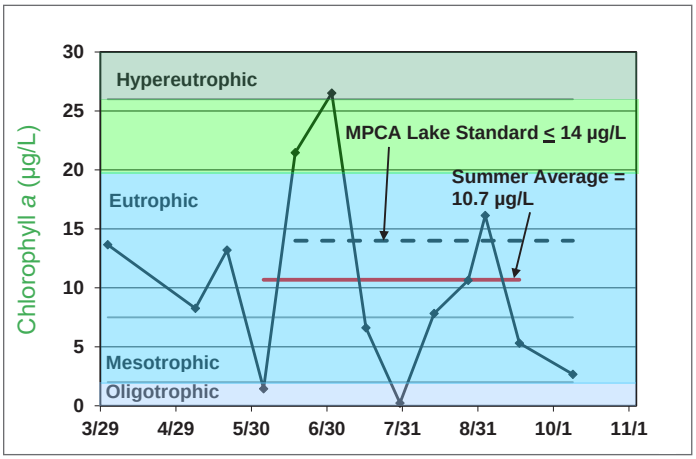


Water chemistry monitoring (cont.)

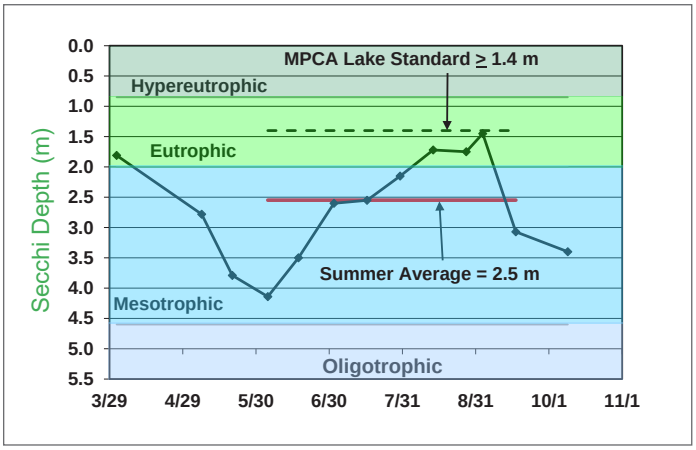
2024 total phosphorus trends



2024 chlorophyll a trends



2024 water clarity (Secchi depth) trends



Historical trends: 1972–2024

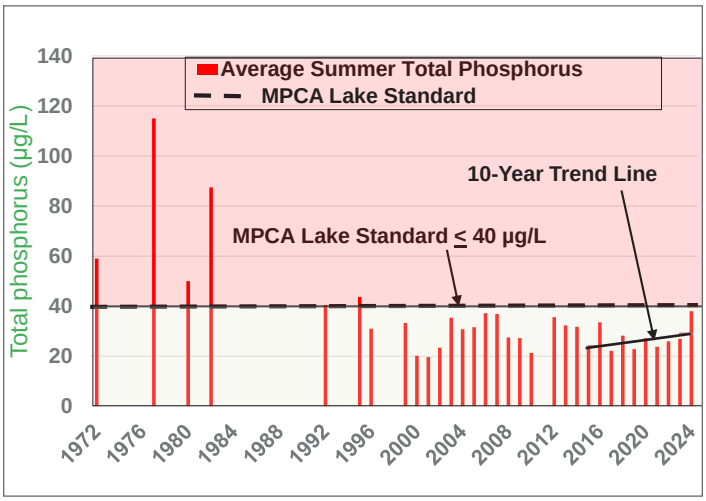
Water quality in Parkers Lake has been monitored since 1972. Summer averages (June through September) of total phosphorus, chlorophyll *a*, and Secchi disc depth from 1972 through 2024 are shown in the figures at right. Lake water quality has improved since 2000. Prior to 2000, at least one of the three parameters generally failed to meet the BCWMC/MPCA standards. Since 2000, total phosphorus and Secchi disc have met the BCWMC/MPCA standards and chlorophyll *a* has met the standard since 2016.

Overall, from 1972 through 2024, 97 percent of summer average Secchi disc depth and 82 percent and 61 percent of total phosphorus and chlorophyll *a* concentrations, respectively, met BCWMC/MPCA standards. In 2024, summer averages of all three parameters met the BCWMC/MPCA standards.

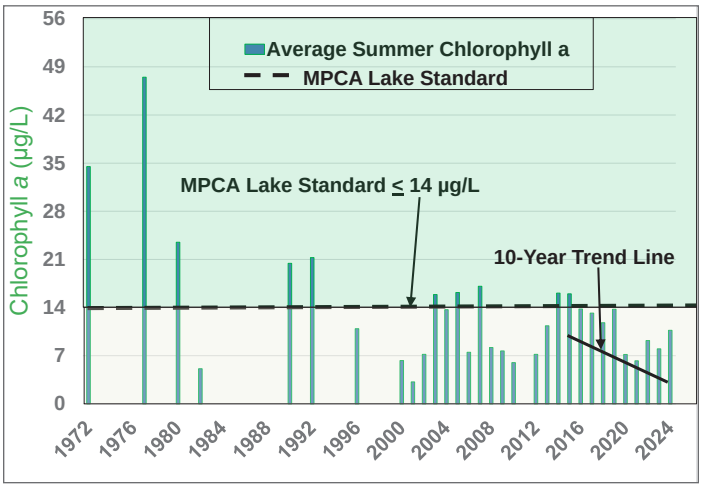
Trend analyses show no statistically significant change in water quality over the last 10 years as measured by changes in summer average total phosphorus, chlorophyll *a*, and Secchi disc depth. While total phosphorus has increased at an annual rate of about 0.5 µg/L and chlorophyll *a* has decreased at an annual rate of about 0.8 µg/L over the past 10 years, these changes are not significant at the 95 percent confidence level. Trend analysis of Secchi disc depth indicates no change occurred over the past 10 years.



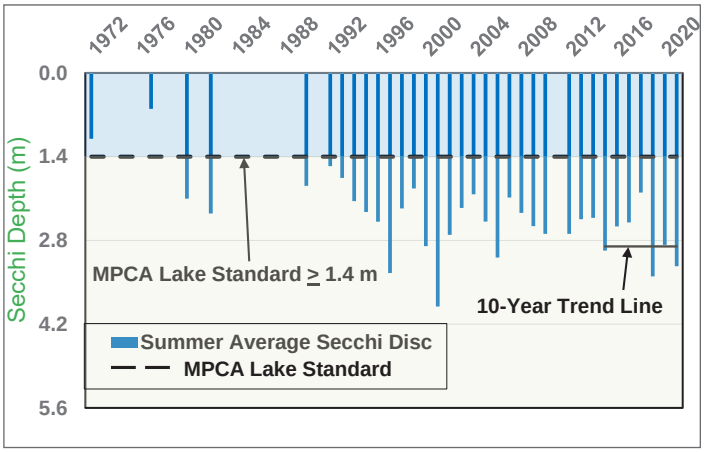
Historical phosphorus trends



Historical chlorophyll *a* trends



Historical Secchi disc trends



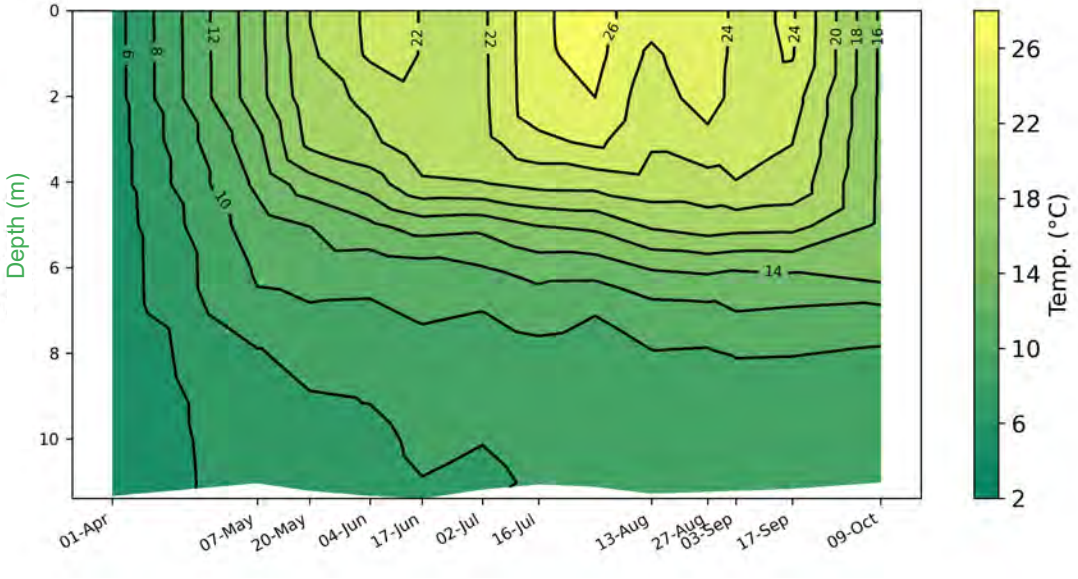
Phosphorus loading from sediment

Stratification—the separation of the lake into different temperature layers—resulted in low oxygen levels at the bottom of Parkers Lake in 2024. The lake's thermocline separated warmer water at the surface of the lake from the cooler waters near the bottom. The upper layer of warm water-known as the epilimnion-mixed regularly, while the cooler waters stayed separated due to density differences, only fully mixing with the epilimnion during fall and spring turnover (see temperature isopleth on page 6). Low oxygen levels were observed below the Parker's Lake thermocline from May through October in this year (see dissolved oxygen isopleth on page 6).

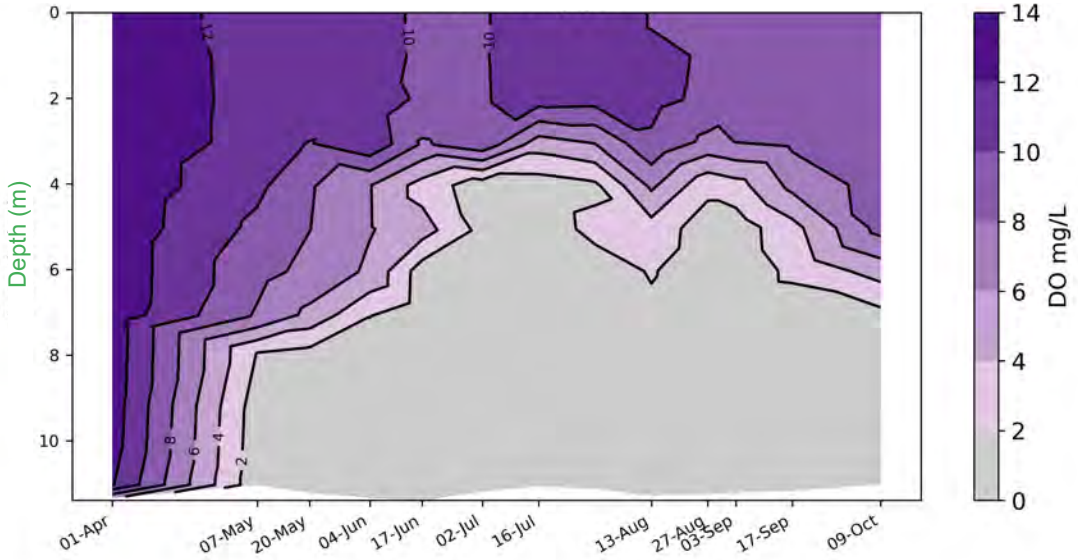
The release of phosphorus stored in lake-bottom sediments when oxygen levels are low (<2 mg/L) is described as "internal phosphorus loading from sediment." Lake stratification confined the high phosphorus concentrations from internal sediment loading to the bottom of Parkers Lake in May and June when the thermocline was 6 to 8 meters from the surface. Later in the summer, when the thermocline was closer to the surface (4 meters during July or 5 meters in late August through early September), the high phosphorus from internal sediment loading was mixed into the lake's surface waters during storm events (see total phosphorus isopleth on page 6). Higher wind speeds increased turbulent mixing, also allowing higher phosphorus concentrations from internal loading to mix into the lake's surface water during this time. The added phosphorus increased algal growth in the lake's surface waters and reduced water clarity. Despite phosphorus increases in surface waters from storm event mixing, the summer average surface water phosphorus concentration reflected good water quality and met the MPCA phosphorus standard.



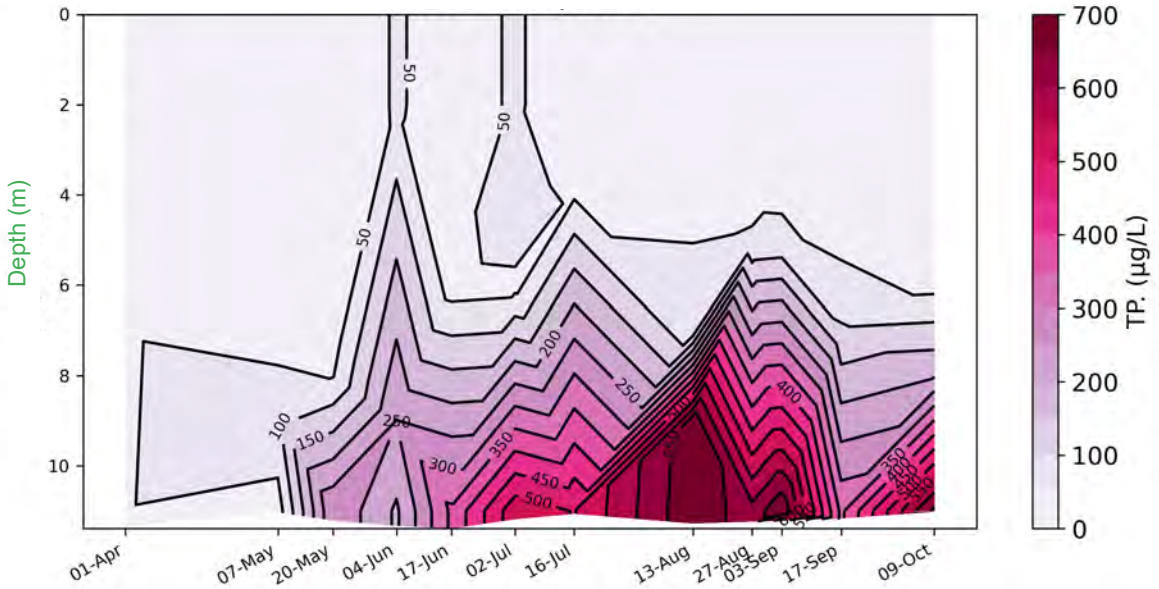
Temperature isopleth



Dissolved oxygen isopleth



Total phosphorus isopleth



Chloride levels from 1980 to 2024

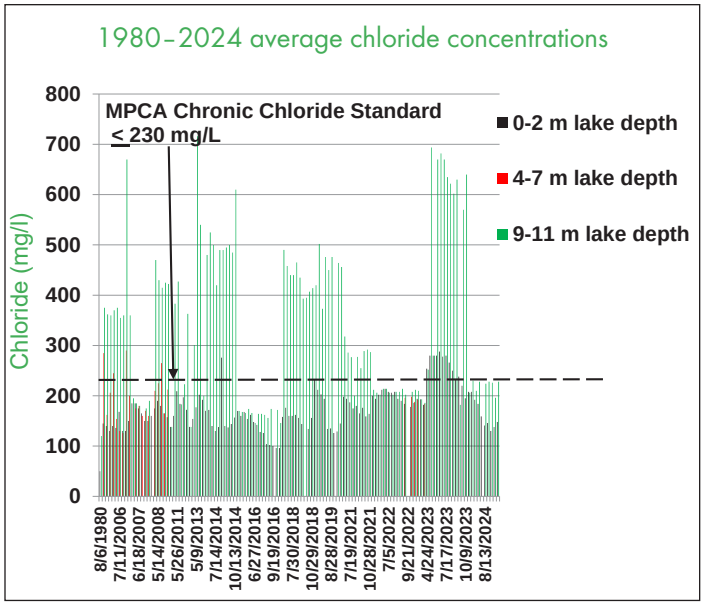
Chloride concentrations in area lakes have increased since the early 1990s, when many government agencies switched from sand or sand/salt mixtures to salt for winter road maintenance. When snow and ice melt, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to pollute 5 gallons of water to a point where it can no longer support freshwater life. That pollution is essentially permanent, as there is no easy or affordable way to remove chloride from water.

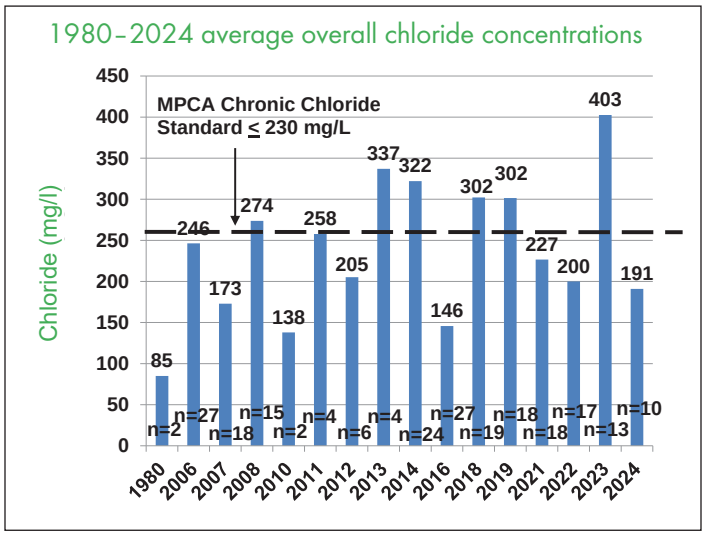
Because high chloride concentrations can harm fish, zooplankton, and plant life, the MPCA has established maximum and chronic chloride standards. The maximum standard is the highest concentration of chloride that aquatic organisms can be exposed to for a brief time with zero-to-slight mortality. The chronic standard is the highest chloride concentration that aquatic life can be exposed to indefinitely without causing chronic toxicity. Chronic toxicity is defined as a stimulus that lingers or continues for a long period, often one-tenth of the life span or more. Chronic effects can be mortality, reduced growth, reproduction impairment, harmful changes in behavior, and other nonlethal effects. A lake is considered impaired for chlorides if two or more measurements exceed the chronic criterion (230 mg/L) within a 3-year period or if one measurement exceeds the maximum criterion (860 mg/L).

Surface chloride measurements in 2024 ranged from a low of 130.0 mg/L in early September to a high of 207.9 mg/L in May. Near-bottom chloride measurements ranged from a low of 195.6 mg/L in late September to a high of 229.9 mg/L in late May. All 2024 measurements met the MPCA chronic and maximum chloride standards.

Parkers Lake has been listed as impaired for chlorides since 2014. As shown in the figure at right, chloride concentrations in the lake's bottom waters (9–11 meter depths) failed to meet the MPCA chronic chloride standard during most years from 2006 through 2021. During this period, annual chloride averages for the entire lake also generally exceeded the MPCA chronic standard. An exception occurred in 2021 when the annual chloride average was slightly below the MPCA chronic standard, despite all but one near-bottom chloride concentration exceeding the MPCA chronic standard. In 2024, chloride concentrations in the lake's surface and bottom waters met the MPCA chronic chloride standard. The 2024 average chloride concentration (including surface and near-bottom) of 191 mg/L was lower than average concentrations from 2018 through 2023, ranging from 200 mg/L to 403 mg/L.

The winter preceding this monitoring had very little snow. The lower quantities of deicing chemicals applied to the lake's watershed during the winter preceding the 2024 monitoring likely contributed to the lower chloride concentrations in the lake during 2024.





Macrophytes (aquatic plants)

Lake Plant Eutrophication Index of Biological Integrity (IBI)

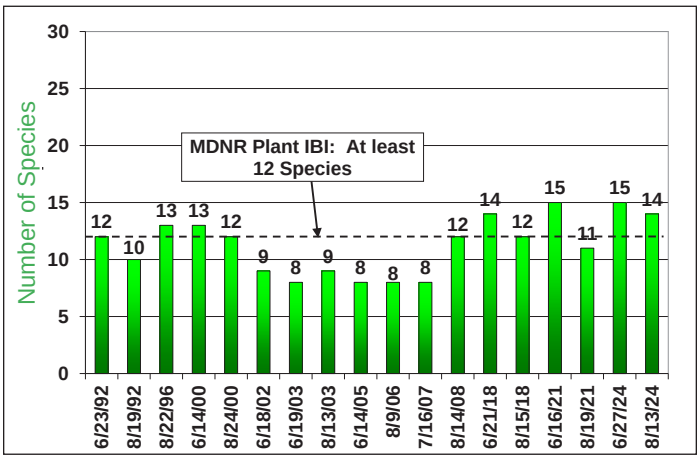
Eutrophication (excessive nutrients) can have detrimental effects on a lake, including reducing the quantity and diversity of plants. The MNDNR developed a Lake Plant Eutrophication Index of Biological Integrity (IBI) to measure the response of a lake plant community to eutrophication. The Lake Plant Eutrophication 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). The MNDNR has determined a threshold for each metric. Lakes that score below the thresholds contain degraded plant communities and are likely stressed from anthropogenic (human-caused) eutrophication.

Plant survey data from 1992 to 2024 were assessed to determine Plant IBI trends. The figures at right show Parkers Lake FQI scores and the number of species for that period compared to the MNDNR Plant IBI thresholds.

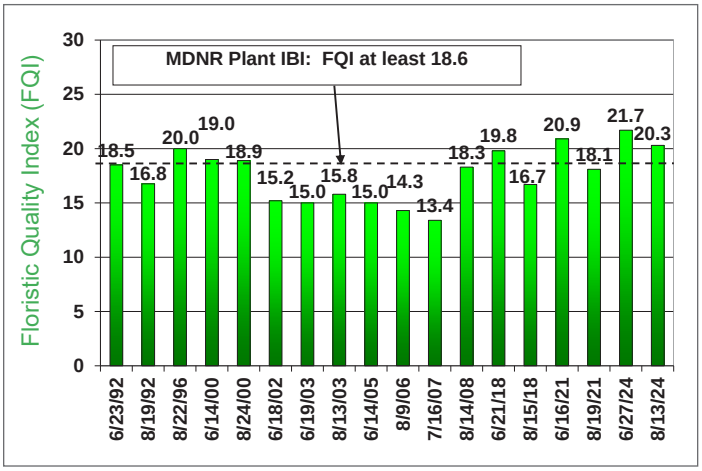
- **Number of species:** A deeper water lake, such as Parkers Lake, meets the MNDNR Plant IBI threshold when it has 12 species or more species. The number of species in Parkers Lake in 2024 ranged from 14 in August to 15 in June, better than the MNDNR Plant IBI threshold. From 1992 through 2021, the number of species in Parkers Lake ranged from eight to 15 and met the MNDNR Plant IBI threshold on eight of the 16 monitored occasions.
- **FQI values (quality of species):** The MNDNR Plant IBI threshold for deeper water lakes, as measured by FQI, is a minimum of 18.6. In 2024, FQI values for Parkers Lake ranged from a low of 20.3 in August to a high of 21.7 in June, both better than the MNDNR Plant IBI threshold. The June value was the highest FQI value observed in the monitored period. From 1992 through 2021, FQI values ranged from 13.4 to 20.9 and were better than the MNDNR Plant IBI threshold during five of the 16 monitored occasions.



MNDNR plant IBI: number of species



MNDNR plant IBI: floristic quality index (FQI)



Phytoplankton and Zooplankton

Phytoplankton, or algae, are small aquatic plants naturally present in lakes. Phytoplankton derive energy from the sun through photosynthesis and provide food for several types of aquatic organisms, including zooplankton (microscopic animals), which are, in turn, eaten by fish. An inadequate phytoplankton population limits a lake's zooplankton population and indirectly limits fish production in a lake. Excess phytoplankton can reduce water clarity.

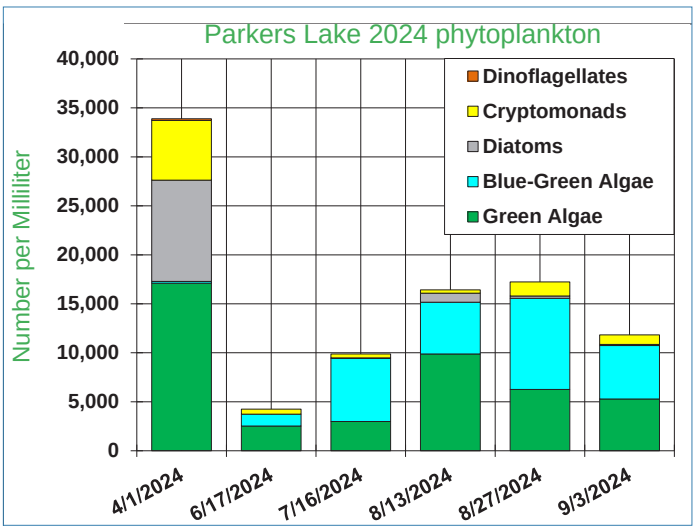
Phytoplankton samples were collected from Parkers Lake to evaluate water quality and the quality of food available to zooplankton. Phytoplankton numbers declined from the April to June sampling, and lower phytoplankton numbers were found from June through September, a reflection of the lake's good water quality. Cryptomonads and green algae, good food sources for the lake's zooplankton, were present throughout the monitored period. Blue-green algae, which are associated with water quality problems and can be a source of health concerns, dominated the phytoplankton community in mid-July and late August and

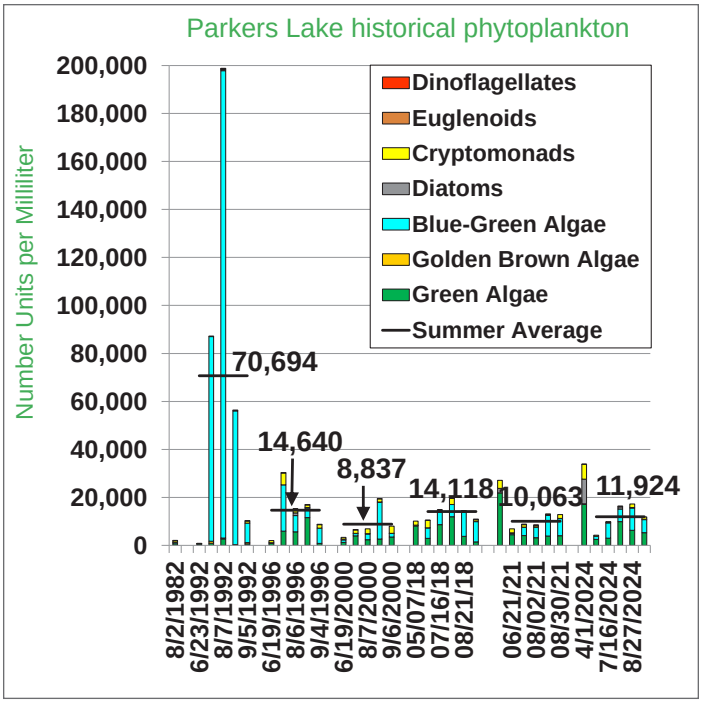
co-dominated the phytoplankton community with green algae in early September. However, the overall number of blue-green algae during 2024 was low and did not cause water quality problems or adverse health concerns (see figure on page 9). In 2024, phytoplankton numbers were within the range observed since 1982 (see figure below).

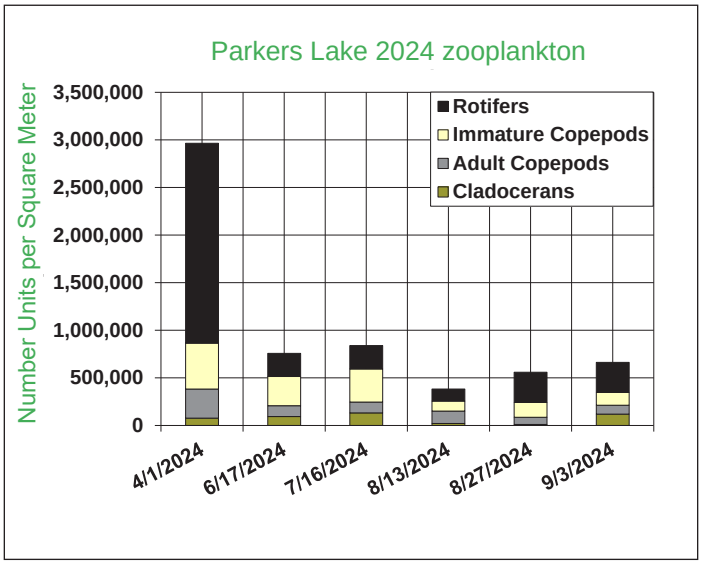
Unlike phytoplankton, zooplankton do not produce their own food. As “filter feeders,” they eat millions of small algae; given the right quantity and species, they can filter the volume of an entire lake in a matter of days. They are also valuable food for planktivorous fish and other organisms.

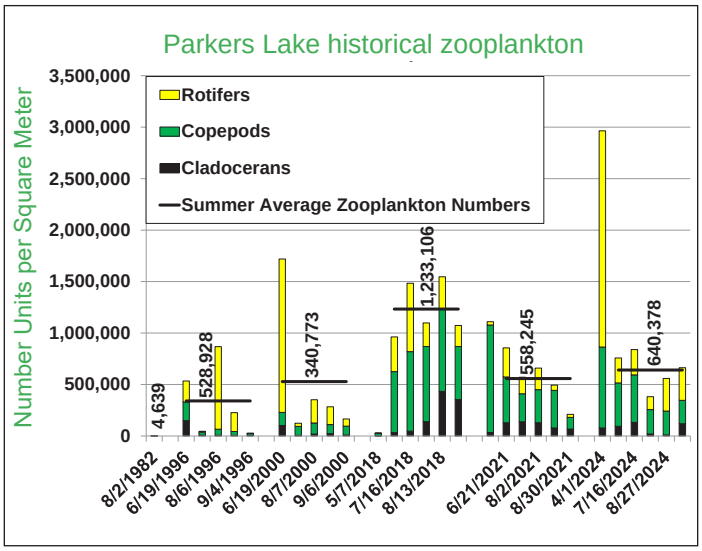
The 2024 zooplankton composition in Parkers Lake reflects the impact of fish predation on the community. Fish generally select the largest zooplankters they see and prefer cladocerans to copepods because they swim slowly and lack the copepods’ ability to escape predation by jerking or jumping out of the way. Rotifers, the least preferred food for fish, dominated the community during April, late August, and early September. Immature copepods, the second least preferred food for fish, dominated the community during June and July. In mid-August, immature and adult copepods co-dominated the community (see figure at right). Because rotifers and copepods do not graze as heavily on algae as the larger cladocerans, they generally have a limited impact on the lake’s water quality. This suggests that future Parkers Lake water quality management efforts should focus on phosphorus management to reduce the nutrients contributing to algae growth.

Zooplankton numbers in 2024 were within the range observed since 1982 (see figure at right).









Aquatic invasive species

In 2024, two aquatic invasive species were present in Parker's Lake.

- **Curly-leaf pondweed (*Potamogeton crispus*):** CLP was found at 33 percent of sample points in June and 5 percent in August 2024. The decline between June and August was due to a natural die-off in late June.

  At the time of June sampling, 44 of the 47 CLP sample points were low density (i.e., a density of 1 on a scale of 1–3); of the remaining three sample points, one had a medium density of CLP (i.e., a density of 2 on a scale of 1-3) and two had a high density (i.e., a density of 3 on a scale of 1–3). In August, six of the seven CLP sample points were low density; the remaining sample point had a medium density of CLP. CLP did not cause problematic conditions for recreational users in 2024, but the late June die-off added phosphorus to the lake.

  Although CLP frequency declined between 2018 and 2021—from 39 percent in June 2018 to 29 percent in June 2021 and from 4 percent in August 2018 to not observed in August 2021—it slightly increased in 2024—to 33 percent in June and 5 percent in August.

  CLP density was similar in 2018, 2021, and 2024. The average June CLP density was 1.2 in June 2018 and 2021, compared with 1.1 in June 2024. The average August CLP density was 1.0 in 2018 compared with 1.1 in 2024. CLP was not observed in August 2021.

  Limited ice and snow cover during the preceding winter, allowing CLP to grow throughout the winter, may have contributed to the increased abundance of CLP in 2024.

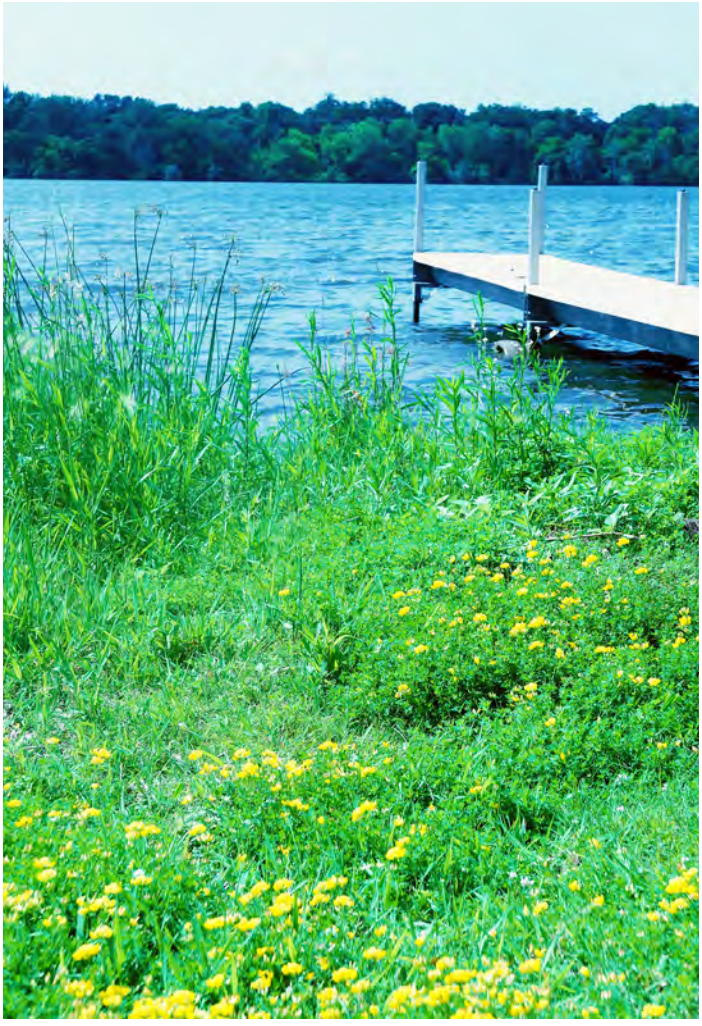
- **Eurasian watermilfoil (*Myriophyllum spicatum*):** In 2024, Eurasian watermilfoil (EWM) frequency was similar in June (40%) and August (43%). The average 2024 EWM density in the lake was also similar in June (1.4 on a scale of 1–3) and August (1.3). While a few areas of the lake had high levels of EWM during both June and August, most EWM areas did not cause problematic conditions for recreational lake users in 2024.

  June frequency and density in 2018 (61 percent frequency and 2.2 density) and 2021 (60 percent frequency and 1.9 density) were higher than 2024 (40 percent frequency and 1.4 density). Similarly, August frequency and density were higher in 2018 (71 percent frequency and 2.0 density) and 2021 (76 percent frequency and 1.9 density) than in 2024 (43 percent frequency and 1.3 density). The reduction in EWM frequency and density in 2024 was favorable for the lake.

Suitability of Parkers Lake for other AIS

Many AIS residing in Minnesota have not yet been observed in Parkers Lake but could be introduced. For example, zebra mussels and starry stonewort are in nearby Medicine Lake. To evaluate whether Parkers Lake water quality would support the introduction of six AIS (starry stonewort, zebra mussels, spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish), a suitability analysis for each species was performed.

The analysis compared 2024 water quality data in Parkers Lake with the water quality conditions required for each species, specifically evaluating total phosphorus, chlorophyll *a*, Secchi disc depth, trophic state index (TSI), water temperature, dissolved oxygen, specific conductance, pH, calcium, magnesium, sodium, alkalinity, hardness, and calcium carbonate. The results indicate the water quality of Parkers Lake meets the suitability requirements for rusty crayfish, faucet snail, zebra mussels, starry stonewort, and spiny waterflea. However, the sodium and specific conductance levels were too high to be suitable for the Chinese mystery snail. Hence, this species would likely survive but may not thrive in Parkers Lake.



Item 5Ciii.
BCWMC 7-17-25

Westwood Lake

2024 Water Quality Monitoring



The Bassett Creek Watershed Management Commission

Stewardship of the Ȟaȟá Wakpádaŋ/Bassett Creek Watershed
to improve ecosystem health and reduce flood risk

The Bassett Creek Watershed Management Commission (BCWMC) has monitored water quality conditions in the watershed's 10 priority lakes since 1972. This monitoring is performed to detect changes or observe trends in water quality, inform pollution modeling and studies, and target future projects and programs. A summary of 2024 monitoring efforts on Westwood Lake is provided below.

At a glance: 2024 monitoring results

In 2024, the BCWMC monitored Westwood Lake for the following:

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

Results of 2024 monitoring show that Westwood Lake met the applicable Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for chlorides, Secchi disc (a measure of clarity), total phosphorus, and chlorophyll a. Trend analyses show no significant changes in Secchi disc measurements, total phosphorus, or chlorophyll a over the past 10 years. Other results include::

- The number of plant species observed in the lake was better than the Minnesota Department of Natural Resources (MNDNR) Plant Index of Biotic Integrity (IBI) threshold in both June and August.
- Floristic Quality Index (FQI) values, a measure of plant species quality, were better than the MNDNR Plant IBI threshold in June but poorer than the threshold in August.
- Aquatic invasive species (AIS) observed in 2024 were curly-leaf pondweed (CLP), purple loosestrife, reed canary grass, and narrow-leaved cattail. CLP was problematic in 2024 due to its increased frequency in presence and increased density of plants.
- The 2024 phytoplankton summer average was higher than summer averages from 2018 and 2021, but within the range of averages observed since 1982, and was consistent with good water quality.
- Although 2024 zooplankton numbers were within the range observed since 1982, the 2024 summer average was higher than summer averages from 1993 to 2021, indicating increased food availability and/or decreased predation in 2024.
- The results of an AIS suitability analysis indicate that the water quality of Westwood Lake meets the suitability requirements for rusty crayfish, faucet snail, zebra mussel, and starry stonewort, but only partially meets the suitability requirements for spiny waterflea and Chinese mystery snail.

About Westwood Lake

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



Recommendations

- Management of CLP is recommended to protect the water quality of Westwood Lake.
- Continue to provide education and information to the Westwood Hills Nature Center and lake users to reduce the chance of AIS introduction.
- Continue water quality and biological monitoring at a 3-year frequency.

2024 water chemistry

2024 was a very wet year, and according to data from the Minnesota Department of Natural Resources, April through June was the wettest on record for Minnesota. During this period, the Twin Cities received 17.3 inches of precipitation, 5.9 inches above normal. March, July, and August were also wet, with 13.5 inches of precipitation in the Twin Cities, 3.4 inches above normal. As shown in the figures to the right, phosphorus and chlorophyll concentrations in Westwood Lake increased during March through August when above normal precipitation increased stormwater runoff to the lake.

Total phosphorus levels

While phosphorus is necessary for plant and algae growth, excessive phosphorus leads to excessive algae growth, decreased water clarity, and water quality impairment. Some common sources of phosphorus are fertilizers, leaves and grass clippings, atmospheric deposition, soil erosion, and aquatic plant die-off (such as curly-leaf pondweed). Phosphorus can also be released from lake sediments when dissolved oxygen concentrations are very low.

- BCWMC/MPCA standard: Summer average of 60 micrograms per liter (µg/L) or less
- Observed range: Low of 12 µg/L in March to a high of 44 µg/L in late August following a rainstorm.
- Summer average: 33 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 that appear clear generally have chlorophyll *a* levels of less than 15 micrograms per liter (µg/L).

- BCWMC/MPCA standard: Summer average of 20 µg/L or less
- Observed range: Low of 1.8 µg/L in mid-April to a high of 26.2 µg/L in late August following a rainstorm
- Summer average: 14.0 µg/L (met BCWMC/MPCA standard)

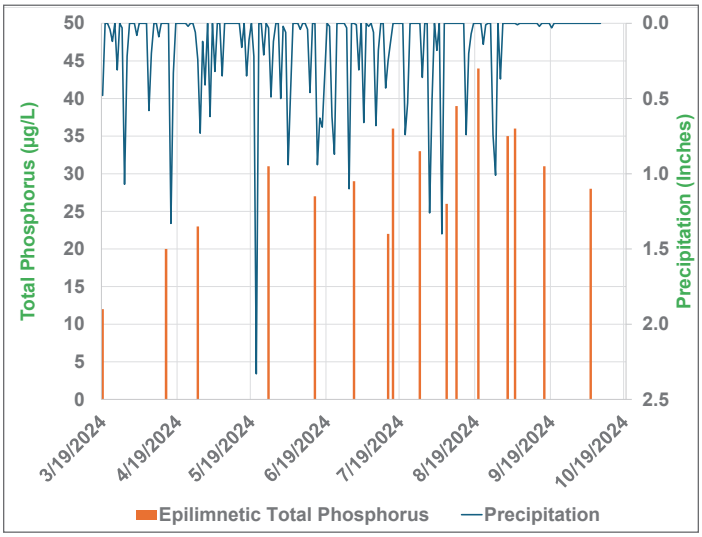
Water clarity

Water clarity is often affected by the number 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 clarity.

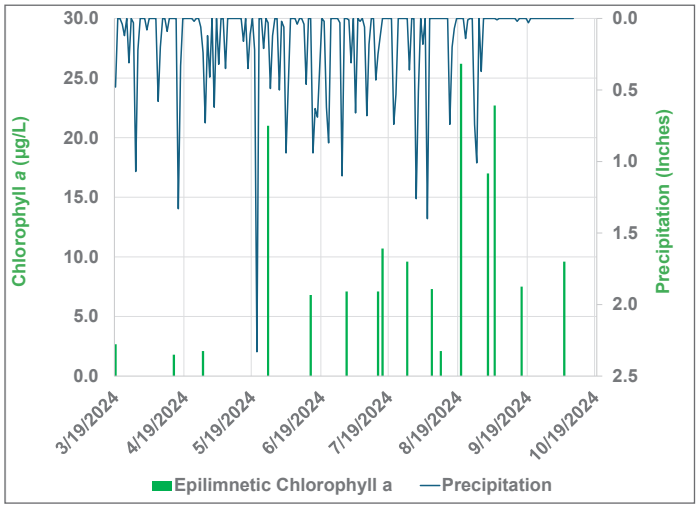
- BCWMC/MPCA standard: Summer average of 1.0 meter or more.
- Observed range: From a low of 1.0 meters in late August following a rainstorm to a high of 1.9 meters in late May and mid-July. The Secchi disc was on the top of submerged aquatic plants in March (1.8 meters), mid-July (1.2 meters), early August (1.3 meters), and early September (1.1 meters).
- Summer average: 1.5 meters (met BCWMC/MPCA standard).

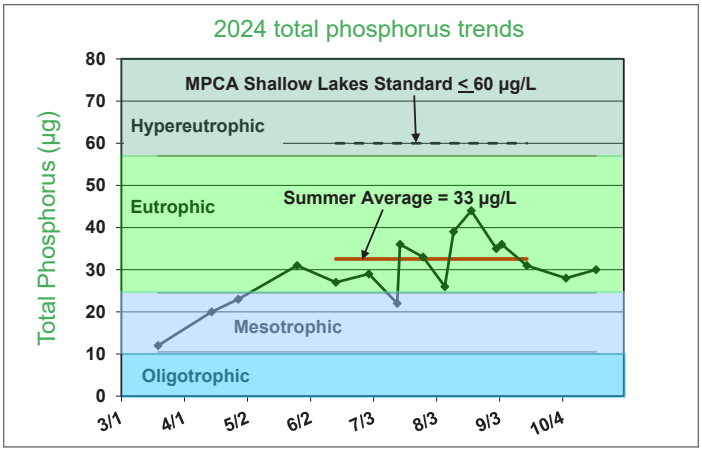
The graphs below and on the following page include data collected from Westwood Lake by a volunteer participating in the Community Assisted Monitoring Program (CAMP), which was coordinated and funded by the Metropolitan Council with assistance and additional funding from the BCWMC.

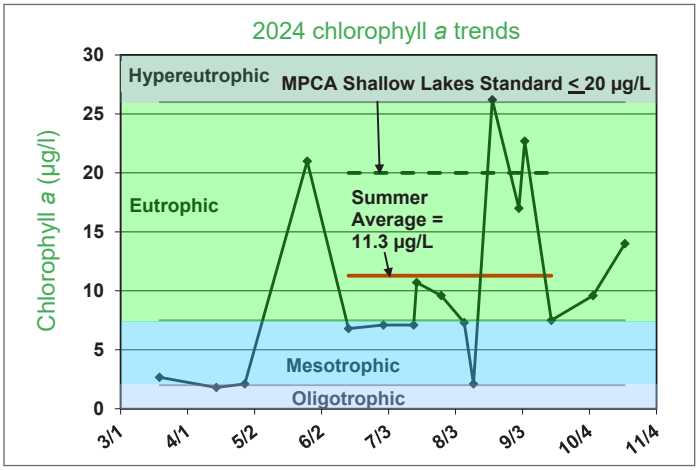
2024 Precipitation and total phosphorus

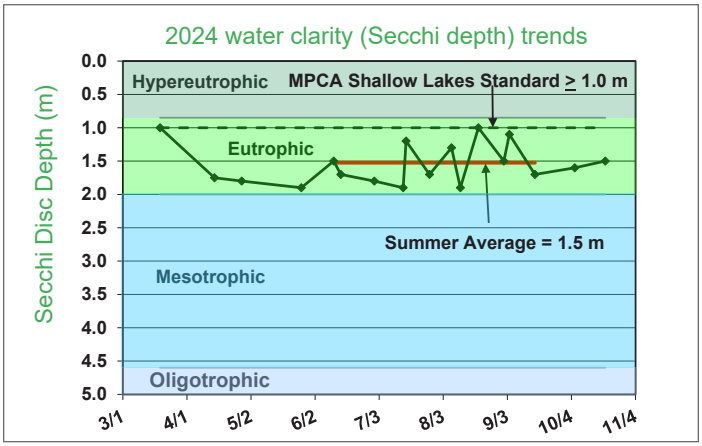


2024 precipitation and chlorophyll a









Definitions

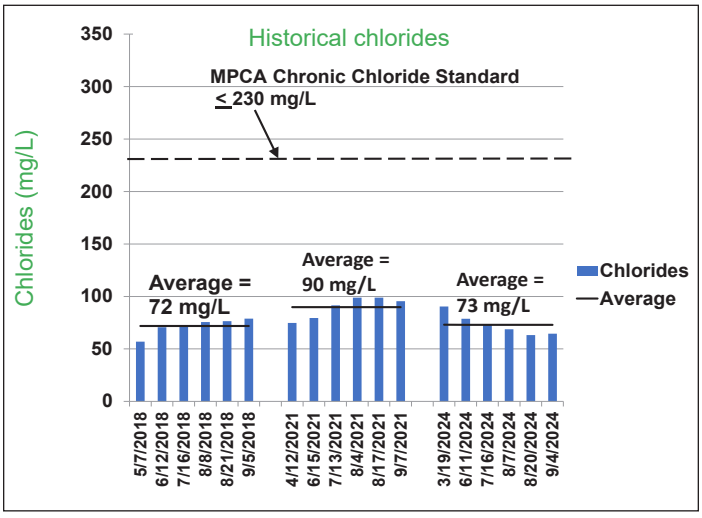
- **Hypereutrophic:** Nutrient-rich lake conditions characterized by frequent and severe algal blooms and low water clarity; excessive algae can significantly reduce lake oxygen levels.
- **Eutrophic:** Lake condition characterized by abundant accumulation of nutrients supporting dense growth of algae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

Chloride levels in 2018, 2021, and 2024

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 melt, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to pollute 5 gallons of water, to a point where it can no longer support freshwater life. The pollution is essentially permanent, as there is no easy or affordable way to remove chloride from water.

Because high chloride concentrations can harm fish, zooplankton, and plant life, the MPCA has established maximum and chronic chloride standards. The maximum standard is the highest concentration of chloride that aquatic organisms can be exposed to for a brief time with zero-to-slight mortality. The chronic standard is the highest chloride concentration that aquatic life can be exposed to indefinitely without causing chronic toxicity. Chronic toxicity is defined as a stimulus that lingers or continues for a long period, often one-tenth of the life span or more. Chronic effects can be mortality, reduced growth, reproduction impairment, harmful changes in behavior, and other nonlethal effects. A lake is considered impaired for chlorides if two or more measurements exceed the chronic criterion (230 mg/L) within a 3-year period or if one measurement exceeds the maximum criterion (860 mg/L).

All 2018, 2021, and 2024 chloride measurements in Westwood Lake were well below both the maximum and chronic chloride standards. The 2024 average annual chloride concentration (73 mg/L) was similar to the 2018 average (72 mg/L) and lower than the 2021 average (90 mg/L).



Water chemistry monitoring from 1977–2024: historical trend

Summer water quality in Westwood Lake has been monitored since 1977. Summer averages (June through September) of total phosphorus, chlorophyll *a*, and Secchi disc depth from 1977 to 2024 are shown in the figures at right. In 1977 and 1982, these averages mostly failed to meet BCWMC/MPCA standards, but have generally met the standards since 1982. Exceptions include high chlorophyll *a* values in 2001, high total phosphorus values in 2005 and 2006, and a low average Secchi disc depth in 2017. During the period of record, 86 percent of total phosphorus and 93 percent of chlorophyll *a* and Secchi disc summer averages met the Minnesota State Water Quality Standards for shallow lakes in the North Central Hardwood Forest Ecoregion published in the Minnesota Rules (Minn. R. Ch. 7050.0222 Subp. 4).

The 2024 summer average chlorophyll *a* concentration was more than double summer average concentrations from 2020 through 2023 without a comparable increase in average summer average total phosphorus concentration or decrease in summer average Secchi disc transparency. The reason for the 2024 increase in average summer chlorophyll *a* concentration is not apparent from review of the available data.

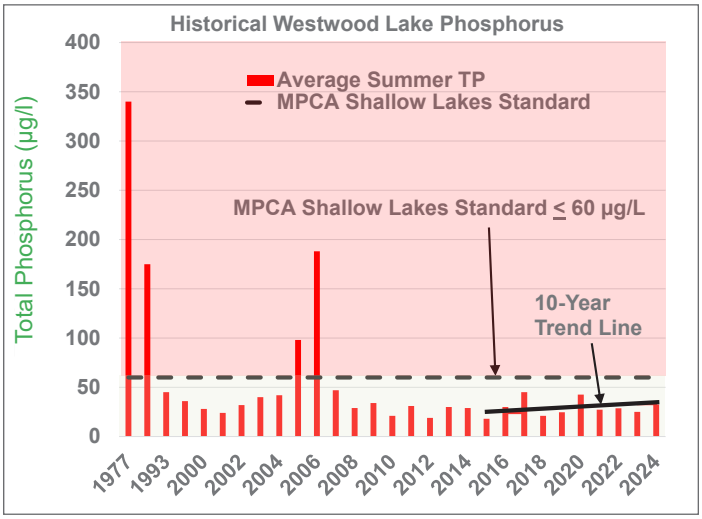
Trend analyses for the last 10 years show:

- Increasing summer average total phosphorus concentrations.
- Increasing summer average chlorophyll *a* concentrations.
- No change in summer average Secchi disc depths.

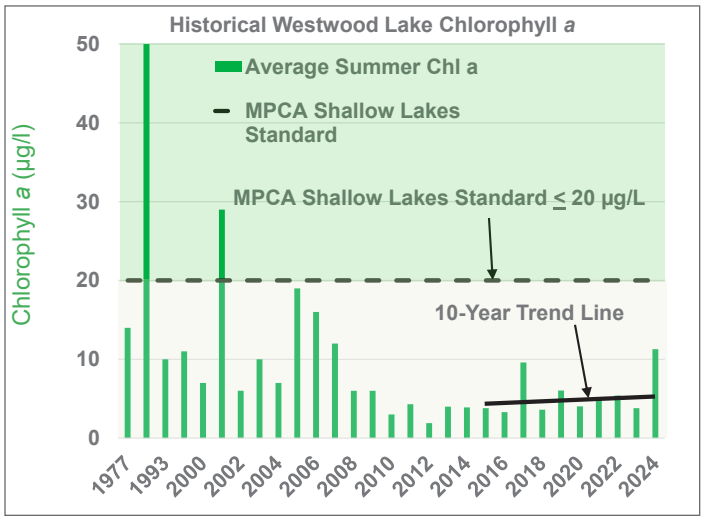
None of these changes is statistically significant (95 percent confidence level).



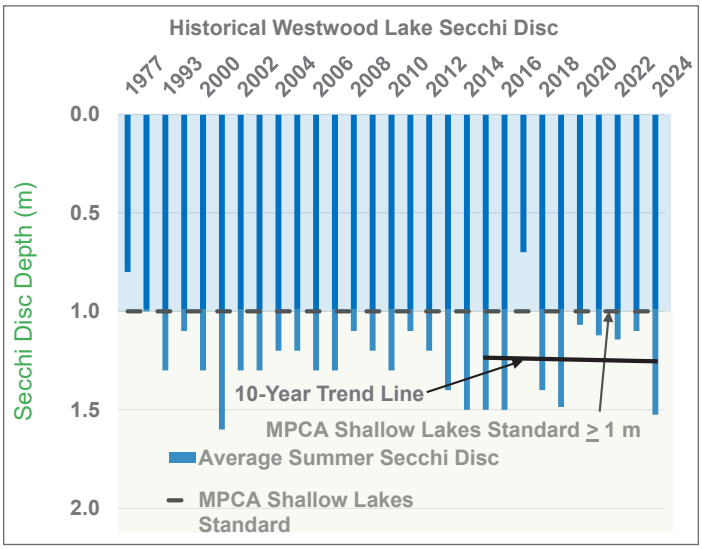
Historical total phosphorus trends



Historical chlorophyll *a* trends



Historical water clarity (Secchi depth) trends



Macrophytes (aquatic plants)

Lake Plant Eutrophication Index of Biological Integrity (IBI)

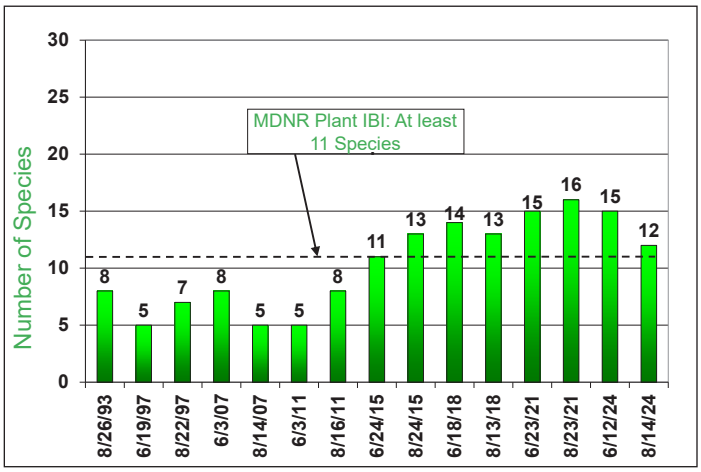
Eutrophication (excessive nutrients) can have detrimental effects on a lake, including reducing the quantity and diversity of plants. The MNDNR developed a Lake Plant Eutrophication Index of Biological Integrity (IBI) to measure the response of a lake plant community to eutrophication. The Lake Plant Eutrophication 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). The MNDNR has determined a threshold for each metric. Lakes that score below the thresholds contain degraded plant communities and are likely stressed from anthropogenic (human-caused) eutrophication.

Westwood Lake plant survey data from 1993 to 2024 were assessed to determine Plant IBI trends. The figures at right show the number of species and the FQI scores for that period compared to the MNDNR Plant IBI thresholds.

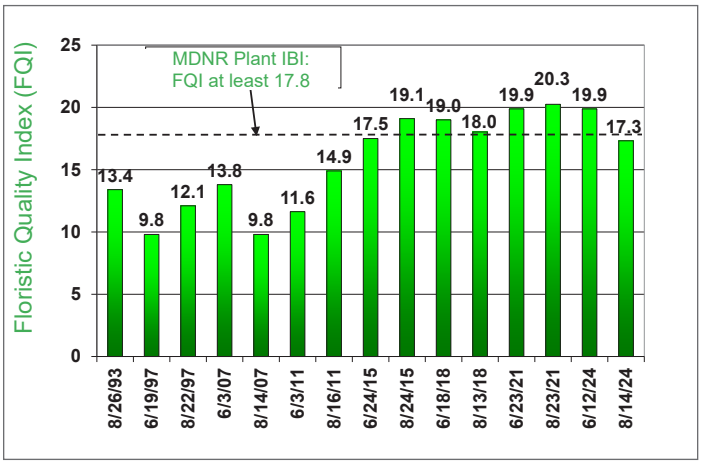
- Number of species: A shallow lake, such as Westwood Lake, meets the MNDNR Plant IBI threshold when at least 11 species are present. During the period examined, the number of species in Westwood Lake ranged from 5 to 16, exceeding the MNDNR Plant IBI threshold from 2015 through 2024.
- FQI values (quality of species): The MNDNR Plant IBI threshold for shallow lakes, as measured by FQI, is a minimum value of 17.8. During the period examined, FQI values in Westwood Lake ranged from 9.8 to 20.3 and exceeded the MNDNR Plant IBI threshold from August 2015 through June 2024.
- 2024 results: The number of species observed in the lake and the FQI (19.9) values were better than the MNDNR Plant IBI thresholds in June, but in August fell below this threshold (FQI value = 17.3).

  The number of species in the lake declined from 15 in June to 12 in August, but a healthy and diverse plant community was present throughout 2024. The decline in number of species was largely favorable because two of the three species not observed in August were aquatic invasive species: curly-leaf pondweed (CLP) and reed canary grass. The seasonal die-off of CLP in late June is typical. In August, reed canary grass was not seen at the single location where it was observed in June. The third species not observed in August was small pondweed, a native species. Although the frequency of this species generally declines between June and August, its absence in August was likely due to displacement by coontail and/or bearded stonewort that significantly increased in frequency between June and August.

MNDNR plant IBI: number of species



MNDNR plant IBI: floristic quality index (FQI)





Aquatic invasive species

In 2024, four aquatic invasive species (AIS) were found to be present in Westwood Lake.

- **Curly-leaf pondweed (*Potamogeton crispus*):** Curly-leaf pondweed (CLP) was problematic in 2024 due to an increased frequency in presence and increased density of plants. The frequency in June 2024, 40 percent, was significantly higher than the frequency of 10 percent in June 2021. Visual sightings increased from four in 2021 to 25 in 2024.

  Rake fullness was used to determine the overall quantity (density) of CLP. Rake fullness is measured on a scale of 1 to 3 where 1 indicates a few plants on the rake, 2 indicates the rake head was about half full, and 3 indicates the rake head is overflowing with curly-leaf pondweed plants. Average rake density in Westwood Lake increased from 1.25 (a few plants on the rake) in 2021 to 1.74 (the rake head was about half full) in 2024. In 2024, some areas of CLP formed dense mats on the lake's surface, and 22 percent of the sample points with CLP had a density of 3.

  The increased abundance of CLP in Westwood Lake in 2024 may be due to limited ice and snow cover during the preceding winter, allowing CLP to grow throughout the winter. Increasing frequency and density of CLP is of concern due to its potential as a source of internal phosphorus loading that can adversely impact the lake's water quality. CLP dies out in early to mid-summer, and the decay of the plant releases nutrients and consumes oxygen, exacerbating the internal release of phosphorus. Management of CLP is recommended to protect the water quality of Westwood Lake.
- **Purple loosestrife (*Lythrum salicaria*):** This emergent species was found at one location in the northwestern corner of the lake in 2015, 2018, 2021, and 2024. It was found at additional locations in 2015, 2018, and 2021. Purple loosestrife was not problematic in 2024 because it was found at fewer locations than in previous years.
- **Narrow-leaved cattail (*Typha angustifolia*):** In 2024, narrow-leaved cattail was observed at seven sample points along the lake's shoreline in June and eight sample points in August. It was found in similar areas but at fewer sample points in previous years: four to six sample points in 2015, five in 2018, and two to four in 2021.
- **Reed canary grass (*Phalaris arundinacea*):** Reed canary grass was first found in Westwood Lake in 2018, at three locations along the north shoreline in June and one location in August. It was observed at two locations in June 2024 and at one location in August 2019, June and August 2021, and August 2024.

Bearded stonewort in Westwood Lake

Bearded stonewort (*Lychnothamnus barbatus*) was first observed in Westwood Lake in 2015. This was also the first observation of this species in all of Minnesota.

Bearded stonewort is an alga in the family Characeae, which resembles rooted aquatic plants. This species was not seen in North America until 2012; few populations have been documented worldwide. Bearded stonewort obtains all of its nutrients from the water. This nutrient absorber can reduce phosphorus concentrations and improve water quality.

Displacing another species in the Characeae family (*Chara contraria* or fetid stonewort), the bearded stonewort in Westwood Lake expanded its extent by approximately an order of magnitude from 2015 to 2018 and was observed at 34 percent of sample locations in August 2018. It continued expanding its extent to 40 percent in August 2019, 44 percent in August 2021, and 77 percent in August 2024. In 2024, bearded stonewort dominated most lake areas and was the only species in some areas.

The continued expansion of bearded stonewort and displacement of other species such as *Chara contraria* is concerning. However, because MNDNR has placed bearded stonewort on the MNDNR plant watchlist as a newly discovered species and considers bearded stonewort to be a sensitive species, its management may not be permitted.



Bearded stonewort in Westwood Lake

Suitability of Westwood Lake for other AIS

Many aquatic invasive species (AIS) residing in Minnesota have not yet been observed in Westwood Lake but could be introduced. For example, both zebra mussels and starry stonewort are present in nearby Medicine Lake but have not been observed in Westwood Lake. A suitability analysis was performed to evaluate whether Westwood Lake water quality would support the introduction of six AIS (starry stonewort, zebra mussels, spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish).

The analysis compared 2024 water quality in Westwood Lake with the water quality conditions required for each species, specifically evaluating total phosphorus, chlorophyll a, Secchi disc depth, trophic state index (TSI), water temperature, dissolved oxygen, specific conductance, pH, calcium, magnesium, sodium, alkalinity, hardness, and calcium carbonate. The results indicate that the water quality of Westwood Lake meets the suitability requirements for rusty crayfish, faucet snail, zebra mussel, and starry stonewort, but only partially meets the suitability requirements for spiny waterflea and Chinese mystery snail. Hence, these species would likely survive but may not thrive in Westwood Lake.

Phytoplankton and zooplankton

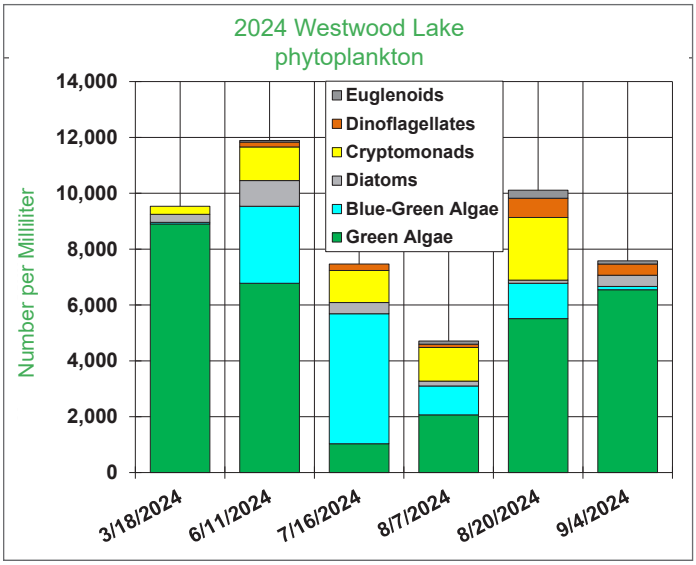
Samples of phytoplankton, microscopic aquatic plants, were collected from Westwood Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). Phytoplankton numbers were low throughout 2024, reflecting good water quality (see figure at right). Green algae, a good food source for the lake's zooplankton, were dominant throughout the monitored period except for mid-July when blue-green algae were dominant. Although blue-green algae are associated with water quality problems and can be a source of health concerns, the low numbers of blue-green algae present in Westwood Lake throughout 2024 are consistent with good water quality and no adverse health concerns.

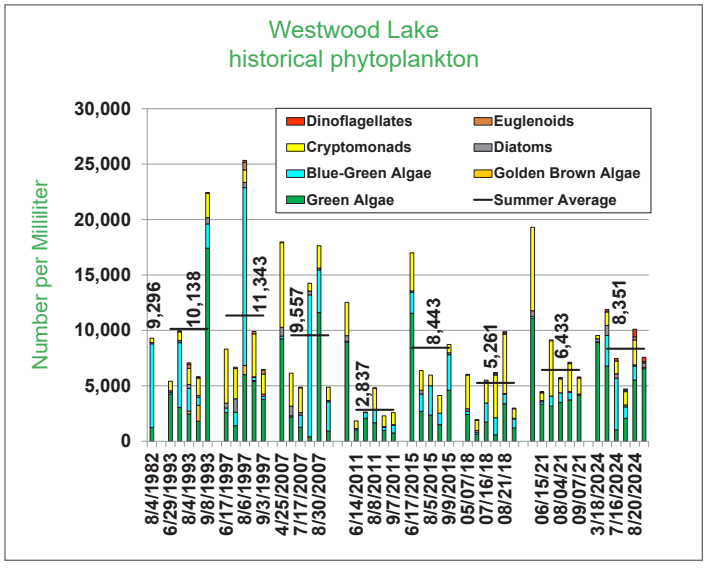
The 2024 phytoplankton summer average (8,351) was higher than summer averages from 2018 (5,261) and 2021 (6,433) but within the range of summer averages observed since 1982 (2,837–11,343). All summer averages during the monitored period are consistent with good water quality.

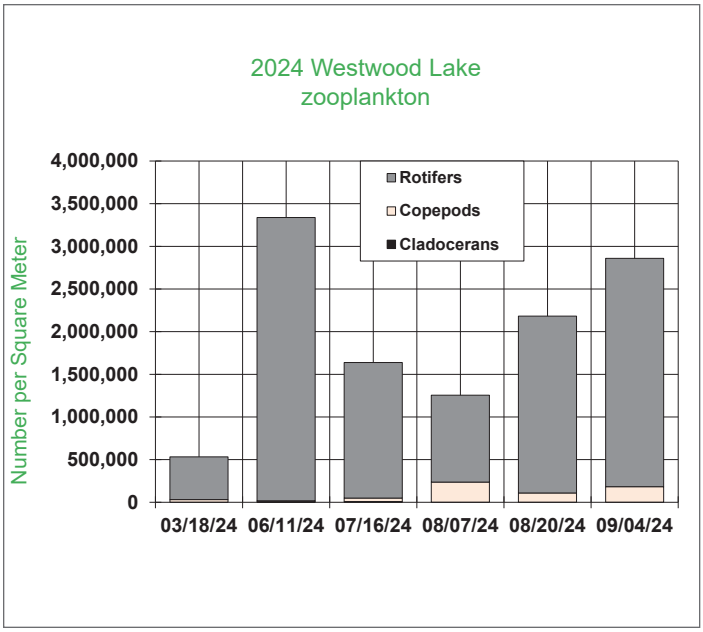
Unlike phytoplankton, zooplankton do not produce their own food. As "filter feeders," they eat millions of small algae. Given the right quantity and species, they can filter the volume of an entire lake in a matter of days. They are also valuable food for planktivorous fish and other organisms.

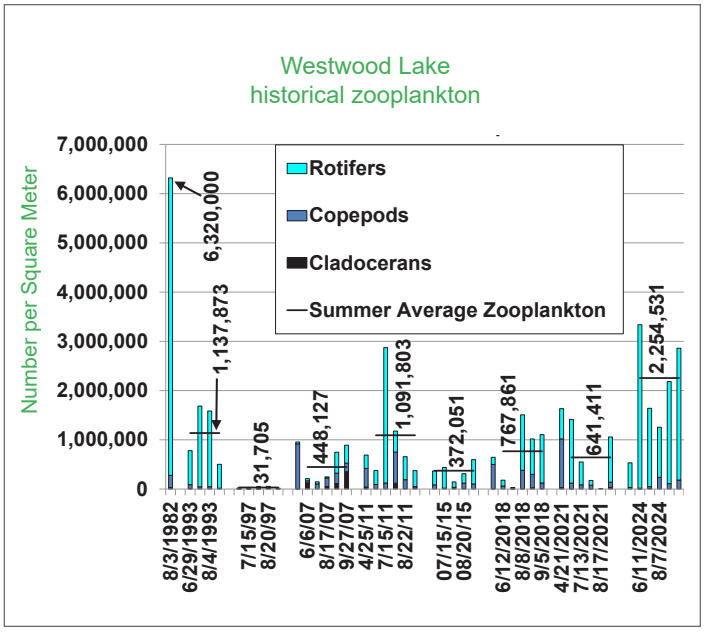
The 2024 zooplankton composition (see figure on the following page) reflects the impact of fish predation on the community. Fish generally select the largest zooplankters they see and prefer cladocerans to copepods because they swim slowly and lack the copepods' ability to escape predation by jerking or jumping out of the way. Rotifers, the least preferred food for fish, dominated the community in Westwood Lake throughout 2024, and copepods consistently occurred in higher numbers than cladocerans. Because rotifers and copepods do not graze as heavily on algae as the larger cladocerans, they generally have a limited impact on the lake's water quality. This suggests that future Westwood Lake water quality improvement efforts should focus on phosphorus management to reduce the nutrients contributing to algae growth.

Although 2024 zooplankton numbers were within the range observed since 1982 (see figure on the following page), the 2024 summer average (2,254,531) was higher than summer averages from 1993–2021 (31,705–1,137,973). Because zooplankton are limited by food availability and predation, the higher summer average suggests increased food availability and/or decreased predation in 2024.






2024 Westwood Lake
zooplankton
Number per Square Meter
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Rotifers
Copepods
Cladocerans
03/18/24
06/11/24
07/16/24
08/07/24
08/20/24
09/04/24


Westwood Lake
historical zooplankton
Number per Square Meter
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
Rotifers
Copepods
Cladocerans
Summer Average Zooplankton
6,320,000
1,137,873
31,705
448,127
1,091,803
372,051
767,861
641,411
2,254,531
8/3/1982
6/29/1993
8/4/1993
7/15/97
8/20/97
6/6/07
8/17/07
9/27/07
4/25/11
7/15/11
8/22/11
07/15/15
08/20/15
6/12/2018
8/8/2018
9/5/2018
4/21/2021
7/13/2021
8/17/2021
6/11/2024
8/7/2024



Item 5Civ.
BCWMC 7-17-25

Medicine Lake

2024 Water Quality Monitoring



The Bassett Creek Watershed Management Commission

Stewardship of the Ȟaȟá Wakpádaŋ/Bassett Creek Watershed
to improve ecosystem health and reduce flood risk

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 since 1972. This monitoring is performed to detect changes or observe trends in water quality, inform pollution modeling and studies, and target future projects and programs. Three Rivers Park District (TRPD) annually monitors the water quality of Medicine Lake, and BCWMC periodically partners with TRPD on additional monitoring in the lake.

At a glance: 2024 monitoring results

In 2024, TRPD monitored Medicine Lake for the following:

- Water chemistry (nutrients, chlorophyll *a*, chloride)
- Water clarity and dissolved oxygen, temperature, and specific conductance
- Macrophytes (aquatic plants)

In 2024, BCWMC partnered with TRPD to monitor the Southwest Bay of Medicine Lake and to add phytoplankton and zooplankton to the monitoring program. TRPD collected the samples. BCWMC funded the monitoring of the Southwest Bay and analyzed the phytoplankton and zooplankton samples.

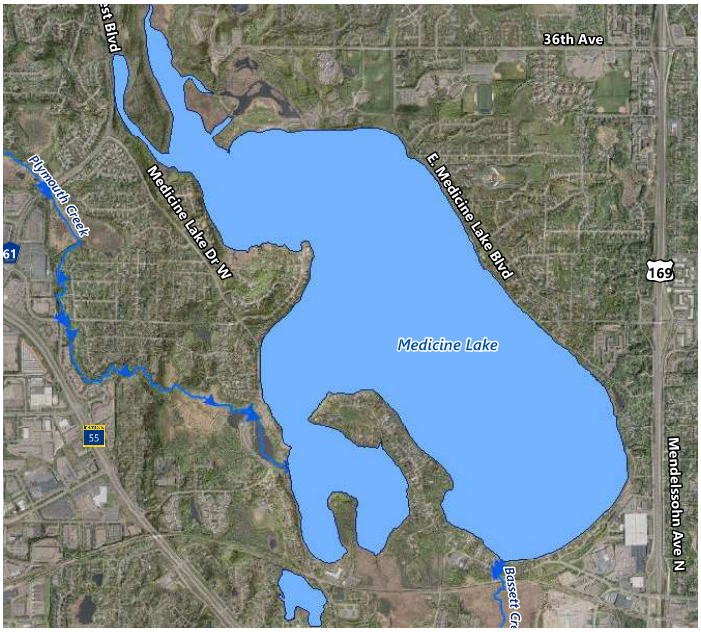
Results of 2024 monitoring show that the Main Basin and Southwest Bay of Medicine Lake met the applicable Minnesota Pollution Control Agency (MPCA) and BCWMC water quality standards for Secchi disc (a measure of clarity) and chlorophyll *a*, but did not meet the MPCA and BCWMC standard for total phosphorus. Trend analyses based on summer averages over the past 10 years show significant reductions in chlorophyll *a* and significant increases in Secchi disc at the 95th confidence level in the Main Basin and Southwest Bay. The significant changes are likely due to the increases in zebra mussels and the removal of algae by zebra mussel grazing. Declining summer average total phosphorus concentrations in the Main Basin and Southwest Bay over the past 10 years were not significant at the 95th percent confidence level.

Other results include the following:

- All measurements in the Main Basin and Southwest Bay during 2024 were well below the maximum chloride standard and, except for one bottom measurement from the Southwest Bay on April 1, were also below the chronic chloride standard.
- Both the number of species in the lake and Floristic Quality Index (FQI) values were better than the Minnesota Department of Natural Resources (MNDNR) Plant IBI thresholds.
- Four aquatic invasive species were observed in Medicine Lake in 2024: curly-leaf pondweed, Eurasian watermilfoil, starry stonewort, and zebra mussels.
- Following herbicide treatment of 113 acres of CLP in the spring of 2024, the plant's June frequency was 24 percent, which met the Lake Vegetation Management Plan (LVMP) goal of maintaining CLP at a frequency of less than 25 percent. However, this frequency

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
MNDNR ordinary high water level	889.3 feet
Normal water level	887.9 feet
Downstream receiving waterbody	Ȟaȟá Wakpádaŋ/Bassett Creek
Location (city)	Medicine Lake, Plymouth
MPCA impairments	Mercury in fish tissue, nutrients
Aquatic invasive species	Eurasian watermilfoil, curly-leaf pondweed, zebra mussels (Nov. 2017), starry stonewort (Aug. 2018)
Public access	Yes (boat launch)



exceeded the CLP threshold frequency of 22 percent specified in the 2010 total maximum daily load (TMDL) implementation plan for Medicine Lake.

- Eurasian watermilfoil was not problematic in 2024, ranging in frequency from 13 to 19 percent of the sample locations.
- Starry stonewort occurred at a frequency of 1 to 3 percent from 2018 through June 2024, but increased to a frequency of 13 percent in August 2024.
- Zebra mussel surveys documented increases in number from about 1 per hour from 2017 to 2019 to 2,444 per hour in 2022 followed by a decline to 1,780 per hour in 2023. Zebra mussel veligers (planktonic larvae) were observed in zooplankton samples from the Main Basin in 2020 and 2024 and from the Southwest Bay in 2024.
- It appears zebra mussel grazing of algae has reduced phytoplankton numbers in the Main Basin and Southwest Bay of Medicine Lake by about 50 percent from 2016 to 2024.
- Zebra mussel grazing of green algae, a preferred food for zebra mussels, reduced early spring numbers in the Main Basin of Medicine Lake by more than an order of magnitude from 2016 to 2020 and kept numbers low in 2024. Zebra mussel grazing in the Southwest Bay reduced green algae numbers by more than 80 percent from 2016 to 2024.
- In 2024, cladocerans, the preferred food for fish, were found in lower numbers than copepods and rotifers in the Main Basin and Southwest Bay of Medicine Lake.
- In the Main Basin, average zooplankton numbers were lower in 2020 and 2024 than in 2016 due to fewer rotifers and copepods, and in the Southwest Bay due to fewer copepods. It appears the lower numbers of rotifers were due to zebra mussel predation. It is not known whether the lower numbers of copepods were due to fish predation or to food limitation caused by zebra mussels grazing on algae.
- An Aquatic Invasive Species (AIS) Suitability Analysis indicates that the water quality of the Main Basin and Southwest Bay of Medicine Lake meets the suitability requirements for rusty crayfish, faucet snail, and spiny waterflea, but only partially meets the suitability requirements for the Chinese mystery snail.

Recommendations

- An alum application split into three phases is recommended for Medicine Lake following a carp survey and development of a feasibility study, with monitoring done in between alum applications to help determine if future alum dose adjustments are warranted. A May treatment is recommended for each phase.
- Adaptive management to further address and control AIS is recommended, including:
    - Continued annual herbicide treatment of CLP to reduce total phosphorus loading during plant die-off in mid-summer. The current LVMP allows for the treatment of 25% to 30% of the littoral area. It is expected that a whole lake treatment may become an option at some point. We recommend that current CLP efforts should continue through the LVMP process with an adaptive management approach (considering the results of plant surveys) for both CLP and Eurasian watermilfoil after alum treatment based on future observed plant occurrence frequencies.
    - Current starry stonewort treatment efforts with copper/hydrothol/komeen may minimize the spread to other lake areas to prevent a surge in extent and biomass of starry stonewort with the improved water clarity expected after the alum treatment. In addition, an adaptive management approach should be taken with other controls as new research becomes available.
    - Current and potential zebra mussel treatments (molluscicides) have either been unsuccessful or cost-prohibitive. Until a cost-effective product becomes available for long-term control of zebra mussels on a whole lake, an adaptive management approach should be taken for alternative controls as new research becomes available.
- Street sweeping and/or enhanced treatment of stormwater runoff is recommended for the direct drainage area and a few small subwatersheds that drain directly to Medicine Lake.
- Continue working with cities, businesses, and Hennepin County to improve winter maintenance practices and reduce the chloride load conveyed to Medicine Lake from streets and parking lots in its watershed, including from Crane Lake and Parkers Lake, which ultimately drain to Medicine Lake.
- Continue to provide education and information to lake users to reduce the chance of AIS introduction and movement of AIS from Medicine Lake to other lakes.
- Continue water quality and biological monitoring at a 3-year frequency.

2024 water chemistry monitoring

2024 was a very wet year. According to data from the MNDNR, April through June was the wettest on record for Minnesota. During this period, the Twin Cities received 17.3 inches of precipitation, 5.9 inches above normal. March, July, and August were also wet, with 13.5 inches of precipitation in the Twin Cities—3.4 inches above normal. As shown in Figures 1–6, phosphorus and chlorophyll *a* concentrations in the Main Basin and Southwest Bay of Medicine Lake increased, and Secchi disc depth decreased from April through August, when above normal precipitation increased stormwater runoff to the lake.

Total phosphorus levels

While phosphorus is necessary for plant and algae growth, too much phosphorus leads to excessive algae growth, decreased water clarity, and water impairment. Some common sources of phosphorus are fertilizers, leaves and grass clippings, atmospheric deposition, soil erosion, and plant die-off (such as curly-leaf pondweed). Phosphorus can also be released from lake sediments when oxygen concentrations are absent or very low.

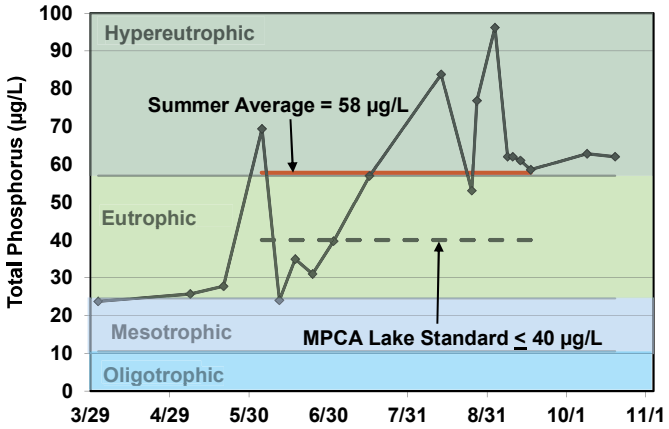
- **BCWMC/MPCA standard:** Summer average of 40 micrograms per liter (µg/L) or less.
- **Observed range:** 2024 total phosphorus concentrations in the Main Basin ranged from a low of 24 µg/L on April 1 to a high of 96 µg/L on September 3 (Figure 1). 2024 total phosphorus concentrations in the Southwest Bay ranged from a low of 23 µg/L on May 13 to a high of 84 µg/L on June 4 (Figure 2).
- **Summer average:** 2024 Main Basin and Southwest Bay summer averages were 58 µg/L and 52 µg/L, respectively, and did not meet the BCWMC/MPCA standard (Figures 1 and 2).

Chlorophyll *a* levels

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

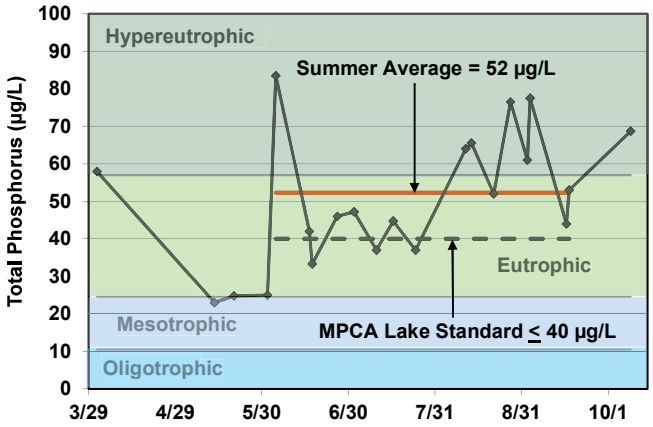
- **BCWMC/MPCA standard:** Summer average of 14 µg/L or less.
- **Observed range:** 2024 chlorophyll *a* concentrations in the Main Basin ranged from a low of 0.3 µg/L on June 4 to a high of 27.6 µg/L on September 3 (Figure 3). 2024 chlorophyll *a* concentrations in the Southwest Bay ranged from a low of 1.0 µg/L on May 13 to a high of 31.0 µg/L on August 11 (Figure 4).

Figure 1: 2024 Total Phosphorus–Main Basin



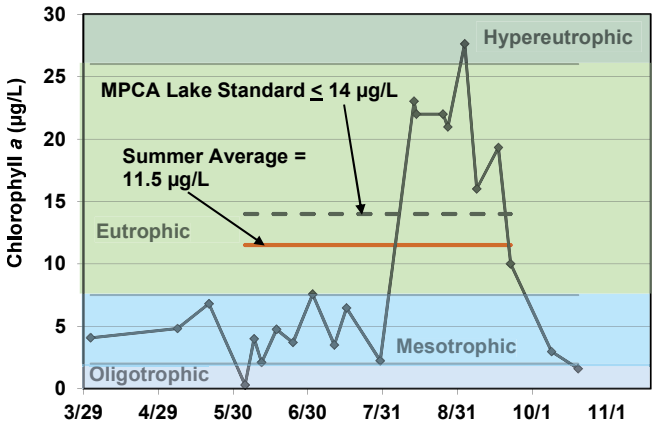
(Data collected by TRPD)

Figure 2: 2024 Total Phosphorus–Southwest Bay



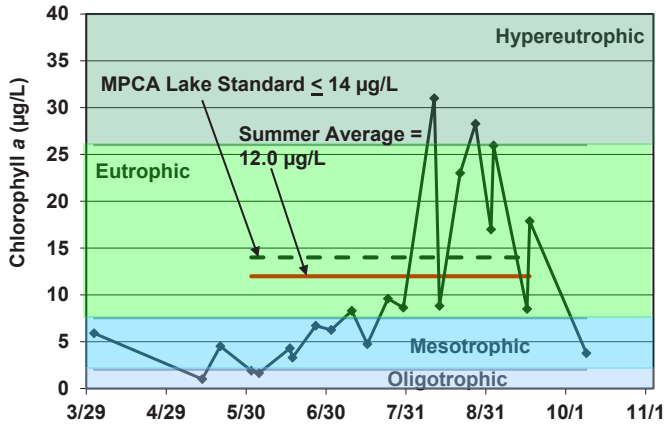
(Data collected by TRPD, funded by BCWMC)

Figure 3: 2024 Chlorophyll *a*–Main Basin



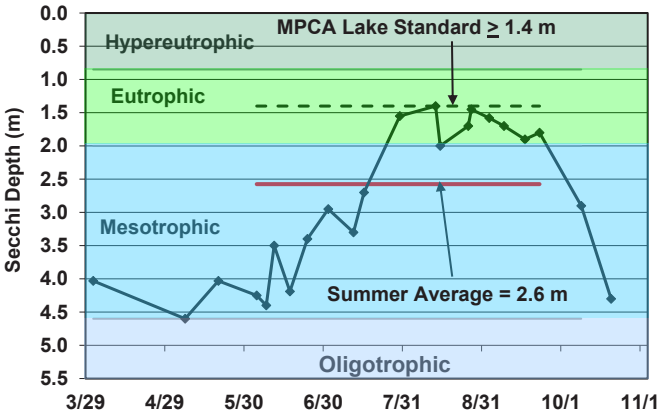
(Data collected by TRPD)

Figure 4: 2024 Chlorophyll *a*–Southwest Bay



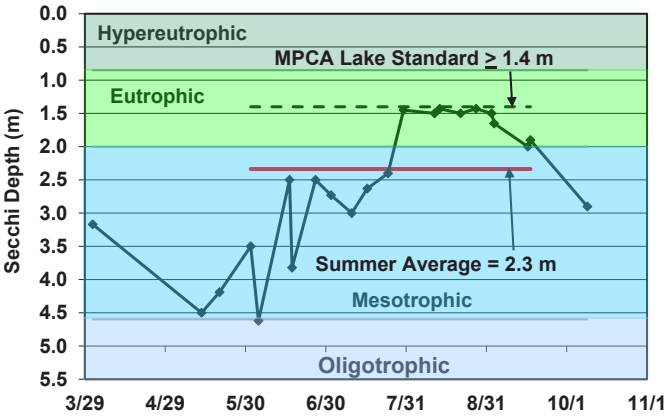
(Data collected by TRPD, funded by BCWMC)

Figure 5: 2024 Water Clarity (Secchi Depth) Main Basin



(Data collected by TRPD)

Figure 6: 2024 Water Clarity (Secchi Depth) Southwest Bay



(Data collected by TRPD, funded by BCWMC)

Definitions

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

- **Summer average:** 2024 Main Basin and Southwest Bay summer averages were 11.5 µg/L and 12.0 µg/L, respectively, and met the BCWMC/MPCA standard (Figures 3 and 4).

Water clarity

Water clarity is often affected by sediment and the number 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 clarity.

- **BCWMC/MPCA standard:** Summer average of 1.4 meters or more.
- **Observed range:** 2024 Secchi disc depth in the Main Basin ranged from a low of 1.5 meters on August 27 to a high of 4.6 meters on May 7 (Figure 5). 2024 Secchi disc depth in the Southwest Bay ranged from a low of 1.4 meters on August 13 and August 27 to a high of 4.6 meters on June 4 (Figure 6).
- **Summer average:** 2024 Main Basin and Southwest Bay summer averages were 2.6 meters and 2.3 meters, respectively, and met the BCWMC/MPCA standard (Figures 5 and 6).

Phosphorus loading from sediment

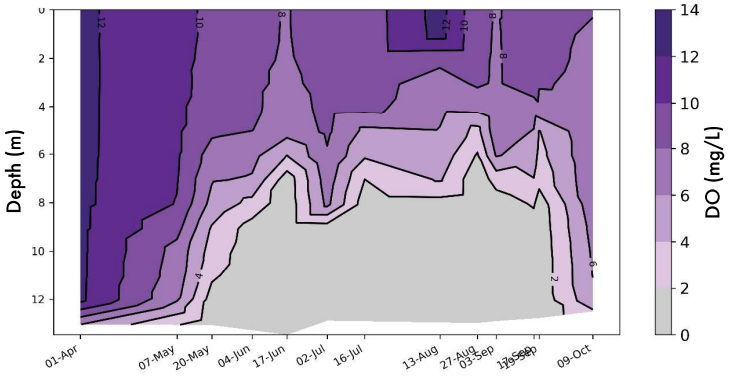
When oxygen levels are low, phosphorus stored in sediment is released (internal loading), causing higher total phosphorus concentrations in near-bottom waters. The 2010 Medicine Lake TMDL study (LimnoTech) found internal phosphorus loading from sediment to be a significant source of lake phosphorus—about 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 2025 Medicine Lake TMDL Assessment (Barr) found that near-bottom oxygen levels in Medicine Lake are typically low in the Main Basin from June through August. Phosphorus release from sediments during this same period causes near-bottom phosphorus concentrations to consistently increase during the summer. Temperature and dissolved oxygen data indicate that the lake typically starts to mix between late August and early September, resulting in increased phosphorus concentrations at the surface and lower phosphorus concentrations near the bottom (in the hypolimnion).

In 2024, near-bottom oxygen levels were low (<2 mg/L) in the Main Basin and Southwest Bay from May until September when the lake began to mix (Figures 7–8). Near-bottom total phosphorus concentrations in the Main Basin and Southwest Bay increased from May until September (Figures 9–10). When the lake began to mix in September, near-bottom total phosphorus concentrations decreased in the Main Basin but remained high in the Southwest Bay.

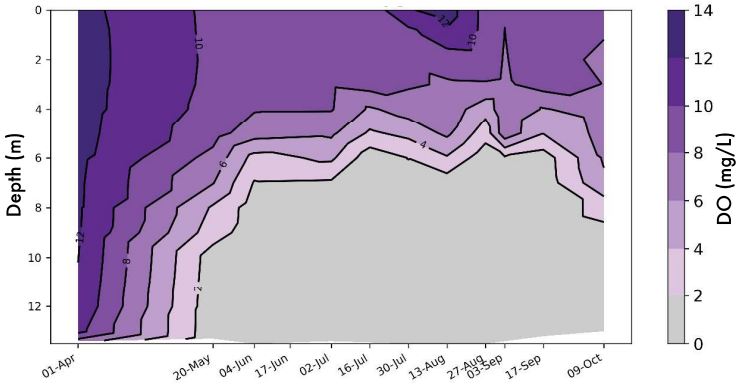


Figure 7: 2024 Main Basin–Dissolved Oxygen Isopleth



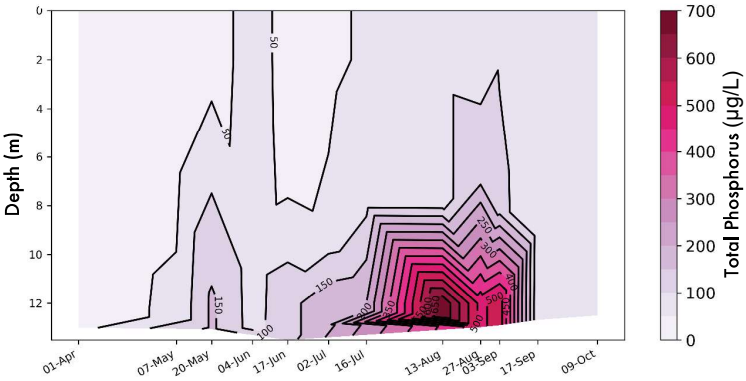
(Data collected by TRPD)

Figure 8: 2024 Southwest Bay–Dissolved Oxygen Isopleth



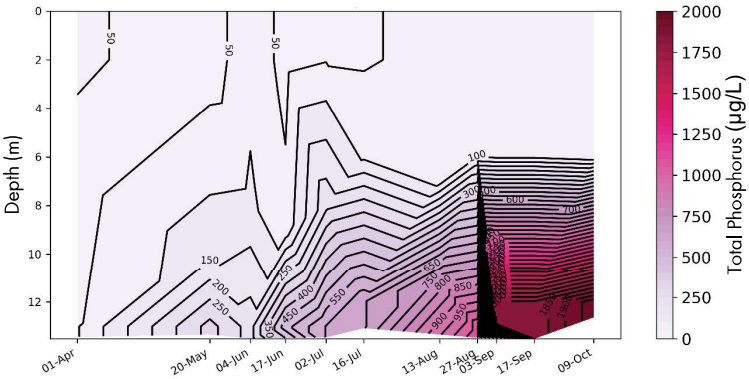
(Data collected by TRPD, funded by BCWMC)

Figure 9: 2024 Main Basin–Total Phosphorus Isopleth



(Data collected by TRPD)

Figure 10: 2024 Southwest Bay–Total Phosphorus Isopleth



(Data collected by TRPD, funded by BCWMC)

Water chemistry monitoring from 1972 to 2024: 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 depth from the Main Basin and Southwest Bay from 1972–2024 are shown in Figures 11–16. During the period of record, the following percentage of summer averages failed to meet Minnesota State Water Quality Standards for lakes in the North Central Hardwood Forest Ecoregion published in Minnesota Rules 7050 (Minn. R. Ch. 7050.0222 Subp 4):

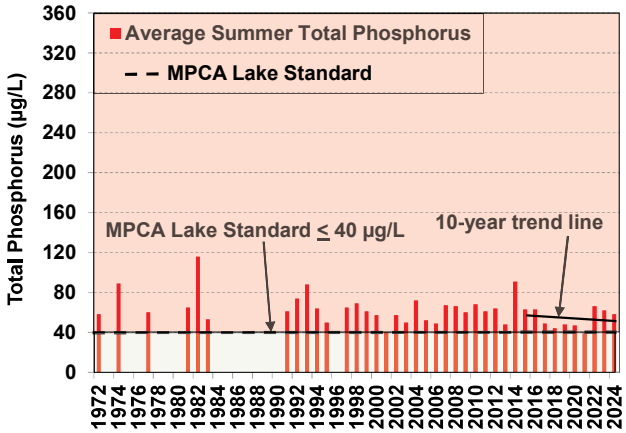
- 95 percent of Main Basin and 92 percent of Southwest Bay total phosphorus
- 95 percent of Main Basin and 88 percent of Southwest Bay chlorophyll *a*
- 26 percent of Main Basin and 17 percent of Southwest Bay Secchi disc

Trend analyses over the past 10 years show:

- Declining summer average total phosphorus concentrations in the Main Basin and Southwest Bay.
- Declining summer average chlorophyll *a* concentrations in the Main Basin and Southwest Bay.
- Increasing summer average Secchi disc transparency in the Main Basin and Southwest Bay.

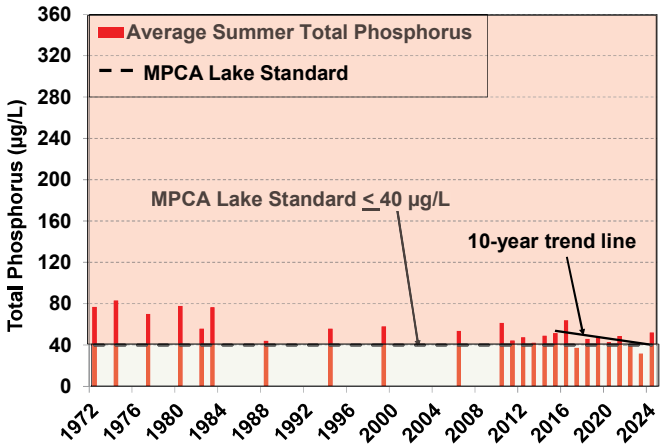
The changes in total phosphorus concentrations are not significant at the 95th percent confidence level, but the changes in chlorophyll *a* and Secchi disc are statistically significant at the 95th percent confidence level. Recent data collected by TRPD indicate that the statistically significant reductions in chlorophyll *a* and improvements in Secchi disc transparency are likely due to the increase in zebra mussels, which filter out certain types of algae.

Figure 11: Historical Total Phosphorus–Main Basin



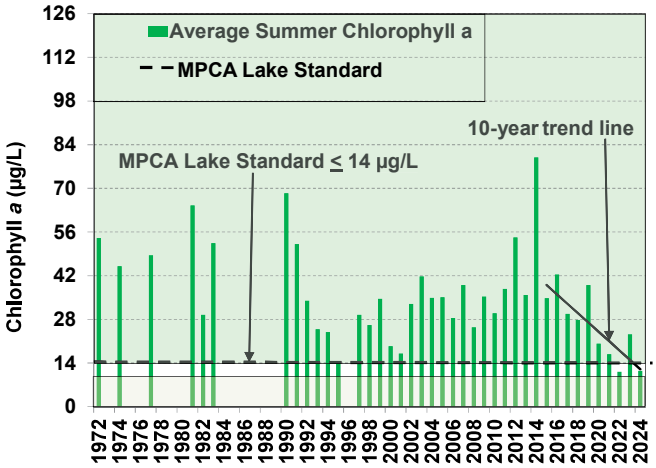
(Data collected by TRPD)

Figure 12: Historical Total Phosphorus–Southwest Bay



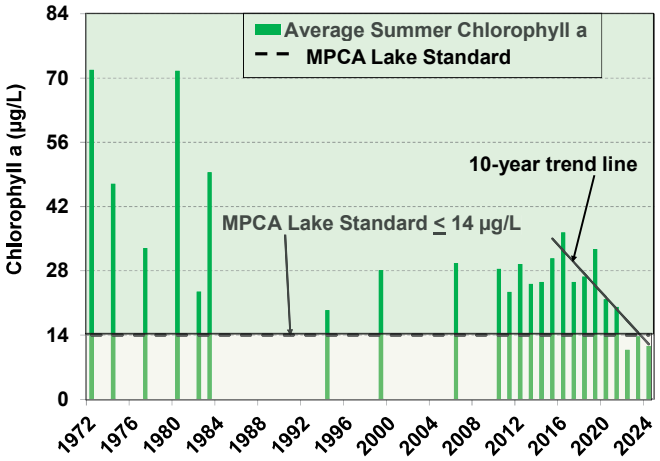
(Data collected by TRPD, funded by BCWMC)

Figure 13: Historical Total Chlorophyll *a*–Main Basin



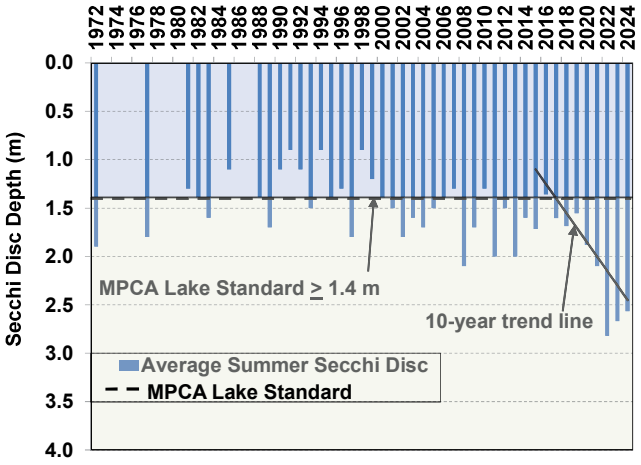
(Data collected by TRPD)

Figure 14: Historical Total Chlorophyll *a*–Southwest Bay



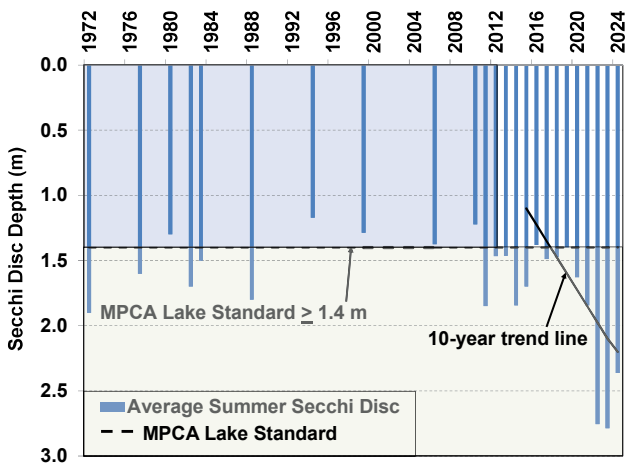
(Data collected by TRPD, funded by BCWMC)

Figure 15: Historical Water Clarity (Secchi Depth)—Main Basin



(Data collected by TRPD)

Figure 16: Historical Water Clarity (Secchi Depth)—Southwest Bay



(Data collected by TRPD, funded by BCWMC)

Chloride levels

Chloride concentrations in area lakes have increased since the early 1990s, when many government agencies switched from sand or sand/salt mixtures to salt for winter road maintenance. When snow and ice melt, the salt goes with it, washing into lakes, streams, wetlands, and groundwater. It only takes 1 teaspoon of road salt to pollute 5 gallons of water, so it can no longer support freshwater life. That pollution is essentially permanent, as there is no easy or affordable way to remove chloride from water.

Because high chloride concentrations can harm fish, zooplankton, and plant life, the MPCA established maximum and chronic chloride standards. The maximum standard is the highest concentration of chloride that aquatic organisms can be exposed to for a brief time with zero-to-slight mortality. The chronic standard is the highest chloride concentration that aquatic life can be exposed to indefinitely without causing chronic toxicity. Chronic toxicity is defined as a stimulus that lingers or continues for a long period, often one-tenth of the life span or more. Chronic effects can be mortality, reduced growth, reproduction impairment, harmful changes in behavior, and other nonlethal effects. A lake is considered impaired if two or more measurements exceed the chronic criterion (230 mg/L) within a 3-year period or if one measurement exceeds the maximum criterion (860 mg/L).

Figures 17 and 18 show that all measurements in the Main Basin and Southwest Bay from 2016 through 2024 were well below the maximum chloride standard and were also below the chronic chloride standard, except for:

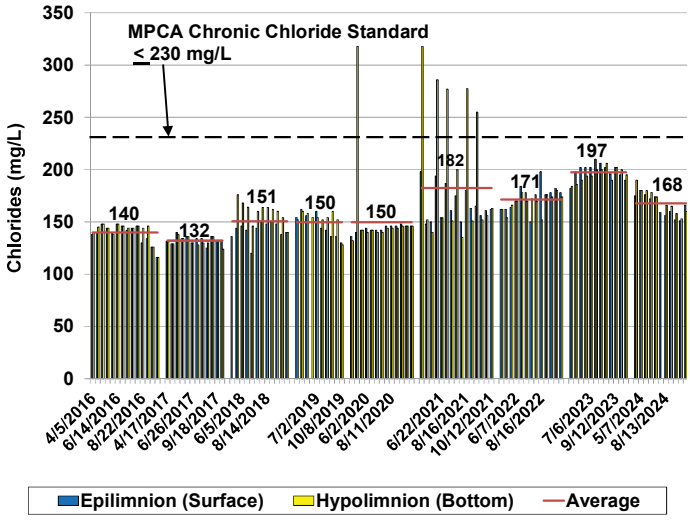
- Six measurements from the Main Basin hypolimnion (bottom) (one in 2020 and five in 2021).
- One measurement from the Southwest Bay in 2024.

Because six Medicine Lake chloride measurements exceeded the chronic criterion during 2020–2021, the lake met the MPCA impairment criterion of two or more measurements exceeding the chronic criterion within a 3-year period. The lake did not meet the MPCA impairment criterion in 2022–2023 since only one measurement exceeded the chronic criterion within the 3-year period.

Medicine Lake was recently classified by the State as a “high-risk water” for high chloride levels. While the lake has generally met MPCA standards since 2022, efforts should be made to reduce the chloride load to Medicine Lake, Parkers Lake, and Crane Lake. Both Parkers Lake and Crane Lake are chloride impaired and drain into Medicine Lake, along with the lake’s highly urbanized watershed.

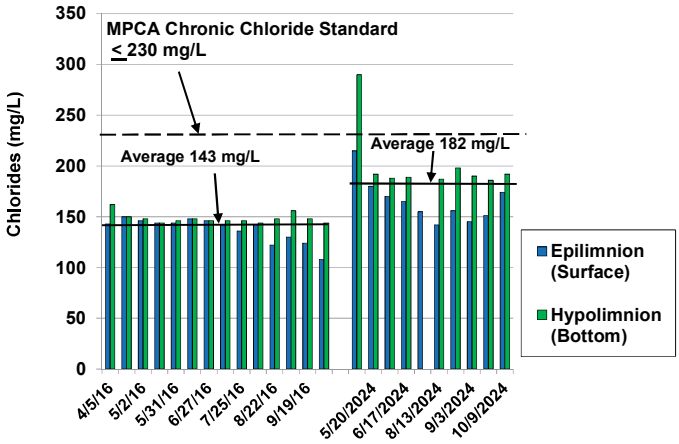
The 2024 average annual chloride concentration in the Main Basin of Medicine Lake (168 mg/L) was within the range of previous years (132 mg/L to 197 mg/L) and was lower than concentrations measured from 2021 through 2023 (171 mg/L to 197 mg/L). In the Southwest Bay, the 2024 average annual chloride concentration of 182 mg/L was higher than the 2016 average annual chloride concentration of 143 mg/L.

Figure 17: Historical Chloride–Main Basin



(Data collected by TRPD)

Figure 18: Historical Chloride–Southwest Bay



(Data collected by TRPD, funded by BCWMC)

Macrophytes

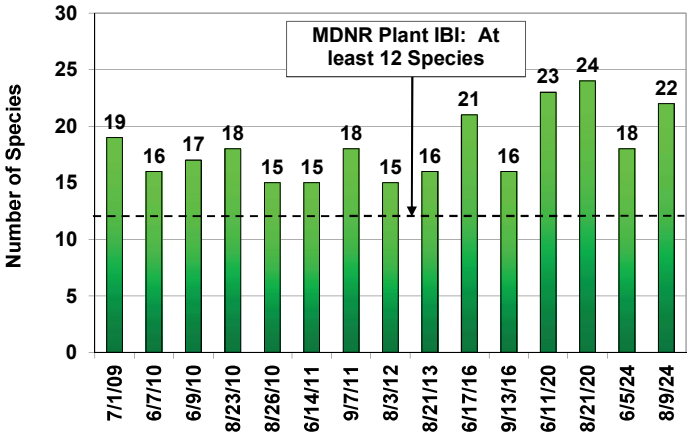
Lake Plant Eutrophication Index of Biological Integrity (IBI)

Eutrophication (excessive nutrients) may have detrimental effects on a lake, including reductions in the quantity and diversity of aquatic plants. The MNDNR developed a Lake Plant Eutrophication Index of Biological Integrity (IBI) to measure the response of a lake plant community to eutrophication. The Lake Plant Eutrophication 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). The MNDNR has determined a threshold for each metric. Lakes that score below the thresholds contain degraded plant communities and are likely stressed from anthropogenic (human-caused) eutrophication.

Plant survey data from 2009 to 2024 were assessed to determine plant IBI trends. Figures 19 and 20 show Medicine Lake FQI scores and the number of species for that period compared to the MNDNR Plant IBI threshold.

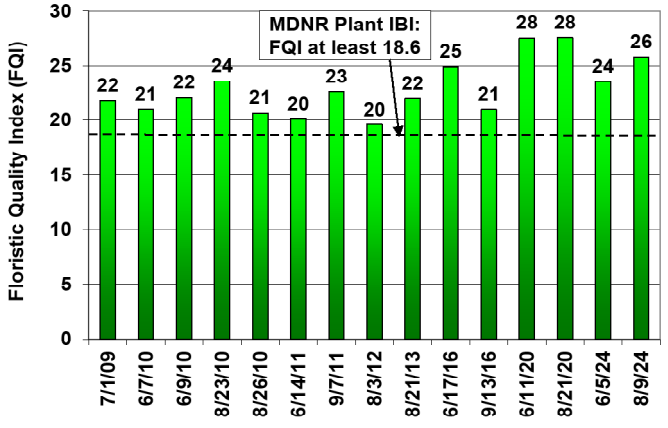
- **Number of species:** A deeper water lake, such as Medicine Lake, meets the MNDNR Plant IBI threshold when it has 12 or more species. During the period examined, the number of species in Medicine Lake ranged from 15 to 24 (Figure 19), meeting or exceeding the MNDNR Plant IBI threshold during the entire period of record. Eighteen to 22 species were observed in the lake in 2024.
- **FQI values (quality of species):** The MNDNR Plant IBI threshold for deeper water lakes, as measured by FQI, is a minimum value of 18.6. During the period examined, FQI values in Medicine Lake ranged from 20 to 28, exceeding the MNDNR Plant IBI threshold during the entire period of record (Figure 20). FQI scores ranged from 24 to 26 in 2024.

Figure 19: Species Richness from 2009–2024



(Data collected by TRPD)

Figure 20: FQI of Plant Community from 2009–2024



(Data collected by TRPD)

Aquatic invasive species

In 2024, four invasive species were found in Medicine Lake.

Curly-leaf pondweed *(Potamogeton crispus)*

Curly-leaf pondweed (CLP) has been a consistent problem in Medicine Lake and continued to be a problem in 2024. With the exception of 2007, the herbicide endothall was used to control the plant each year from 2004 through 2015, and the herbicide diquat was used to control the plant annually from 2018 through 2021 (Figure 21). An LVMP to manage CLP in Medicine Lake was created by the TRPD and approved by the MNDNR in April of 2022. The management goals of the LVMP were to maintain CLP below 25 percent frequency of occurrence, maintain a diverse native species population, and reduce CLP turion density. From 2022 through 2024, CLP was treated with two herbicides, diquat and galleon, and treatment areas approximately doubled compared with areas treated from 2019 through 2021 (Figure 21).

The 2022 through 2024 treatments reduced June CLP frequency of occurrence from 40 percent in 2022 to 24 percent in 2024 (Figure 22) and average turion density from 966 turions per square meter in 2022 to 262 turions per square meter in 2024. The reduction of CLP frequency below 25 percent and the reduction of turion density met the management goals of the LVMP. However, the 2024 CLP frequency of 24 percent still exceeded the goal of 22 percent frequency, set in the 2010 TMDL implementation plan for Medicine Lake.

Eurasian watermilfoil *(Myriophyllum spicatum)*

Eurasian watermilfoil (EWM) was not problematic in 2024, ranging in frequency from 13 to 19 percent of the sample locations. From 2004 through 2024, EWM frequency has ranged from 0 to 70 percent (Figure 23). Although EWM has not been targeted for herbicide treatment, the lower frequencies since 2018 indicate the diquat treatments of CLP have also been effective in controlling EWM.

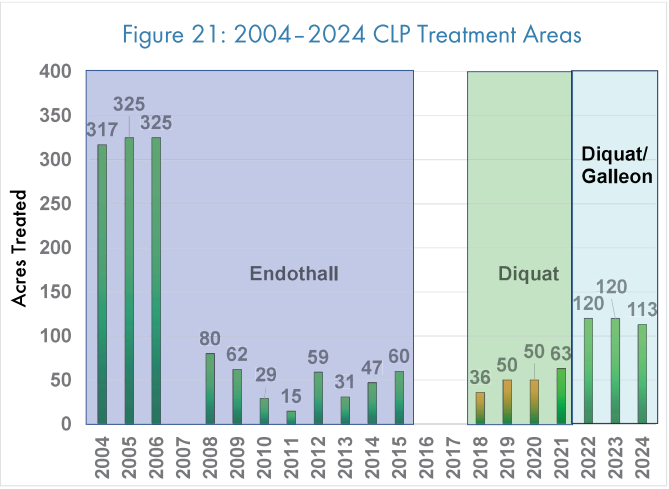


Curly-leaf pondweed



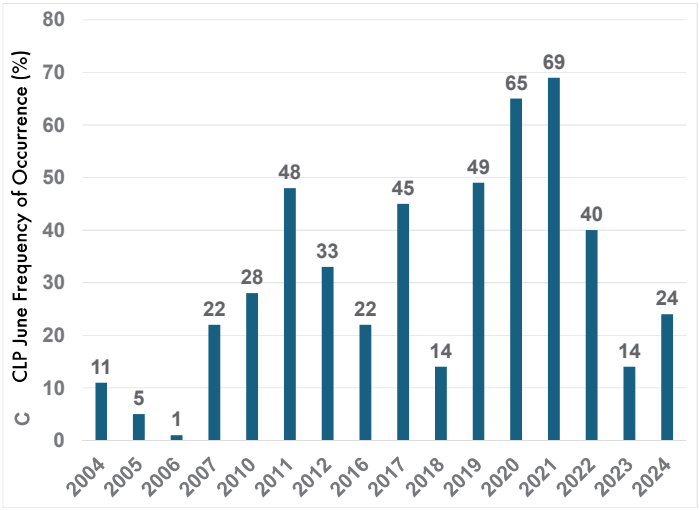
Eurasian watermilfoil

Figure 21: 2004–2024 CLP Treatment Areas



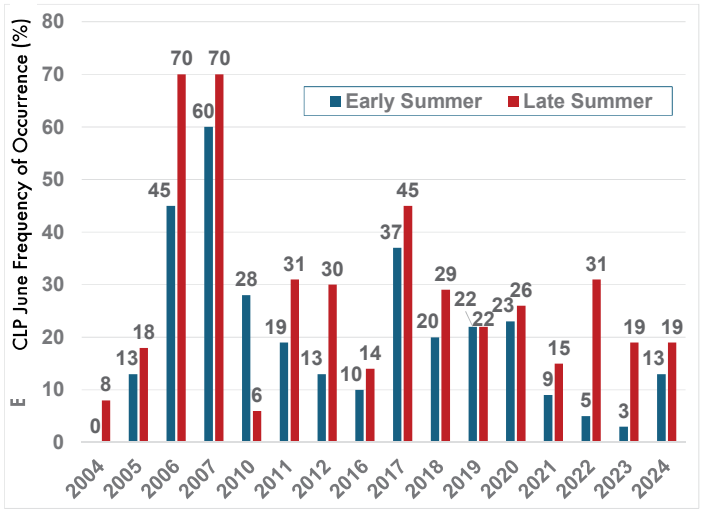
(Data provided by TRPD)

Figure 22: CLP Frequency of Occurrence (%)



(Data collected by TRPD)

Figure 23: EWM Frequency of Occurrence (%)



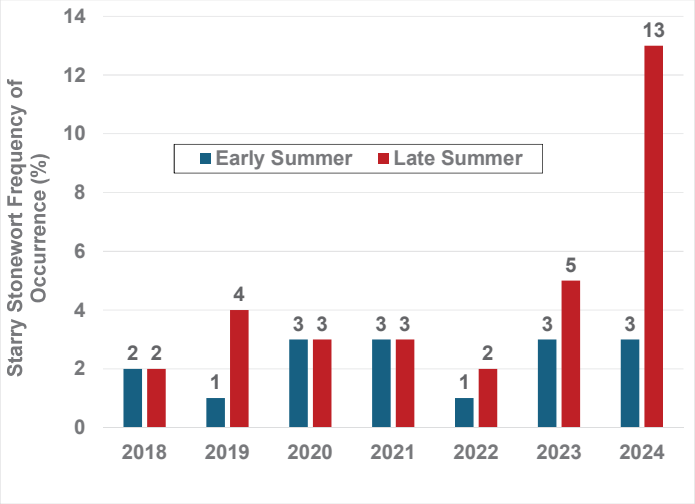
(Data collected by TRPD)

Starry stonewort *(Nitellopsis obtusa)*

Although starry stonewort frequency remained at low levels from when it was first observed in the lake in 2018 until June 2024, its frequency increased between June and August 2024. The MNDNR completed a plant survey on August 1, 2018, and confirmed that a 14-acre area of starry stonewort was present on the northern side of the lake near the boat landing and swimming beach. The MNDNR funded herbicide treatment of the plant (copper sulfate and endothall) from 2018 through 2020. Despite the treatments, a 2020 plant survey documented that the plant had spread to areas along the western and eastern sides of the lake, but the frequency of occurrence remained low through 2023, ranging from 1 to 3 percent. However, starry stonewort frequency of occurrence increased in 2024, from 3 percent in June to 13 percent in August (Figure 24).

The increased frequency is concerning because starry stonewort can produce dense mats at the water's surface that interfere with boating, fishing, swimming, and other recreation and may choke out native plant communities.

Figure 24: Starry Stonewort Frequency of Occurrence (%)



(Data collected by TRPD)


Starry stonewort

Zebra mussels *(Dreissina polymorpha)*

Zebra mussels have increased in extent and number since they were first observed in Medicine Lake in 2017, when a resident living on the south end of the lake found a zebra mussel on a dock. According to surveys performed by TRPD, the number of zebra mussels:

- Remained low through 2019 (about 1 per hour found in survey).
- Greatly increased in 2020 (31 per hour).
- Greatly increased in 2021 (1,679 per hour).
- Increased in 2022 (2,444 per hour).
- Declined in 2023 (1,780 per hour, Figure 25).

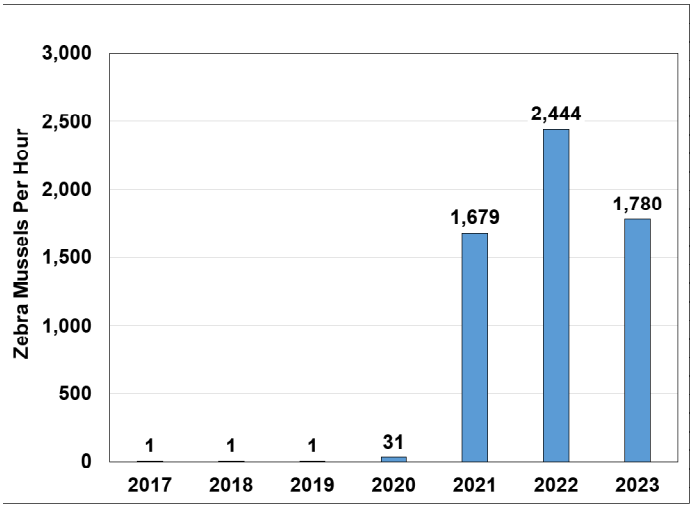
A 2024 zebra mussel survey was not conducted.

The 2020 zebra mussel survey documented that zebra mussels had spread from the southern end of the lake to the eastern and northern sides of the lake. As shown in Figures 26 and 27, zebra mussel veligers (planktonic larvae) have been observed in zooplankton samples collected from the lake in 2020 (Main Basin) and 2024 (Main Basin and Southwest Bay).



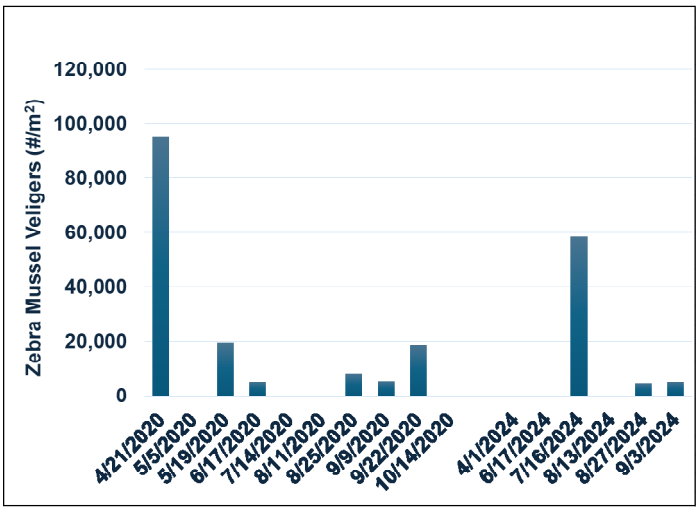
Zebra mussels

Figure 25: Zebra Mussel Surveys



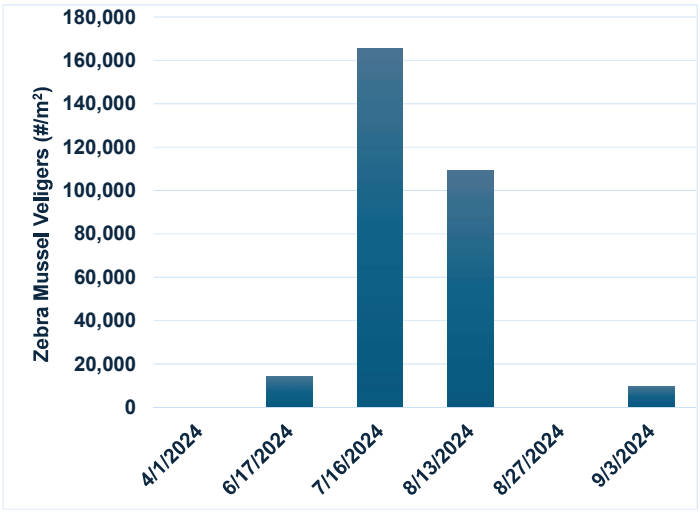
(Samples collected by TRPD)

Figure 26: 2020 and 2024 Zebra Mussel Veligers—Main Basin



(Samples collected by TRPD, analyzed by BCWMC)

Figure 27: 2024 Zebra Mussel Veligers—Southwest Bay



(Samples collected by TRPD, funded and analyzed by BCWMC)

Phytoplankton and Zooplankton

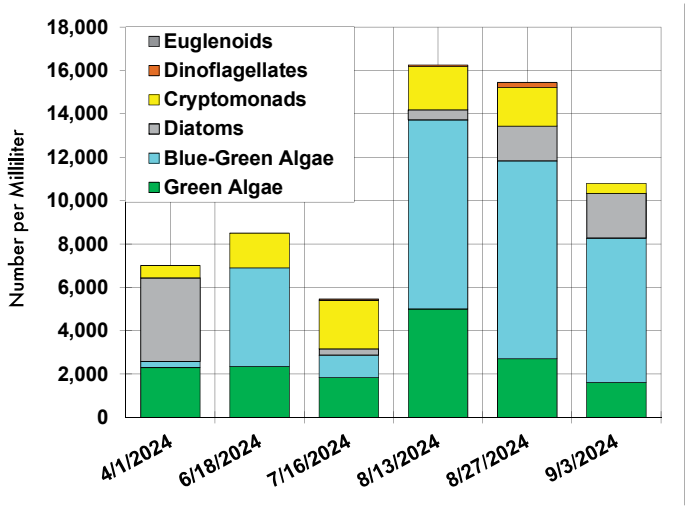
Phytoplankton, or algae, are small aquatic plants naturally present in lakes. Phytoplankton derive energy from the sun through photosynthesis and provide food for several types of aquatic organisms, including zooplankton (microscopic animals), which are, in turn, eaten by fish. An inadequate phytoplankton population limits a lake's zooplankton population and indirectly limits fish production in a lake. Excess phytoplankton can reduce water clarity.

Samples of phytoplankton were collected from Medicine Lake to evaluate water quality and the quality of food available to zooplankton. In 2024, diatoms, cryptomonads, and green algae, good food sources for the lake's zooplankton, were present in the Main Basin and the Southwest Bay throughout the monitored period. Phytoplankton numbers in the Main Basin and Southwest Bay declined from June through July, increased in August, and remained at higher numbers in September due to increased blue-green algae. While blue-green numbers increased with higher concentrations of phosphorus during August and September, other types of algae did not (Figures 28 and 29).

It appears that zebra mussel grazing of algae has reduced phytoplankton numbers in Medicine Lake by about 50 percent from 2016 to 2024. As shown in Figure 30 and Figure 31, average phytoplankton numbers declined from 21,826 units per milliliter in 2016 to 10,578 units per milliliter in 2024 in the Main Basin and from 20,332 units per milliliter in 2016 to 10,970 units per milliliter in 2024 in the Southwest Bay. In spring, zebra mussel filtration rates rise dramatically as waters warm from 41°F to 50°F and then stabilize. The declining phytoplankton numbers are consistent with declining chlorophyll *a* concentrations during this period.

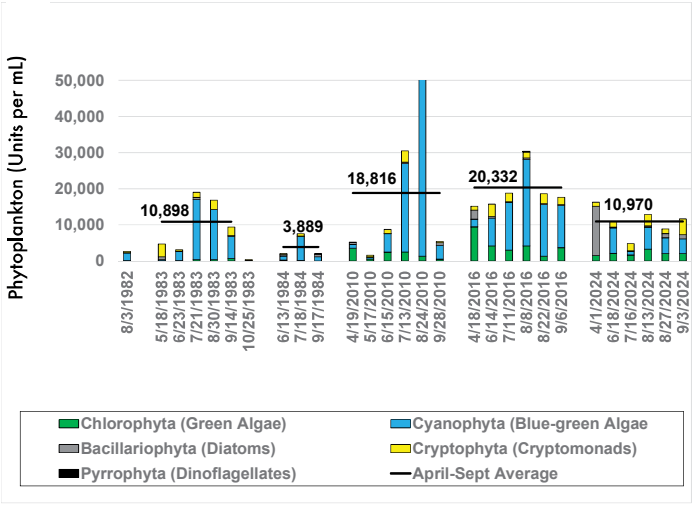
As shown in Figure 32, it appears that zebra mussel grazing of green algae, a preferred food for zebra mussels, reduced early spring numbers in the Main Basin of Medicine Lake by more than an order of magnitude from 2016 (15,335 units per mL) to 2020 (1,493 units per mL) and kept numbers low in 2024 (2,135 units per mL). In the Southwest Bay, early spring numbers were reduced by more than 80 percent from 2016 (9,477 units per mL) to 2024 (1,551 units per mL) (Figure 33).

Figure 28: 2024 Phytoplankton per Milliliter–Main Basin



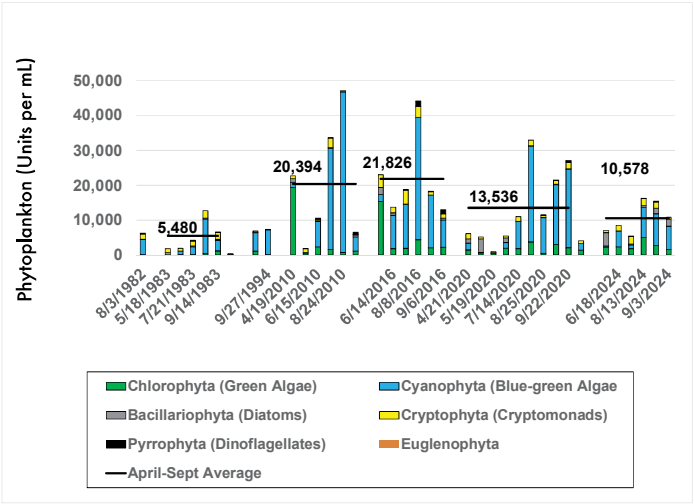
(Samples collected by TRPD, analyzed by BCWMC)

Figure 29: 2024 Phytoplankton per Milliliter–Southwest Bay



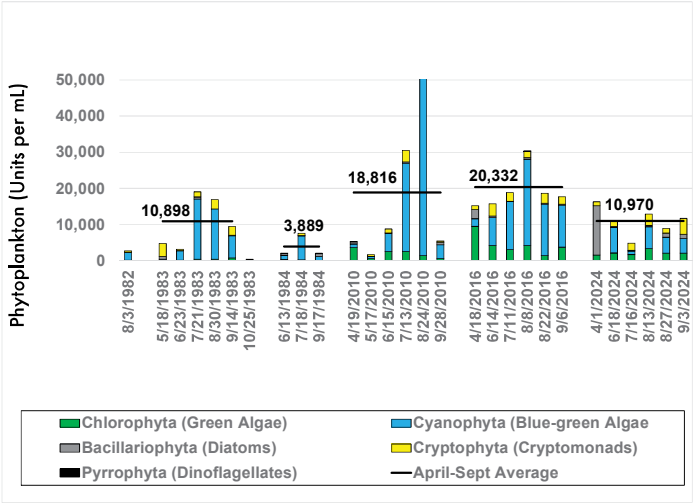
(Samples collected by TRPD, funded and analyzed by BCWMC)

Figure 30: 1982–2024 Phytoplankton–Main Basin



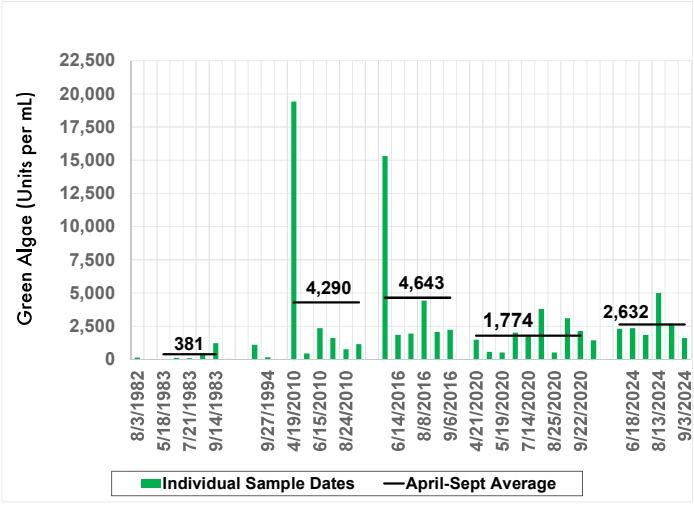
(Samples collected by TRPD, analyzed by BCWMC)

Figure 31: 1982–2024 Phytoplankton–Southwest Bay



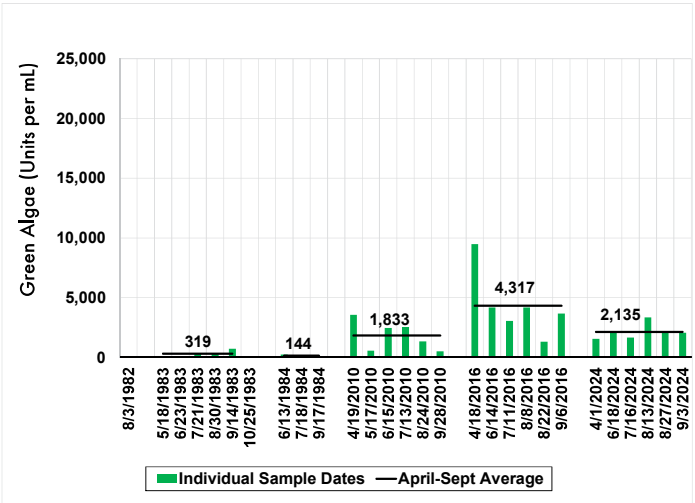
(Samples collected by TRPD, funded and analyzed by BCWMC)

Figure 32: 1982–2024 Green Algae–Main Basin



(Samples collected by TRPD, analyzed by BCWMC)

Figure 33: 1982–2024 Green Algae–Southwest Bay

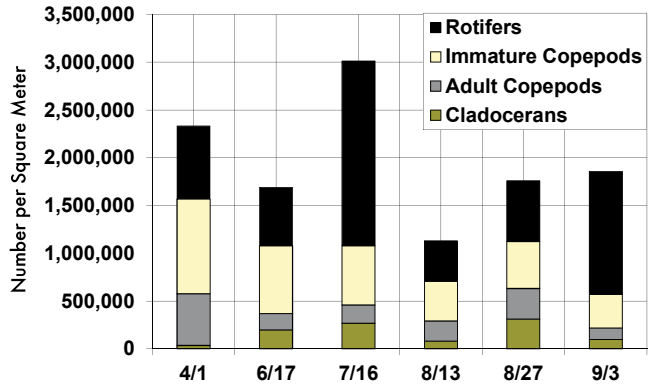


(Samples collected by TRPD, funded and analyzed by BCWMC)

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 valuable food for planktivorous fish and other organisms.

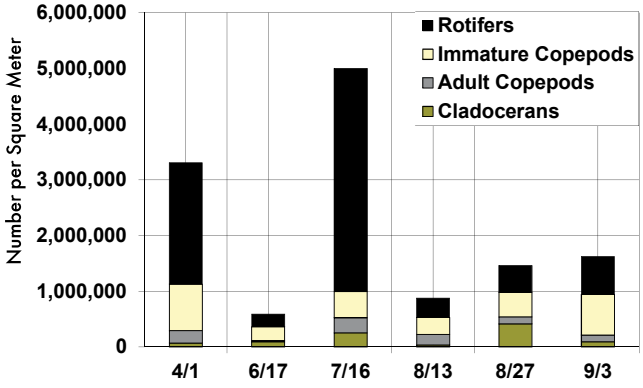
In 2024, cladocerans, the preferred food for fish, were found in lower numbers than copepods and rotifers in the Main Basin and Southwest Bay (Figures 34 and 35). Average zooplankton numbers were lower in 2020 and 2024 than 2016 in the Main Basin (Figure 36) due to fewer rotifers (Figure 38) and copepods (Figure 40). Average zooplankton numbers were lower in 2024 than 2016 in the Southwest Bay (Figure 37) primarily due to fewer copepods (Figure 41). The lower numbers of rotifers in the Main Basin were likely due to zebra mussel predation. Zebra mussels primarily feed on algae, but also consume rotifers, which are small. It is not known whether the lower numbers of copepods in the Main Basin and Southwest Bay were due to fish predation or to food limitation caused by zebra mussels grazing on algae.

Figure 34: 2024 Zooplankton—Main Basin



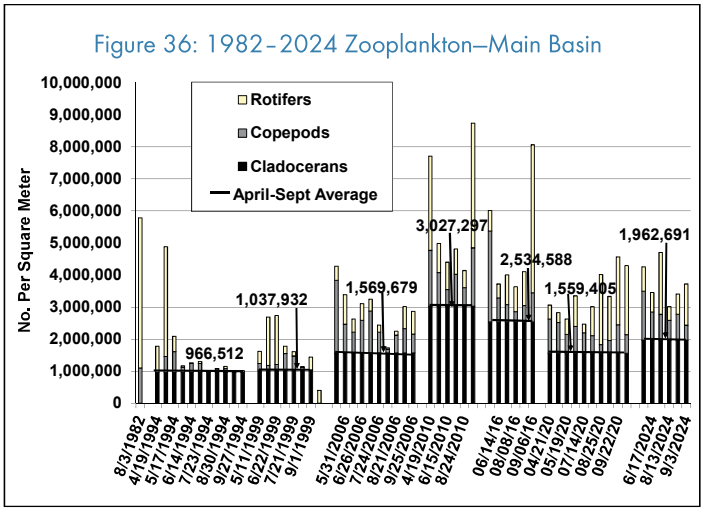
(Samples collected by TRPD, analyzed by BCWMC)

Figure 35: 1982–2024 Zooplankton—Southwest Bay



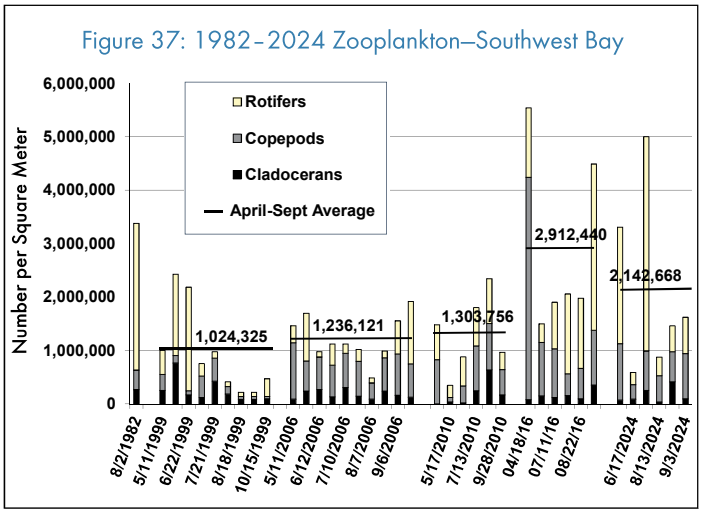
(Samples collected by TRPD, funded and analyzed by BCWMC)

Figure 36: 1982–2024 Zooplankton—Main Basin

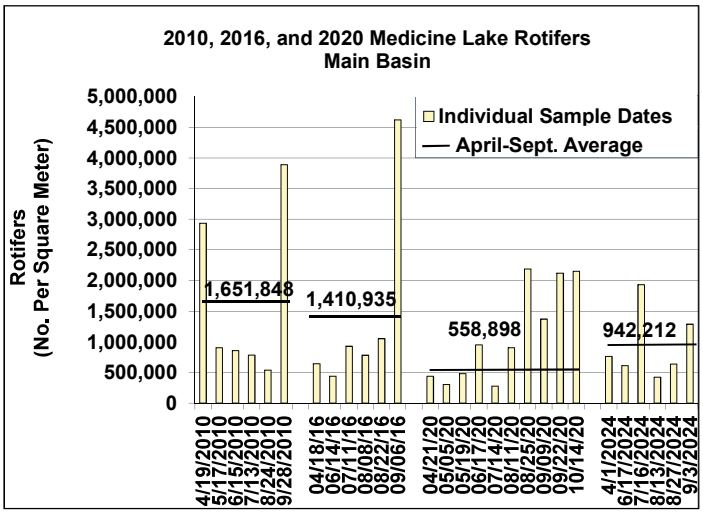


(Samples collected by TRPD, analyzed by BCWMC)

Figure 37: 1982–2024 Zooplankton—Southwest Bay

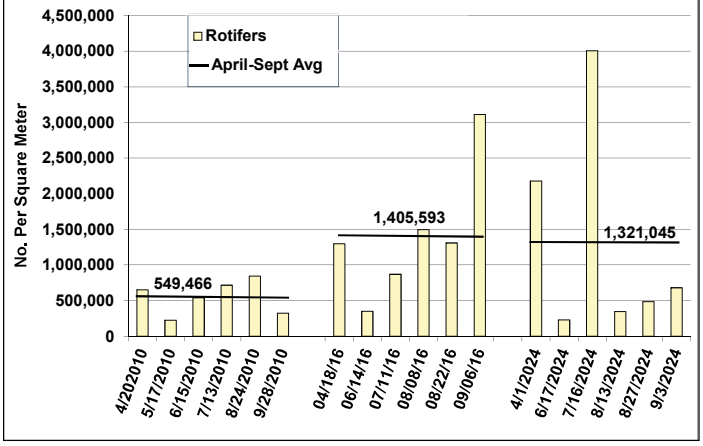


(Samples collected by TRPD, funded and analyzed by BCWMC)



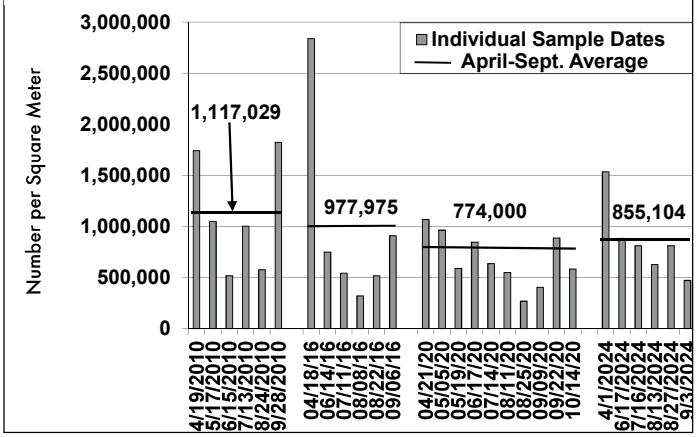
(Samples collected by TRPD, analyzed by BCWMC)

Figure 39: 2010, 2016, and 2024 Rotifers–Southwest Bay



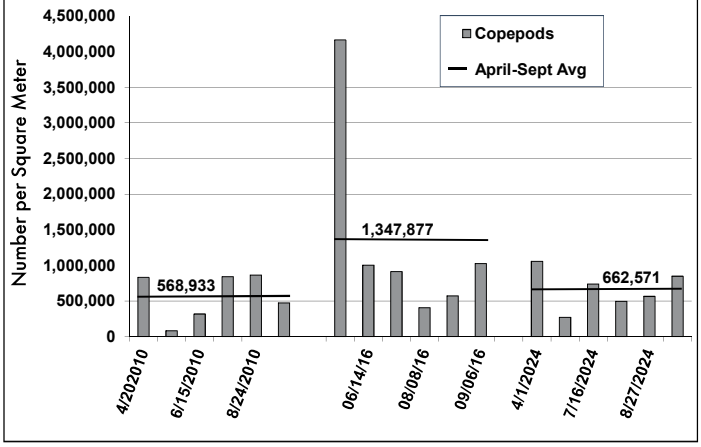
(Samples collected by TRPD, funded and analyzed by BCWMC)

Figure 40: 2010, 2016, 2020, and 2024 Copepods–Main Basin



(Samples collected by TRPD, analyzed by BCWMC)

Figure 41: 2010, 2016, and 2024 Copepods–Southwest Bay



(Samples collected by TRPD, funded and analyzed by BCWMC)

Suitability of Medicine Lake for Aquatic Invasive Species (AIS)

Many aquatic invasive species (AIS) residing in Minnesota have not yet been observed in Medicine Lake, but could be introduced. A suitability analysis was performed to evaluate whether Medicine Lake water quality would support the introduction of four AIS (spiny waterflea, faucet snail, Chinese mystery snail, and rusty crayfish).

The analysis compared 2024 water quality in the Main Basin and Southwest Bay with the water quality conditions required for each species, specifically evaluating water temperature, pH, dissolved oxygen, specific conductance, calcium, magnesium, and sodium. The results indicate that the water quality of the Main Basin and Southwest Bay of Medicine Lake meets the suitability requirements for rusty crayfish, faucet snail, and spiny waterflea, but only partially meets the suitability requirements for the Chinese mystery snail. Hence, the Chinese Mystery Snail would likely survive but may not thrive in Medicine Lake.



Minnesota Watersheds
2025 Annual Meeting on Resolutions and Petitions
August 25, 2025
Via Zoom

Member Meeting Materials

Enclosed are the following items:

1. Notice of Annual Meeting on Resolutions and Petitions
2. Delegate Appointment Form
3. List of Delegates Appointed for the March Special Meeting
4. Annual Meeting on Resolutions and Petitions Agenda
5. Proposed Legislative Platform Updates
6. Proposed Resolutions
7. Active Resolutions

Please note that the Delegate Appointment Forms are REQUIRED. For the Annual Meeting on Resolutions and Petitions to be held, a quorum of 22 delegates MUST be present and must include at least one delegate from each of the three regions. Please return your Delegate Appointment Forms to Jan Voit at jvoit@mnwatersheds.com at your earliest convenience.

Delegates appointed for the special meeting may serve as delegates for the Annual Meeting on Resolutions and Petitions and the Annual Business Meeting. *Email confirmation of those delegates is required from each organization*.

This packet has been distributed to administrators and managers via email. No paper copies of this packet will be sent via the U.S. Postal Service.

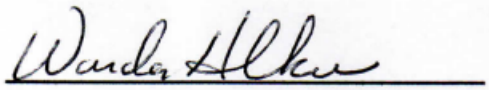
We are looking forward to your participation in this year's virtual Annual Meeting on Resolutions and Petitions!

Minnesota Watersheds
2025 Annual Meeting on Resolutions and Petitions Notice

NOTICE IS HEREBY GIVEN that the 2025 Annual Meeting on Resolutions and Petitions will be held by Zoom beginning at 10:00 a.m. on Monday, August 25 for the following purposes:

1. to consider and act upon proposed Legislative Platform updates; and
2. to consider and act upon proposed Resolutions.

Sincerely,



Wanda Holker
Secretary

Minnesota Watersheds
2025 Delegate Appointment Form

The _____ hereby certifies that it is
name of watershed organization
a watershed district or watershed management organization duly established and in good standing pursuant to Minnesota Statutes 103B or 103D and is a member of Minnesota Watersheds for the year 2025.

The _____ hereby further certifies
name of watershed organization
the following individuals have been appointed as delegates, or as an alternate delegate, all of whom are managers in good standing with their respective watershed district or watershed management organization.

Delegate #1: _____

Delegate #2: _____

Alternate: _____

Authorized by: _____
Signature **Date**

_____
Title

** Please return this form to mnwatershed@gmail.com at your earliest convenience. **

REGION 1	**Delegate 1**	**Delegate 2**	**Alternate**
Bois de Sioux Watershed District	Linda Vavra	Allen Wold	
Buffalo-Red River Watershed District	Peter Fjestad	Cathy Affield	
Cormorant Lakes Watershed District			
Joe River Watershed District			
Middle-Snake-Tamarac Rivers	Bill Petersen	Lein Schiller	Keith Szczepanski
Pelican River Watershed District	Laurie Olson	Chris Jasken	Charlie Jasken
Red Lake Watershed District	LeRoy Ose	Gene Tiedemann	Allan Page
Roseau River Watershed District	Jim Johnson	LaVerne Voll	
Sand Hill River Watershed District	Don Andringa		
Two Rivers Watershed District	Gerald Olsonawski		
Warroad River Watershed District			
Wild Rice Watershed District	Mike Christensen	Duane Erickson	Curt Johannsen
REGION 2	**Delegate 1**	**Delegate 2**	**Alternate**
Buffalo Creek Watershed District			
Cedar River Watershed District			
Clearwater River Watershed District			
Crooked Creek Watershed District			
High Island Creek Watershed District			
Kanaranzi-Little Rock Watershed District			
Lac Qui Parle-Yellow Bank Watershed District	Andrew Weber		
Middle Fork Crow River Watershed District	Ruth Schaefer	Jeff Gertgen	
North Fork Crow River Watershed District	Bob Brauchler	Jim Wuertz	Jim Barchenger
Okabena Ocheda Watershed District			
Shell Rock River Watershed District	Brad Kramer	Joe Pacovsky	Mike Lee
Turtle Creek Watershed District			
Upper Minnesota River Watershed District	Wanda Holker		
Yellow Medicine River Watershed District	Bill Briggs	Randy Kamrath	Darwyn Bach
REGION 3	**Delegate 1**	**Delegate 2**	**Alternate**
Bassett Creek WMC	Joan Hauer	Shaun Kennedy	RJ Twiford
Brown's Creek Watershed District	Celia Wirth	Klayton Eckles	Chuck LeRoux
Capitol Region Watershed District	Shawn Mazanec	Hawona Sullivan Janzen	Joe Collins
Carnelian Marine St. Croix Watershed District	Paul Richert		
Comfort Lake - Forest Lake Watershed District	Jackie Anderson	Steve Schmaltz	
Coon Creek Watershed District	Jim Hafner		
Minnehaha Creek Watershed District	Sherry White	William Olson	Eugene Maxwell
Mississippi WMO			
Nine Mile Creek Watershed District	Peggy Kvam	Chris-Ann Lauria	
Prior Lake Spring Lake Watershed District	Ben Burnett	Bruce Loney	
Ramsey Washington Metro Watershed District	Val Eisele	Benjamin Karp	
Rice Creek Watershed District	Mike Bradley	Marcie Weinandt	
Riley Purgatory Bluff Creek Watershed District	David Ziegler	Jill Crafton	Tom Duevel
South Washington Watershed District	Mike Madigan	Brian Johnson	
Vadnais Lake Area WMO			
Valley Branch Watershed District	Don Pereira	Ed Marchan	John Brach

MINNESOTA WATERSHEDS
Connecting People. Protecting Water.

Annual Meeting on Resolutions and Petitions
AGENDA

Monday, August 25, 2025
10:00 a.m.

Join online: CLICK HERE Meeting ID: 837 1967 3264
Join by phone: +1 312 626 6799 Passcode: 992222

GENERAL BUSINESS

10:00 a.m. Call to Order and Process Overview – Brad Kramer
10:05 a.m. Approval of Agenda (Action) – Brad Kramer

ACTION ITEMS

10:10 a.m. **LEGISLATIVE PLATFORM** (Action) – Brad Kramer

10:30 a.m. **RESOLUTIONS HEARING** (Action) – Don Pereira

Note: If you wish to testify "FOR" or "AGAINST", please raise your hand. You must be recognized by the meeting host before you speak. Limit your comments to two (2) minutes. Voting on each resolution will be done by hand raising.

Resolution 1 – Supporting a Legislative Amendment to Expand the Wetland Conservation Act Exemption of Public Drainage System Repairs
Resolution 2 – Seeking Revision to MN Statute 383B.79 to Include Watershed Management Organizations
Resolution 3 – Seeking Legislative Reform to Increase MDNR and MPCA Efficiency and Define Permit Application Completeness

12:00 p.m. **ADJOURNMENT**

Bassett Creek Watershed Management Commission
MEMO

Date: July 10, 2025
From: Laura Jester, Administrator
To: BCWMC Commissioners
RE: Administrator's Report

Aside from this month's agenda items, the Commission Engineers, city staff, committee members, and I continue to work on the following Commission projects and issues.

CIP Projects (more resources at http://www.bassettcreekwmo.org/projects.)

2019 Medicine Lake Road and Winnetka Avenue Area Long Term Flood Mitigation Plan Implementation Phase I: DeCola Ponds B & C Improvement Project (BC-2, BC-3 & BC-8) Golden Valley: A feasibility study for this project was completed in May 2018 after months of study, development of concepts and input from residents at two public open houses. At the May 2018 meeting, the Commission approved Concept 3 and set a maximum 2019 levy. Also in May 2018, the Minnesota Legislature passed the bonding bill and the MDNR has since committed $2.3M for the project. The Hennepin County Board approved a maximum 2019 levy request at their meeting in July 2018. A BCWMC public hearing on this project was held on August 16, 2018 with no comments being received. Also at that meeting the Commission officially ordered the project and entered an agreement with the City of GoldenValley to design and construct the project. In September 2018, the City of Golden Valley approved the agreement with the BCWMC. The Sun Post ran an article on this project October 2018. Another public open house and presentation of 50% designs was held February 6, 2019. An EAW report was completed and available for public review and comment December 17 – January 16, 2019. At their meeting in February 2019, the Commission approved the 50% design plans. Another public open house was held April 10th and a public hearing on the water level drawdown was held April 16th. 90% Design Plans were approved at the April Commission meeting. It was determined a Phase 1 investigation of the site is not required. The City awarded a contract to Dahn Construction for the first phase of the project, which involves earthwork, utilities, and trail paving and extends through June 2020. Dewatering began late summer 2019. Tree removal was completed in early winter; excavation was ongoing through the winter. As of early June 2020, earth work and infrastructure work by Dahn Construction is nearly complete and trail paving is complete. Vegetative restoration by AES is underway including soil prep and seeding. Plants, shrubs, and trees will begin soon along with placement to goose protection fencing to help ensure successful restoration. The construction phase of this project was completed in June with minor punch list items completed in September. The restoration and planting phase is complete except for minor punch list items and monitoring and establishment of vegetation over three growing seasons. A final grant report for BWSR's Watershed Based Implementation Funding was submitted at the end of January 2021. City staff completed a site walk through to document dead or dying trees and shrubs in need of replacement (under warranty). This project (along with Golden Valley's Liberty Crossing Project) received the award for "Project of the Year" from the Minnesota Association of Floodplain Managers in 2021. A reimbursement request for Restoration, planting, and vegetation establishment completed in 2023 and tree replanting in 2024 was approved for payment at the April meeting. A final project report will be presented at the August meeting. Project website: http://www.bassettcreekwmo.org/index.php?cID=433 .

2020 Bryn Mawr Meadows Water Quality Improvement Project (BC-5), Minneapolis (No change since August 2024): A feasibility study by the Commission Engineer was developed in 2018 and approved in January 2019. The study included wetland delineations, soil borings, public open houses held in conjunction with MPRB's Bryn Mawr Meadows Park improvement project, and input from MPRB's staff and design consultants. Project construction year was revised from 2020 and 2022 to better coincide with the MPRB's planning and implementation of significant improvements and redevelopment Bryn Mawr Meadows Park where the project will be located. A public hearing for this project was held September 19, 2019. The project was officially ordered at that meeting. In January 2020 this project was awarded a $400,000 Clean Water Fund grant from BWSR; a grant work plan was completed and the grant with BWSR was fully executed in early May 2020. The project and the grant award was the subject of an article in the Southwest Journal in

February: https://www.southwestjournal.com/voices/green-digest/2020/02/state-awards-grant-to-bryn-mawr-runoff-project/. In September 2020, Minneapolis and MPRB staff met to review the implementation agreement and maintenance roles. BCWMC developed options for contracting and implementation which were presented at the November meeting. At that meeting staff was directed to develop a memorandum of understanding or agreement among BCWMC, MPRB, and city of Minneapolis to recognize and assign roles and responsibilities for implementation more formally. The draft agreement was developed over several months and multiple conversations among the parties. At the May 2021 meeting the Commission approved to waiver potential conflict of the Commission legalcounsel and reviewed a proposal for project design by the Commission Engineer. The updated design proposal and the design agreement among all three parties were approved at the June 2021 meeting. Four public open houses were held in the park in 2021 to gather input on park concepts. Project partners met regularly throughout design to discuss schedules, planning and design components, and next steps. Concept designs were approved by the MRPB Board in late 2021. Staff met with MnDOT regarding clean out of Penn Pond and continue discussions. 50% design plans were approved by the Commission at the January 2022 meeting; 90% design plans were approved at the March 2022 meeting along with an agreement with MPRB and Minneapolis for construction. The agreement was approved by all three bodies. Commission Engineers finalized designs and assisted with bidding documents. Bids were returned in early August. At the meeting in August, the Commission approved moving forward with project construction (through MPRB), and approved a construction budget (higher than previously budgeted) and an amended engineering services budget. MPRB awarded the construction contract. In late November the contractor began the initial earthwork and started on portions of the stormwater pond excavations. By late December the 1st phase of construction was complete with the ponds formed and constructed. The contractor began driving piles in late January and began installing underground piping in early February. At the March meeting, the Commission approved an increase to the engineering services budget and learned the construction budget is currently tracking well under budget. The change order resulting from the City of Minneapolis' request to replace a city sewer pipe resulted in extra design/engineering costs that were approved by the Administrator so work could continue without delays. The MPRB will reimburse the Commission for those extra costs and will, in-turn, be paid by the city. In early May construction was focused in the Morgan / Laurel intersection. The right-of-way storm sewer work is complete including the rerouting of some of the existing storm infrastructure and installation of the stormwater diversion structures. Construction of the ponds is complete and stormwater from the neighborhood to the west is now being routed through new storm sewers to the ponds. Vegetation is currently being established around the ponds. At the October meeting the Commission approved an amendment to the agreement with MPRB and Minneapolis in order to facilitate grant closeout. At the December 2023 meeting the Commission approved a partial reimbursement to MPRB for $400,000. Corrections to a weir that was installed at the wrong elevation were made in spring 2024. A final grant report was submitted to the MN Board of Water and Soil Resources in late January 2024 and the final grant payment was recently received. Project as-built drawings were recently completed and an operations and maintenance plan is being developed. Final reimbursement requests from MPRB and Minneapolis are expected later this year. Project website: http://www.bassettcreekwmo.org/projects/all-projects/bryn-mawr-meadows-water-quality-improvement-project

2020 Jevne Park Stormwater Improvement Project (ML-21) Medicine Lake (No change since July 2023): At their meeting in July 2018, the Commission approved a proposal from the Commission Engineer to prepare a feasibility study for this project. The study got underway last fall and the city's project team met on multiple occasions with the Administrator and Commission Engineer. The Administrator and Engineer also presented the draft feasibility study to the Medicine Lake City Council on February 4, 2019 and a public open house was held on February 28th. The feasibility study was approved at the April Commission meeting with intent to move forward with option 1. The city's project team is continuing to assess the project and understand its implications on city finances, infrastructure, and future management. The city received proposals from 3 engineering firms for project design and construction. At their meeting on August 5th, the Medicine Lake City Council voted to continue moving forward with the project and negotiating the terms of the agreement with BCWMC. Staff was directed to continue negotiations on the agreement and plan to order the project pending a public hearing at this meeting. Staff continues to correspond with the city's project team and city consultants regarding language in the agreement. The BCWMC held a public hearing on this project on September 19, 2019 and received comments from residents both in favor and opposed to the project. The project was officially ordered on September 19, 2019. On October 4, 2019, the Medicine Lake City Council took action not to move forward with the project. At their meeting in October 2019, the Commission moved to table discussion on the project. The project remains on the 2020 CIP list. In a letter dated January 3, 2022, the city of Medicine Lake requested that the Commission direct its engineer to analyze alternatives to the Jevne Park Project that could result in the same or similar pollutant removals and/or stormwater storage capacity. At the March meeting, the Commission directed the Commission Engineer to prepare a scope and budget for the alternatives analysis which were presented and discussed at the April 2022 meeting. No action was taken at that meeting to move

forward with alternatives analysis. In May and June 2023, Commission staff discussed the possibility of incorporating stormwater management features into a redevelopment of Jevne Park currently being considered by the City of Medicine Lake. After review of the preliminary park design plans, the Commission Engineer and I recommended implementation of the original CIP Project to the City. Project webpage: http://www.bassettcreekwmo.org/index.php?cID=467.

2014 Schaper Pond Diversion Project and Carp Management, Golden Valley (SL-3): Repairs to the baffle structure were made in 2017 after anchor weights pulled away from the bottom of the pond and some vandalism occurred in 2016. The city continues to monitor the baffle and check the anchors, as needed. Vegetation around the pond was planted in 2016 and a final inspection of the vegetation was completed last fall. Once final vegetation has been completed, erosion control will be pulled and the contract will be closed. The Commission Engineer began the Schaper Pond Effectiveness Monitoring Project last summer and presented results and recommendations at the May 2018 meeting. Additional effectiveness monitoring is being performed this summer. At the July meeting the Commission Engineer reported that over 200 carp were discovered in the pond during a recent carp survey. At the September meeting the Commission approved the Engineer's recommendation to perform a more in-depth survey of carp including transmitters to learn where and when carp are moving through the system. At the October 2020 meeting, the Commission received a report on the carp surveys and recommendations for carp removal and management. Carp removals were performed through the Sweeney Lake Water Quality Improvement Project. Results were presented at the February 2021 meeting along with a list of options for long term carp control. Commission took action approving evaluation of the long-term options to be paid from this Schaper Pond Project. Commission and Golden Valley staff met in March 2021 to further discuss pros and cons of various options. At the September 2021 meeting, the Commission approved utilizing an adaptive management approach to carp management in the pond ($8,000) and directed staff to discuss use of stocking panfish to predate carp eggs. Commission Engineers will survey the carp in 2022. At the April meeting, the Commission approved panfish stocking in Schaper Pond along with a scope and budget for carp removals to be implemented later in 2022 if needed. Commission staff informed lake association and city about summer activities and plans for a fall alum treatment. Approximately 1,000 bluegills were released into Schaper Pond in late May. Carp population assessments by electroshocking in Sweeney Lake and Schaper Pond were completed last summer. A report on the carp assessment was presented in January. Monitoring in Schaper Pond in 2023 and a reassessment of carp populations in 2024 were approved in early 2023. Carp box netting in 2024 is also approved, as needed. A carp survey of Schaper Pond and Sweeney Lake were recently completed which found higher than expected carp numbers in Sweeney Lake. Carp Solutions completed box netting in Sweeney Lake in late September 2024. At the October meeting the Commission Engineer reported that 191 carp were removed bringing the carp density to about 31.3 kg/hectare, less than the 100 kg/hectare threshold for water quality problems. A more detailed report on carp population status and recommendations for further monitoring in Schaper Pond was presented and approved at the January 2025 meeting. Monitoring on the pond got underway earlier this summer. However, due to heavy rains and impacts to a city manhole, monitoring results may be compromised, and some monitoring equipment was removed so the city could perform manhole repairs. Additional information will be presented at a future meeting. Project webpage: http://www.bassettcreekwmo.org/index.php?cID=277.

2014 Twin Lake In-lake Alum Treatment, Golden Valley (TW-2) (No changes since August 2024): At their March 2015 meeting, the Commission approved the project specifications and directed the city to finalize specifications and solicit bids for the project. The contract was awarded to HAB Aquatic Solutions. The alum treatment spanned two days: May 18- 19, 2015 with 15,070 gallons being applied. Water temperatures and water pH stayed within the desired ranges for the treatment. Early transparency data from before and after the treatment indicates a change in Secchi depth from 1.2 meters before the treatment to 4.8 meters on May 20th. There were no complaints or comments from residents during or since the treatment.

Water monitoring continues to determine if and when a second alum treatment is necessary. Lake monitoring results from 2023 were presented at the July 2024 meeting. Results show continued excellent water quality. The CIP funding remains in place for this project as a 2nd treatment may be needed in the future. Project webpage: http://www.bassettcreekwmo.org/index.php?cID=278.

2013 Four Seasons Area Water Quality Project (NL-2): At their meeting in December 2016, the Commission took action to contribute up to $830,000 of Four Seasons CIP funds for stormwater management at the Agora development on the old Four Seasons Mall location. At their February 2017 meeting the Commission approved an agreement with Rock Hill Management (RHM) and an agreement with the City of Plymouth allowing the developer access to a city-owned parcel to construct a wetland restoration project and to ensure ongoing maintenance of the CIP project components. At the August 2017 meeting, the Commission approved the 90% design plans for the CIP portion of the project. At the April 2018 meeting, Commissioner Prom notified the Commission that RHM recently disbanded its efforts to purchase the property for redevelopment. In 2019, a new potential buyer/developer (Dominium) began preparing plans for redevelopment at the site. City staff, the Commission Engineer and I have met on numerous occasions with the developer and their consulting engineers to discuss stormwater management and opportunities with "above and beyond" pollutant reductions. Concurrently, the Commission attorney has been working to draft an agreement to transfer BCWMC CIP funds for the above and beyond treatment. At their meeting in December, Dominium shared preliminary project plans and the Commission discussed the redevelopment and potential "above and beyond" stormwater management techniques. At the April 2020 meeting, the Commission conditionally approved the 90% project plans. The agreements with Dominium and the city of Plymouth to construct the project were approved May 2020 and project designers coordinated with Commission Engineers to finalize plans per conditions. In June 2021, the City of Plymouth purchased the property from Walmart. The TAC discussed a potential plan for timing of construction of the stormwater management BMPs by the city in advance of full redevelopment. At the August 2021 meeting, the Commission approved development of an agreement per TAC recommendations. The city recently demolished the mall building and removed much of the parking lot. At the December meeting the Commission approved the 90% design plans and a concept for the city to build the CIP project ahead of development and allow the future developer to take credit for the total phosphorus removal over and above 100 pounds. At the July meeting, the Commission approved an agreement with the city to design, construct, and maintain the CIP project components and allow a future developer to use pollutant removal capacity above 100 pounds of total phosphorus. A fully executed agreement is now filed. The updated 90% project plans were approved at the September 2023 meeting. Changes to those plans were needed to address permitting requirements resulted. Those changes were presented at the November 2024 meeting and were administratively approved by the Commission Engineers. Construction of the wetland restoration is complete (see photo). Project webpage: http://www.bassettcreekwmo.org/index.php?cID=282.



2021 Parkers Lake Chloride Reduction Project (PL-7) (No change since June): The feasibility study for this project was approved in May 2020 with Alternative 3 being approved for the drainage improvement work. After a public hearing was held with no public in attendance, the Commission ordered the project on September 17, 2020 and entered an agreement with the city of Plymouth to implement the project in coordination with commission staff. City staff and I have had an initial conversation about thisproject. The city plans to collect additional chloride data this winter in order to better pinpoint the source of high chlorides loads within the subwatershed. Partners involved in the Hennepin County Chloride Initiative (HCCI) are interested in collaborating on this project. A proposal from Plymouth and BCWMC for the "Parkers Lake Chloride Project Facilitation Plan" was approved for $20,750 in funding by the HCCI at their meeting in March. The project will 1) Compile available land use data and chloride concentrations, 2) Develop consensus on the chloride sources to Parkers Lake and potential projects to address these sources, and 3) Develop a recommendation for a future pilot project to reduce chloride concentrations in Parkers Lake, which may be able to be replicated in other areas of Hennepin County, and 4) help target education and training needs by landuse. A series of technical stakeholder meetings were held last fall and winter to develop recommendations on BMPs. A technical findings report was presented at the July 2022 meeting. At the September 2022 meeting, the Commission approved a scope and budget for a study of the feasibility of in-lake chloride reduction activities which was presented at the November meeting. The Commission directed staff to develop a scope for a holistic plan for addressing chloride runoff from the most highly contributing subwatershed. Commission and Plymouth staff continue to work on outreach and engagement with properties in the subwatershed, primarily through activities by WMWA's coordinator position. At the March meeting the Commission approved a contract with Bolton and Menk for assessment of salt storage and other practices at 4 properties.

In April, Bolton and Menk staff met owners/operators of Brightview and submitted a report on their visit. I recently met with city and county staff to review the report and discuss next steps. I'll be reaching out to Bolton & Menk to get further information on some of their recommendations in the coming days. Visits to three other properties will take place in early winter when operations can be reviewed. Project website: www.bassettcreekwmo.org/projects/all-projects/parkers-lake-drainage-improvement-project

2022 Medley Park Stormwater Treatment Facility (ML-12) (No change since June): The feasibility study for this project is complete after the Commission Engineer's scope of work was approved last August. City staff, Commission Engineers and I collaborated on developing materials for public engagement over the fall/early winter. A project kick-off meeting was held in September, an internal public engagement planning meeting was held in October, and a Technical Stakeholder meeting with state agencies was held in November. A story map of the project was created and a survey to gather input from residents closed in December. Commission Engineers reviewed concepts and cost estimates have been reviewed by city staff and me. Another public engagement session was held in April to showcase and receive feedback on concept designs. The feasibility report was approved at the June meeting with a decision to implement Concept #3. At the July meeting the Commission directed staff to submit a Clean Water Fund grant application, if warranted. A grant application was developed and submitted. Funding decisions are expected in early December. A public hearing on this project was held in September with no members of the public attending. In September, a resolution was approved to officially order the project, submit levy amounts to the county, and enter an agreement with the city to design and construct the project. The city hired Barr Engineering to develop the project designs which are now underway. The BCWMC received a $300,000 Clean Water Fund grant from BWSR in December 2021 and the grant agreement approved in March 2022. 50% design plans were approved in February 2022 and 90% plans were approved at the May 2022 meeting. Final plans and bid documents were developed by the city's consultation (Barr Engineering). Construction began in November 2022 and winter construction was finished in late January 2023. Activities in spring 2023 included completing grading (topsoil adjustments); paving (concrete, bituminous); light pole and fixture install; benches install; site clean up and prep for restoration contractor. In late May 2023, Peterson Companies completed their construction tasks and the project transitioned to Traverse de Sioux for site restoration and planting. A small area of unexpected disturbance from construction was added to the overall area to be restored with native plants through a minor change order. Site restoration, planting, and seeding was completed in late June 2023. A final grant report was submitted to the MN Board of Water and Soil Resources in late January 2025 and all grant funds were received. The Commission approved reimbursement requests from Golden Valley at their October 2024 and March 2025 meetings. The project was recently featured in the "Snap Shots" newsletter from the MN Board of Water and Soil Resources. A final reimbursement request and report will be submitted after final vegetation establishment. www.bassettcreekwmo.org/projects/all-projects/medley-park-stormwater-treatment-facility

2022 SEA School-Wildwood Park Flood Reduction Project (BC-2, 3, 8, 10) (No change since December 2023): The feasibility study for this project is complete after the Commission Engineer's scope of work was approved last August. A project kick-off meeting with city staff was held in late November. Meetings with city staff, Robbinsdale Area School representatives, and technical stakeholders were held in December, along with a public input planning meeting. A virtual open house video andcomment form were offered to the public including live chat sessions on April 8th. The feasibility study report was approved in June with a decision to implement Concept #3. A public hearing on this project was held in September with no members of the public attending. In September, a resolution was approved to officially order the project, submit levy amounts to the county, and enter an agreement with the city to design and construct the project. The city hired Barr Engineering to develop the project designs which are now underway. A virtual public open house was held February 3rd. 50% Design Plans were approved at the January meeting. A public open house was held September 29th. 90% were approved at the October Commission meeting. Six construction bids were received in late February with several of them under engineer's estimates. The city contracted with Rachel Contracting and construction got underway earlier this spring. By late June excavation was completed and the playground area was prepped and ready for concrete work to begin on July 5. Bids were open for the SEA School/Wildwood Park restoration project on June 20. Three bids were received and two came in right around our estimate. The city is recommending the low bidder (Landbridge Ecological). At the end of July utility crews lowered the watermain and installed the storm sewer diversions into the park from along Duluth Street. The hydrodynamic separator was also set (with a crane). Crews also worked on the iron-enhanced sand filter and the outlet installation, stone work on the steepened slopes, trail prep, bituminous paving, and concrete work (curb and gutter, pads, and ADA ramps). The preconstruction meeting for the restoration work was held with work to begin late August or early September. The city awarded the contract for the DeCola Pond D outlet work to Bituminous Roadways Inc. in August. The

SEA School site construction is complete and restoration work is complete for the season. The DeCola Pond D outlet replacement and site restoration is also now complete.

Project webpage: www.bassettcreekwmo.org/projects/all- projects/sea-school-wildwood-park-flood-reduction-project.

Bassett Creek Restoration Project: Regent Ave. to Golden Valley Rd. (2024 CR-M), Golden Valley (See Item 5A):

A feasibility study for this project got underway in fall 2022. A public open house was held March 1st with 30 residents attending. The draft feasibility report was presented at the April meeting. A final feasibility report was presented at the June meeting where the Commission approved the implementation of Alternative 3: to restore all high, medium, and low priority sites. A Clean Water Fund grant application for $350,000 was recently developed and submitted to BWSR. The Commission held a public hearing on this project at its September meeting and officially ordered the project and set the final levy. An agreement with the city of Golden Valley for design and construction was approved at the November 2024 Commission meeting. The Commission (Commission Engineers) will design the project and provide engineering services. A scope of work for engineering services was approved at the March meeting. A drone survey of the entire stretch was completed in early April. A project kick-off meeting was held with city and commission staff on April 9th. Field and desktop surveys are continuing. Meetings regarding utility easements and communications planning were recently held. A public open house on the project was held on June 5th. At the June meeting the Commission approved a scope and budget for a wetland delineation and architectural survey which are unexpected requirements for a permit from the U.S. Army Corps of Engineers. That work is getting underway. Additionally, Administrator Jester approved a scope and budget for an archeological survey that was included in the original engineering services scope as a contingency task with approval delegated to the Administrator. At this meeting, Commission Engineers will present the 50% designs. Project website: https://www.bassettcreekwmo.org/projects/all-projects/bassett-creek-restoration-project-regent-ave-golden-valley-r

Ponderosa Woods Stream Restoration Project, Plymouth (ML-22): A feasibility study for this project got underway in fall 2022. A public open house was held February 13th with 3 residents attending. The draft feasibility report was presented at the May meeting and additional information was presented at the June meeting where the Commission approved implementing Alternative 1.5. The Commission held a public hearing on this project at its September meeting and officially ordered the project, set the final levy, and approved an agreement with the City of Plymouth for project implementation. Plymouth hired Midwest Wetland Improvements to design the project. 60% designs were conditionally approved at the October meeting. A public open house was held on October 23rd. 90% design plans were approved at the November 2024 meeting. The city received favorable bids for the project and construction began in December. Tree removals and channel restoration is continuing and should be completed soon. Outreach and communication to impacted property owners has been thorough. Construction of the project is complete and vegetation establishment will continue into this year. Recnet heavy rains have filled the creek this summer! Project website: https://www.bassettcreekwmo.org/projects/all-projects/ponderosa-woods-stream-restoration-project.



Sochacki Park Water Quality Improvement Project (BC-14) (No change since September): This project is proposed to be added to the CIP through a minor plan amendment as approved at the March Commission meeting with CIP funding set at $600,000. The project involves a suite of projects totaling an estimated $2.3M aimed improving the water quality in three ponds and Bassett Creek based on a subwatershed analysis by Three Rivers Park District (TRPD). A memorandum of understanding about the implementation process, schedules, and procedural requirements for the project was executed in April among BCWMC, TRPD, and the cities of Golden Valley and Robbinsdale. A feasibility study is underway for the project and is being funded by TRPD. The feasibility study kick off meeting was held June 5th. Information on the project and an update on the feasibility study was presented at the June meeting. A technical stakeholder meeting was held July 10th. A public open house was held July 26th and a Phase I Environmental Site Assessment was recently completed. The draft feasibility study was presented at the August meeting and the final feasibility study was approved at the September meeting. The Commission held a public hearing on this project at its September meeting and officially ordered the project and set the final levy. Project partners recently met to review a scope and budget for design and discuss construction sequencing, funding availability, and cooperative agreement provisions. TRPD was recently awarded $1.6M in federal funding for this

project and other facility investments in Sochacki Park. Staff provided a project update at the March meeting. A cooperative agreement with TRPD and Robbinsdale was approved at the April meeting. Three Rivers Park District contracted with Barr Engineering to develop project designs. A Phase II Environmental Assessment was recently completed. Preliminary results were presented at a recent project partner meeting. Soil contamination (including PCBs) was found in some areas to be above MPCA action levels. TRPD and their consultants (Barr Engineering) are developing response plans and considering applying for Hennepin County Environmental Response funds. The Sochacki Park Joint Powers Operations Committee is meeting soon. Project webpage: https://www.bassettcreekwmo.org/projects/all-projects/sochacki-park-water-quality-improvement-project.

Plymouth Creek Restoration Project Dunkirk Lane to 38th Ave. North (2026 CR-P) (No change since May): A scope and budget for a feasibility study was approved at the October meeting. A project kick off meeting was held November 3rd and a technical stakeholder meeting was held December 5th. Field investigations and desktop analyses are complete. Site prioritization ranking criteria are being developed and concept designs are being developed. A public open house was held on March 11th. Residents who attended are in favor of the project and had questions about impacts to trees, potential construction activities in specific reaches, and buckthorn removal. The feasibility study was approved at the May meeting with Option 3a being approved for implementation. At the June meeting the Commission approved a maximum levy for 2025 that includes funding for this project which was approved by the Hennepin County Board August 6th At its September meeting, the Commission held a public hearing on this project and approved a resolution officially ordering the project, setting the 2025 levy, and entering an agreement with the City of Plymouth for design and construction. The city will hold a public open house on this project in spring 2025 after the city contracts with an engineering firm. A Clean Water Fund grant for $400,000 was awarded by BWSR. The grant agreement and sub-grant agreement were approved at the April meeting. The City of Plymouth has hired a firm for project designs which are getting underway this summer. Project webpage: https://www.bassettcreekwmo.org/projects/all-projects/plymouth-creek-restoration-dunkirk-lane-38th-ave-n.

Crane Lake Chloride Reduction Demonstration Project, Minnetonka (CL-4) (No change since Feb): At the meeting in July, the Commission approved a scope and budget for the feasibility study for this project. The Commission Engineer is gathering background information. A project kick off meeting was held September 26th. Monitoring equipment was recently installed and included communications/coordination with MnDOT. Project webpage: https://www.bassettcreekwmo.org/projects/all-projects/crane-lake-chloride-reduction-demonstration-project.

Administrator Activities June 10 – July 9, 2025

Subject	Work Progress
CIP and Technical Projects	• Main Stem Bassett Creek Restoration Project: Reviewed, commented on, and approved Archeological (Cultural Resources) Survey Scope and Budget; met with Commission Engineer and city staff to review project costs and buffer requirements; reviewed and commented on 50% design memo • Hydrologic & Hydraulic Model Update and Conversion Project: Coordinated with Commission Engineer and Hennepin County staff to incorporate BCWMC's H&H update/conversion project into County All-Hazard Mitigation Plan and to provide additional project budget details • Sweeney Lake AIS: Assisted with prep and attended AIS Early Detection Training event; corresponded with Sweeney Lake Assoc president re: yellow iris • Lost Lake BG Algae: Corresponded with lake resident, city staff, and Commission Engineers on sampling protocols for possible blue green algae bloom • Lost and Northwood Lake TMDL: Participated in project kick off meeting with MPCA, Commission Engineers, MS4s (cities, county, MnDOT)
Education and Outreach	• Delivered and pickup educational materials for SLP Ecotacular event • Attended Metro Watershed Partners Salt Subcommittee meeting • Met with partners to discuss next steps on chloride reduction strategies • Drafted June WMWA meeting notes • Attended June and July WMWA meetings • Met with subcommittee to discuss WMWA strategic planning • Attended Watershed Equity Alliance annual retreat • Corresponded and met with website contractor re: updates/changes to website; requested ideas from commissioners

Administration	• Developed agenda; reviewed invoices and submitted expenses spreadsheet to Plymouth; reviewed financial report; drafted June meeting minutes; reviewed memos, reports, and documents for Commission meeting; printed and disseminated meeting information to commissioners, staff, and TAC; updated online calendar; drafted meeting follow up email; ordered catering for July Commission meeting; updated meeting notice • Participated in pre-meeting call with Commission Engineer and Chair Cesnik • Document filing, mailing checks and agreements and updating website calendar • Sent 2026 proposed operating budget to member cities for comment by August 1st • Updated commissioner roster • Set Education Committee meeting • Reviewed correspondence and discussed Fruen Mill potential variance request with developers and Commission Engineer • Took and filed photos of high water in Plymouth Creek, Ponderosa Woods Creek, and Medicine Lake dam • Reviewed/commented on 2024 draft monitoring reports for Westwood, Parkers, Cavanaugh, and Medicine Lakes
MN Watersheds	• Completed meeting minutes from March quarterly meeting of MN Association of Watershed Administrators (MAWA) • Attended quarterly meeting of MAWA • Traveled to and attended MN Watersheds Summer Tour in Roseau, MN • Finalized meeting notes from April Metro Watersheds meeting • Participated in Resolutions Committee meeting to describe BCWMC resolution to Minnesota Watersheds • Attended MAWA Executive Committee meeting
2025 Watershed Management Plan	• Met with Commission Engineers for bi-weekly check in meetings • Drafted meeting minutes for June PSC meeting and updated plan progress tracker • Prepared agenda and materials for July PSC meeting; attended meeting • Facilitated June 10th Plan TAC meeting; developed resulting recommended Plan revisions for PSC to consider • Attended/presented draft plan at Plymouth Environmental Quality Commission meeting • Made revisions to Section 3 • Finalized all plan sections with PSC Chair edits • Attended July PSC meeting • Updated plan sections for review at July Commission meeting

Memorandum

To: Laura Jester, Administrator, Bassett Creek Watershed Management Commission
From: Barr Engineering Co. (Jessica Olson, P.E., Veronica Parsell)
Subject: Scope and Budget for Archaeological Reconnaissance and Reporting for the Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024)
Date: June 27, 2025
Project: 23272114

Administrative approval June 27, 2025

Background

Project Background:

The Bassett Creek Main Stem Restoration Project, Regent Avenue to Golden Valley Road (CR-M 2024) (Project) is a stream restoration project in City of Golden Valley. At their March 20, 2025 meeting, the Commission approved the scope and budget for the Commission Engineer to prepare final design, develop plans and specifications, and provide permitting assistance, bidding assistance and construction services for the Project. As part of the approved Project scope, the Commission Engineer planned to update the cultural resources literature review from the feasibility study and noted that the US Army Corps of Engineers (USACE) may require a Phase I archaeological reconnaissance and technical report for the Project. The Project scope identified a contingency budget of $15,000 for the Phase I archaeological reconnaissance and technical report that can be authorized by the Commission administrator. Based on communications with USACE, archaeological reconnaissance is required for the Project. The remainder of this memorandum summarizes why an archaeological reconnaissance is required, and the scope, budget, and schedule of the archaeological reconnaissance and report.

Section 106: National Preservation Act

Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR Part 800 (Section 106) requires that federal agencies assess the effects of their projects on cultural resources eligible for or listed in the National Register of Historic Places (NRHP). Section 106 applies to any federal agency undertaking that has the potential to affect NRHP-eligible or listed cultural resources, should they be present. Cultural resources include above-ground (i.e., historic architectural) and below-ground (i.e., archaeological) resources. The Project will seek permitting from the USACE, thereby constituting an undertaking subject to Section 106. As a result, the Commission Engineer will complete a cultural resources literature review (part of the original Project scope) and the proposed Phase I archaeological reconnaissance to evaluate whether the project's area of potential effects (APE) contains archaeological resources eligible for or listed in the NRHP. A Phase I historic architectural reconnaissance is also being completed under a separate scope, to determine whether the project's area of potential effects (APE) contains historic architectural resources eligible for or listed in the NRHP. For the purposes of this proposal, the Commission Engineer assumes the APE for archaeological resources consists of the proposed stream restoration project area footprint, consisting of 67 project areas in the upland along either side of the creek, which total approximately four acres of land.

Phase I Archaeological Reconnaissance and Reporting

Following completion of the literature review (covered in original work scope) and preceding Phase 1 archaeological reconnaissance, the Commission Engineer will prepare, submit, and obtain a license from the Minnesota Office of the State Archaeologist (OSA) for work on non-federal public land (including City of Golden Valley and Three Rivers Park District), per state requirements. Once the license is obtained from OSA, the Commission Engineer will complete a Phase I archaeological reconnaissance for the project to identify archaeological sites located in the APE (Figure 1). The APE consists primarily of wooded vegetation with some residential development including houses, sidewalks and roadways; therefore, the Commission Engineer assumes that average ground surface visibility will be less than 25 percent. As a result, shovel test excavation will be required, except in areas of previous ground disturbance. Shovel tests will be excavated according to Minnesota State Historic Preservation Office (SHPO) guidelines, which require shovel tests to be excavated every 50 feet (15 meters). We will perform shovel tests on both sides along the stream corridor in areas where project construction would occur, with at least one shovel test in each of the 67 proposed project areas. Areas in which the corridor crosses previously disturbed soils (i.e. soils that were removed or turned up as part of some sort of development such as the installation of utilities) and areas within the creek will not be tested, as there would be no potential for intact cultural resources in these locations.

We will prepare a technical report detailing the results of the Phase I archaeology survey. The report will include sections, as appropriate, outlining the purpose of the survey, a description of the environmental setting, the cultural context for the project area, results of the background research, details of methods used, and survey results including descriptions of any identified resources. The report will also include the Commission Engineer's recommendations for the project to proceed as planned or for any additional archaeological work that may be needed prior to project construction.

Assumptions

- The Commission Engineer will work with the Commission Administrator and Golden Valley staff to notify property owners prior to initiating the archaeological survey. Golden Valley staff will send out notification letters.
- Weather conditions are conducive to fieldwork, i.e., no heavy rain, snow, or frozen ground.
- Up to four acres, consisting of 67 separate project areas, will be investigated for archaeological resources.
- Most of the project area has a high probability to contain archaeological resources; therefore, shovel test unit excavation will be completed at 15-meter intervals along each side of the proposed 7,000-foot stream corridor in areas of proposed ground disturbance.
- Gopher State One Calls will be completed by the Commission Engineer for the project area prior to shovel test unit excavation.
- Up to 80 shovel tests will be excavated.
- Shovel test excavation will not exceed 60 centimeters below surface. Archaeological deep testing and/or augering is not included in this scope of services.

- If any archaeological sites are encountered, the Commission Engineer may request a change order to complete the required site delineation, artifact processing, OSA site form preparation and submission, and additional reporting requirements.
- Phase II evaluation to further investigate sites to determine their NRHP eligibility will not be performed as part of this proposal.
- If historic or precontact cemeteries or burial grounds are identified in the project area, the Commission Engineer can provide a separate scope and budget to proceed with the steps necessary to adhere to relevant rules and regulations.
- No NRHP-eligible archaeological sites will be identified within the APE. NRHP eligible properties require additional documentation and reporting requirements.
- The Commission Engineer will complete up to one round of report edits following Commission Administrator's review.

Schedule

The Commission Engineer developed the proposed schedule shown below given the assumptions identified in this scope of work.

Table 1. Proposed Project Schedule

Task	Timeline
Fieldwork	July-August 2025
Reporting	August-September 2025

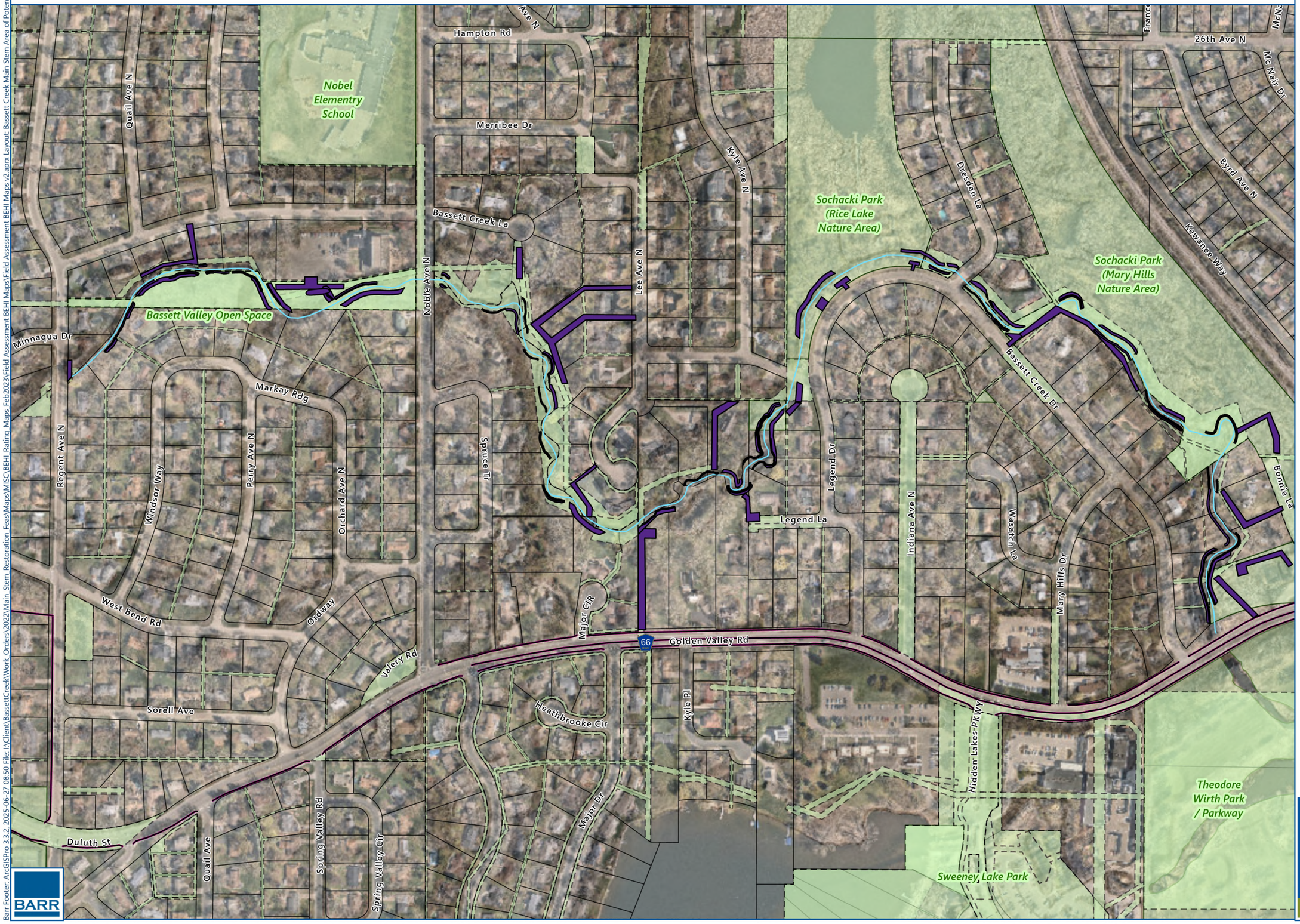
Budget

The Commission Engineer proposes to complete the scope of work described above for a total cost of up to **$15,000** on a time and materials basis.

Task	Cost Estimate
Archaeological Reconnaissance (Fieldwork)	$7,500
Reporting and Project Management	$7,500
Total	**$15,000**

These services will be performed by our cultural resources team, including Veronica Parsell and Allison Hawley; they are registered professional archaeologists with more than 21 years of combined experience.

BASSETT CREEK MAIN STEM AREA OF POTENTIAL EFFECT



Bassett Creek

Bike and Pedestrian Trail System

Private Parcel

Public Parcel

Easement

Area of Potential Effect

N

0 300

Feet

Imagery: NearMap (May 2022)

Area of Potential Effect
Bassett Creek Main Stem Restoration

Golden Valley, MN

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.3.2, 2025-06-27 08:50 File: I:\Client\BassettCreek\Work_Orders\2022\Main_Stem_Restoration_Feas\Maps\MISC\BEHI_Ratings_Maps_Feb2023\Field Assessment BEHI Maps\Field Assessment BEHI Maps v2.aprx Layout: Bassett Creek Main Stem Area of Potential Effects