Eagan - Inver Grove Heights
Watershed Management Organization

AGENDA

BOARD OF MANAGERS

SPECIAL MEETING

September 16 , 2025 at 5:30 P.M.

Eagan Maintenance Facility
3501 Coachman Point, Eagan, MN 55122

1. Call to Order
2. Approval of Agenda
3. Consent Agenda

    3.1. Minutes August 19, 2025

    3.2. Invoices for Payment
4. Watershed Plan Update
5. New Business

        5.1 CLIMB Theater—New Invoice
6. Adjournment

Stantec

INVOICE

Invoice Number	2445279
Invoice Date	August 29, 2025
Purchase Order	227707496
Customer Number	1312103
Project Number	227707496

Bill To
Eagan-Inver Grove Heights Water Management Organization
Victoria Ranua
4100 220th Street
Suite 102
Farmington MN 55024
United States

EFT/ACH Remit To (Preferred)
Stantec Consulting Services Inc. (SCSI)
Bank of America
ABA No. : 111000012
Account No: 3752096026
Email Remittance: eft@stantec.com

Alternative Remit To
Stantec Consulting Services Inc. (SCSI)
13980 Collections Center Drive
Chicago IL 60693
United States

Project **2nd Generation Watershed Management Plan**

Project Manager	Spector, Diane F	Contract Upset	47,729.00
Current Invoice Total (USD)	3,625.50	Amount Billed to Date	47,366.34
		For Period Ending	**August 22, 2025**

Top Task 100 Stakeholder Input

Professional Services

Category/Employee		Current Hours	Rate	Current Amount
	Tilman, Elizabeth (Lisa)	6.50	196.00	1,274.00
	Subtotal Professional Services	6.50		1,274.00

Top Task Subtotal Stakeholder Input 1,274.00

Top Task 200 Plan Update & Review

Professional Services

Category/Employee		Current Hours	Rate	Current Amount
	Neumiller, Grace Catherine	11.50	133.00	1,529.50
	Kemmitt, Kathrine Lee (Katie)	3.00	176.00	528.00
	Subtotal Professional Services	14.50		2,057.50

Top Task Subtotal Plan Update & Review 2,057.50

Top Task 400 Project Management

Professional Services

Category/Employee		Current Hours	Rate	Current Amount
	Tilman, Elizabeth (Lisa)	1.50	196.00	294.00
	Subtotal Professional Services	1.50		294.00

Invoice Number	2445279
Invoice Date	August 29, 2025
Purchase Order	227707496
Customer Number	1312103
Project Number	227707496

Top Task Subtotal	Project Management	294.00

Total Fees & Disbursements	3,625.50
INVOICE TOTAL (USD)	**3,625.50**

Net Due in 30 Days or in accordance with terms of the contract

Stantec will not change our banking information. If you receive a request noting our banking information has changed, please contact your Stantec Project Manager

SEPTEMBER 2025

E-IGHWMO SECOND GENERATION WATERSHED MANAGEMENT PLAN

Eagan-Inver Grove Heights Watershed Management Organization

https://eaganinvergroveheightswmo.org/

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Abbreviations and Acronyms

BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
cfs	cubic feet per second
Chl-*a*	Chlorophyll-a
Board	Eagan-Inver Grove Heights Watershed Management Organization Board of Managers
CIP	Capital Improvement Program
MDNR	Department of Natural Resources
EPA	Environmental Protection Agency
LGU	Local Government Unit
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MMDNR	Minnesota Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetland Inventory
NWS	National Weather Service
ppb	parts per billion (µg/L)
Plan	Watershed Management Plan
E-IGHWMO	Eagan-Inver Grove Heights Watershed Management Organization
SWPPP	Storm Water Pollution Prevention Program
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
TSS	Total Suspended Solids
µg/L	microgram per liter (ppb)
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WCA	Wetland Conservation Act
WLA	Wasteload Allocation
WMO	Watershed Management Organization

Executive Summary

This watershed management plan describes how the Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) will manage activities in the watershed in the ten-year period 2026-2035.

The Eagan-Inver Grove Heights Watershed Management Organization was formed on January 7, 2014 using a Joint Powers Agreement (JPA) developed under authority conferred to the member communities – Eagan and Inver Grove Heights - by Minnesota Statutes 471.59 and under the authority of MS 103B.201 through 103B.251. The watershed had previously been established as the Gun Club Lake Watershed Management Organization. That joint powers organization was dissolved in 2013 when the City of Mendota Heights withdrew.

The watershed is located in the southeast portion of the Minneapolis-St. Paul seven county metropolitan area (Figure 1.1) in the Lower Minnesota River basin of the Upper Mississippi River watershed. The Organization's purpose is set forth in Minnesota Statutes 103B.210, Metropolitan Surface Water Planning, which codified the Metropolitan Surface Water Management Act of 1982. Minnesota Statutes 103B.231 and Minnesota Rules 8410 establish requirements for watershed management plans within the Twin Cities Metro Area. Minn. Stat. 103B.201 outlines the purposes of a watershed management organization:

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; and
8) Secure the other benefits associated with the proper management of surface and ground water.

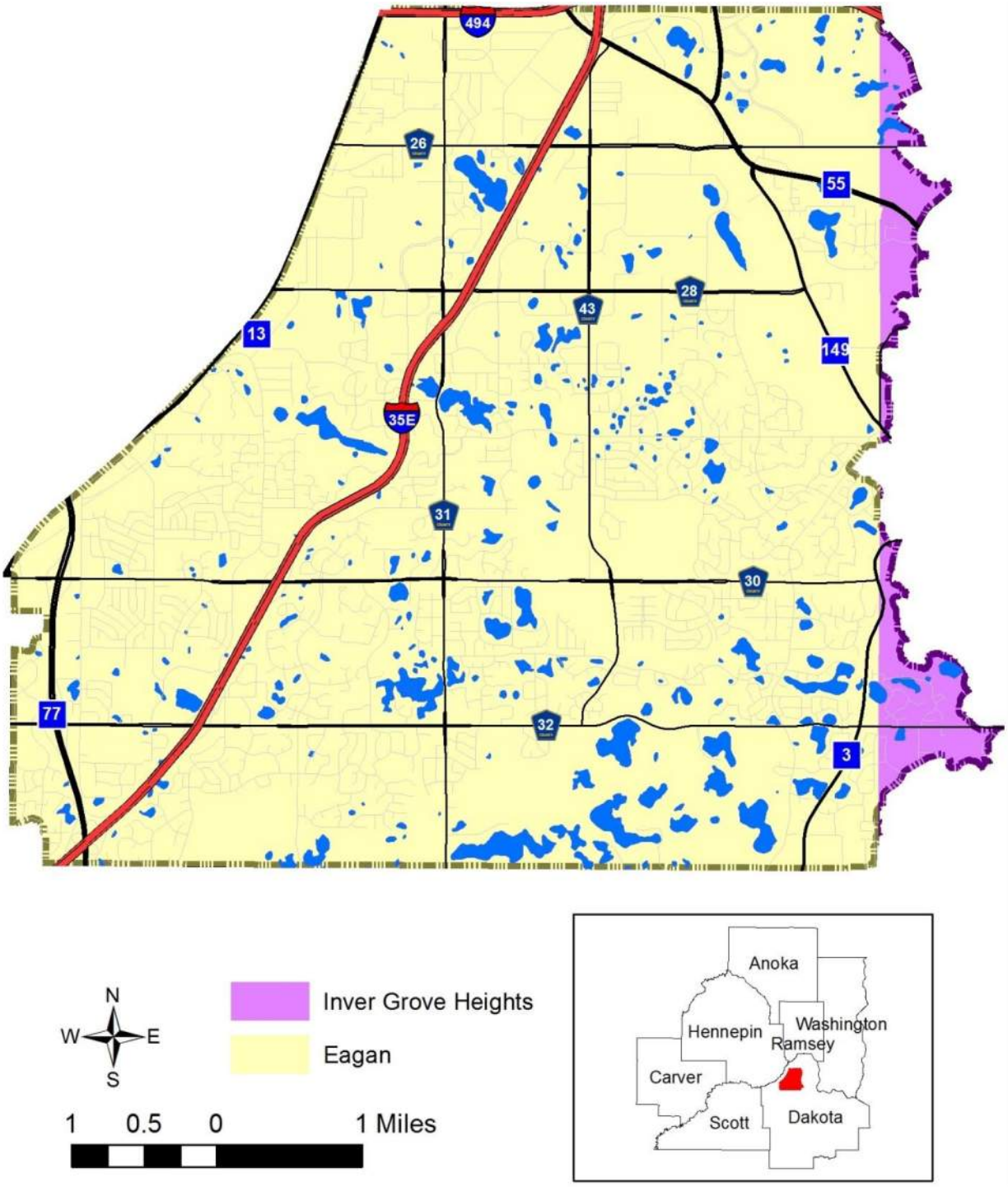


Figure ES.1: Cities in the Eagan-Inver Grove Heights watershed.

Second-Generation Watershed Management Plan

The Eagan-Inver Grove Heights Watershed Management Organization initiated work on the Second-Generation Plan in January 2025. The Plan includes information required in Minnesota Administrative Rules Chapter 8410, Local Water Management: an updated land and water resources inventory, assessment of issues and identification of corrective actions and corresponding goals; an implementation program; and a process for amending the Plan.

Key Roles of Watershed Management Organization and Partners

A Board of Managers has been established as the governing body of the E-IGHWMO tasked with the implementation of this Watershed Management Plan. This WMO is relatively unique in the Metro Area: it is almost entirely comprised of land in one city—Eagan—and encompasses most of that city.[1] It faces some special challenges defining a role for the Board that fulfills its statutory obligations without creating duplication of effort. The Board has identified education and outreach efforts as the primary implementation role of the watershed in order to reduce redundancy.

The Board will support and facilitate city-led capital projects for construction by member cities. While the WMO does not undertake capital projects, it may facilitate them through cost-share and grant funding and supplement them by providing education and outreach opportunities. The Cities of Eagan and Inver Grove Heights are the regulatory authorities for E-IGHWMO and engage in hands on implementation of water resource management. The Dakota County Environmental Resources Department operates a number of programs to conserve natural and water resources in the county and the Eagan-Inver Grove Heights watershed. The Board of Water and Soil Resources (BWSR) is the state's administrative agency for watershed districts; thus, BWSR reviews and approves watershed management plans and periodically assesses watershed organizations as part of its Performance Review and Assistance Program (PRAP).

Process for Watershed Management Plan Input

The plan development process included soliciting input from state agencies (BWSR, MDNR, MDA, MDH, MetCouncil, and MPCA), member cities, citizen advisory groups (Sustainable Eagan Advisory Commission and Inver Grove Heights Environmental Advisory Commission) and a community survey. This early input included both a review of resources available from the agencies to assist with the planning and implementation process and an overview of issue areas that the agencies recommended the E-IGHWMO to consider in the Plan.

Priority Issues

The E-IGHWMO Board identified the following priority issues during the planning process:

[1] E-IGHWMO is the successor to the former Gun Club Lake WMO that disbanded in 2014 when one member City withdrew.

1. Water quality improvement and pollution reduction education and outreach efforts are not reaching as broad an audience as needed for increased engagement and impact.
2. Deicing salt use is still excessive in some areas despite current education and outreach efforts.
3. Education and assessment support is needed for shoreline practices and aquatic vegetation survey to provide comprehensive lake management.
4. Groundwater conservation and protection has not been a focus of education and outreach efforts.
5. Lake access for fishing could be expanded and improved to provide more opportunities for fishing without damage to shorelines.

Management Plan Priorities and Goals

Through the identification of issues in the watershed, the E-IGHWMO developed priorities and goals to guide water resources planning and management functions:

1. Augment efforts of member cities through education and outreach to local citizens and businesses and through partnerships on grants for capital improvements and plan implementation to improve water quality and limit water quantity impacts.
2. Target education and outreach activities to a broad local audience on key water resource protection topics such as water quality improvements, deicing salt and water softener salt reduction, aquatic invasive species mitigation, shoreline vegetative buffers, and pet waste management, fish consumption, groundwater protection, and water conservation.
3. Support implementation of small, distributed water quality improvement projects through education efforts and cost-share programs.
4. Reduce chloride impact on local and regional waters through education efforts and cost-share programs.
5. Lead volunteer efforts for healthy shoreline initiatives and aquatic invasive species and aquatic macrophyte monitoring.

Implementation Plan Highlights

Implementation of the Second-Generation Plan will consist primarily of an education and outreach program. The Eagan-Inver Grove Heights Watershed Management Organization does not operate a regulatory program but will participate in member city processes to update policies and ordinances to promote water quality and quantity protections. In addition, the E-IGHWMO does not operate a monitoring program but will support monitoring of submerged aquatic vegetation and shoreline health in watershed lakes. The WMO will implement projects through a cost-share partnership program to support water quality improvement efforts within the watershed. Overall goals for WMO involvement in member cities' capital improvement projects include partnering on projects that meet the WMO's priorities, including runoff capacity projects, supporting erosion control and stabilization projects, and improving fishing access points. Capital projects are funded 100% by the member cities. The E-IGHWMO will assist cities in leveraging grant funding or identifying other funding sources when available. The Plan provides annual estimates and general programs, projects, and costs for 2026-2035 activities.

Plan Amendments

This Watershed Management Plan provides direction for the Eagan-Inver Grove Heights Watershed Management Organization's activities through the year 2035. The Board may initiate amendments to the Plan at any time based on new requirements or data availability, policies, programs, practices, or emerging concerns. The Board will annually review the Implementation Plan and Capital Improvements Program (CIP), which may require future minor or major plan amendments.

1.0 Introduction

1.1 BACKGROUND AND HISTORY

The Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) is a joint powers organization established in 2014. Member cities had previously been part of the predecessor WMO, the Gun Club Lake WMO, which completed and implemented two ten-year management plans prior to disbanding. The E-IGHWMO is relatively unique in the Twin Cities Metro Area: it is almost entirely comprised of land in one city—Eagan—and encompasses most of that city (Figure 1-a). A small portion of the watershed is within Inver Grove Heights. It faces some special challenges defining a role for the Board that fulfills its statutory purpose and requirements without creating duplication of effort.

Both member cities have a long history of active water and natural resources management in accordance with their approved local stormwater management plans. The Inver Grove Heights portion of the watershed is managed either according to a master plan (the City of Inver Grove Heights Northwest Area plan in this Northwest Area Overlay District) with stringent volume management requirements or by an existing cooperative agreement between the two cities.

The City of Eagan, which comprises 96 percent of the land area of the watershed, operates a robust water resources program. As the City began rapidly developing in the 1980s, proactive actions to manage lakes and ponds, regulate shoreland activities, and respond to potential sanitary sewer permit violations helped to protect lakes and maintain water quality. Today, long-term data show most of the lakes in the watershed meet state water quality standards. Where standards are not met, Eagan has been proactive in developing management plans and dedicating resources for their improvement.

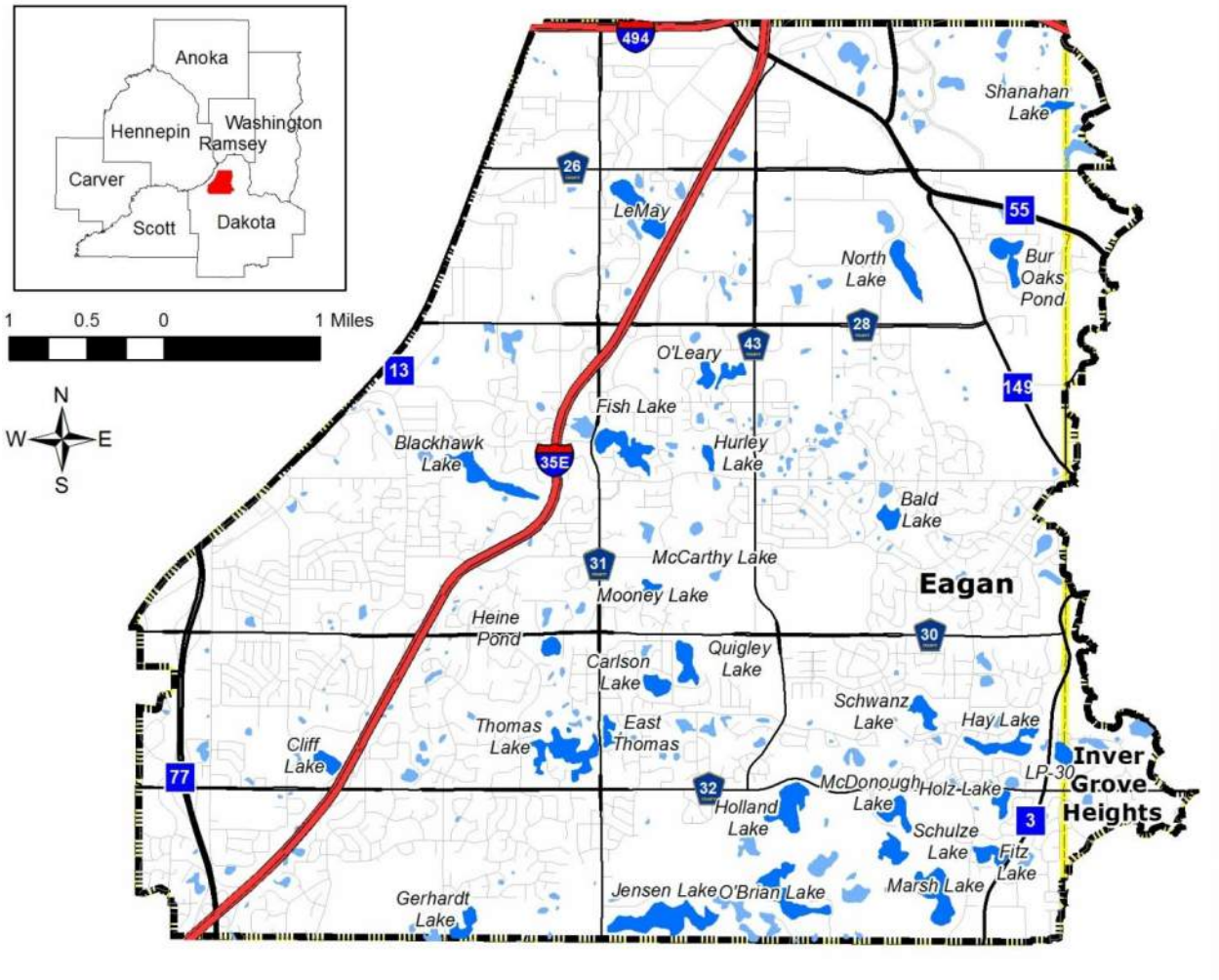


Figure 1-a. The Eagan-Inver Grove Heights watershed in Dakota County, Minnesota

1.2 PLAN ORGANIZATION

The E-IGHWMO initiated work on its first Watershed Management Plan in January 2015. It initiated work on its Second-Generation Watershed Management Plan in 2024.

Minnesota Statutes 103B.201 to 103B.253 and Minnesota Rules Chapter 8410 specify the basic content of the watershed management plan. This plan is divided into six sections:

1 – Introduction: Describes the authority and composition of the E-IGHWMO the purpose of the Surface Water Management Act and the components of this watershed management plan.

2 – Inventory and Condition Assessment: A physical inventory of the watershed, which includes a profile of the watershed's existing environmental conditions. This profile contains descriptions of the area's geology, topography, soils, biological and human environment, and current land use and expected land use in 2040. This section also contains information on the lakes, streams, and wetlands in the watersheds.

3 – Watershed Organization and Operations: This section provides information about the WMO, how it is organized, its history, and its responsibilities, and discusses ongoing operations.

4 – Issues and Goals: This section presents the E-IGHWMO Board of Managers' Vision and Mission for watershed management, describes the problems and issues identified in the planning process, and sets forth the goals the Board will work to achieve in the ten-year period covered by this Plan.

5 – Implementation Plan: This section describes the Board's proposed operating programs and the Capital Implementation Program and discusses implementation costs and financing. It also discusses the methods by which the Board will evaluate progress towards achieving the goals set forth in the Plan.

6 – Impact on Local Government: This section describes the Board's expectations for Local Surface Water Management Plans prepared by the member cities in the watershed, and how the Board will fulfill its oversight responsibilities.

7 – Amendments to the Plan: This section sets forth the process that will be followed should this Plan need to be amended.

2.0 Inventory and Condition Assessment

This section documents existing conditions and resource characteristics within the Eagan-Inver Grove Heights watershed.

Member cities complete Local Water Management Plans summarizing the City's physical environment and land use, drainage areas and the volumes, rates, and paths of stormwater runoff, areas for stormwater management needed to meet water quality and quantity standards established in the WMO plan, identify regulated areas, and lay out an implementation program, including capital improvements. The E-IGHWMO has the opportunity to review Local Water Management Plans of member cities prior to local adoption to ensure consistency with this Watershed Management Plan. Where the Local Water Management Plans or other planning documents provide a detailed inventory of conditions, those data are not repeated here but are referenced and listed in the 8.0 References section.

A summary of Local Water Management Plan information is provided for context and to describe the land and water within the watershed.

- **Stormwater.** Eagan and Inver Grove Heights water management plans include a description and maps of the City's stormwater systems. The City of Eagan's Storm Water Master Plan Update contains detailed information on stormwater flow within the City. In general, stormwater flows from southeast to northwest within City boundaries and ultimately drains to the Minnesota River. See **Figure 2-11** in the document for drainage districts and storm basins within the City. The City of Eagan's Integrated Water Master Plan contains information about stormwater flow and investigation area recommendations through the City in Section 4. **S**tormwater systems directly impact surface water quality and quantity, and the connection is addressed in the City of Eagan's Water Quality & Wetland Management Plan. The City of Inver Grove Heights Stormwater Manual (Northwest Area) and the Fourth Generation Water Resources Management Plan (remainder of the city) both describe stormwater flow and management within the city.
- **Groundwater/surface water connections.** The City of Eagan's Integrated Water Master Plan refers to existing groundwater priorities and challenges, including priority groundwater recharge areas and strategies for recharge. Despite the large land base, only 700 acres were identified as highly suitable for groundwater recharge. Section 2 of both the Inver Grove Heights Stormwater Manual (Northwest Area) and the Fourth Generation Water Resources Management Plan describe groundwater resources within the city.
- **Wetlands.** There are over 600 wetlands within the E-IGHWMO boundary. The Cities generally view these as an asset and have developed around the wetlands. Section 3.0 of the City of Eagan's Water Quality & Wetland Management Plan describes wetlands within the city, including classification and a National Wetland Inventory (NWI) map. Section 2 of both the Inver Grove Heights Stormwater Manual (Northwest Area) and the Fourth Generation Water Resources Management Plan describe wetland resources within the city.

- **Water quality.** See the City of Eagan's Water Resources webpage for detailed information on lake, wetland, and pond water quality trends from 1991-2024. In general, lake water quality has been trending toward improvement in all water bodies due to City efforts (e.g. stormwater management improvements, street sweepings, cost-share programs). The City of Inver Grove Heights Water Resources webpage contains links to more information about surface waters within the City. The City of Inver Grove Heights Fourth Generation Water Resources Management Plan describes water body impairments and issues in the city in Section 4.
- **Water quantity.** Cities are expected to update local models to reflect updated guidance on rainfall event sizes and future projections. The City of Eagan updated their stormwater models as part of the Integrated Water Master Plan (2018) to use the most up-to-date precipitation frequency estimates (using NOAA's Atlas-14). The City of Inver Grove Heights Fourth Generation Water Resources Management Plan investigated runoff rates and volumes based on the most current available information.

The Physical Environment subsection describes the watershed's physical setting, geology and geomorphology, soils, and water resources. The Biological Environment subsection describes vegetation, biodiversity and native communities, unique features, and the biology of lakes and streams. The subsection Human Environment describes land use and growth patterns, recreational resources, and potential environmental hazards. The lakes, streams, and wetlands in the watershed are described in the Water Resources section.

2.1 WATERSHED PHYSICAL ENVIRONMENT

Location

The Eagan-Inver Grove Heights watershed covers just over 30 square miles in northwest Dakota County. There are two municipalities with land in the watershed (Figure 1-a, Table 2-a).

Table 2-a. Cities in the Eagan-Inver Grove Heights watershed.

Cities	Area (sq mi)	% of Total
Eagan	29.37	95.9%
Inver Grove Heights	1.24	4.1%
Total	30.61	100%

Topography and Drainage

The watershed is rolling to hilly and slopes from the south and southeast northwest to the Minnesota River. The topography is characterized by deep, poorly drained depressions that hold wetlands and ponds and are naturally land-locked. Many of these outlet through storm sewers. The cities maintain a stormsewer map that is maintained in their local watershed map. There are no perennial streams draining the watershed.

Geology and Geomorphology

The C-57 Geologic Atlas of Dakota County provides anoverview of the surficial and bedrock geology of the Eagan-Inver Grove Heights watershed (Steenberg et al., 2023). The Eagan-Inver Grove Heights watershed is located within the Twin Cities formation of the Eastern St. Croix Moraine, which is characterized by relatively steep hills, rolling topography and occasional deep depressions filled with either small lakes or peat. In general, the area between I-35E and the Minnesota River is dominated by Des Moines Lobe mixed till and mixed outwash deposits, with the balance of the watershed dominated by Superior Lobe till. Additional information on the geology of the watershed, including the presence of one karst feature (a sinkhole noted as "Bridle Ridge Rd. Collapse), can be found in the Geologic Atlas of Dakota County, Minnesota (Steenberg et al., 2023) and the Dakota County, Minnesota Groundwater Plan 2020-2030 (Dakota County 2021).

Climate

The climate is predominantly continental. Sitting close to the middle of North America, the weather in the watershed can vary widely and rapidly. Both temperature and precipitation can change abruptly. **Error! Reference source not found.** shows the watershed's temperature normals, or a verages, for the last 30 years.

Table 2-b. Temperature normals in °F for the Eagan-Inver Grove Heights watershed.

Minneapolis-St. Paul International Airport (1991-2020)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Maximum	23.6	28.5	41.7	56.6	69.2	79.0	83.4	80.7	72.9	58.1	41.9	28.8	55.4
Minimum	8.8	12.7	24.9	37.5	49.9	60.4	65.3	62.8	54.2	40.9	27.7	15.2	38.4
Mean	16.2	20.6	33.3	47.1	59.5	69.7	74.3	71.8	63.5	49.5	34.8	22.0	46.9

Source: Minnesota State Climatology Office and National Climatic Data Center.

In a normal year, around 31 inches of precipitation falls on the watershed. Table 2-c shows the watershed's precipitation normals. Winter snowfall averages about 51 inches. Snow generally stays on the ground from mid-December to early March. Temperature, snow and rainfall data for the watershed are obtained at the weather station at the Minneapolis-St. Paul International Airport.

Table 2-c. Precipitation normals in inches for the Eagan-Inver Grove Heights watershed.

Minneapolis-St. Paul International Airport (1991-2020)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation	0.89	0.87	1.68	2.91	3.91	4.58	4.06	4.34	3.02	2.58	1.61	1.17	31.62
Snow	11.0	9.5	8.2	3.5	0	0	0	0	0	0.8	6.8	11.4	51.2

Source: National Oceanic and Atmospheric Administration (NOAA) National Weather Service National Climatic Data Center.

Our hydrological landscape is changed as recently we have been experiencing changing precipitation and variations in winter temperatures. These changes result in more extremes and variability in precipitation, additional freeze thaw cycles in the winter, and wider variations in snow

and ice cover. Total monthly precipitation is expected to decrease and monthly average and maximum air temperatures are expected to increase in the E-IGHWMO area according to the MDNR's Minnesota Climate Trends tool for the Lower Minnesota River watershed. NOAA Atlas 14 provides the most current precipitation frequency data used in stormwater modeling. NOAA Atlas 15 is in development and is expected to include both updated precipitation frequency values based on the most recent rainfall data and future projections of precipitation frequency values to allow evaluation of impacts of changing precipitation patterns on future infrastructure needs.

Soils

Most of the watershed's upland area is composed of well-drained Kingsley sandy or Kinsgley-Mahtomedi complex soils. Texture is generally loamy or sandy with moderate infiltration rates when thoroughly wetted. Moderately permeable soils dominate the watershed, as indicated by the large areas covered by soil hydrologic groups B and C (Figure 2-a). Soil hydrologic group characteristics are detailed in Table 2-d.

The soils information in Figure 2-a and Table 2-d is provided for use in describing the general characteristics of the major soil associations for summary purposes. The Dakota County Soil Survey or on-site soil borings should be consulted for site-specific information. The Soil Survey is available through the Dakota County SWCD or the online Web Soil Survey (USDA NRCS 2019).

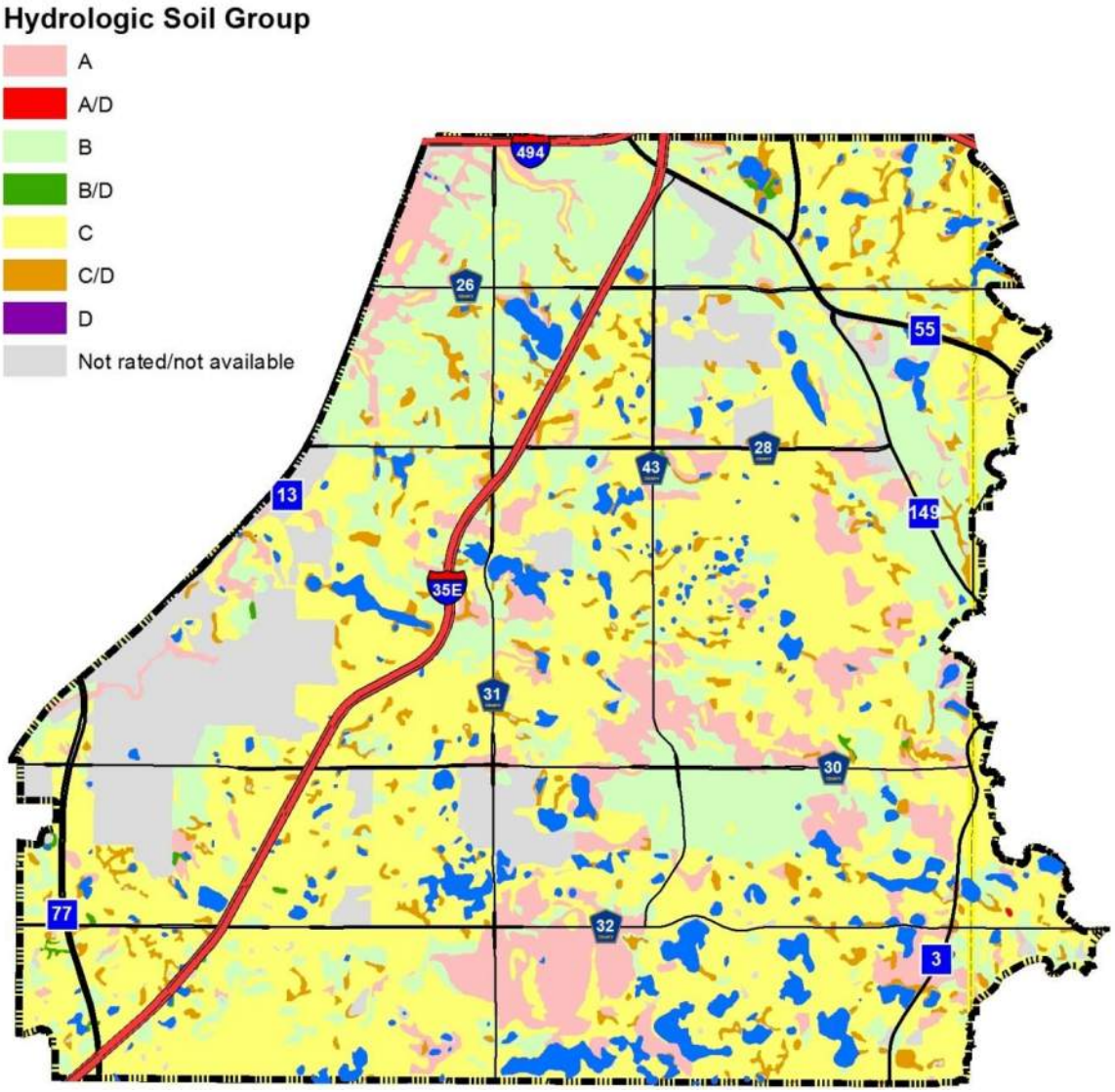


Figure 2-a. Soils by Hydrologic Soil Group classification.
Source: USDA NRCS SSURGO.

Table 2-d. Soil characteristics and infiltration rates by Hydrologic Soil Group (HSG).

HSG	Infiltration Rate/Hour	Texture	Unified Soil Classification System
A	1.63”	Gravel, sandy gravel and silt gravels	GW – well graded gravels, sandy gravels GPO – Gap-graded or uniform gravels, sandy gravels GM – Silty gravels, silty sandy gravels SW – Well-graded, gravelly sands
	0.8”	Sand, loamy sand or sandy loam	SP – Gap-graded or uniform sands, gravelly sands
B	0.45”		SM – Silty sands, silty gravelly sands
	0.3”	Loam, silt loam	MH – Micaceous silts, diatomaceous silts, volcanic ash
C	0.2”	Sandy clay loam	ML – Silts, very fine sand, silty or clayey fine sands
D	0.06”	Clay loam, silty clay loam, sandy clay, silty clay or clay	GC – Clayey gravels, clayey sandy gravels SC – Clayey sands, clayey gravelly sands CL – Low plasticity clays, sandy or silty clays OL – Organic silts and clays of low plasticity CH – Highly plastic clays and sandy clays OH – Organic silts and clays of high plasticity

Source: Minnesota Stormwater Manual (MPCA 2025).

2.2 WATERSHED BIOLOGICAL ENVIRONMENT

Vegetation

At the time of the Public Land Survey conducted by the U.S. Surveyor General's Officei in 1854, the watershed was dominated by the Big Woods of maple-basswood forest. Aspen-oaklands and oak openings and barrens are ecotones between open prairie and deciduous forest, characterized by small groves of trees interspersed with prairie (Figure 2-b). This vegetation surrounding our lakes and wetlands contributed to positive historic water quality. Since the area has been converted to urban uses and agriculture only a few remnants of the pre-settlement vegetation remain, mostly preserved within local and Lebanon Hills Regional Park. The MDNR and Minnesota Biological Survey (MBS) have identified those locations in the watershed with intact native plant communities, and those with biodiversity significance (Figure 2-c).

The MDNR identified Regionally Significant Natural Resource Areas by evaluating land characteristics: the imperviousness of areas of natural land cover; the size and shape of the natural area; the adjacent land use and land cover; connectivity to other natural areas; and presence of native plant communities. The Minnesota Biological Survey (MBS) identified sites of biodiversity significance that may contain high quality native plant communities, rare plants, rare animals, and/or animal aggregations. A biodiversity significance rank is assigned based on the number of rare species, the quality of the native plant communities, size of the site, and context within the landscape.

The MBS identifies native plant communities, which are a group of native plants that interact with each other and the surrounding environment in ways not greatly altered by humans or by introduced plant or animal species. Table 2-e indicates the native plant community types that have been identified in the watershed and their conservation status.

Table 2-e. Native plant community types observed in the Eagan-Inver Grove Heights watershed.

Community Type	Last Cataloged	State Status
Mesic prairie (southern) type	1998	S2
Oak forest (southeast) mesic type	1993	SNR
Tamarack swamp (southern)	1993	S2S3
Red oak-sugar maple – basswood – (bitternut hickory) forest	1993	S3
Red oak-white oak forest	1994	S4

Minnesota conservation status ranks include S1 = critically imperiled; S2 = imperiled; S3 = vulnerable to extirpation; S4 = apparently secure, uncommon but not rare; S5 = secure, common, widespread, and abundant.

Note: Current as of 2025. Not based on a comprehensive survey of the state or watershed. Absence of observation does not mean other species or community types are not present.
Source: Natural Heritage and Nongame Research Program of the Division of Ecological and Water Resources, Minnesota Department of Natural Resources (MDNR).

Rare, Threatened, and Endangered Species. The MDNR Natural Heritage and Nongame Research Program maintains a database of observations of rare plant and animal species compiled from historical records from museum collections and published information supplemented with data

from years of field work. No rare plant species were listed in that database as being observed recently or at some time in the past within the watershed.

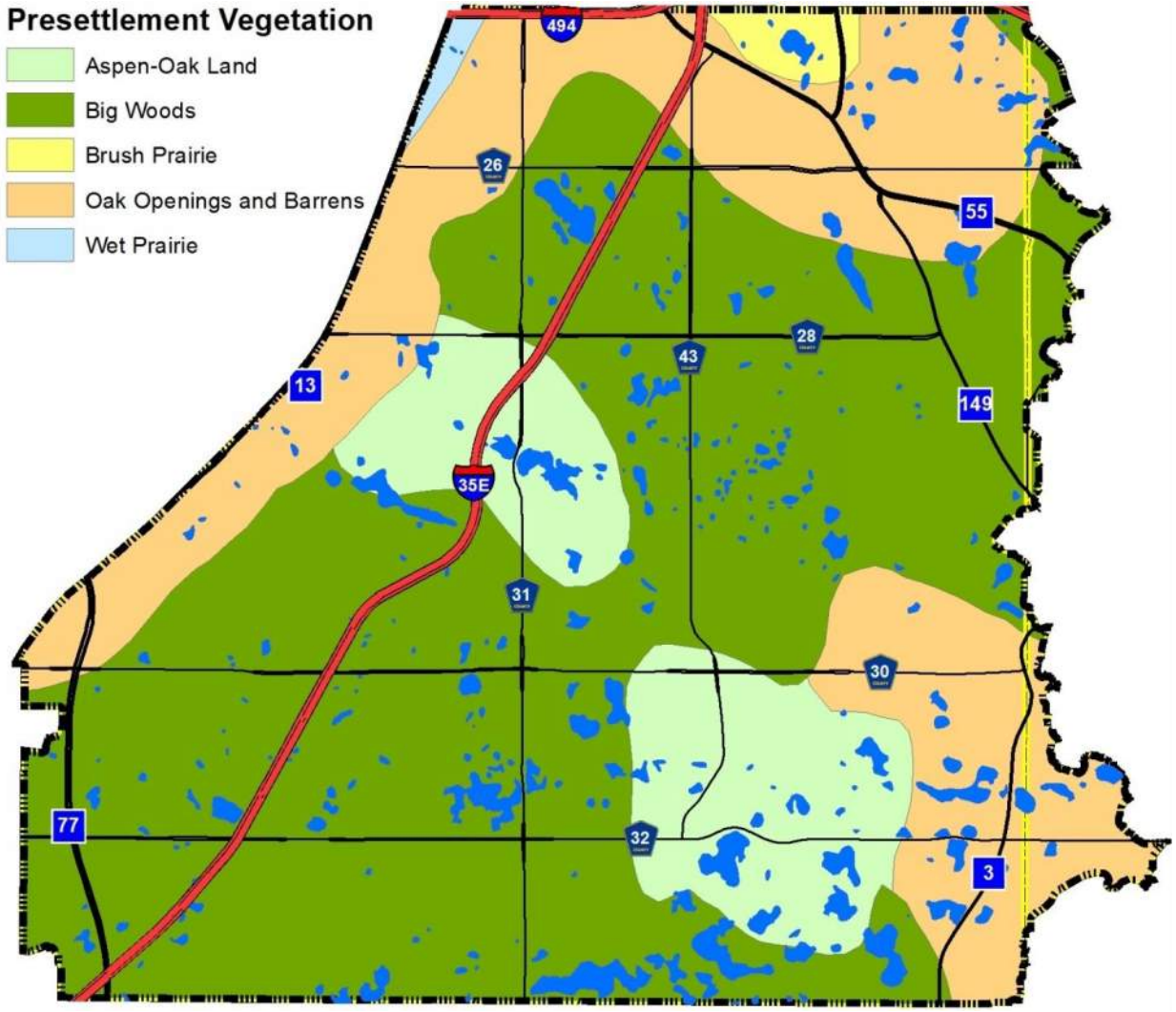


Figure 2-b. Presettlement vegetation.
Source: Minnesota MDNR.

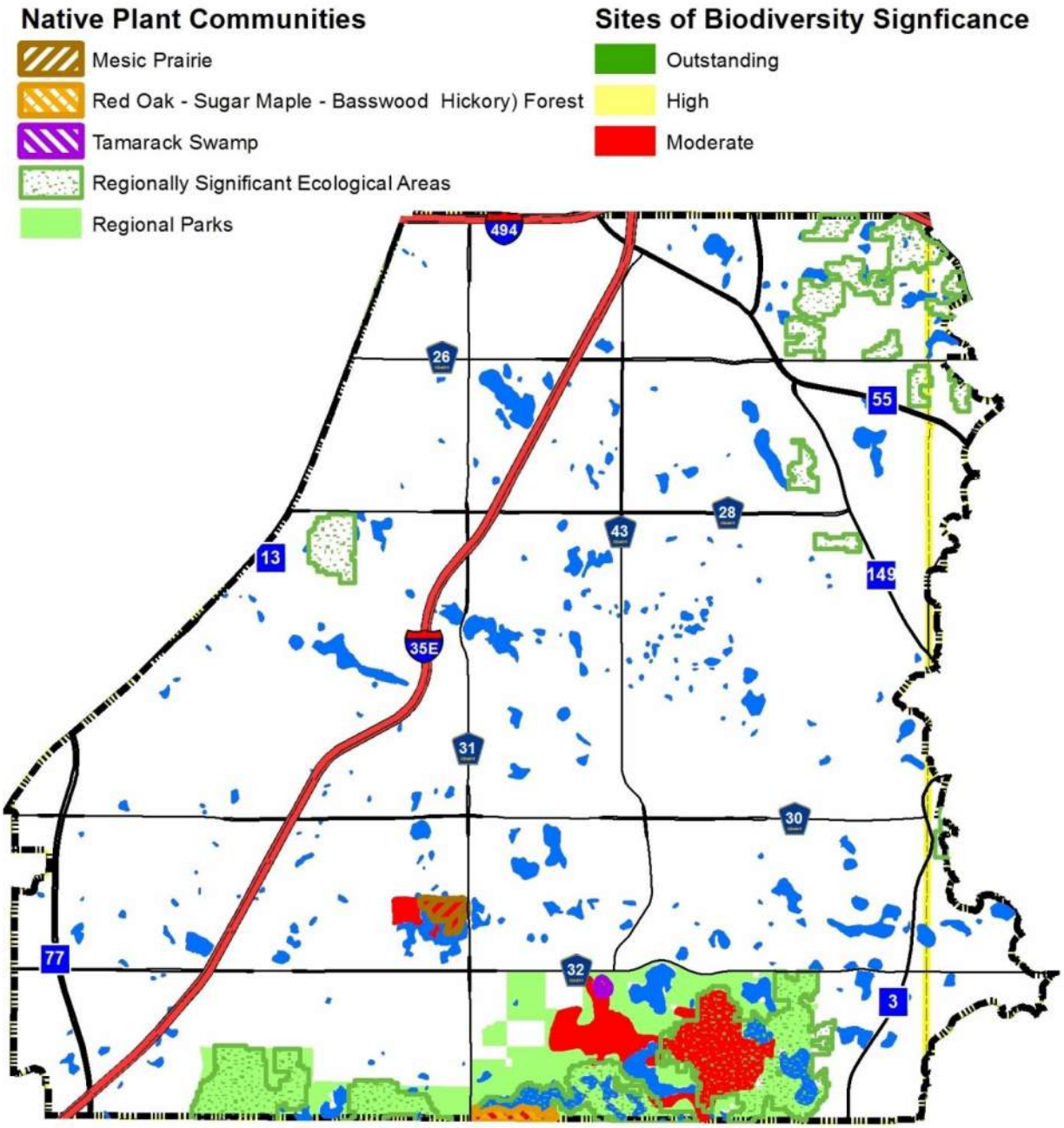


Figure 2-c. Sites of ecological diversity and significance.
Source: Minnesota County Biologic Survey (CBS), Minnesota MDNR.

Fish and Wildlife

Fish. Fishing is possible on many of the lakes in the Eagan-Inver Grove Heights watershed and holds recreational and cultural value for the community. The City of Eagan maintains an online resource that includes directions and lake access (City of Eagan 2025), common fish species (City of Eagan 2025), and information about lake management (City of Eagan 2025). Lakes that are regularly stocked with fish by the MDNR are shown in Table 2-f. The MDNR Lakefinder (MMDNR 2025) website may be consulted to find the latest fish survey information for each lake.

Table 2-f. MDNR and City of Eagan fish stocking in lakes in the Eagan-Inver Grove Heights watershed, 2003-2024.

Lake	Year(s) Stocked	Fish Stocked
Almquist	2024	Bluegill sunfish
Bald	2017, 2018, 2019, 2020	Fathead minnows, walleye, yellow perch, channel catfish
Blackhawk	2017, 2021	Walleye, yellow perch
BP-6 (Oak Ride Elem.)	2022	Largemouth bass, bluegill sunfish, black crappie
Bur Oaks	2017, 2019, 2020, 2023	Green sunfish, bluegill sunfish, fathead minnows, largemouth bass, walleye, channel catfish
Carlson	2017-2024, 2010-2015	Walleye, channel catfish, yellow perch
Fish	2014, 2016-2018, 2021	Walleye, channel catfish, northern pike, yellow perch
Heine	2017, 2018, 2022	Walleye, yellow perch, channel catfish
Holz	2023	Green sunfish
LeMay	2014-2015, 2018	Yellow perch, Black crappie, largemouth Bass
Schwanz	2018, 2022	Walleye, yellow perch, channel catfish
McDonough	2010-2014	Bluegill sunfish, black crappie
Thomas	2017, 2023, 2024	Bluegill sunfish, largemouth bass, green sunfish, channel catfish

Source: Minnesota MDNR, City of Eagan.

Rare, Threatened, and Endangered Species. The MDNR Natural Heritage and Nongame Research Program maintains a database of observations of rare plant and animal species compiled from historical records from museum collections and published information supplemented with data from years of field work. Table 2-g shows the rare fish and wildlife species listed in that database as being observed recently or at some time in the past within the watershed.

Table 2-g. Rare species observed in the Eagan-Inver Grove Heights watershed.

Scientific Name	Name	Last Cataloged	Federal Status	State Status
Buteo lineatus	Red-shouldered Hawk	1988	-	SPC
Emydoidea blandingii	Blanding's turtle	1988	-	THR
Emydoidea blandingii	Blanding's turtle	1993	-	THR
Emydoidea blandingii	Blanding's turtle	2000	-	THR
Chondestes grammacus	Lark sparrow	2008	-	SPC
Emydoidea blandingii	Blanding's turtle	2017	-	THR
Crotalaria saggittalis var. sagittalis	Rattlebox	2017	-	SPC
Emydoidea blandingii	Blanding's turtle	2018	-	THR
Etheostoma microperca	Least darter	2018	-	SPC
Notropis anogenus	Pugnose shiner	2018	-	THR
Emydoidea blandingii	Blanding's turtle	2019	-	THR
Etheostoma microperca	Least darter	2019	-	SPC
Notropis anogenus	Pugnose shiner	2019	-	THR
Etheostoma microperca	Least darter	2020	-	SPC
Notropis anogenus	Pugnose shiner	2020	-	THR
Emydoidea blandingii	Blanding's turtle	2021	-	THR
Cygnus buccinator	Trumpeter Swan	2021	-	SPC
Etheostoma microperca	Least darter	2021	-	SPC
Notropis anogenus	Pugnose shiner	2021	-	THR

Minnesota conservation status ranks include END-endangered, THR-threatened, SPC-special concern.
Note: Current as of 2025. Not based on a comprehensive survey of the state or the watershed. Absence of observation does not mean other species are not present. Some species may have multiple observations.
Source: Natural Heritage and Nongame Research Program of the Division of Ecological and Water Resources, Minnesota Department of Natural Resources (MDNR).

Aquatic Invasive Species. As of 2025, eleven lakes and ponds in the watershed have been determined by the Department of Natural Resources (MDNR) to be infested with Eurasian Watermilfoil (*Myriophyllum spicatum*), an invasive exotic plant species. These include Fish, Holland, McDonough, O'Brien, Portage (in Lebanon Hills Regional Park), Blackhawk, Schultz, Thomas, and Schwanz Lakes, as well as Valley Pond and Heine Pond. In addition, Hay Lake, Holz Lake, and Unnamed Lake (19006400) were listed as infested MDNRwith Flowering Rush (*Butomus umbellatus*). Furthermore, numerous other lakes and wetlands contain non-native Purple Loosestrife (*Lythrum salicaria*) and Curly-leaf Pondweed (*Potamogeton crispus*). The City of Eagan made significant efforts to control flowering rush as soon as it was discovered in city boundaries.

Unique Features and Scenic Areas

The 2,000-acre Lebanon Hills Regional Park is located within the watershed and managed entirely by Dakota County. This large park offers hiking, mountain biking, camping, horse trails, geocaching, kayaking, cross country skiing, and picnicking, and offers numerous classes and events at its Nature Center. City parks provide access to the watershed's many lakes.

While not located within the Eagan-Inver Grove Heights watershed, Nicols Fen, a rare calcareous fen, is downstream of the watershed on the Minnesota River bluff. Kennealy Creek and Harnack Creek, MDNR-designated trout streams, are also downstream of the watershed.

2.3 WATERSHED HUMAN ENVIRONMENT

Current Land Use and Population

The predominant land use in the watershed is single family detached residential which make up 37 percent of the overall area. Parks, recreational, and preserves comprise 14 percent of the overall land area, dominated by the nearly 2,000-acre Lebanon Hills Regional Park. Undeveloped, a category which includes undevelopable wetlands and grasslands in addition to lands that are currently vacant and developable (Table 2-h) comprises 10 percent. Almost the entire watershed (Figure 2-d) is within the existing Metropolitan Urban Service Area (MUSA), except a small portion of the watershed in Inver Grove Heights. This area outside the MUSA is not included in Metropolitan Council's urban growth planning. The 2020 Census population of the watershed is approximately 71,855 persons. The MPCA has designated portions of the Eagan-Inver Grove Heights watershed as environmental justice areas, with over 40% people of color. View the MPCA Environmental Justice map at the following link for more information: Understanding Environmental Justice in MN.

Future Land Use

Areas of projected urban growth are shown in Figure 2-e. Future land use data was compiled by the Metropolitan Council from cities' most recent Comprehensive Plans, and represents cities' expected 2040 land use. Most of the projected growth is expected to be in the existing developed corridors, with a mix of development at different densities, and to include residential, commercial, and industrial uses.

Table 2-h. 2020 land use in the Eagan-Inver Grove Heights watershed.

Land Use	Area (acres)	%
Single Family Detached	7326.5	37%
Park, Recreational, or Preserve	2794.3	14%
Undeveloped	1892.4	10%
Industrial or Utility	1300.9	7%
Single Family Attached	1154.6	6%
Major Highway	1015.0	5%
Open Water	898.6	5%
Retail and Other Commercial	794.6	4%
Institutional	780.3	4%
Office	545.7	3%
Multifamily	543.6	3%
Mixed Use Industrial	321.7	2%
Agricultural	89.9	<1%
Golf Course	70.3	<1%
Mixed Use Commercial	41.7	<1%
Manufactured Housing Park	14.0	<1%
Mixed Use Residential	10.4	<1%
Farmstead	2.5	<1%
Total	19597.0	

Source: Metropolitan Council from city Comprehensive Plans and aerial photo interpretation.

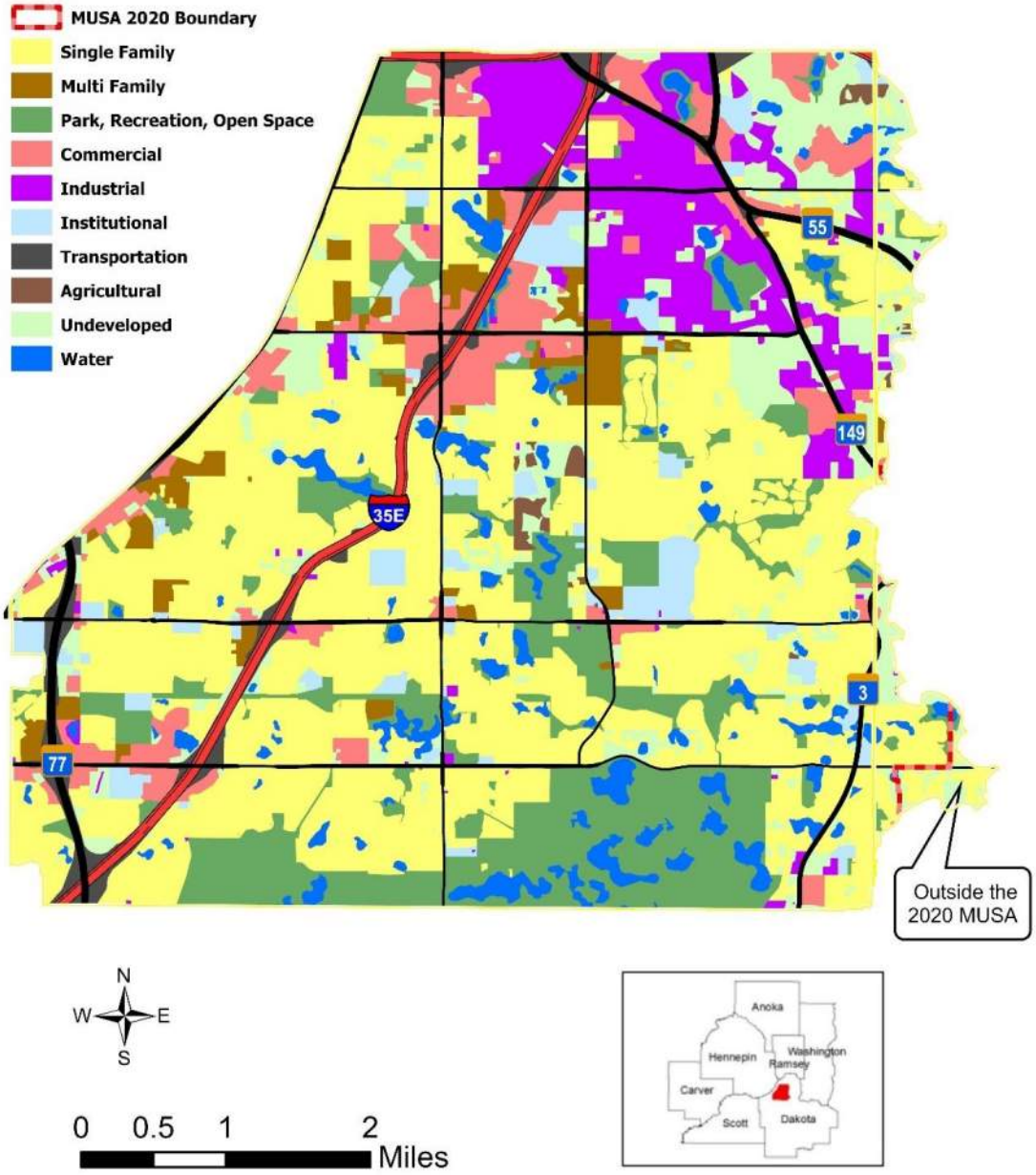


Figure 2-d. 2020 land use in the Eagan-Inver Grove Heights watershed.
Source: Metropolitan Council.

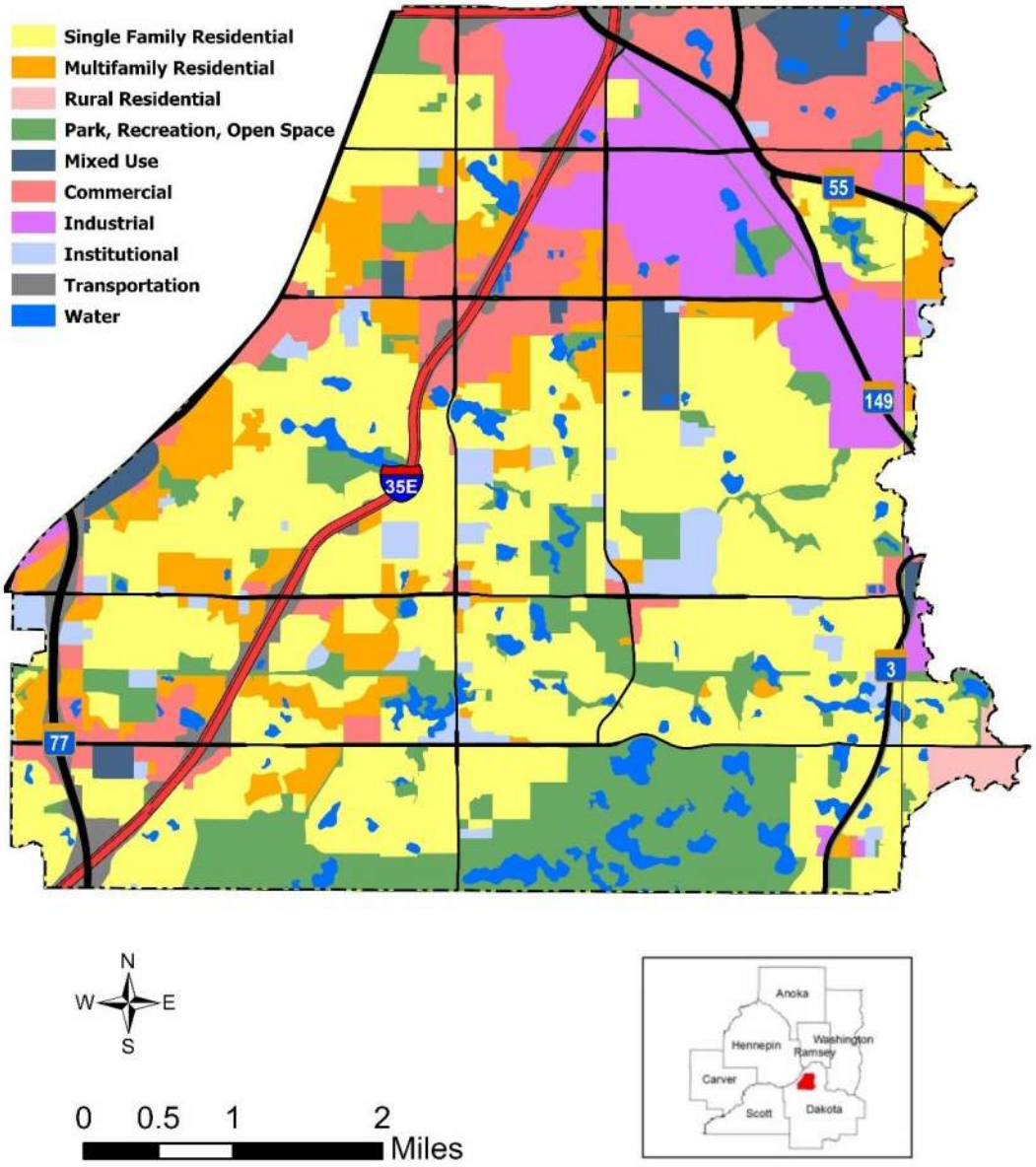


Figure 2-e. Planned 2040 land use in the Eagan-Inver Grove Heights watershed.
Source: Metropolitan Council.

Water-Based Recreation

Public parks abut many of the lakes in the watershed (Figure 2-f). The Lebanon Hills Regional Park on the south end of the watershed preserves many lakes and wetlands, with an extensive trail system providing access and viewing. Dakota County Parks maintains a swimming beach on Schulze Lake and a fishing pier on Holland Lake.

The City of Eagan and the MDNR maintain shore fishing piers and shore fishing areas on several of the lakes in the watershed. Some of the lakes are canoe-accessible, and there is a public boat ramp on Fish Lake. Eight lakes are part of the MDNR's Fishing in the Neighborhood program, which promotes fishing across all age groups by providing access to lakes, fish stocking, and programming in schools and at special events.

Existing Environmental Hazards

The City of Eagan has a long history of industrial activity, much of it pre-dating any or strong environmental regulation. There are over 50 sites within the City that had or currently have the presence or potential presence of a hazardous substance, pollutant, or contaminants that may affect water resources. Currently there are over 450 Hazardous Waste generators in the city, but the current programs have stronger safeguards than in the past. Groundwater connections (ie. interactions between surface water and groundwater), hazardous waste, leaking above- and below-ground storage tanks, and hazardous materials spills can be potential sources of surface and groundwater contamination. Past contamination limits areas available for groundwater infiltration in otherwise suitable areas. The MPCA maintains a current on-line mapping tool called What's in My Neighborhood (MPCA 2025) with information about air quality, hazardous waste, remediation, solid waste, tanks and leaks, and water quality. Many program sites exist within the boundaries of the watershed, including brownfields cleanup sites, hazardous waste generating sites, and negative air quality contributors.

The MPCA also has a Smart Salting Tool (SST) to help communities assess the origin of chloride within their community. The tool does not make assessment based on WMO boundaries, but the Cities of Eagan and Inver Grove Heights combined have over 130,000 tons of chlorides (the Industrial Source is the Seneca WWTP for water softening which serves eight communities, including area with the E-IGHWMO) (Figure 2-g). Within Eagan and Inver Grove Heights, there are nearly 8,000 tons of water softening salt used annually (the majority of which goes to the Seneca WWTP or into septic drainfields). Winter Maintenance accounts for nearly 9,000 tons of chloride with the two Cities. The SST tools allow an entity to create a chloride assessment and a chloride action plan.

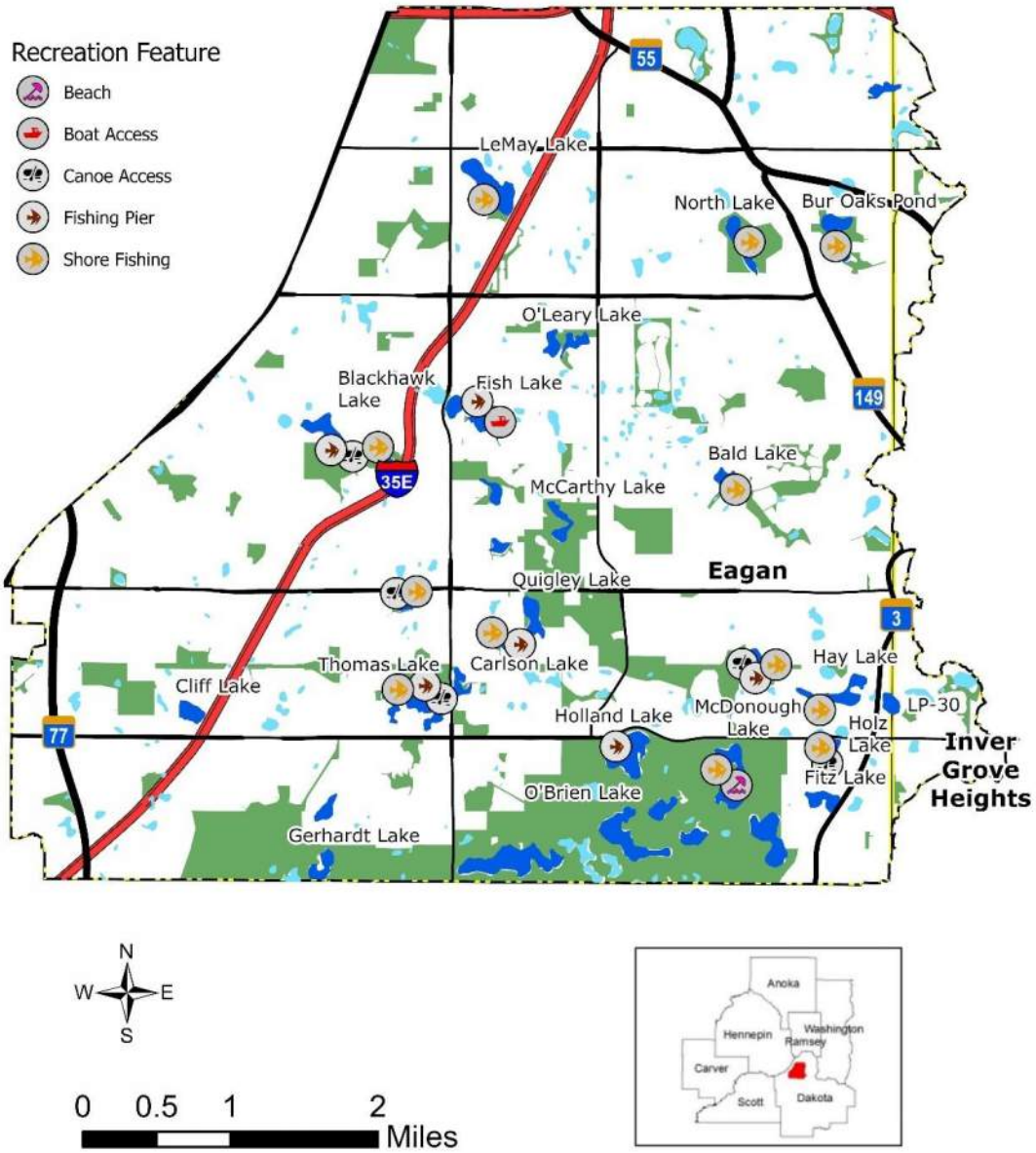
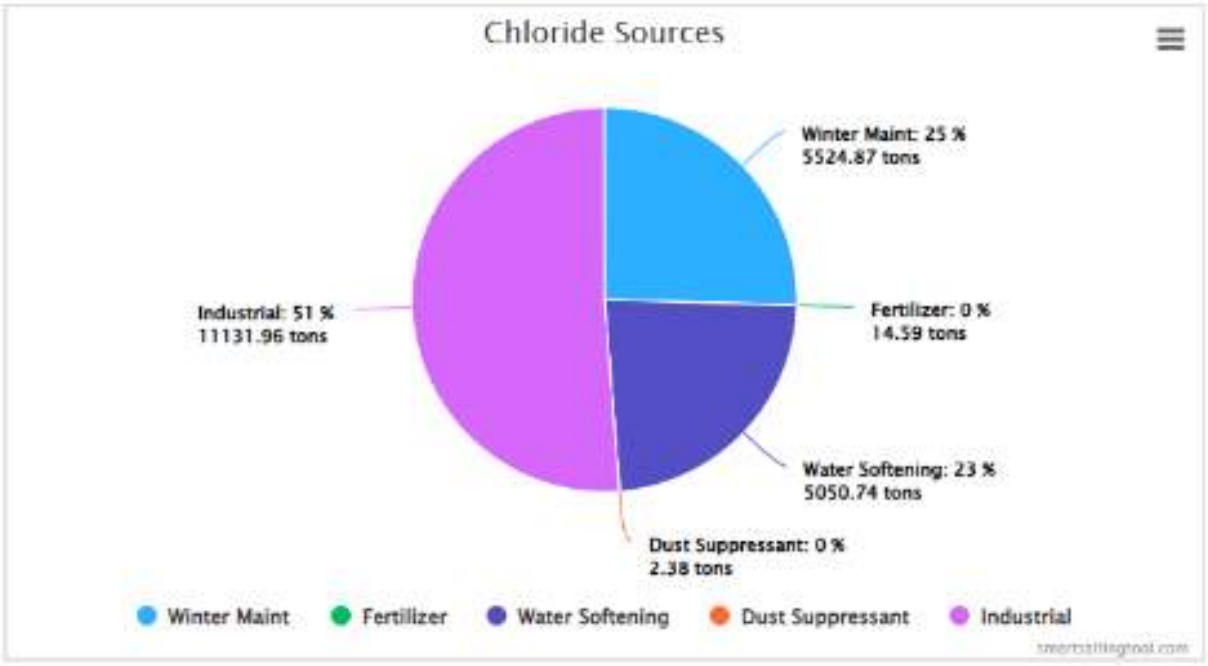


Figure 2-f. Water-based recreation in the Eagan-Inver Grove Heights watershed, 2025.
Source: Minnesota MDNR, City of Eagan.



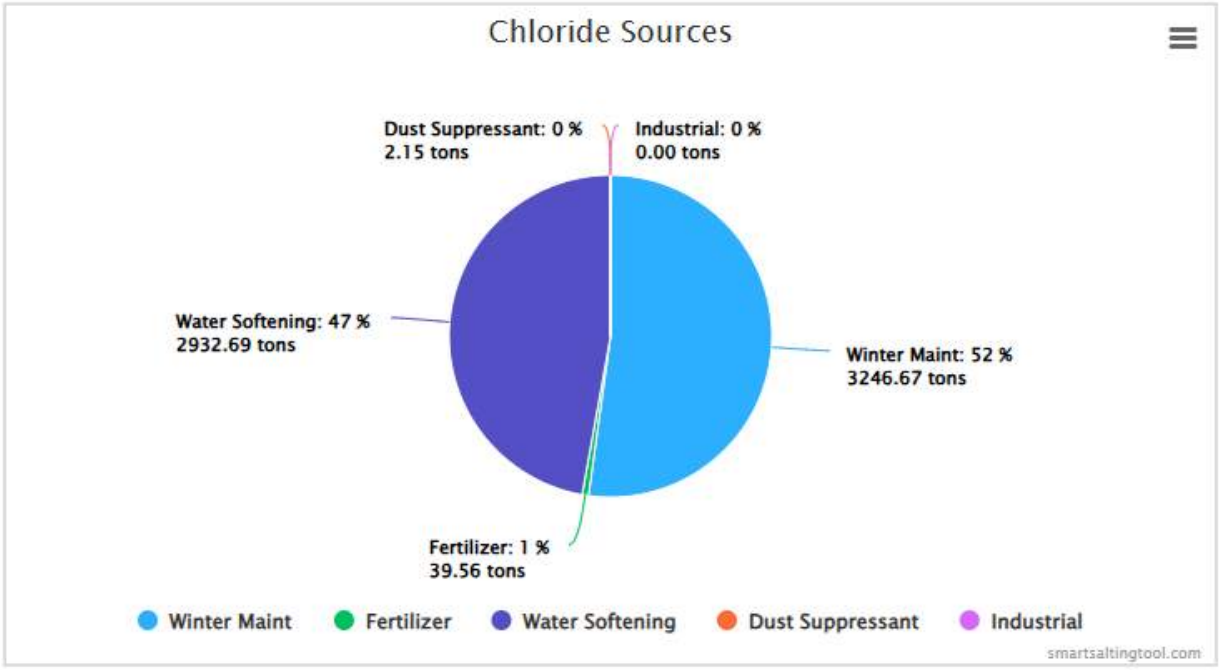


Figure 2-g. Chloride sources in the Cities of Eagan (top) and Inver Grove Heights (bottom).
Source: MPCA Smart Salting Tool.

2.4 WATERSHED WATER RESOURCES

Lakes

There are 29 lakes in the E-IGHWMO watershed, shown in Figure 2-h. The MDNR lake number and shoreland classification, lake morphometry, and water quality data are shown in Table 2-i.

Minnesota's eutrophication standards for lake water quality vary depending on the depth classification of the lake (Table 2-j). Shallow lakes have a maximum depth of 15 feet or less or have 80% or more of the lake area shallow enough to support emergent and submerged rooted aquatic plants. Some of the smallest and shallowest of these lakes may be considered wetlands; those eutrophication standards would not apply to those waterbodies. More information about the lakes can be found online at the MDNR's LakeFinder application (MDNR 2025).

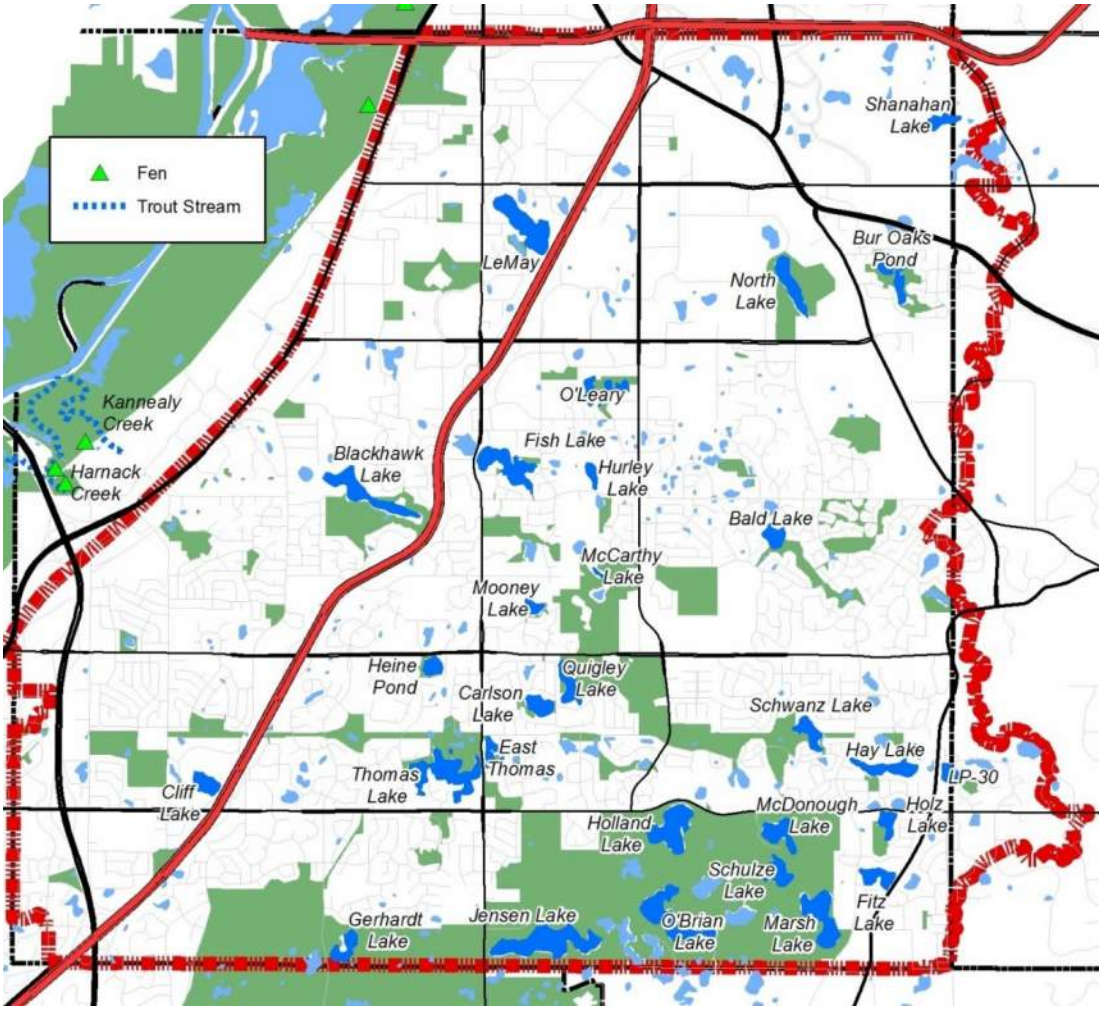


Figure 2-h. Lakes in the Eagan-Inver Grove Heights watershed boundary (red). Background green areas are parks and note that fens are outside the jurisdiction of the E-IGHWMO.
Source: Minnesota MDNR.

Table 2-i. Characteristics of lakes in the Eagan-Inver Grove Heights watershed (2014-2024).

Lake	City ID#	MDNR ID# (prefix 19-)	Surface Area (ac)	Max Depth (ft)	Depth Class	MDNR Class	Summer Average (May-Sept)		
							TP (µg/L)	Chl-*a* (µg/L)	SD (m)
Bald	JP-20	0061	10.3	9	Shallow	GD	59	18	1.6
Blackhawk	BP-1	0059	37.7	10	Shallow	RD	27	9	1.7
Bur Oaks	GP-1	0259	10.0	9	Shallow	-	82	13	1.8
Quigley (Carlson)‡	LP-42	0066	12.0	19	Deep	GD	31	25	2.0
Cliff (Pitts)‡	AP-11	0068	11.8	8	Shallow	GD	43	11	1.2
East Thomas	BP-8	0161	8.8	9	Shallow	-	32	12	1.6
Fish	JP-4	0057	28.9	33	Shallow	GD	152	15	2.0
Fitz (Unnamed)‡	LP-26	0077	11.5	9	Shallow	GD	25	21	1.4
Gerhardt*	BLP-2	0069	14.9	17	Shallow	NE	-	29	0.9
Hay (Unnamed)‡	LP-31	0062	19.8	9	Shallow	GD	27	9	1.8
Heine Pond (Unnamed)‡	BP-5	0153	7.2	30	Deep	-	11	6	3.2
Holland*	LP-38	0665	36.4	75	Shallow	NE	-	4	3.9
Holz	LP-28	0064	9.2	9	Shallow	GD	25	18	1.7
Jensen*	LP-12	0071	51.9	6	Shallow	NE	-	12	1.6
LeMay	DP-2	0055	36.5	16	Shallow	GD	47	12	1.8
McCarthy	JP-9	0060	11.3	6	Shallow	RD	189	105	0.9
McDonough*	LP-45	0076	16.7	11	Shallow	RD	-	14	2.2
North (Unnamed)‡	EP-2	0136	14.2	11	Shallow	-	51	14	2.2
O'Brien*	LP-18	0072	35.1	10	Shallow	NE	-	7	3.5
O'Leary †	DP-7	0056	16.1	5	Shallow	GD	156	40	1.1
Schulze (Schultz)‡*	LP-24	0075	11.9	13	Shallow	NE	-	12	2.6
Schwanz	LP-32	0063	11.5	13	Shallow	RD	24	13	2.1
Shanahan	FP-8	0054	13.1	7	Shallow	GD	33	9	1.4
Thomas	BP-7	0067	40.4	7	Shallow	GD	32	16	1.3

Sources: Minnesota MDNR, MPCA EDA

†Considered by the MPCA to be wetlands and not subject to Table 2-i eutrophication standards.

‡Lake names are as used locally. The MDNR lake names are shown in parentheses.

*Lakes within Lebanon Hills Regional Park

GD= General Development NE = Natural Environment; RD = Recreational Development (Shoreland Management Classification)

Table 2-j. Eutrophication water quality standards for lakes in the watershed.

Parameters	Shallow Lakes	Deep Lakes
Total Phosphorus (TP) (mg/L)	≤60	≤40
Chlorophyll-*a* (chl-*a*) (mg/L)	≤20	≤14
Secchi Depth transparency (SD) (meters)	≥1.0	≥1.4

Impaired Lakes. Five of the lakes in the watershed (Carlson, Holz, Fish, North, and Blackhawk) have been designated by the MPCA and EPA as Impaired Waters and are listed on the state's draft 2024 303(d) list: two for not meeting state nutrient concentration standards (Carlson, Holz), and three exceeding mercury in fish tissue standards (Fish, North, and Blackhawk) (Figure 2-i). Nutrient TMDLs have been completed for the two nutrient-impaired lakes (Table 2-k) as part of the City of Eagan's Neighborhood Lakes TMDL and Management Plans report (Wenck Associates 2015). Wasteload allocations for the lakes can be found in the TMDL report. The MPCA has completed a statewide TMDL for the listed mercury impairments.

The MPCA also has assessed many waterbodies in the state for chloride impairments. A primary source of chloride is salt used on roads and other pavement. Water softener salt is another primary source of chloride and is typically routed through wastewater treatment (drainfield for private septic systems or to WWTP's and discharged into downstream watersheds for those businesses and residences hooked to municipal resources). The MPCA's draft Twin Cities Metropolitan Area Chloride Management Plan includes Fish Lake among the lakes characterized as "high risk" for chloride impairment, meaning it is not currently listed as impaired, but past monitoring includes results within 10 percent of the chronic criteria (207 mg/L). For this lake, there are large amounts of impervious surface in the vicinity used for highway commercial (big box retailers).

Delisted Lakes. Three lakes in the watershed (LeMay, Fitz, and Fish) have been delisted from the state's list of impaired waters (under section 303(d) of the Clean Water Act). Additionally, Carlson and Holz lakes, impaired for nutrients, have been referred for delisting by the PCA in 2026. To be removed from the state's list of impaired waters, a lake must have water quality data collected over a 10-year period where these data demonstrate compliance with water quality standards consistently. Effective watershed management practices should be implemented to address and reduce the source of the impairment.

Fish Consumption Guidance. Four lakes in the watershed have waterbody-specific guidance for fish consumption due to mercury and/or PFAS found in fish tissue as of July 2025. When eating fish from one of the lakes listed in Table 2-l, follow the guidance for the listed species. For all other species of fish from these lakes, follow the MDH Statewide Fish Consumption Guidelines (MDH 2025). The statewide guidelines should also be followed when eating fish from any lake not listed in Table 2-l. It is important to note that fish from most lakes in the watershed have not been tested for contaminants. For more information, visit the MDH Fish Consumption Guidance webpage (MDH 2025).

Fish Lake crappies contain PFOS with fish consumption guidance of one serving per month for sensitive groups, and one serving per week for the general public. Sunfish in LeMay Lake contain PFOS, and it is recommended that sensitive populations limit consumption to one serving per month (MDH 2025). MDNR LakeFinder can be used to find all waterbody-specific guidelines for fish consumption.

Table 2-k. Impaired lakes in the Eagan-Inver Grove Heights watershed.

Lake	MDNR Lake #	Affected Use	Pollutant	TMDL Approved	TMDL Delisting
Carlson	19-0066	Aquatic Recreation	Nutrients	2014	2026 (in review)
Holz	19-0064	Aquatic Recreation	Nutrients	2014	2026 (in review)
Fish	19-0057	Aquatic Consumption	Mercury in fish & Nutrients	2010	2014
North	19-0136	Aquatic Consumption	Mercury in fish	2008	N/A
Blackhawk	19-0059	Aquatic Consumption	Mercury in fish	2008	N/A

Source: Minnesota Pollution Control Agency Draft 2014 303(d) list.

Table 2-l. Waterbody-specific fish consumption guidance for the Eagan-Inver Grove Heights watershed.

Lake Name	Population[1]	Fish Species	Consumption Guideline	Contaminant
Blackhawk	Sensitive	Crappie	1 serving per month	Mercury
Blackhawk	General	Crappie, Sunfish	1 serving per week	Mercury
Fish	Sensitive	Crappie	1 serving per month	PFOS
Fish	General	Crappie	1 serving per week	Mercury, PFOS
Fish	General	Northern pike	1 serving per month	Mercury
McDonough	General	Bullhead, Sunfish	2 servings per week	Mercury
LeMay	Sensitive	Sunfish	1 serving per month	PFOS
LeMay	General	Sunfish	1 serving per week	PFOS

[1] The MDH Fish Consumption Guidance program defines populations as:

- Sensitive populations: people who are or may become pregnant, people who are breastfeeding or plan to breastfeed, and children under age 15.
- General populations: people not planning to become pregnant, men, and boys over age 15.

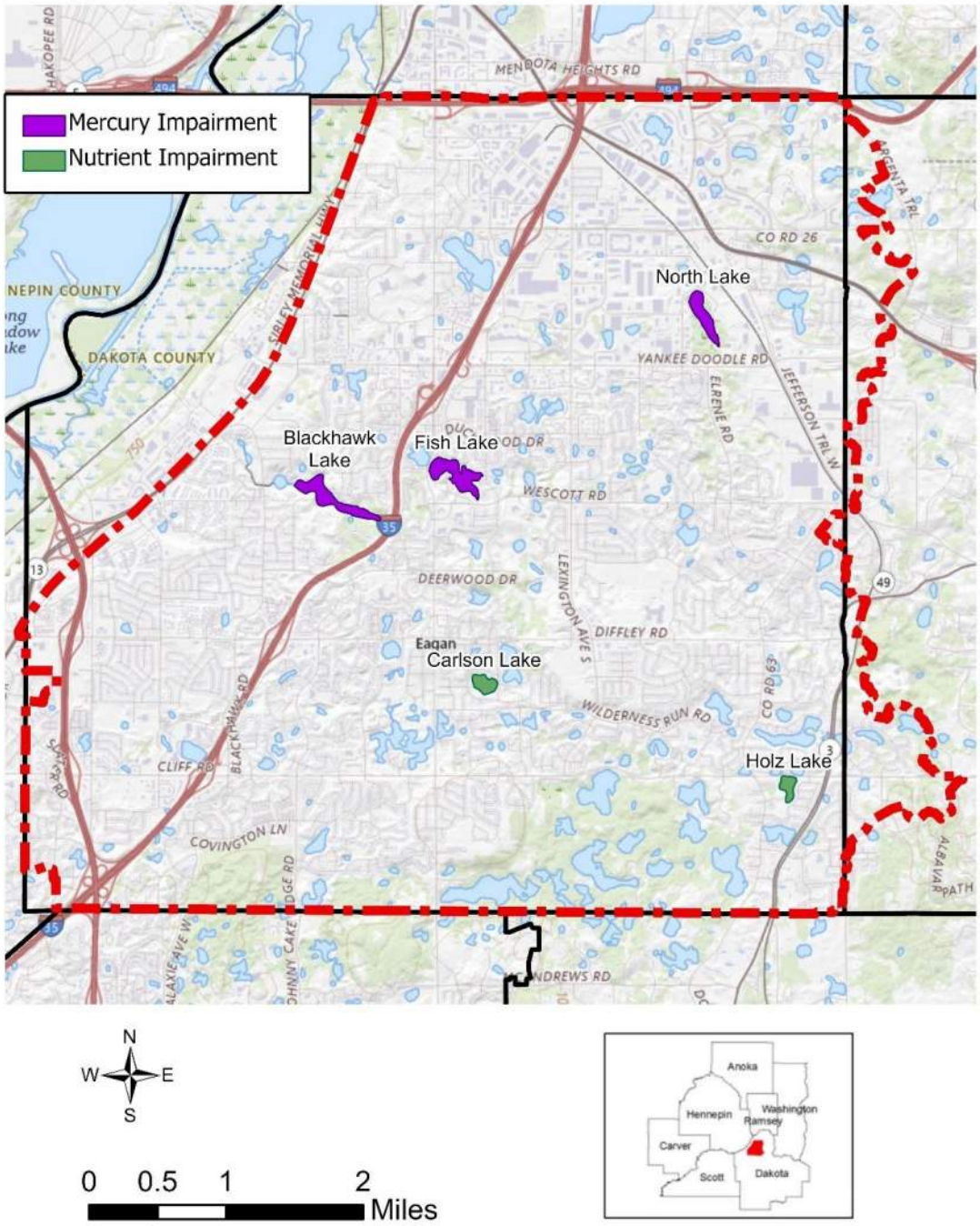


Figure 2-i. Impaired waters in the Eagan-Inver Grove Heights watershed. Fish Lake was delisted in 2014. Carlson and Holz Lakes will be delisted by 2026.

Source: Minnesota Pollution Control Agency Draft 2024 303(d) list and Eagan Neighborhood Lakes Study.

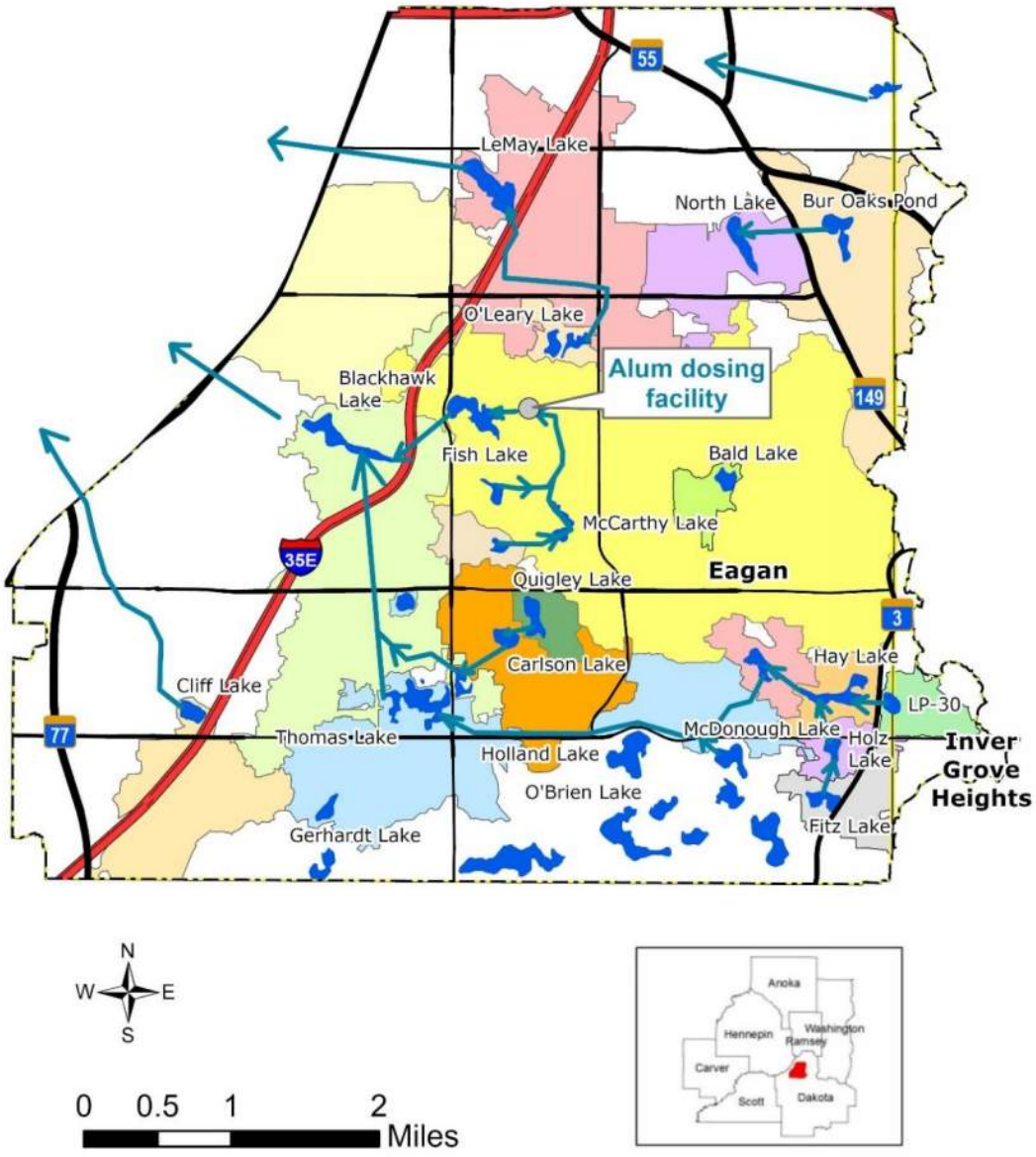


Figure 2-j. City of Eagan's designated priority lakes in the Eagan-Inver Grove Heights watershed.
Source: MDNR, City of Eagan

Priority Lakes. Figure 2-j above shows the City of Eagan's thirty designated priority lakes in the Eagan-Inver Grove Heights watershed and the associated lake subwatershed boundaries. An alum dosing facility is located directly east of Fish Lake. The arrows denote the directionality of water flow (primarily surface runoff) across the watershed.

Streams

There are no perennial streams in the Eagan-Inver Grove Heights watershed. Some intermittent or seasonal channels may temporarily convey runoff during snowmelt or high flow events. Kennealy

Creek and Harnack Creek, MDNR-designated trout streams, lie downstream of the watershed along the Minnesota River bluff (Figure 2-h).

Ditches

There are no regulated ditches in the Eagan-Inver Grove Heights watershed.

Wetlands

The US Fish and Wildlife Service compiled wetland maps from aerial photo interpretation as part of the National Wetland Inventory (NWI). Wetland scientists use two common classification schemes to identify wetland type – the US Fish and Wildlife Service's "Circular 39" system, and a replacement classification system developed by Cowardin et al. for the Fish and Wildlife Service, commonly referred to as the Cowardin system. The Circular 39 system was originally developed as a means for classifying wetlands for waterfowl habitat purposes. Nine of the Circular 39 freshwater wetland types are found in Minnesota. The Cowardin scheme is a hierarchical classification based on landscape position, substrate, flooding regime, and vegetation. While the Cowardin scheme has been officially adopted by the Fish and Wildlife Service and other agencies, the Circular 39 system is still commonly used because of its simplicity and ease of use. Table 2-m and Figure 2-k show the types and areal extent of NWI wetlands in the watershed.

The City of Eagan inventoried wetlands in the community in 2007 and completed functions and values assessments on a select number in areas that were expected to develop in the coming years. Eagan's Water Quality and Wetland Management Plan (Wenck 2020) includes a classification system and framework for managing wetlands. Section 11.67 of Eagan City Code sets forth regulatory provisions by wetland management classification.

The City of Inver Grove Heights has completed a wetland inventory in its Northwest Area and Southwest Study Area, which includes that part of the City within the E-IGHWMO. Functions and values assessments and a wetland management classification system were developed for the wetlands in the Northwest Area (Bonestroo 2003). The City is updating Section 9 Chapter 5 of its City Code to revise stormwater and wetland management provisions.

Table 2-m. NWI wetland area by type in the Eagan-Inver Grove Heights watershed.

Circular 39 Type	Acres	Percent
1 - Seasonally Flooded	9.0	<0.1%
2 - Wet Meadow	3.9	<0.1%
3 - Shallow Marsh	401.0	2.0%
4 - Deep Marsh	135.1	0.7%
5 - Shallow Open Water	873.0	4.5%
6 - Shrub Swamp	29.9	0.2%
7 - Wooded Swamp	43.4	0.2%
Upland	18,101.6	92.4%
Grand Total	19,596.9	

Cowardin Type	Acres	Percent
Unconsolidated Bottom (UB)	996.3	5.1%
Emergent (EM)	409.9	2.1%
Forested (FO)	47.3	0.2%
Scrub-shrub (SS)	29.9	0.2%
Aquatic Bed (AB)	11.5	0.1%
Unconsolidated Shore (US)	0.3	<0.1%
Upland	18,101.6	92.4%
Grand Total	19,596.9	

Source: Minnesota MDNR, 2013 NWI Update East-Central Minnesota.

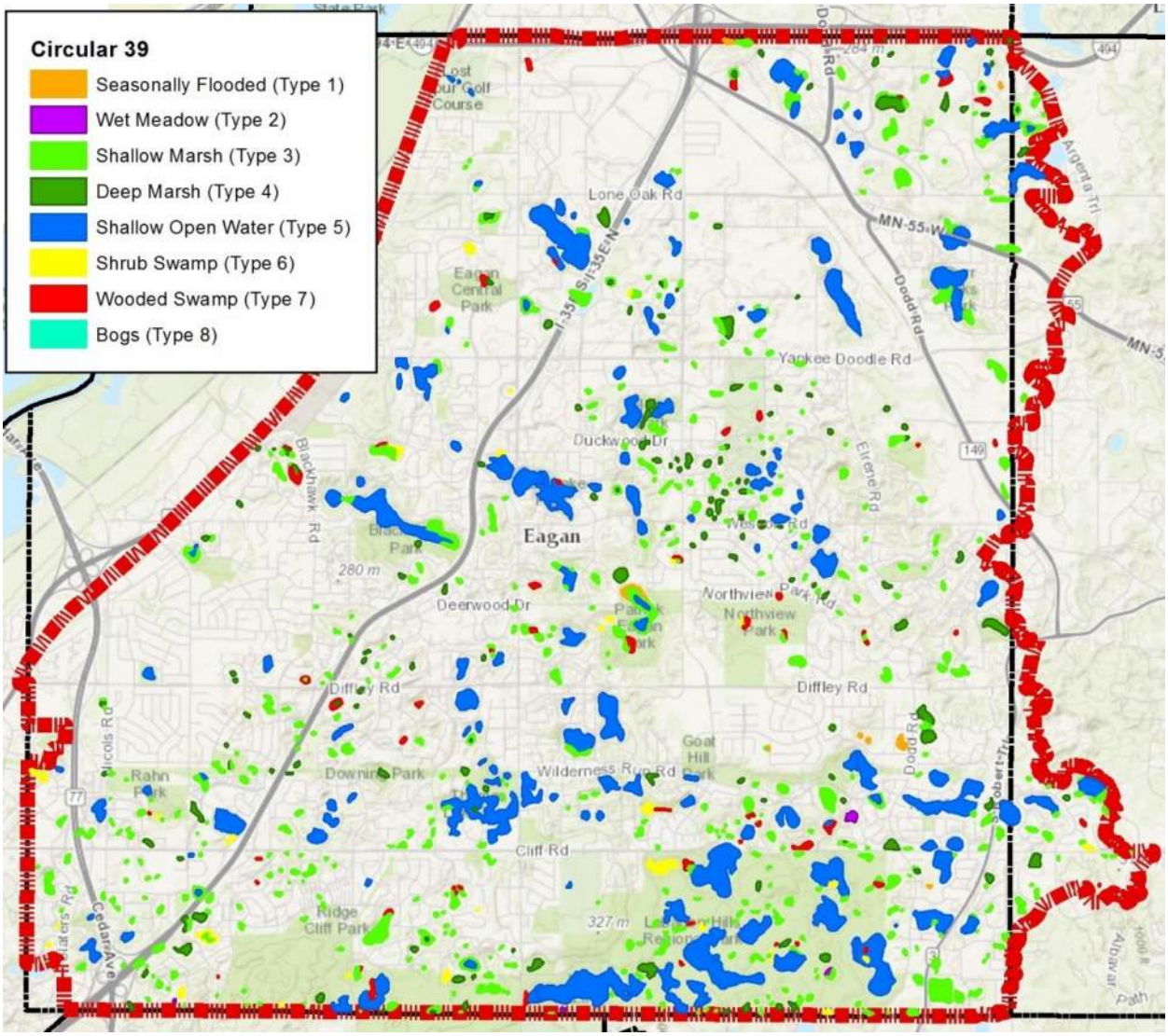


Figure 2-k. National Wetlands Inventory wetlands in the Eagan-Inver Grove Heights watershed.
Source: Minnesota MDNR, 2013 NWI Update East-Central Minnesota.

Public Waters

State statutes classify certain waterbodies as Waters of the State and the MDNR maintains maps and lists on the Public Waters Inventory (PWI). Public Waters wetlands include all Type 3, Type 4, and Type 5 wetlands (as defined in U.S. Fish and Wildlife Service Circular No. 39, 1971) that are 10 acres or more in size in unincorporated areas or 2.5 acres or more in size in incorporated areas. Public watercourses are defined as natural and altered watercourses with a total drainage area greater than two square miles or natural and altered watercourses designated by the MDNR commissioner as trout streams. Work within waterbodies designated on the PWI is regulated by the MDNR. Public Waters are all water basins and water courses that meet the criteria set forth in MN Section 103G.005.

The City of Eagan Water Quality and Wetland Management Plan (Wenck Associates 2018) and Inver Grove Heights 4th Generation Water Resources Management Plan (WSB 2018) provide detailed information on Public Waters within each community, and those data are included here by reference. The MDNR is in the process of updating the PWI. The 8-year project will review and update public waters by county. Dakota County has not yet been reviewed.

Floodplain

Flooding can have significant negative impacts on a community. Floodplain areas flood most often and severely. Land use regulations define the floodplain as the area covered by the flood that has a one percent chance of occurring each year, also known as the 100-year flood. The floodplain is divided into two zoning districts: the floodway and flood fringe. The floodway includes the river channel and nearby land areas which must remain open to discharge the 100-year flood. The flood fringe, while in the flood plain, lies outside the floodway. Regulations usually allow development in the flood fringe but require flood-proofing or raising to the legal flood protection elevation and providing compensating storage.

In 1968, Congress created the National Flood Insurance Program (NFIP) to make flood insurance available to property owners at federally subsidized rates. The NFIP required communities to adopt local laws to protect lives and future development from flooding. The Federal Emergency Management Agency (FEMA) first must formally notify a community that it has special flood hazard areas (SFHA) before it can join the NFIP.

FEMA notifies communities by issuing a Flood Hazard Boundary Map (FHBM). Each of the communities in the Eagan-Inver Grove Heights watershed has a Flood Insurance Study. In both Eagan and Inver Grove Heights, the Special Flood Hazard Areas are limited to the floodplains of the Minnesota and Mississippi Rivers. No Special Flood Areas have been identified within the Eagan-Inver Grove Heights watershed. Both cities maintain floodplain ordinances regulating low floor elevations adjacent to ponds and other bodies of water to limit localized flooding potential. Flood insurance studies and printed panels may be obtained from city or county offices, or FEMA's online Flood Map Service Center. The entire Eagan-Inver Grove Heights watershed may experience localized flooding to various depths; however, there are no FEMA AE zones within the watershed extent (100-Year Flood Level). AE zones are areas of modeled, predictable flooding and are most often found adjacent to lakes, streams, and wetlands.

Groundwater

Each city's groundwater resources are described in more detail in their Local Water Plans. The City of Eagan draws its water from the Jordan, Mt. Simon, and Prairie Du Chien-Jordan aquifers (Black and Veatch 2019). The City of Inver Grove Heights obtains its municipal water from the Prairie du Chien-Jordan and the Mt. Simon-Hinckley aquifers (Wenck 2018). The MDNR notes that the Minnesota legislature created a few specific groundwater management areas as a tool for MDNR to address difficult groundwater-related resource challenges. E-IGHWMO is outside the MDNR's *North and East Metro Groundwater Management Area* suggesting that water use in the E-IGHWMO area is not currently causing resource management concerns.

The 2020-2030 Dakota County Groundwater Plan provides information on groundwater flow and quality for the aquifers present in the watershed (Dakota County 2021). In addition, Drinking Water Supply Management Areas (DWSMAs) cover many parts of the watershed. Numerous private wells and septics are also present in the watershed (362 total), as shown in Minnesota Department of Health's Source Water Protection Web Map Viewer. Private well sampling information through the MDH can be found at the Eagan Private Well Study and Inver Grove Heights Private Well Sampling links. Drinking Water contaminants of greatest concern include geogenic arsenic and manganese. Chloride was detected in 88% of wells, likely from septic systems. There are no known groundwater contamination plumes in the Eagan-Inver Grove Heights watershed (MPCA 2025).

Both cities have also completed Wellhead Protection Plans for areas within the DWSMAs, approved by the Minnesota Department of Health. The City of Eagan is currently in the process of amending their plan and Inver Grove Heights is due to begin amending their plan in the next few years. These Wellhead Protection Plans model groundwater flow, determine DWSMAs and their vulnerability to contamination, identify potential sources of contamination of groundwater in the DWSMAs, and lay out strategies for managing those potential sources of contamination. DWSMAs show the area where the cities will draw water from for the next 10 years and therefore are areas that should be managed to reduce the risk of contamination of groundwater. When spills do happen in these areas, swift action should be taken to protect groundwater. More information about these Wellhead Protection Plans can be obtained from the respective city (City of Eagan 2025) and at the Minnesota Department of Health Source Water Protection website page (MDH 2025).
There are no known groundwater contamination plumes noted in the watershed.

3.0 Watershed Organization and Operations

This section describes how the Eagan-Inver Grove Heights Watershed Management Organization is organized, its purpose and authorities, and its various operating programs.

3.1 Eagan-Inver Grove Heights Watershed Management Organization

Governance

The watershed is governed by a five-member board comprised of three representatives from Eagan and two from Inver Grove Heights who are appointed by each City Council for a term determined by the city and outlined in the JPA. See Section 6 Subdivision 2 of the JPA for more detail. The Board meets every two months, holding a meeting on the third Tuesday of the convening month. Meetings are open to the public. The Joint Powers Agreement setting forth the authorities granted to the Board is included in Appendix A.

Operations

The E-IGHWMO has no employees; it contracts with the Dakota County SWCD for administrative services. The Board contracts with consultants when necessary to support its work. This may include attorneys, engineers, scientists, or others. Temporary advisory committees were established for Management Plan development, but the Board has not established any standing Technical or Citizen's Advisory Committees.

3.2 Roles and Responsibilities

Board

A Board of Managers has been established as the governing body of the E-IGHWMO tasked with implementation of this Watershed Management Plan. Operating expenses are funded through an annual apportionment to each city based fifty percent on their proportionate share of assessed valuation of real property within the watershed and fifty percent on their proportional area of the watershed. These expenses include the cost of contractual engineering, administrative, and legal services and programs such as water quality monitoring, public information and education, and special studies.

The Board cannot directly levy taxes or special assessments but has the ability to assess members who subsequently decide how they want to generate the funds. Options available to the members include *ad valorem* tax, creation of a watershed management tax district, special assessments, or Chapter 444 storm sewer utility financing. The Board may also request bonding from Dakota County.

The WMO recognizes the comprehensive programs and regulatory controls implemented by the two member cities and has worked to define a role that avoids duplication of water management efforts. Most of the issues typically administered by WMOs and set forth in their statutory purpose, such as managing inter-community flows and ensuring uniformity of local policies and official controls, are currently managed by the two cities and not the WMO. The WMO, through this planning process and through ongoing coordination with member cities, has identified a role

Cities

The cities are the regulatory authority for E-IGHWMO and engage in hands on implementation of water resource management.

Member cities have approved stormwater management plans consistent with the first-generation watershed plan and will update local water management plans and controls as needed to remain consistent with this watershed management plan. The cities have in place ordinances requiring stormwater management, erosion control, and wetland and floodplain management.

Both member cities are regulated as National Pollutant Discharge Elimination System (NPDES) Municipal Separate Small Storm Sewer System (MS4) communities and have approved NPDES permits and Stormwater Pollution Prevention Programs (SWPPPs) that include numerous activities to manage stormwater and prevent water resource degradation. Those SWPPPs also contain implementation actions to reduce pollutant loading and manage the rate and volume of stormwater runoff, provide public education and involvement, detect and eliminate illicit discharges, manage construction site runoff, address stormwater management in development projects, and establish a pollution prevention program.

The Board will support and facilitate city-led capital projects for construction by member cities. While the WMO does not undertake capital projects, it may facilitate them through cost-share and grant funding and supplement them by providing education and outreach opportunities. In addition to E-IGHWMO supported projects, member cities may undertake additional improvements, such as including BMPs in routine street reconstruction projects. The member cities are responsible for managing stormwater and preventing water resource degradation, including maintaining their stormwater infrastructure and facilities.

Member cities also engage in various water and natural resources management activities such as Lakefest and “Touch-A-Truck” activities, Adopt-A-Park programs, urban forestry and Arbor Day activities, promotion of recycling and composting, and environmental and water resource education published in the city newsletter and website. The City Councils of both member cities have established a citizen environmental commission charged with providing advice to the Council on environmental matters.

Cities must ensure their local water management plans are consistent with the goals and standards of the E-IGHWMO Second-Generation plan. For reference, see Section 6 of the plan (Impact on Local Governments).

Dakota County Soil and Water Conservation District (SWCD)

The Dakota County SWCD was organized in 1944 to assist land occupiers and homeowners, in rural and urban settings, to protect soil and water resources. Programs and services are offered in several management areas:

- Agricultural Resource Management
- Backyard Conservation
- Natural Resources Management
- Stormwater Management
- Watershed Management

The SWCD provides education and outreach to students and to agricultural and suburban property owners; offers technical advice and support to individuals and to cities, townships, and watershed organizations; and provides financial incentives to conserve and manage the land and water resources of the county through programs such as Landscaping for Clean Water and Lawns Re-Imagined. Priority focus areas include preventing soil loss, managing the impacts of stormwater, and protecting and restoring native plant communities. E-IGHWMO partners with the SWCD by contracting for staff support, by providing funds for the Landscaping for Clean Water program implementation, and by funding other educational programming in the watershed.

County

The Dakota County Environmental Resources Department operates a number of programs to conserve natural and water resources in the county and the Eagan-Inver Grove Heights watershed, including establishing minimum septic system standards that are enforced locally, well testing and sealing assistance, and the Wetland Health Program (WHEP), a program for adult volunteers, as well as other activities in the non-urbanized areas of the county. The 2020-2030 Dakota County Groundwater Plan (2021) outlines the county's responsibilities and goals for groundwater protection. The E-IGHWMO partners with Dakota County through their Low Salt No Salt program and by supporting the County Groundwater Plan by educating residents on groundwater protection practices. Dakota County also directly controls 14% of the land based within E-IGHWMO through their ownership of Lebanon Hills Park.

Metropolitan Council

The Metropolitan Council's 2040 Water Resources Policy Plan aims to guide the region towards a present and future where water is clean and plentiful, the benefits of water and water services are maximized and equitable, and risks and negative outcomes are eliminated or minimized. The plan contains the regional water context, water policies, the Wastewater System Plan, and the Metro Area Water Supply Plan. Metropolitian Council operates the Seneca Wastewater Treatment Plant, which takes all the sanitary sewer discharge from both Eagan and Inver Grove Heights and takes the pump septic effluent from any contractor serving residents in Eagan and Inver Grove Heights. The Metropolitan Council provides many programs, tools, and activities to support regional water use.

Among the many programs and activities are several of particular interest to the Board: the development of targeted watershed pollutant loads; review of watershed and local water plans and comprehensive plans for consistency with Metro goals and objectives; grant programs; the Community Assisted Lake Monitoring Program (CAMP); the Environmental Information Management System; and participating in their subregional engagement groups.

Minnesota Pollution Control Agency

The MPCA operates several programs applicable to watershed planning. The MPCA monitors water quality, sets standards, and implements various controls. Of particular interest are the National Pollutant Discharge Elimination System (NPDES) program and implementation of the Clean Water Act. The MPCA manages the NPDES Phase I construction and industrial stormwater discharge permitting. MPCA also manages the NPDES Phases I and II permitting for municipal separate storm sewer systems (MS4s). Dakota County and MnDOT are also MS4s with conveyances in the Eagan-Inver Grove Heights watershed.

The MPCA implements the Clean Water Act's requirement that states adopt water quality standards to protect the nation's waters. The Environmental Protection Agency (EPA) and MPCA require managers of water resources that fail to meet these established standards to prepare a Total Maximum Daily Load (TMDL) study identifying the source of the pollutant and a plan for bringing the water resource into compliance. The City of Eagan worked closely with the MPCA and received funding from that agency to complete TMDLs and lake management plans as part of the Eagan Neighborhood Lakes TMDLs and Management Plans study.

Board of Water and Soil Resources

The Board of Water and Soil Resources (BWSR) is the state's administrative agency for soil and water conservation districts, watershed districts, metropolitan watershed management organizations, and county water managers. BWSR's core functions include implementing the state's soil and water conservation policy, comprehensive local water management, and the Wetland Conservation Act (WCA). BWSR reviews and approves watershed management plans and periodically assesses watershed organizations as part of its Performance Review and Assistance Program (PRAP). BWSR offers several funding opportunities including the watershed-specific Watershed Based Implementation Funding (WBIF) Grant Program, which allocates funding across watershed organizations on two-year funding cycles for prioritized projects. Other BWSR Clean Water Fund programs, such as Projects and Practices, can be funding sources for watershed projects.

BWSR wetland specialists participate in Technical Evaluation Panels to assess potential wetland impacts and mitigation strategies. BWSR also periodically audits LGUs to assure that WCA is being administered properly. Finally, BWSR is the implementation agency for the Clean Water Funds grant program funded by the Clean Water, Land, and Legacy Amendment.

Minnesota Department of Health

The Environmental Health Division of the MDH operates many programs of interest to the Board. Programs include Drinking Water Protection (which includes Source Water and Wellhead Protection), Well Management, Health Risk Assessment (including the Fish Consumption Guidance Program which partners with the MDNR and MPCA for the Interagency Fish Contaminant Program), Site Assessment and Consultation, and other environmental health services. MDH's Drinking Water Protection Section is responsible for the administration and enforcement of the Safe Drinking Water Act, which includes federal drinking water quality standards and requirements for a Wellhead Protection program, among other regulations.

To avoid duplication of effort, the E-IGHWMO set a role of encouraging groundwater recharge through infiltration in accordance with wellhead protection plans and raising awareness about groundwater and water conservation issues, relying on expertise from the cities to perform its functions.

Minnesota Department of Natural Resources

The MDNR manages and protects the state's natural resources and operates numerous programs. The department provides technical assistance and information regarding best management practices, natural resource management, incorporating natural resource conservation in land use planning, and lakescaping.

The MDNR Fisheries Division monitors and improves fisheries within the state including many of the lakes within the watershed. It also promotes fishing opportunities and provides grants to assist in the construction of fishing piers. The Ecological and Water Resources (EWR) Division focuses on an overarching vision of "Healthy Watersheds throughout Minnesota." "Healthy Watersheds" include: 1) sustainable quantities and qualities of water; 2) sustainable levels of biodiversity; 3) well-functioning ecosystem services; and 4) sustainable and vibrant natural resource economies and recreational opportunities. The EWR Division also provides the following services:

- It maintains an inventory of public waters and operates permit programs for working in public waters or for appropriating public waters;
- Oversees the state's floodplain management program;
- Provides local stewardship by coordinating the Mississippi River Critical Area and MNRAA programs and the Shoreland Management program;
- Collects, analyzes, and provides ecological information, including:
- Location and management of rare resources (endangered and threatened species, critical habitats, high quality natural communities);
    - ❖ Management of harmful exotic species, fish and wildlife diseases, and negative environmental impacts of human development;
    - ❖ Management and restoration of important ecological processes in river systems and key natural areas; and

- ❖ Development of information about Minnesota's ecosystems and their significance to a sustainable quality of life.

The MDNR's webpage at MDNR.state.mn.us/lakefind/index.html is LakeFinder, a MDNR supported tool that combines information from various MDNR Divisions, as well as other state agencies, such as Minnesota Pollution Control Agency (water quality) and Minnesota Department of Health (fish consumption). This tool contains data for more than 4,500 lakes and rivers throughout Minnesota. The MDNR also provides a variety of specialized programs oriented to property owners or neighborhood groups, such as the Aquatic Plant Management programs, Urban Fisheries and Fishing in the Neighborhood, and Metro Greenways programs.

Minnesota Department of Agriculture

The MDA is statutorily responsible for the management of pesticides and fertilizer other than manure to protect water resources. The MDA implements a wide range of protection and regulatory activities to ensure that pesticides and fertilizer are stored, handled, applied and disposed of in a manner that will protect human health, water resources and the environment. The MDA works with the University of Minnesota to develop pesticide and fertilizer Best Management Practices (BMPs) to protect water resources, and with farmers, crop advisors, farm organizations, other agencies and many other groups to educate, promote, demonstrate and evaluate BMPs, to test and license applicators, and to enforce rules and statutes. The MDA has broad regulatory authority for pesticides and has authority to regulate the use of fertilizer to protect groundwater.

4.0 Issues and Goals

This Plan section sets forth the Board's Mission and Vision and discusses the problems and issues that were identified during the Plan development process and the goals the Board will pursue to address them.

4.1 Mission and Vision

This WMO is relatively unique in the Metro Area: it is almost entirely comprised of land in one city—Eagan—and encompasses most of that city.[2] It faces some special challenges defining a role for the Board that fulfills its statutory obligations without creating duplication of effort.

The member cities have a long history of active water and natural resources management. Both member cities are regulated MS4s and implement Stormwater Pollution Prevention Programs that include numerous activities to manage stormwater and prevent water resource degradation. Therefore, most of the issues typically administered by WMOs and set forth in their statutory purpose, such as managing inter-community flows and ensuring uniformity of local policies and official controls, are currently managed by the two cities and not the WMO. The E-IGHWMO Board affirms that the cities' actions, standards, and controls are protective of water resources and has developed a mission and vision that focuses on the WMO's chosen role partner with member cities to achieve water resource goals and to engage and educate citizens toward greater participation in water resource protection and improvement.

MISSION & VISION STATEMENT

To implement programs and foster civic engagement within the watershed to promote citizen participation and responsibility in protecting and improving our water resources and to partner with member cities to achieve water resources goals.

Throughout this planning process, the Board discussed what it does well and their proudest efforts and accomplishments. Using their accomplishments as a guide, the Board updated its vision for roles in watershed management and updated its mission statement to align more closely with current activities and future directions.

The Board is proud of its active and involved managers conducting community outreach and of positive partnerships with the City of Eagan and the City of Inver Grove Heights. Below is a list of

[2] E-IGHWMO is the successor to the former Gun Club Lake WMO that disbanded in 2014 when one member City withdrew.

current successful programs completed during the First-Generation E-IGHWMO plan tenure that the Board would like to continue into the 2nd Generation Plan.

Successful First-Generation E-IGHWMO Plan Accomplishments:

1. E-IGHWMO tabling at community events
2. Distribution of salt cups to raise awareness and change behavior around salt use for deicing
3. Distribution of pet waste bags to raise awareness and change behavior around pet waste management
4. Creation of Water Smart Yards Checklist
5. Water exhibitions at library and community theater events
6. Traveling displays and engaging activities for City use with hands-on experiential learning tools
7. Adopt-a-Drain program implementation and support
8. Publishing regular City Newsletter Updating E-IGHWMO website
9. Sponsoring City Hall Best Management Practices and Educational Signage
10. Selling low-cost rain barrels
11. Developing water-themed educational kits that can be checked out at Westcott (Eagan) or Inver Glen (Inver Grove Heights) locations
12. Organizing community clean-up days
13. Organizing and facilitating neighborhood meetings to educate and engage citizens on water quality improvements
14. Partnering with CLIMB Theater for elementary education and outreach programming
15. Leading Minnesota Water Stewards program
16. Presenting at City Council meetings to communicate WMO's purpose and projects
17. Funding contributions for elementary school educational water quality programs
18. Landscaping for Clean Water project support
19. Advocating for the protection and improvement of water resources in the E-IGHWMO watershed
20. Providing targeted support as a partner with member cities to implement actions that will achieve the WMO's and member cities' water resource goals
21. Foster support and collaboration with multiple stakeholders

4.2 Assessment of Problems and Issues

The E-IGHWMO Board identified problems and issues confronting water resources management in the watershed and ranked those that were of high priority. The process to assess problems and issues included soliciting input from state agencies, member cities, citizen advisory groups and a community survey.

Organizations that responded to the Second-Generation Plan initiation notice include BWSR, MDNR, MDA, MDH, MetCouncil, and MPCA. This early input included both a review of resources available

from the agencies to assist with the planning and implementation process, and an overview of issue areas that the agencies recommended the E-IGHWMO consider in the Plan.

The Board also solicited input from member cities and citizen advisory committees (Sustainable Eagan Advisory Commission and Inver Grove Heights Environmental Advisory Commission) and conducted a community survey to gather resident input on water resource priorities. Specific details on input can be found in Appendix 9.2, 9.3, 9.4, and 9.5.

The identified priority issues were areas where the E-IGHWMO can complement—not duplicate—the efforts of Eagan and Inver Grove Heights, aligning its initiatives with existing city and agency plans.

The priority issue areas were identified as:

1. Water quality improvement and pollution reduction education and outreach efforts are not reaching as broad an audience as needed for increased engagement and impact.
2. Deicing salt use is still excessive in some areas despite current education and outreach efforts.
3. Education and assessment support is needed for shoreline practices and aquatic vegetation survey to provide comprehensive lake management.
4. Groundwater conservation and protection has not been a focus of education and outreach efforts.
5. Lake access for fishing could be expanded and improved to provide more opportunities for fishing without damage to shorelines.

4.3 WATERSHED MANAGEMENT PLAN PRIORITIES

The Eagan-Inver Grove Heights Watershed Management Organization narrowed down its Second-Generation Watershed Management Plan priorities through an iterative process. Decision factors included discussion from the Board based on their experience with the implementation of the First-Generation Plan and knowledge of local resources and issues, a review of water quality data provided by member cities, input from the TAC, community survey results, and a review of local studies including the 2015 Eagan Neighborhood Lakes TMDL Management Plans Report, 2018 City of Eagan Water Quality and Wetland Management Plan, Dakota County 2020-2030 Groundwater Plan, 2020 MPCA Lower Minnesota River WRAPS Report, and the 2022 E-IGHWMO Performance Review and Assessment by BWSR.

WATERSHED MANAGEMENT PLAN AREAS OF FOCUS

1. *Partner with the cities to fill gaps in water resource assessment and management.*
2. *Undertake an active communication and engagement program with multiple stakeholders.*
3. *Educate the community and provide resources for actions they can take to improve water quality in the watershed.*

The E-IGHWMO Board of Managers established the following priorities to guide this Second-Generation Management Plan:

1. Augment efforts of member cities through education and outreach to local citizens and businesses and through partnerships on grants for capital improvements and plan implementation to improve water quality and limit water quantity impacts.
2. Target education and outreach activities to a broad local audience on key water resource protection topics such as water quality improvements, deicing salt and water softener salt reduction, aquatic invasive species mitigation, shoreline vegetative buffers, and pet waste management, fish consumption, groundwater protection, and water conservation.
3. Support implementation of small, distributed water quality improvement projects through education efforts and cost-share programs.
4. Reduce chloride impact on local and regional waters through education efforts and cost-share programs.
5. Lead volunteer efforts for healthy shoreline initiatives and aquatic invasive species and aquatic macrophyte monitoring.

4.4 MANAGEMENT PLAN GOALS AND ACTIONS

Through the identification and prioritization of issues in the watershed, the E-IGHWMO developed goals for each priority area that will guide activities over the coming decade. These goals were derived through engagement with stakeholder groups, staff at the Cities of Eagan and Inver Grove Heights, and the Board of Managers.

Goals will be achieved through implementation of the actions identified for each goal area. The detailed framework to achieve the WMO's goals is set forth in the Implementation Plan. Member cities supplement and complement E-IGHWMO actions with local regulations and implementation programs. Successful achievement of the goals in this Plan is dependent on partnership between E-IGHWMO and member cities.

Three high-priority goals for the E-IGHWMO are to raise awareness of water resources issues and opportunities, communicate with stakeholders about their potential roles and responsibilities in the management of those resources, and to affect positive changes. The Board will develop and implement a three-year Communication and Outreach Plan that sets forth more detailed messages, strategies, and metrics for evaluating and measuring change in attitudes and behaviors. The Board will review its Communication and Outreach Plan every three years and work together with its partners to update priority messages, strategies, and metrics based on current needs. The WMO will evaluate overall plan goal progress every five years.

To meet its broad goal areas in Water Quality and Quantity, Groundwater, and Education, the E-IGHWMO will target public involvement and education on management and protection of water resources. It will develop and disseminate through a variety of media and delivery practices information about water resources, stormwater management, aquatic invasive species, salt use, shoreline protection and other topics developed in a three-year Communication and Outreach Plan.

The WMO publishes an annual report providing an overview of conditions of the waters in the watershed, a summary of E-IGHWMO efforts, and actions stakeholders can take to protect and improve those waters.

E-IGHWMO will partner with entities such as its member cities, Dakota County, Dakota SWCD, nonprofit organizations, Watershed Partners, University Extension, and others to maximize cost-effectiveness, ensure consistency of messaging, and increase audience reach. Finally, it will engage volunteers such as Minnesota Water Stewards, Master Naturalists and Master Gardeners, Landscaping for Clean Water participants, K-12 environmental education specialists, Adopt-a-Drain and trash clean-up participants, and Earth Week organizers to extend the reach of the Board. Through these methods, the E-IGHWMO will engage with residents to change behavior to better protect water resources and will educate residents to understand the impact of land use and management decisions on water resources.

Water Quantity

A statutory responsibility of watershed management organizations is minimizing the public expense to mitigate flooding. This Plan accomplishes this by supporting member cities in ensuring that development and redevelopment do not create excessive new volumes and rates of runoff that may cause downstream flooding by providing feedback on city ordinances when they are due for revision. A second responsibility is promoting groundwater recharge, which impacts stream baseflow, wetland hydrology and lake levels. The E-IGHWMO does not operate a regulatory program, but relies on the cities to implement their stormwater management ordinances and MS4 programs. The Board expects that the cities will operate a regulatory program with volume and runoff standards at least as stringent as the MS4 general stormwater permit requirements. Eagan and Inver Grove Heights have in place a Joint Powers Agreement establishing intercommunity discharge rates (~5.66 cfs / acre of drainage) that the WMO deems sufficiently protective of water resources.

All the member cities are National Pollutant Discharge Elimination System (NPDES) Municipal Separate Small Storm Sewer Systems (MS4s) and have approved NPDES permits and Stormwater Pollution Prevention Programs (SWPPPs) that include activities to manage stormwater and prevent water resource degradation, including maintenance of their stormwater infrastructure and facilities. Those SWPPPs also contain TMDL implementation actions to reduce pollutant loading and manage the rate and volume of stormwater runoff.

Goal Area 1: Water Quantity		
#	**Goals**	**Action Items**
1.1	Ensure cities maintain the existing 100-year flood capacity to minimize flood damage to private and public property and minimize public capital expenditures needed to correct flooding problems by reducing or achieving no net increase in the rate of runoff from the watershed to limit any impacts to the flood profile.	A. Require member cities to maintain a regulatory program with volume and runoff standards at least as stringent as the NPDES MS4 general stormwater permit requirements. B. Leverage grant dollars to partner on two volume reduction projects as requested by member cities to reduce downstream flooding. C. Incorporate runoff volume reduction messaging into the communication and outreach plan, emphasizing the importance of effective stormwater management for reducing the impact of runoff volumes on downstream flooding.
1.2	Reduce stormwater runoff volume and increase infiltration and groundwater recharge.	A. Require member cities to maintain a regulatory program with volume and runoff standards at least as stringent as the NPDES MS4 general stormwater permit requirements. B. Fund ten stormwater management projects per year through a cost-share program such as the Landscaping for Clean Water Program. C. Address stormwater runoff and groundwater usage reduction through three community outreach events targeted at designing low water use landscapes and irrigation systems and educating the public on reducing irrigation water usage. D. Participate in member city processes when cities update land use and stormwater policies and ordinances to ensure water quality and quantity protections for local water resources. Identify areas for E-IGHWMO involvement through education and outreach. Consider drinking water supply management areas (DWSMAs) when promoting infiltration and mitigate the possible introduction of new contaminants or exacerbation of existing contamination.
1.3	Ensure adequate management of intercommunity stormwater flows, particularly with respect to changing precipitation patterns.	A. Every five years, facilitate review of existing intercommunity stormwater runoff design and planning with the member communities, similar to the existing agreement between Eagan and Inver Grove Heights.

Water Quality & Habitat

Water quality and the ability to enjoy the lakes in the watershed is a high priority to the E-IGHWMO. The water quality of many of the lakes in the watershed is within or better than state nutrient standards. Three lakes have been delisted from their designations as Impaired Waters and now meet standards for recreational use, and two other lakes (Carlson and Holz) are expected to be delisted by 2026. The City of Eagan has developed an action plan to protect and maintain water quality in the delisted lakes by preventing nutrient backsliding. To protect and improve water quality in lakes and wetlands in the watershed and to protect downstream water resources, the E-IGHWMO will provide education and outreach on water quality protection and will provide cost-share funding for implementation of small, distributed water quality improvement projects across the local landscape including infiltration or filtration BMPs in areas where groundwater and human health can remain protected. Furthermore, lake habitat is negatively impacted by aquatic invasive species, erosion, harmful algal blooms, and more factors that disrupt the balance of lake ecosystems. The E-IGHWMO has a statutory obligation to address aquatic ecosystem habitat and recreation and plans to address these issues by raising awareness and education of invasive species, supporting improvement in fishing access points or aquatic habitat, supporting shoreline health evaluations, and hosting annual public engagement events for citizens on aquatic ecosystem health.

Goal Area 2: Water Quality & Habitat		
#	**Goals**	**Action Items**
2.1	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	A. Leverage grant funding and WMO resources to support member cities with implementation of at least two water quality capital improvement projects including stormwater water quality infrastructure and in-lake treatments. B. Provide financial support to conduct submerged aquatic vegetation surveys in the watershed to support planned lake studies by the City of Eagan. C. Solicit interested volunteers for existing aquatic vegetation and aquatic invasive species training programs in collaboration with City of Eagan to spot invasive species and track changes in aquatic vegetation. Engage two volunteers per surveyed lake to conduct annual spot checks for tracking assessments. Surveyed lakes will align with City of Eagan lake monitoring priorities. D. Communicate water quality updates each year to the public. Updates may include annual lake water quality trend analyses, metrics on water quality goals, and information on completed improvement projects. Additionally, provide educational messages on water quality topics such as the importance of restricting the surface runoff of household chemicals, yard waste, illicit discharges, and pet waste to lakes within the watershed. Communications may be through city newsletters or WMO outlets such as emails, website, and social media posts. E. Participate in two collaborative water quality improvement efforts, such as the Metropolitan Council Subregional Engagement effort or the Dakota County Master Gardeners Let's Grow workshop. F. Require member cities to maintain a regulatory program with volume and runoff standards at least as stringent as the NPDES MS4 general stormwater permit requirements.

Goal Area 2: Water Quality & Habitat		
#	**Goals**	**Action Items**
2.2	Protect water resources from chloride impacts in priority city waterbodies towards no new impairments.	A. Provide deicing salt reduction education at two events annually. Outreach may include items such as information on the impact of salt and chloride on water bodies, distribution of salt cups, and information on local efforts to reduce deicing salt use. B. Promote chloride impact reduction actions annually each winter for businesses and residents in the watershed through targeted communication with local business owners and property managers, local training events, and website postings. Efforts may host local training sessions and utilize messaging from existing programs such as MPCA Smart Salting and the Dakota County Low Salt No Salt program. C. Provide grant support or other incentives to 10 local business owners or property managers to reduce salt application rates by 25% or more through low salt design and staff trainings. Prioritize businesses and properties within high vulnerability DWSMAs. D. Provide grant support, rebates, or other incentives to 10 homeowners to remove or reduce home water softener use (i.e. provide information on settings for water softeners that reduce salt use to general public). Prioritize grants for softeners on private septic systems while recognizing that grants to homeowners discharging to regional wastewater treatment facilities reduce treatment needs and benefit downstream watersheds. E. Partner with member cities to encourage efforts for reducing deicing salt use through the design of low salt programs and minimizing the need for deicing salt.

Goal Area 2: Water Quality & Habitat		
#	**Goals**	**Action Items**
2.3	Support cities in efforts to prevent erosion of the soil into surface water systems, prioritizing projects with the most cost-effective reduction in downstream TSS contribution.	A. Support three erosion control and stabilization projects in partnership cities. B. Promote installation of water quality BMPs, such as bioinfiltration and filtration basins and shoreline and wetland native buffers, by providing information and educational opportunities to property owners and by funding at least ten projects per year through a cost-share program such as the Landscaping for Clean Water Program. In addition, this will help prevent backsliding for lakes that meet or exceed the State of Minnesota water quality goals. C. Promote the Adopt-a-Drain program to clean out storm drain collection areas of silt and debris throughout the year through annual volunteer recruitment events. D. Provide technical assistance to homeowners including layout, mid-point, and final inspections for raingardens, native plantings, and shoreline stabilization via partnerships with existing programs such as the SWCD.
2.4	Protect and enhance fish and wildlife habitat and water recreational facilities.	A. Post signage raising awareness of invasive species and/or native landscapes at five popular recreational waterbodies in the watershed in alignment with City of Eagan waterbody prioritization system. B. Leverage financial resources to support improvements in fishing access points (ie. new piers, shore fishing spots) or aquatic habitat at two waterbodies, aligned with City of Eagan CIP priority waterbodies. C. Partner with MDNR and assist in aquatic invasive species education, early detection, and rapid response through three community education program events. D. Support shoreline health evaluations as aligned with city needs in the watershed to support planned lake studies by member cities. E. Promote native shoreline vegetation restoration annually through community outreach and education events. Leverage participation by residents who participate in shoreline restoration programs or highlight their stories on the E-IGHWMO website. F. Host annual public engagement event to educate citizens about healthy lake shorelines, causes of lake algal blooms, aquatic macrophytes and macroinvertebrates that are indicators of aquatic ecosystem health, and other water quality topics. (i.e. Landscaping for Clean Water Shoreland Workshops)

Goal Area 2: Water Quality & Habitat		
#	**Goals**	**Action Items**
2.5	Raise public awareness about fish consumption advisories in mercury-impaired watershed lakes.	A. Raise awareness about impaired aquatic consumption to reduce public health risk through two fish consumption mercury-focused or PFAS-focused events or outreach efforts. (i.e.. signage at access areas, social media posts, etc.)

Groundwater

The Board has a limited role in groundwater management activities. Over the past two decades, the member cities have completed and adopted Wellhead Protection Plans that are approved by the Minnesota Department of Health and have implemented policies and official controls to protect drinking water sources. Dakota County has also undertaken a number of actions as detailed in its 2020-2030 Groundwater Plan (Dakota County 2021). The E-IGHWMO has chosen a role limited to encouraging groundwater recharge through infiltration in accordance with wellhead protection plans and raising awareness about groundwater and water conservation issues, relying on expertise from the cities. The WMO does not undertake capital projects but may facilitate them through cost-share and grant funding and supplement them by providing education and outreach opportunities. When considering groundwater recharge practices in areas where stormwater infiltration is not allowed, recommended, or where a higher level of engineering review should be conducted prior to installing an infiltration BMP, nuances will be assessed when considering restoration to pre-settlement groundwater recharge conditions.

Goal Area 3: Groundwater		
#	**Goals**	**Action Items**
3.1	Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	A. Fund implementation of groundwater recharge BMPs, such as infiltration, bioswales, or permeable pavements in the watershed to infiltrate stormwater runoff and support natural water absorption in areas where groundwater and human health can remain protected. Fund at least ten projects per year through a cost-share program such as the Landscaping for Clean Water Program. The WMO does not monitor groundwater levels or groundwater quality but can provide data on BMP implementation to those that do. B. Incorporate groundwater system and aquifer recharge education into one public education outreach event each year to raise awareness of water conservation and recharge, potentially using a watershed model. (i.e. Landscaping for Clean Water Introductory Class) C. Develop visual display of local groundwater system to promote understanding and share on the E-IGHWMO website. D. Promote water conservation, particularly reducing water use for irrigation and incorporating water reuse tactics in priority groundwater recharge areas listed in the Groundwater Protection Plan through targeted education outreach to at least fifty community members. Efforts may leverage programs such as WaterSmart Yards, U of Mn Extension, Water Wisely, MetCouncil and/or EPA WaterSense and may include participation in local events such as Lakefest or the Groundwater Source-Water Protection Collaborative. E. Collaborate with member cities and Dakota County to protect groundwater sources through educational outreach on well sealing practices and value. Disseminate information about septic system maintenance.

Wetlands

The Board's primary tool for managing wetlands is the State of Minnesota's Wetland Conservation Act (WCA). Eagan and Inver Grove Heights are the Local Government Units (LGU) responsible for administration of the Wetland Conservation Act within the watershed. Certain actions affecting a wetland, such as draining or filling through construction or development, may require a permit or some other authorization through WCA and often some other regulatory agency such as the US Army Corps of Engineers or the MDNR. Applicants will need to show efforts to avoid or minimize wetland impacts and may be required to replace drained or filled wetland area. In addition, BWSR has developed a method to evaluate and quantify how well individual wetlands provide functions such as flood storage or values such as habitat. Those functions and values assessments can be used to classify the quality of wetlands, and the highest quality wetlands may have additional regulatory protections. Both cities have completed inventories or a framework for the completion of wetlands functions and values assessments and have a classification system for those wetlands and official controls to regulate wetland impacts. The E-IGHWMO's role is to educate the public about the functions and values of wetlands and promote their preservation or restoration.

Goal Area 4: Wetlands		
#	**Goals**	**Action Items**
4.1	Member cities, in accordance with their wetland management plans (WMPs), will protect, restore, or enhance wetlands to improve or maintain their functions and values. Cities establish priority wetlands in their respective WMPs.	A. Incorporate education on the benefits and functions of wetlands at one event annually and promote/recruit community volunteers to participate in the Wetland Health Evaluation Program (WHEP).

5.0 Implementation Plan

Potential operating programs were reviewed during the planning process and are described in this section. This section includes a summary of planned programs including regulatory, monitoring and technical assistance, education and outreach, cost-share, and capital improvements along with a cost estimate for operations over the coming ten-year period (Table 5-b). To achieve the goals set forth in this Plan, the Board will primarily focus on its education and outreach program and will work with its partners to complete work that supports member cities to ensure goals are being achieved.

5.1 Coordination with Other Agencies

The E-IGHWMO is unlike most other WMOs in the Twin Cities Metro Area. The watershed lies almost entirely in one city and comprises almost that entire city. A typical Metro area WMO encompasses several cities, and drainage boundaries do not coincide with municipal boundaries. Therefore, the need for many of the 'traditional' WMO functions of coordinating management and regulatory policies, stormwater runoff rates, volumes, and water quality between cities is very limited. However, those statutory purposes still must be addressed, whether by the WMO or by the cities or other agencies. Because of this, the E-IGHWMO defined its primary role as collaboration on member city implementation programs and supporting civic engagement to promote the improvement of water resources.

MS 103B.201, which is reproduced in the Executive Summary of this Plan, sets forth the purpose of water management planning in the Metro area.

5.2 Regulatory Program

The E-IGHWMO does not operate a regulatory program. Both member cities are MS4s with approved permits to discharge stormwater, and they along with Dakota County and MnDOT as MS4s, will be responsible for ensuring that development, redevelopment, and construction meet NPDES requirements. The E-IGHWMO deems NPDES requirements to be sufficient to protect water resources in the watershed, especially given City SWPPPs that contain provision regarding progress toward achieving TMDLs to prevent backsliding. Both cities currently operate a permitting program and have local controls in place consistent with E-IGHWMO management strategies. Local Water Management Plans are expected to include an overview of the official controls and procedures that the member cities have in place to ensure that land disturbing activity in the watershed is conducted in accordance with E-IGHWMO strategies.

E-IGHWMO will participate in member city processes when cities update land use and stormwater policies and ordinances to promote water quality and quantity protections for local water resources. Every five years, the E-IGHWMO will facilitate a review of existing intercommunity stormwater runoff design and planning with the member communities, similar to the existing agreement between Eagan and Inver Grove Heights. Also, E-IGHWMO will participate in collaborative efforts to improve water quality.

5.3 Monitoring and Technical Assistance Program

The E-IGHWMO does not operate a water quality monitoring program. The City of Eagan and other partners monitor the quality of lakes and wetlands in the watershed, and the Board relies on these robust monitoring programs. Those partners will be required to annually present monitoring data and water quality trends to the Board. The WMO will work together with its partners to disseminate monitoring results in its annual report and in other formats as desired.

E-IGHWMO will support monitoring of submerged aquatic vegetation and shoreline health in watershed lakes to support comprehensive lake management evaluations. Surveys will be conducted on five key lakes in the watershed aligned to support planned lake studies by member cities. Beyond surveys, E-IGHWMO will promote existing aquatic vegetation and aquatic invasive species training programs for community volunteers to spot invasive species and track changes in aquatic vegetation. Two volunteers per surveyed lake will be tasked with conducting annual spot checks for tracking assessments.

E-IGHWMO will also support technical assistance to homeowners including layout, mid-point, and final inspections for raingardens, native plantings, and shoreline stabilization through the Landscaping for Clean Water Program.

5.4 Education and Outreach Program

COMMUNICATION AND PUBLIC OUTREACH PROGRAM GOALS

The goal of the E-IGHWMO's Education & Outreach Program is to engage community members in the protection and improvement of lakes, rivers, streams, wetlands, and groundwater through education, increased water awareness, and community participation.

Communication and Public Outreach is a core function of the Eagan-Inver Grove Heights Watershed Management Organization. The Board will develop and implement a three-year Communication and Outreach Plan that sets forth more detailed messages, strategies, and metrics for evaluating and measuring change in attitudes and behaviors. The Board will review its Communication and Outreach Plan every three years and work together with its partners to update priority messages, strategies, and metrics based on current needs. Developing partnerships with the member cities, Dakota County, lake associations, nonprofits, and other interested parties will be key to widespread dissemination of information.

Community Survey Education Goals. In May 2025, the E-IGHWMO sent out a community survey to gauge what residents in the watershed deemed to be priorities for water resources management to

help guide E-IGHWMO plan development. Residents identified several education and outreach goals to be high priority in the E-IGH plan development. These include:

- Water resources education needs to reflect altered rainfall, snowfall, and snowmelt patterns and consequently affected de-icer usage, lake levels, and flood concerns due to climate change.
- Watershed education and outreach should more effectively target groups such as K-12 students and townhome/condo owners.
- More awareness should be spread about Landscaping for Clean Water Programming in the community.
- More educational signage about aquatic invasive species should be placed near lakes, ponds, and wetlands.
- More information and assistance about native plantings should be provided in residential yards.
- Tracking how watershed educational programs affect behavioral change should be improved.
- Businesses should be educated on limiting de-icing salt usage.
- Aquatic invasive species education and Adopt-a-Drain volunteer programs should be incorporated.
- Lawmakers should be educated on water quality impacts from development.
- Homes in the community should be canvassed by E-IGHWMO watershed board members or community volunteers to spread awareness about water resource topics.
- Collaboration with other organizations in the watershed, including the Dakota County Master Gardeners, should be emphasized.

Stakeholder Goals. Stakeholders and target audiences are individuals or groups to whom communication is being directed. The Plan has identified the following target audiences and general goals for each. Often more than one target audience will benefit from an educational activity. This is not an inclusive list; it will be revised from time to time.

1. All property owners and residents (residential and non-residential)
    - Understand that they live in a watershed and know where their stormwater runoff goes
    - Understand nutrient and chloride sources and their impacts on lakes, wetlands, streams, and groundwater
    - Understand how runoff rates and volumes affect lakes, wetlands, and streams
    - Understand groundwater processes and the importance of protecting the quality and quantity of groundwater resources
    - Educate residents to understand the impact of land use and management decisions on water resources
    - Understand and undertake Best Management Practices (BMPs) on their properties to reduce nutrient and chloride loads and runoff volume
    - Participate in volunteer activities or events

2. Lakeshore property owners
    - Know the water quality status of their lake, and the types and magnitude of actions needed to protect and improve lake water quality
    - Understand the importance of healthy lake shorelines and implement natural shoreline protection methods
    - Understand and participate in activities to reduce the risk of Aquatic Invasive Species (AIS)
    - Understand and undertake Best Management Practices such as native shoreline buffers

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3. Educators and students
    - Create opportunities for volunteer monitoring and other hands-on learning
    - Educators are aware of and have access to continuing education centered around water resources
    - Educators and students understand that they live in a watershed and know where their stormwater runoff goes
    - Educators and students understand nutrient and chloride sources and their impacts on lakes, wetlands, streams, and groundwater

4. Water-based recreation users
    - Know the water quality and fishery status of the lake and the types and magnitude of actions needed to protect and improve it
    - Understand and take action to reduce the risk of Aquatic Invasive Species (AIS)
    - Understand the risks of impaired aquatic fish consumption and reduce risk of negative public health effects
    - Participate in volunteer activities or events

Implementation Strategies. Each year the Board will review progress made from the Education and Outreach plan and refine education and outreach activities for the coming year. Progress and success of the education and outreach program will be evaluated in multiple ways and will be tailored to the specific audiences. Trends in participation, such as number of website hits, social media followers, and social media activity, and attendance at events, will be useful metrics for gauging the reach of various messages. Another potential source of information is the periodic resident surveys the cities undertake to better understand the needs and desires of their citizens (Table 5-a).

The Board will rely on the following and other strategies to implement the program and achieve the Plan's communication and outreach goals:

- Establish key messages for the coming year, delivery mechanisms, and methods of evaluating outcomes.
- Engage groups of citizens or other partners such as member cities, Master Water Stewards, Dakota County, and Dakota SWCD as needed to advise the Board and to assist in program development and implementation.
- Participate with collaborative groups to pool resources to undertake activities in a cost-effective manner, promote interagency cooperation and collaboration, and promote consistency of messages.

- Use the WMO's, member cities', and educational partners' websites and newsletters, social media, local newspapers and cable TV to share useful information to stakeholders on ways to improve water quality.
- Prominently display the E-IGHWMO logo on information and outreach items, project and interpretive signs, and other locations to increase visibility.
- Provide opportunities for the public to learn about and participate in water quality activities.
- Enhance education opportunities for youth.
- Provide opportunities for bridge-building between stakeholders with sometimes competing ideas and interests.

Table 5-a. Education and Outreach Programs, Resources, and Partners.

Program Area	Action Items	Partners
General Outreach and Messaging	• Incorporate flood damage messaging into the communication and outreach plan, emphasizing the importance of effective stormwater management for reducing the impact of runoff volumes on downstream flooding. • Develop visual display of local groundwater system to promote understanding and share on the E-IGH website. • Promote water conservation, particularly reducing water use for irrigation, implementing Water Smart Yards, and incorporating water reuse tactics in priority groundwater recharge areas listed in the Groundwater Protection Plan by distributing educational pamphlets to fifty community members. • Communicate water quality updates each year to the public. Updates may include annual lake water quality trend analyses, metrics on water quality goals, and information on completed improvement projects. Additionally, provide educational messages on water quality topics such as the importance of restricting the surface runoff of household chemicals, yard waste, illicit discharges, and pet waste to lakes within the watershed. Communications may be through city newsletters or WMO outlets such as emails and social media posts. • Partner with member cities to encourage efforts for reducing deicing salt use through the design of low salt programs and minimizing the need for deicing salt.	MDNR (AIS Signage) Water Smart Yards City of Eagan (Water Quality Updates) Science Museum of Minnesota Bell Museum Dakota County (Water Resources)

Program Area	Action Items	Partners
	• Post signage raising awareness of invasive species and/or native landscapes at five popular recreational waterbodies in the watershed. • Promote native shoreline vegetation restoration annually through community outreach and education events. Leverage participation by residents who participate in shoreline restoration programs or highlight their stories on the E-IGHWMO website. • Incorporate education on wetland benefits, function, and watershed stewardship to K-12 students at Eagan Elementary schools each year through in-class education programs, or providing cost-share on field trips to local institutions such as the SMM and the Bell Museum. • Collaborate with member cities and Dakota County to protect groundwater sources through educational outreach on well sealing practices and value.	
Volunteer Programs	• Promote the Adopt-a-Drain program to clean out storm drain collection areas of silt and debris throughout the year through annual volunteer recruitment events.	Adopt-a-Drain
Community Events	• Address stormwater runoff and groundwater usage reduction through two community outreach events targeted at designing low water use landscapes and irrigation systems and educating the public on reducing irrigation water usage. • Provide deicing salt reduction education at two events annually. Outreach may include items such as: information on the impact of salt and chloride on water bodies, distribution of salt cups and information on local efforts to reduce deicing salt use. • Raise awareness about impaired aquatic consumption to reduce public health risk through two fish consumption mercury-focused events or outreach efforts. • Incorporate groundwater system and aquifer recharge education into one public education outreach event each year to raise awareness of	WaterSmart Yards U of Mn Extension Water Wisely MetCouncil EPA WaterSense MDH (Mercury awareness event) Dakota County (Groundwater recharge education) WHEP

Program Area	Action Items	Partners
	water conservation and recharge, potentially using a watershed model. • Incorporate education on the benefits and functions of wetlands at one event annually and promote community volunteers to participate in the Wetland Health Evaluation Program (WHEP). • Host annual public engagement event to educate citizens about healthy lake shorelines, causes of lake algal blooms, aquatic macrophytes and macroinvertebrates that are indicators of aquatic ecosystem health, and other water quality topics. • If requested, participate in and provide water quality education at community events such as Lakefest and the Eagan Home and Leisure Show. • Provide access to the Landscaping for Clean Water program through introduction class, design course, and maintenance workshop. • Provide a Lawns Reimagined workshop that helps homeowners transition their yards to low-input systems by reducing fertilizer, water use, and mowing frequency.	Landscaping for Clean Water Lawns ReImagined Dakota County Soil & Water Conservation District (SWCD)
Partnerships	• Partner with MDNR and assist in aquatic invasive species education, early detection, and rapid response through two community education program events. • Promote chloride impact reduction actions annually each winter for businesses, residents, and member cities in the watershed through targeted communication with local business owners and property managers, local training events, and website postings. Efforts may host local training sessions and utilize messaging from existing programs such as MPCA Smart Salting and the Dakota County Low Salt No Salt program.	MDNR MPCA Smart Salting Dakota County Low Salt No Salt City of Eagan City of Inver Grove Heights

Cost-Share Program

E-IGHWMO will implement projects through a cost-share partnership program to support water quality improvement efforts within the watershed. The WMO will develop a cost-share plan consistent with MR 8410.0105 Subpart 7: Incentive Programs. To protect water resources from chloride impacts, the WMO will provide grant support to local business owners or property managers to aid in de-icing salt reduction efforts and the implementation of smart salting programs. E-IGHWMO will also provide financial and/or technical support to local homeowners to improve efficiency of home water softeners.

Additionally, E-IGHWMO will fund smaller stormwater management projects and water quality BMPs through the Landscaping for Clean Water Program, a Dakota County SWCD program. E-IGHWMO will promote water quality BMP projects such as bioinfiltration, infiltration basins, and shoreline and wetland native buffers. E-IGHWMO will also support capital improvement projects for groundwater resources by funding the implementation of two groundwater BMPs such as infiltration, bioswales, or permeable pavements within the watershed. One goal of the Landscaping for Clean Water Program is to help prevent backsliding for lakes that meet or exceed the State of Minnesota's water quality standards.

BWSR Clean Water Fund (CWF) grants and other competitive grants provide an opportunity for the WMO to aid cities by offsetting the cost of large studies. Such opportunities can be identified in the E-IGHWMO implementation schedule (see Table 5-b).

5.5 CAPITAL IMPROVEMENT PROGRAM

The JPA allows the Board to acquire, operate, construct, and maintain capital improvements included in the Capital Improvement Program (CIP) of its Management Plan. Member cities construct Best Management Practices (BMPs), either as stand-alone capital improvement projects or incorporated into street, highway, and other public improvement projects. Table 5-b shows the expected costs and funding sources for implementing this Plan, including a Capital Improvement Program (CIP) of capital projects the cities plan to undertake.

Overall goals for E-IGHWMO involvement in member cities capital improvement projects include partnering on projects that meet the WMO's priorities including runoff capacity projects, supporting erosion control and stabilization projects, and improving fishing access points. The WMO may assist member cities to acquire funding needed to move forward with water quality and water quality improvement projects. Capital projects are funded 100% by the member cities. E-IGHWMO will assist cities in leveraging grant funding or identifying other funding sources when available.

The City of Eagan's Water Resources Capital Improvements Program projects for 2026-2030 include:

- City of Eagan Water Quality Cost-Share Partnership Program: $374,500
- Water Resources Infrastructure Maintenance (small projects fund for repair, replacement, expansion): $318,500
- Iron-Sand Filtration Systems Maintenance: $139,000

- Bur Oaks Protection Project (direct-drainage areas): $138,000
- Fish Lake Alum Treatment System Settling Basin Maintenance: $151,000
- Alum applications (includes lake bottom sediment – nutrient release analysis to determine if timing is appropriate for alum treatment): Cliff Lake, Schwanz Lake, Hay Lake, North Lake, LeMay Lake, Bald Lake, Bur Oaks Pond, Almquist Lake: $634,500
- Carlson Lake direct drainage water quality improvements: $171,000
- Thomas Lake direct-drainage water quality improvements: $210,000
- Fish Lake direct-drainage water quality improvements: $95,000
- North Lake direct-drainage water quality improvements: $380,000
- McCarthy Lake direct-drainage water quality improvements: $681,000

The City of Inver Grove Heights has several Capital Improvement Projects planned between 2026-2030:

- Tentative 2025 Stormwater Maintenance Operations
- Stormwater Maintenance Operations in 2027 (if not impacted by Cliff Road Trail Project)
- CIP Minor Drainage Improvements in 2027 (if no impacted by Cliff Road Trail Project)
- Alameda Path Minor Drainage Improvements in 2027
- Cliff Road Sediment Maintenance
- Appenine Way Riprap, Sediment, woody removal

MS4 Maintenance Requirements. As regulated MS4s, Eagan and Inver Grove Heights are required to undertake periodic maintenance of BMPs and conveyances such as pond sediment removal projects. Additionally, the cities require periodic replacement of street sweeping and other maintenance equipment. These expenses are also part of the capital improvement program. Cities review and revise their CIPs periodically. As part of its annual budget process and ongoing communications with member cities, the E-IGHWMO will request updated CIPs and adjust the Implementation Plan and CIP as necessary in accordance with the Plan Amendment process detailed in Section 4.6, Amendments to the Plan.

5.6 ADMINISTRATION PROGRAM

Administrative and operational costs for general expenses incurred by the E-IGHWMO are outlined in Section 5.7. E-IGHWMO organizational costs include staffing, engineering and consulting services, as well as legal services. Work program costs include annual reporting for activity, finance, and audits, as well as the distribution of an annual newsletter. Additional work program costs include the E-IGHWMO website, board education, and updates to the education and outreach program plan and watershed management plan updates.

Implementation Plan Cost and Funding

The estimated cost of implementing this Plan is set forth in Section 5.7 below. The primary source of funding for projects and grant match requirements will be assessments from the member cities. The Board may apply for grants to fund special projects or to supplement member cities' projects or programs.

5.7 IMPLEMENTATION PLAN TABLE

Program	Goal	Action Item	Goal Area	Objective	Planned Action Descriptions	Partners	Funding Source	E-IGHWMO 10-year Costs	Estimated Grant/Partner Funds	Total 10-year Cost	Estimated Cost by Year (Planning Level) - presented in 2025 dollars									
											2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Regulatory	1.2	C	Water Quality & Habitat and Water Quantity	Reduce stormwater runoff volume and increase infiltration and groundwater recharge through city NPDES stormwater permit requirements.	1.2.C. Participate in member city processes when cities update land use and stormwater policies and ordinances to ensure water quality and quantity protections for local water resources. Identify areas for E-IGHWMO involvement through education and outreach. Consider drinking water supply management areas (DWSMAs) when promoting infiltration and mitigate the possible introduction of new contaminants or exacerbation of existing contamination.	City of Eagan City of Inver Grove Heights	E-IGHWMO and Member Cities	Included in staff costs under Adminstration	-	Included in staff costs under Adminstration		***					***			
	1.3	A	Water Quality & Habitat	Ensure adequate management of intercommunity stormwater flows, particularly with respect to changing precipitation patterns.	1.3.A. Every five years, facilitate review of existing intercommunity stormwater runoff design and planning with the member communities, similar to the existing agreement between Eagan and Inver Grove Heights.	City of Eagan City of Inver Grove Heights	E-IGHWMO and Member Cities	Included in staff costs under Adminstration	-	Included in staff costs under Adminstration		***					***			
	2.1	E	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.E. Participate in two collaborative water quality improvement efforts, such as the Metropolitan Council Subregional Engagement effort or the Dakota County Master Gardeners Let's Grow workshop.	MetCouncil, Dakota County	E-IGHWMO and Member Cities	Included in staff costs under Adminstration	-	Included in staff costs under Adminstration			***					***		
Monitoring & Technical Assistance	2.1	B	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.B. Provide financial support to conduct submerged aquatic vegetation surveys in the watershed to support planned lake studies by the City of Eagan.	City of Eagan City of Inver Grove Heights	E-IGHWMO and Member Cities	$ 10,000	$ 40,000	$ 50,000	$ 10,000		$ 10,000		$ 10,000		$ 10,000		$ 10,000	
	2.1	C	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.C. Solicit interested volunteers for existing aquatic vegetation and aquatic invasive species training programs in collaboration with City of Eagan to spot invasive species and track changes in aquatic vegetation. Engage two volunteers per surveyed lake to conduct annual spot checks for tracking assessments. Surveyed lakes will align with City of Eagan lake monitoring priorities.	City of Eagan MN DNR U of MN Community Education SWCD	E-IGHWMO and City of Eagan	$ 35,000	Eagan Lake Management Program	$ 35,000	$ 8,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
	2.3	D	Water Quality & Habitat	Prevent erosion of the soil into surface water systems.	2.3.D. Provide technical assistance to homeowners including layout, mid-point, and final inspections for raingardens, native plantings, and shoreline stabilization via the SWCD.	Dakota SWCD's Landscaping for Clean Water Program	E-IGHWMO	$ 72,000	-	$ 72,000	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200	$ 7,200
	2.4	D	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.D. Support shoreline health evaluations as aligned with city needs in the watershed to support planned lake studies by member cities. Build on resources such as "Score Your Shore".	Dakota SWCD City of Eagan City of Inver Grove Heights	E-IGHWMO	$ 50,000	-	$ 50,000		$ 10,000		$ 10,000		$ 10,000		$ 10,000		$ 10,000
	2.4	B	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.B. Leverage financial resources to support improvements in fishing access points (ie. new piers, shore fishing spots) or aquatic habitat at two waterbodies, aligned with City of Eagan CIP priority waterbodies.	MN DNR Dakota SWCD City of Eagan City of Inver Grove Heights	DNR (FINS, Shore Fishing Program, etc.)	$ 30,000	$ 90,000	$ 120,000			$ 50,000				$ 70,000		
Education and Outreach	1.1	B	Water Quantity	Assuming cities maintain the NPDES discharge rates, ensure cities maintain the existing 100-year flood capacity to minimize flood damage to private and public property and minimize public capital expenditures needed to correct flooding problems. It is assumed that reducing or achieving no net increase in the rate of runoff to the streams will limit any impacts to the flood profile.	1.1 B. Incorporate runoff volume reduction messaging into the communication and outreach plan, emphasizing the importance of effective stormwater management for reducing the impact of runoff volumes on downstream flooding.		E-IGHWMO	$ 2,000	-	$ 2,000			$ 2,000							
	2.1, 3.1	F, E	Water Quality & Habitat, and Groundwater	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs. Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	F. Provide access to the Dakota County SWCD's Landscaping for Clean Water program through introduction class, design course, and maintenance workshop. E. Collaborate with member cities and Dakota County to protect groundwater sources through educational outreach on well sealing practices and value. Disseminate information about septic system maintenance.	Dakota County SWCD Programs: Landscaping for Clean Water Lawns Reimagined	E-IGHWMO	$ 110,000	-	$ 110,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000
	1.2, 3.1	B, D	Water Quantity and Groundwater	Reduce stormwater runoff volume and increase infiltration and groundwater recharge through city NPDES stormwater permit requirements. Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	1.2.B. Address stormwater runoff and groundwater usage reduction through three community outreach events targeted at designing low water use landscapes and irrigation systems and educating the public on reducing irrigation water usage. 3.1.D. Promote water conservation, particularly reducing water use for irrigation and incorporating water reuse tactics in priority groundwater recharge areas listed in the Groundwater Protection Plan through targeted education outreach to at least fifty community members. Efforts may leverage programs such as WaterSmart Yards, U of Mn Extension, Water Wisely, MetCouncil and/or EPA WaterSense and may include participation in local events such as Lakefest or the Groundwater Source-Water Protection Collaborative.	Dakota SWCD WaterSmart Yards U of MN Extension Water Wisely MetCouncil EPA WaterSense Local Events such as LakeFest	E-IGHWMO	$ 2,000	-	$ 2,000		$ 2,000			***			***		

Program	Goal	Action Item	Goal Area	Objective	Planned Action Descriptions	Partners	Funding Source	E-IGHWMO 10-year Costs	Estimated Grant/Partner Funds	Total 10-year Cost	Estimated Cost by Year (Planning Level) - presented in 2025 dollars									
											2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Education and Outreach	2.4	C	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.C. Partner with DNR and assist in aquatic invasive species education, early detection, and rapid response through three community education program events.	MN DNR Community Education SWCD Local Events such as LakeFest	E-IGHWMO	$ 1,000	-	$ 1,000		$ 1,000				***			***	
	2.1	D	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.D. Communicate water quality updates each year to the public. Updates may include annual lake water quality trend analyses, metrics on water quality goals, and information on completed improvement projects. Additionally, provide educational messages on water quality topics such as the importance of restricting the surface runoff of household chemicals, yard waste, illicit discharges, and pet waste to lakes within the watershed. Communications may be through city newsletters or WMO outlets such as emails, website, and social media posts.	City of Eagan City of Inver Grove Heights	E-IGHWMO and Member Cities	$ 10,000	Member City Monitoring programs	$ 10,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
	2.2	A, E	Water Quality & Habitat	Protect water resources from chloride impacts.	2.2.A. Provide deicing salt reduction education at two events annually. Outreach may include items such as: information on the impact of salt and chloride on water bodies, distribution of salt cups, and information on local efforts to reduce deicing salt use. 2.2.E. Partner with member cities to encourage efforts for reducing deicing salt use through the design of low salt programs and minimizing the need for deicing salt.	City of Eagan City of Inver Grove Heights Dakota County Low Salt No Salt Local Events such as LakeFest MPCA Smart Salting	E-IGHWMO	$ 5,000	-	$ 5,000	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
	2.2	B	Water Quality & Habitat	Protect water resources from chloride impacts.	2.2.B. Promote chloride impact reduction actions annually each winter for businesses and residents in the watershed through targeted communication with local business owners and property managers, local training events, and website postings. Efforts may host local training sessions and utilize messaging from existing programs such as MPCA Smart Salting and the Dakota County Low Salt No Salt program.	Dakota County Low Salt No Salt MPCA Smart Salting			$ 20,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
	2.3	C	Water Quality & Habitat	Prevent erosion of the soil into surface water systems.	2.3.C. Promote the Adopt-a-Drain program to clean out storm drain collection areas of silt and debris throughout the year through annual volunteer recruitment events.	Adopt-a-drain Hamline University Local Events such as LakeFest	E-IGHWMO	$ 5,000	-	$ 5,000	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
	2.4	A	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.A. Post signage raising awareness of invasive species and/or native landscapes at five popular recreational waterbodies in the watershed in alignment with City of Eagan waterbody prioritization system.	MN DNR	Grants (BWSR, DNR)			$ 30,000		$ 6,000		$ 6,000		$ 6,000		$ 6,000		$ 6,000
	2.4	E, F	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.E. Promote native shoreline vegetation restoration annually through community outreach and education events. Leverage participation by residents who participate in shoreline restoration programs or highlight their stories on the E-IGHWMO website. 2.4.F. Host annual public engagement event to educate citizens about healthy lake shorelines, causes of lake algal blooms, aquatic macrophytes and macroinvertebrates that are indicators of aquatic ecosystem health, and other water quality topics (i.e. Landscaping for Clean Water Shoreland Workshops).	Dakota SWCD, Landscaping for Clean Water, Local Events such as LakeFest	E-IGHWMO	$ 2,000	-	$ 2,000	$ 2,000	***	***	***	***	***	***	***	***	***
	2.5	A	Water Quality & Habitat	Raise public awareness about mercury exposure through fish consumption particularly in mercury-impaired North and Blackhawk lakes.	2.5.A. Raise awareness about impaired aquatic consumption to reduce public health risk through two fish consumption mercury-focused or PFAS-focused events or outreach efforts (i.e.. signage at access areas, social media posts, etc.).	MDH	E-IGHWMO	$ 4,000	-	$ 4,000					$ 2,000					$ 2,000
	3.1	B, C	Groundwater	Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	3.1.B. Incorporate groundwater system and aquifer recharge education into one public education outreach event each year to raise awareness of water conservation and recharge, potentially using a watershed model (i.e. Landscaping for Clean Water Introductory Class). 3.1.C. Develop visual display of local groundwater system to promote understanding and share on the E-IGHWMO website.	Dakota SWCD Dakota County Eagan Inver Grove Heights	E-IGHWMO	$ 5,000	-	$ 5,000	$ 3,000	$ 2,000	***	***	***	***	***	***	***	***
	2.1	F	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.F. If requested, participate in and provide water quality education at community events such as LakeFest and the Eagan Home and Leisure Show. 2.1.G. Incorporate education on watershed stewardship to K-12 students at Eagan Elementary schools each year through activities such as library kits, in class education programs, or providing cost share on field trips to local locations with watershed education (e.g. nature centers, SMM, Bell Museum).	Dakota SWCD Eagan Inver Grove Heights Local Events such as LakeFest Nature Centers Museums	E-IGHWMO	$ 20,000	-	$ 20,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
	3.1	E.	Groundwater	Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	3.1.E. Collaborate with member cities to protect groundwater sources through educational outreach on well sealing practices and value.	Dakota County	E-IGHWMO	$ 1,500	-	$ 1,500	$ 500				$ 500				$ 500	
	4.1	A	Wetlands	Member cities, in accordance with their wetland management plans (WMPs), will protect, restore, or enhance wetlands to improve or maintain their functions and values. Cities establish priority wetlands in their respective WMPs.	4.1.A. Incorporate education on the benefits and functions of wetlands at one event annually and promote/recruit community volunteers to participate in the Wetland Health Evaluation Program (WHEP).	WHEP Local Events such as LakeFest	E-IGHWMO	$ 500	-	$ 500	$ 500									

Program	Goal	Action Item	Goal Area	Objective	Planned Action Descriptions	Partners	Funding Source	E-IGHWMO 10-year Costs	Estimated Grant/Partner Funds	Total 10-year Cost	Estimated Cost by Year (Planning Level) - presented in 2025 dollars									
											2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Project Cost-Share	2.2	C, D	Water Quality & Habitat	Support city efforts to protect water resources from chloride impacts in priority city waterbodies towards no new impairments.	2.2.C. Provide grant support or other incentives to 10 local business owners or property managers to reduce salt application rates by 25% or more through low salt design and staff trainings. Prioritize businesses and properties within high vulnerability DWSMAs. 2.2.D. Provide grant support, rebates, or other incentives to 10 homeowners to remove or reduce home water softener use (i.e. provide information on settings for water softeners that reduce salt use to general public). Prioritize grants for softeners on private septic systems while recognizing that grants to homeowners discharging to regional wastewater treatment facilities reduce treatment needs and benefit downstream watersheds.	Business Owners Homeowners	E-IGHWMO	$ 10,000	-	$ 10,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
	1.2, 2.3, 3.1	A, B, A	Water Quantity, Water Quality & Habitat, and Groundwater	Reduce stormwater runoff volume and increase infiltration and groundwater recharge through city NPDES stormwater permit requirements. Support cities in efforts to prevent erosion of the soil into surface water systems. Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	1.2.A. Fund ten stormwater management projects per year through a cost-share program such as the Landscaping for Clean Water Program. 2.3.B. Promote installation of water quality BMPs, such as bioinfiltration and filtration basins and shoreline and wetland native buffers, by providing information and educational opportunities to property owners and by funding at least ten projects per year through a cost-share program such as the Landscaping for Clean Water Program. In addition, this will help prevent backsliding for lakes that meet or exceed the State of Minnesota water quality goals. 3.1.A. Fund implementation of groundwater recharge BMPs, such as infiltration, bioswales, or permeable pavements in the watershed to infiltrate stormwater runoff and support natural water absorption in areas where groundwater and human health can remain protected. Fund at least ten projects per year through a cost-share program such as the Landscaping for Clean Water Program. The WMO does not monitor groundwater levels or groundwater quality but can provided data on BMP implementation to those that do.	Dakota County SWCD's Landscaping for Clean Water Program	E-IGHWMO	$ 30,000	-	$ 30,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Capital Improvement	1.1	A	Water Quantity	Assuming cities maintain the NPDES discharge rates, ensure cities maintain the existing 100-year flood capacity to minimize flood damage to private and public property and minimize public capital expenditures needed to correct flooding problems. It is assumed that reducing or achieving no net increase in the rate of runoff to the streams will limit any impacts to the flood profile.	1.1.A. Leverage grant dollars to partner on two volume reduction projects as requested by member cities to reduce downstream flooding.	City of Eagan City of Inver Grove Heights	City funds and/or outside grants, WMO Costs cover grant application staff time	$ 3,000	$ 1,000,000	$ 1,003,000				$ 1,500				$ 1,500		
	2.1	A	Water Quality & Habitat	Supplement the cities' activities to achieve, maintain, or improve water quality in the watershed's lakes so that each lake meets or exceeds the State of Minnesota intended use and classification and water quality standards for nutrients, specifically targeting Total Phosphorus (TP) so that median TP values remain at or below the shallow lake state standard of 60 ug/L. Waterbodies will be prioritized in accordance with cities' lake management programs.	2.1.A. Leverage grant funding and WMO resources to support member cities with implementation of at least two water quality capital improvement projects including stormwater water quality infrastructure and in-lake treatments.	City of Eagan City of Inver Grove Heights	City funds and/or outside grants, WMO Costs cover grant application staff time	$ 4,500	$ 3,500,000	$ 3,504,500			$ 1,500		$ 1,500		$ 1,500			
	2.3	A	Water Quality & Habitat	Support cities in efforts to prevent erosion of the soil into surface water systems.	2.3.A. Support three erosion control and stabilization projects in partnership with member cities.	City of Eagan City of Inver Grove Heights	City funds and/or outside grants, WMO Costs cover grant application staff time	$ 4,500	$ 300,000	$ 304,500		$ 1,500			$ 1,500			$ 1,500	
Administration				Organizational Administration	Staff Services	-	E-IGHWMO	$ 220,000	-	$ 220,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000
					Engineering and Consultant Services	-	E-IGHWMO	$ 30,000	-	$ 30,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
					Legal Services	-	E-IGHWMO	$ 5,000	-	$ 5,000	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
				Work Program	File Annual Activity Report, Finance Report, and Audit	-	E-IGHWMO	$ 40,000	-	$ 40,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
					Publish/Distribute Annual Newsletter or Communication	-	E-IGHWMO	$ 3,000	-	$ 3,000	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300
					Website	-	E-IGHWMO	$ 30,000	-	$ 30,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
					Board Education	-	E-IGHWMO	$ 5,000	-	$ 5,000	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
				Watershed Plan	Develop three-year communication and outreach plan and update plan on given schedule	-	E-IGHWMO	$ 4,500	-	$ 4,500	$ 1,500			$ 1,500			$ 1,500			
					Watershed Plan Update	-	E-IGHWMO	$ 50,000	-	$ 50,000								$ 25,000	$ 25,000	
						Total			**Total Expenses**	$ 5,784,500	$ 87,000	$ 87,000	$ 128,000	$ 83,500	$ 80,000	$ 80,500	$ 77,500	$ 152,000	$ 101,500	$ 107,500

6.0 Impact on Local Governments

Following approval and adoption of the Eagan-Inver Grove Heights Watershed Management Plan pursuant to Minnesota Statutes 103B, governmental units having land use planning and regulatory responsibility are required by statute to prepare or amend their local water management plans. Local plan content is driven primarily by Minnesota Rules 8410 and must include a capital improvement program and implementation plan to bring the local water management plan into conformance with the Board's Plan. The local water management plans must be submitted to the Board and the Metropolitan Council not more than two years before the member city's Comprehensive Plan is due.

Local Plan Content

Local water management plans adopted by member cities pursuant to Minnesota Statutes, Section 103B.235 shall be consistent with this Watershed Management Plan. Local plans must comply with Minnesota Statutes, Section 103B.235 and Minnesota Rules 8410.0105 regarding local plan content. At a minimum, local water management plans are required to do the following:

- Provide a self-assessment documenting how the goals, policies and actions in the cities' previous Local Plan were successfully met and where they fell short. The WMO will use this self-assessment to determine if the Cities are adequately implementing their Local Plans. Failure to implement Local Plans would be dealt with on a case-by-case basis under the provisions of the Joint Powers Agreement.
- Update the existing and proposed physical environment and land use. Information from previous plans that has not changed may be referenced and summarized but does not have to be repeated. Local plans may adopt sections of this Plan's Inventory and Condition Assessment by reference unless the city has more recent information, such as revised figures and data.
- Explain how the goals, requirements, and standards in this Plan will be implemented at the local level, including any necessary modifications of local ordinances, policies, and practices, and a schedule for their adoption.
- Show how the member city will take action to achieve the load reductions and other actions identified in and agreed to in any TMDL Implementation Plans, including identifying known upcoming projects including street or highway reconstruction projects that will provide opportunities to include load and volume reduction BMPs.
- Update existing or potential water resource related problems and identify nonstructural, programmatic, and structural solutions, including those program elements detailed in Minnesota Rules 8410.0100, Subp. 1 through 6.
- Set forth an implementation program including a description of adoption or amendment of official controls and local policies necessary to implement the Rules and Standards; programs; policies; and a capital improvement plan.

Local Plan Review

Each member city shall submit its proposed local water management plan to the Board and the Metropolitan Council and Dakota County for review before adoption by its governing body. The Metropolitan Council review period is 45 days and the Board review period is 60 days after plan receipt.

The Board recognizes that the member cities may have updated their Local Plans within the last five years, and those Plans may need only minor revisions to bring into conformance with this Plan.

7.0 Amendments to the Plan

This Watershed Management Plan provides direction for the Eagan-Inver Grove Heights management activities through the year 2035. The Board may initiate amendments to the Plan at any time based on new requirements or data availability, policies, programs, practices, or emerging concerns.

The Board will annually review the Implementation Plan and Capital Improvements Program (CIP), which may require future minor or major plan amendments. The Plan provides annual estimates and general programs, projects and costs for 2026-2035 activities. One or more future plan amendments may be necessary to amend the Implementation Plan to provide more specificity for the second five years of the Plan.

Amendment Procedures

All amendments to the Plan except minor amendments shall adhere to the full review and process set forth in Minnesota Statutes 103B.231, and this section. The Board shall adopt proposed major plan amendments upon their approval by the Board of Water and Soil Resources (BWSR) in accordance with Minnesota Statutes 103B.231. The amendment procedure for minor plan amendments shall be in accordance with Minnesota Rules 8410.0140 as such rules now exist or as subsequently amended.

Form of the Amendment

Unless the entire document is redone, all adopted amendments must be in the form of replacement pages for the Plan, each page of which must conform to the following:

1. Show deleted text as stricken and new text as underlined.
2. Be renumbered as appropriate.
3. Include the effective date of the amendment on each page.

Third-Generation Plan

When developing the Third-Generation Plan, the Board may consider establishing an advisory committee or other forms of obtaining public input into the next plan.

8.0 References

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9.0 Appendices

9.1 Joint Powers Agreement

JOINT POWERS AGREEMENT
ESTABLISHING A WATERSHED MANAGEMENT ORGANIZATION
FOR THE EAGAN-INVER GROVE HEIGHTS WATERSHED

THE PARTIES TO THIS AGREEMENT are cities that have land within the Eagan-Inver Grove Heights Watershed. This Agreement is made pursuant to the authority conferred upon the parties by Minn. Stat. §§ 471.59 and 103B.211.

1. **Name**. The parties hereby create and establish the Eagan-Inver Grove Heights Watershed Management Organization.

2. **Purpose**. The purpose of this Agreement is to provide an organization to regulate the natural water storage and retention of the Eagan-Inver Grove Heights Watershed, according to Minn. Stat. § 103B.201, to: (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; and (8) secure the other benefits associated with the proper management of surface and ground water.

3. **Definitions**.

Subdivision 1. Board means the Board of Managers of the WMO as hereinafter defined.

Subdivision 2. Council means the governing body of the City of Eagan or the City of Inver Grove Heights.

Subdivision 3. Eagan-Inver Grove Heights Watershed or watershed means the area within the boundary delineated on the map, as set forth on Appendix A, as may be amended.

Subdivision 4. Manager means an individual appointed by a member to comprise and serve on the Board.

Subdivision 5. Member means the City of Eagan or the City of Inver Grove Heights.

Subdivision 6. Watershed Management Organization (WMO) means the organization established by this Agreement--the full name of which is "Eagan-Inver Grove Heights Watershed Management Organization," which shall be a public agency of its respective member cities.

4. Membership. The membership of the WMO shall consist of the cities of Eagan and Inver Grove Heights. No change in governmental boundaries, structure, organizational status or character shall affect the eligibility of either city to be represented on the Board, so long as such city continues to exist as a separate political subdivision.

5. Advisory Committees.

Subdivision 1. Citizen Advisory Committee. The Board may establish a Citizen Advisory Committee from the public at large. The Board may consult the Citizen Advisory Committee on the development, content, and implementation of the watershed management plan.

Subdivision 2. Technical Advisory Committee. The Board may establish a Technical Advisory Committee to perform such duties as delegated by the WMO. Dakota County and the Dakota County Soil and Water Conservation District may be requested to appoint a nonvoting advisory person to assist the Board and/or to serve on the Technical Advisory Committee.

6. Board of Managers.

Subdivision 1. Appointment. The governing body of the WMO shall be its Board, which shall consist of five (5) managers. The City of Eagan shall appoint three (3) managers and the City of Inver Grove Heights shall appoint two (2) managers. Each city may designate alternates if necessitated by the absence of its respective manager(s).

Subdivision 2. Eligibility or Qualification. Each council shall comply with state laws in determining the eligibility or qualification of its manager(s) and alternate(s) on the Board.

Subdivision 3. Term. Managers and alternates shall serve a three (3) year term and until their successors are appointed and qualify. A manager or alternate may not be removed from the Board prior to the expiration of the manager's term, except for just cause by the council that made the appointment. The Board of Water and Soil Resources shall be notified of all appointments to the Board and of all vacancies as required by state law. All vacancies shall be filled within ninety (90) days after they occur. The Board shall comply with state laws regarding published notice of vacancies.

Subdivision 4. Compensation. Managers shall serve without compensation from the WMO, but this shall not prevent a member from providing compensation to a manager for serving on the Board.

Subdivision 5. Organization/Structure. At the Board's first meeting and annually thereafter, the Board shall elect from its managers a Chair, Vice Chair, Secretary, Treasurer, and any other officers it deems necessary to conduct its meetings and affairs. The Chair shall preside at Board meetings, and in the absence of the Chair, the Vice Chair shall perform this duty. In the absence of the Chair or Vice Chair, the Treasurer shall preside. The Chair shall retain all rights

of a manager to speak, make motions, and vote. The Vice Chair shall assume duties when the Chair is absent and shall automatically be promoted to complete the annual term of the Chair if the then current Chair resigns or is removed from the Board. The Secretary shall certify and record the proceedings and official actions of the Board and shall supervise performance of these duties if the Board delegates them to a non-manager. The Treasurer shall oversee the Board's fiscal affairs. Except for the Chair, any manager may be elected to more than one office. At the organizational meeting or as soon thereafter as it may be reasonably done, the Board shall adopt rules and regulations governing its meetings. Such rules and regulations may be amended from time to time at either a regular or a special meeting of the Board. Meetings must be held at least annually. Unless otherwise provided by public notice, Board meetings shall be held in the council chambers of one of the members. The dates, times, and locations of meetings of the Board and the subject matter of the meetings shall be posted on the bulletin board of each member at least ten (10) days prior to the date of the meeting.

Subdivision 6. Voting. Decisions by the Board shall require a majority vote of all managers present at each meeting, each of whom shall be entitled to one vote.

Subdivision 7. Quorum. A majority of the entire Board shall constitute a quorum, but less than a quorum may adjourn a scheduled meeting. In the absence of a quorum, a scheduled meeting shall not be started, and the meeting shall be re-scheduled.

Subdivision 8. Business Address. The Board shall maintain a business office at 3830 Pilot Knob Road, Eagan, Minnesota 55122. All notices to the Board shall be delivered or served to such office.

7. Powers and Duties of the WMO.

Subdivision 1. WMO. Except as otherwise qualified or modified by this Agreement, the WMO, acting by its Board, shall have and may perform all the powers and duties expressly set forth in and reasonably implied from Minn. Stat. §§ 103B.201 to 103B.253, including:

(A) Preparing, adopting, and implementing a watershed management plan according to Minn. Stat. § 103B.231.

(B) Reviewing and approving member's local water management plans per Minn. Stat. § 103B.235.

Subdivision 2. Employees. The WMO may employ such persons as it deems necessary to accomplish its duties and powers.

Subdivision 3. Location. The WMO may contract for the necessary space to carry on its activities either with a member or elsewhere.

Subdivision 4. Materials. The WMO may acquire necessary personal property, material, and supplies to carry out its activities, powers, and duties.

Subdivision 5. Surveys. The WMO may make necessary surveys, or use other reliable surveys and data, and develop projects to accomplish the purposes for which it is organized. The WMO may enter upon lands within or without the watershed to make these surveys and investigations.

Subdivision 6. Public/Private Organizations. The WMO may cooperate or contract with the State of Minnesota or any subdivision thereof or federal agency or private or public organization to accomplish the purposes for which it is organized.

Subdivision 7. Local Improvements. The WMO may order a member to carry out its local water management plan that has been approved by the Board.

Subdivision 8. Operation/Maintenance. The WMO may acquire, operate, construct, and maintain those capital improvements as delineated in the watershed management plan adopted by the Board.

Subdivision 9. Insurance. The WMO may contract for or purchase such insurance as the Board deems necessary for the protection of the WMO.

Subdivision 10. Testing/Measuring Devices. The WMO may establish and maintain devices for testing, acquiring, and recording hydrological and water quality data within the watershed.

Subdivision 11. Technical Assistance/Local Water Management Plans. The WMO may provide any member with technical data or any other information of which the WMO has knowledge that will assist the member in preparing land use classifications or local water management plans within the watershed.

Subdivision 12. Technical Assistance/Legal. The WMO may provide legal and technical assistance in connection with litigation or other proceedings between its members and any other political subdivision, commission, board or agency relating to the planning or construction of facilities to drain or pond storm waters or relating to water quality within the watershed. A majority vote of all managers entitled to vote is required before use of WMO funds for litigation.

Subdivision 13. Reserve Funds. The WMO may accumulate reserve funds for the purposes herein mentioned and may invest funds of the WMO not currently needed for its operations.

Subdivision 14. Revenue. The WMO may collect money, subject to the provisions of this Agreement, from its members, in such amounts approved by the members and

from any other source approved by a majority of its Board; provided, however, approval of the members is not required with respect to the annual general administrative budget of the WMO pursuant to Section 8, Subdivision 3. Notwithstanding, any tax levy must be approved by each member.

Subdivision 15. Contracts. The WMO may make contracts, incur expenses, and make expenditures necessary and incidental to the effectuation of its purposes and powers.

Subdivision 16. Information Availability. The WMO's books, reports, and records shall be available for and open to inspection by its members at all reasonable times.

Subdivision 17. Amendments. The WMO may recommend changes in this Agreement to its members. Any amendments shall require ratification by both members.

Subdivision 18. Additional Powers. The WMO may exercise all other powers necessary and incidental to the implementation of the purposes and powers set forth herein and as outlined and authorized by Minn. Stat. §§ 103B.211 and 103B.253.

Subdivision 19. Supplemental Studies. Each member reserves the right to conduct separate or concurrent studies or tests at its own expense on any matter under study by the WMO.

Subdivision 20. Pollution Abatement. The Board may investigate on its own initiation or shall investigate upon petition of any member all complaints relating to pollution within the watershed covered by this Agreement. Upon a finding that the watershed is being polluted, the Board may order the member to abate this nuisance and each member agrees that it will take all reasonable action available to it under the law to alleviate the pollution and to assist in protecting and improving the water quality of surface water in the watershed.

Subdivision 21. Newsletter. In accordance with Minn. Stat. § 103B.227, the Board shall publish and distribute at least one newsletter or other appropriate written communication at least annually to residents. The newsletter or other communication must explain the WMO's water management programs and list the officers and telephone numbers.

Subdivision 22. Proposals for Services. In accordance with Minn. Stat. § 103B.227, the Board shall at least every two (2) years solicit interest proposals for legal, professional, or technical consultant services before retaining the services of an attorney or consultant or extending an annual services agreement.

Subdivision 23. Planning Activities. The Board shall coordinate its planning activities with contiguous watershed management organizations and counties conducting water planning and implementation under Minn. Stat. Ch. 103B.

Subdivision 24. Annual Report. On or before April 1, the Board shall file with the Board of Water and Soil Resources and the clerk of each member a financial activity report, an activity report, and an audit report for the previous fiscal year meeting the requirements of Minn. Stat. § 103B.231 and Minnesota Rule Part 8410.0150.

8. Finances.

Subdivision 1. Depositories/Disbursements. WMO funds may be expended by the Board according to this Agreement in a manner determined by the Board. The Board shall designate one or more national or state bank or trust companies authorized to receive deposits of public monies to act as depositories for WMO funds. In no event shall there be a disbursement of WMO funds without the signature of at least two (2) managers, one of whom shall be the Treasurer.

Subdivision 2. General Administration. Eaeh member agrees to contribute eaeh year to a general fund to be used for general administration purposes ineluding, but not limited to: salaries, rent, supplies, development of an overall plan, insuranee, bonds, and to purehase and maintain deviees to measure hydrological and water quality data. The annual eontribution by eaeh member shall be based fifty pereent (50%) on the assessed valuation of all properties within the watershed and fifty pereent (50%) on its proportional area within the watershed.

Subdivision 3. Budget. On or before July 1 of eaeh year, the Board shall adopt a general administrative budget by a majority of the Board for the ensuing year. The Secretary shall eertify the budget on or before July 1 to the elerk of each member, together with a statement of the proportion of the budget to be provided by each member. Eaeh member agrees to provide the funds required by the budget and the determination shall be eonelusive.

9. Special Assessments. The WMO shall not have the power to levy special assessments. All such assessments shall be levied by the member(s) wherein the benefited land is located.

10. Duration.

Subdivision 1. Agreement Binding. Except as provided below, each member agrees to be bound by the terms of this Agreement.

Subdivision 2. Termination. This Agreement may be terminated by either member, upon one year's written notice to the other, or at any time upon the written agreement of both members. Dakota County and the Board of Water and Soil Resources must be given at least ninety (90) days advanee written notice of the intent to dissolve the WMO.

Subdivision 3. Allocation of Assets Upon Termination/Dissolution. Upon termination of this Agreement or dissolution of the WMO, all property of the WMO shall be sold

and the proceeds thereof, together with monies on hand, shall be distributed to the members of the WMO. Such distribution of WMO assets shall be made in proportion to the total contribution to the WMO required by the last annual budget.

11. Effective Date. This Agreement shall be in full force and effect when both cities have executed this Agreement. Both members need not sign the same copy. The signed Agreement shall be filed with the clerk of the City of Eagan, who shall notify the clerk of the City of Inver Grove Heights in writing that it has been adopted. Prior to the effective date of this Agreement, either signatory member may rescind its approval.

[Remainder of page left intentionally blank]

IN WITNESS WHEREOF, the undersigned cities, by action of their councils, have caused this Agreement to be executed.

Approved by the City Council

January 7, 2014.

CITY OF EAGAN

BY: Mike Maguire
Mike Maguire
Its Mayor

AND Christina M Scipioni
Christina M. Scipioni
Its City Clerk

Approved by the City Council

December 9, 2013

CITY OF INVER GROVE HEIGHTS

BY: George Tourville
Its Mayor

AND Melissa A Kennedy
Its City Clerk

9.2 BOARD ASSESSMENT OF PROBLEMS AND ISSUES

Table 9-a shows the problems and issues discussed by the E-IGHWMO during 2025 Second-Generation Plan development in four general categories: Water Quality and Quantity, Education, Groundwater, and Other Issues.

Table 9-a. Current E-IGHWMO issues outlined by the Board in 2025 discussions.

Item	Problem or Issue	Discussion
Water Quality and Quantity		
A.	There are impaired lakes in the watershed as well as lakes with good water quality. While LeMay, Fitz, and Fish Lakes have been delisted for nutrient impairments (and Carlson and Holz lakes will soon be delisted), North and Blackhawk lakes are impaired for Mercury.	Protecting and improving lakes and other resources will require multiple strategies to achieve. Pollutant load and volume reduction projects (ie. Thomas lake nutrient reductions, trash management) need to be supplemented with maintenance practices, regulation, and education and outreach to multiple stakeholders. Maintaining water quality through practices such as LCW maintenance workshops will be a heightened focus as lakes are delisted.
B.	Chloride is a contaminant of concern for surface and groundwater. Several lakes are at risk for chloride impairment in the future.	The current salt cup outreach program is popular and successfully engages citizens in the watershed. There are now others doing similar community engagement and education for chloride awareness. E-IGHWMO efforts could be redirected or expanded to target businesses and churches and address sources in addition to road salt, such as water softeners. The WMO could contribute financially to smart-salt design, subsidize city staff smart salt trainings, or distribute rebates for new water softeners.

Item	Problem or Issue	Discussion
C.	Existing shoreline practices don't always reflect current best practices.	Education on shoreline stewardship for shoreline landowners and shoreline users could be expanded to highlight current best practices such as the importance of riparian buffers, reducing the prevalence of turf lawns, and educating folks about macroinvertebrate aquatic ecosystem health indicators. The E-IGHWMO use of the Landscaping for Clean Water program could be expanded to include more shoreline improvement work in the watershed. E-IGHWMO could install signage at fishing areas highlighting the importance of protecting shoreline vegetation. Other implementation actions could be model ordinances, and direct outreach to lake associations and the Minnesota Lake Steward program. Lakes for shoreline outreach could be targeted on a similar timeline with City of Eagan lake CIP projects.
D.	Climate change is altering rainfall and snowfall patterns and snowmelt patterns, affecting deicer usage, lake levels, and flooding concerns requiring updated water resource management and education needs.	As the cities develop climate action plans for infrastructure, the WMO wants to support these initiatives (financially or with other incentives) to protect water resources from future impacts. A changing climate also necessitates different expectations for lake levels, water use, deicing practices, and others, so the E-IGHWMO could incorporate these issues into education efforts. Member cities will need to ensure hydrologic models are kept up to date with the best available precipitation patterns.
E.	Aquatic invasive species can decrease lake quality and use.	Nuisance aquatic invasive species (AIS) are damaging lake quality in the watershed. E-IGHWMO could educate residents and lake users on reducing the spread of AIS via boat and plantings and could conduct AIS surveys or train volunteers how to survey and manage these volunteers.

Item	Problem or Issue	Discussion
Education		
A.	Some groups are not targeted effectively in education and outreach.	E-IGHWMO education and outreach efforts could be refined to better target K-12 education and educators and to communicate effectively with community members whose primary language is not English. E-IGHWMO could provide educator grants to host a specialist to provide interactive water resource education in local schools or to support water resource-based field trips. Education and outreach could also be expanded or rotated through different venues to engage with the community such as hosting classes through Community Ed or Parks & Rec, partnering with the Climb Theater, providing events with childcare, food, or in easily accessible locations.
B.	It is difficult to track how well programs affect behavioral change.	The WMO could find ways to measure the likely impact of its education programs, such as the number of people contacted or providing participant demographic surveys at events.

Item	Problem or Issue	Discussion
Groundwater		
A.	Maintaining an adequate supply of clean, safe, drinkable groundwater is critical to human and environmental health in the watershed.	E-IGHWMO could support cities and residents with irrigation audits to recommend replacement systems. Education and project support programs such as water smart yards and Landscaping for Clean Water could include low water use lawns to reduce irrigation and include infiltration practices to recharge groundwater. However, in areas where stormwater infiltration is not allowed, recommended, or where a higher level of engineering review should be conducted prior to installing an infiltration BMP, these nuances will be assessed when considered restoring to pre-settlement groundwater recharge conditions.
Other Issues		
A.	Overlap of local water management planning and watershed and other agency planning.	The E-IGHWMO is a small WMO almost entirely within Eagan and encompassing almost the entire City. Both Eagan and Inver Grove Heights, through their voluntary actions and those required by their NPDES permits, already undertake nearly all the responsibilities of the WMO through their local water resource management plans. The City of Eagan maintains a robust water quality monitoring program and capital improvement program activities targeted at its water bodies. The challenge is to support and partner with the cities (by leveraging funding and supplementing initiatives with outreach and volunteer events) without replicating what is already being done.

9.3 CITIZEN ADVISORY COMMISSION INPUT

In April 2025, the E-IGHWMO administrator presented about the Second-Generation plan development process at the Sustainable Eagan Advisory Commission (SEAC) and Inver Grove Heights Environmental Advisory Commission (IGH EAC) meetings. These citizen advisory commissions provided voluntary input on perceived issues within the Eagan-Inver Grove Heights watershed. Their feedback was considered during the Second-Generation plan issues and goals development process. Details on issues presented by the SEAC (Table 9-b) and IGH EAC (Table 9-c) are presented below.

Table 9-b. Sustainable Eagan Advisory Commission input on issues within the E-IGHWMO.

Topic	Issue	Potential Solution
Groundwater	High Irrigation Usage	Irrigation Education, incentives to install management systems
Groundwater	Prudent Commercial and Industrial Usage (Data centers?)	Promote leadership in policies that balance stewardship with economic opportunities
Groundwater	Influence of the Pine Bend refinery nearby and its pipelines through Eagan on groundwater	Any info? Studies?
Habitat	Foot traffic for fishing trampling vegetation	Awareness (Signage), and perhaps increase designated fishing spots
Habitat	Fisherman dumping bait into lakes	Awareness (Signage, bait disposal spots)?
Habitat	Watercress, invasive species	Host harvesting events (with cleaning stations)?
Habitat	PFAS in Fish	City already does Hg and PFAS alerts, City does fish tissue testing, any amplifying activities WMO can do?
Water Quality	Thomas Lake being green	Nutrient Management
Water Quality	Trash in Lakes	Awareness, and Community Clean-Up events
Water Quality	Runoff quality	Adopt-a-Drain to supplement City Street Sweeping Program
Water Quality	Wastewater: proper drain management for grease, fat, and oils	Commercial (Restaurants) and Homeowner Education
Water Quality	Salt Education for commercial and residential users	Chloride usage, winter de-icing, and water softeners
Water Quantity	Decreasing water levels due to changes in precipitation patterns (drought)	Unknown
Water Quantity	Increase in impervious surface (hardscaping)	Be conscious of impact, maybe increase commercial, residential raingardens

Table 9-c. Inver Grove Heights Environmental Advisory Commission input on issues within in the E-IGHWMO.

Topic	Issue	Solution
Groundwater	Summer lawn irrigation	Offer incentives for installation of "smart watering" controllers on irrigation system (like City of Woodbury), could pair with Dakota County's informational "Lawn Watering Wisdom" campaign.
Water Quality	Lack of case studies to demonstrate effectiveness of residential level efforts to improve water quality	Help fund / participant in case studies (raingardens, low mow lawns)
Water Quality	Neighborhood-wide stormwater run-off	Help fund neighborhood level raingardens during street reconstruction projects (maybe offer options at initial meetings to gauge interest)
Water Quality	Stormwater run-off awareness	Create or reinvigorate a Storm Drain Stenciling Program, perhaps target neighborhood NOT slated for street reconstruction in the next 10 years. Organize neighborhood "party" for project - talk about run off, Adopt-A-Drain (City Newsletter, Website, e-news... maybe Social Media after an event)
Water Quality	Education	Ensure opportunities for water/nature based education classes available to residents (talked about good resources from Extension, but did not mention LCW)

9.4 COMMUNITY SURVEY RESULTS

To assess community opinions on Eagan-Inver Grove Heights Watershed Management Organization goals, the Board voted to incorporate a community survey as part of the 2nd Generation Plan development. The community survey was sent out to residents of the cities of Eagan and Inver Grove Heights to help the Board better understand community priorities as they relate to water resources. Community feedback has helped guide how the E-IGHWMO focuses their efforts on water quality, water quantity, groundwater and water-dependent natural resources, and other key issues over the next decade to allocate limited funding to address those issues.

The E-IGHWMO Community Survey consists of 13 questions aimed at gauging watershed resident usage of water resources, the most popular recreation areas, key watershed conservation initiatives for the E-IGHWMO to target, and more.

The Community Survey was available virtually on Microsoft Forms for residents to complete for 30 days in May 2025 and received 50 responses. It was distributed via email to a subgroup of Eagan and Inver Grove Heights residents who had expressed interest in the Landscaping for Clean Water program. Of the respondents, 46 live in E-IGHWMO, 1 regularly spends time at lakes and ponds within the watershed, 1 does not live or spend time in E-IGHWMO, and 1 lives on the edge of the E-IGHWMO and Lower Mississippi River watersheds [Question 1]. Additionally, 43 respondents live in the City of Eagan, while 5 respondents live in Inver Grove Heights, and 1 respondent preferred not to say where they live [Question 13].

Most respondents recreate at the lakes, ponds, and wetlands in E-IGHWMO by walking or biking the adjacent trails (43) or by casually viewing them and enjoying their aesthetics (41). Approximately 1/5 of respondents use the watershed's water resources through swimming (13), non-motorized boating (16), or fishing (11), and remaining respondents view ponds in their backyards (4) [Question 2].

According to the survey, the most-used lakes in the watershed are Schulze Lake (36), Thomas Lake (29) and Holland Lake (29), Blackhawk Lake (22), Holz Lake (20), Fish Lake (18), and McDonough Lake (9). Respondents also used Bald Lake (5), Jensen Lake (5), Carlson Lake (4), Bur Oaks Pond (4), LeMay Lake (3), Fitz Lake (1), and several other smaller lakes [Question 3].

By far, most survey respondents interact with the E-IGHWMO through the Landscaping for Clean Water program (25), while others engage with the watershed through the Rain Barrel Program (8). Residents also interact with the WMO through the Water Smart Yards program (5) and through tables at city events (5). Several respondents also heard of E-IGHWMO through the Adopt-a-Drain program (2), Minnesota Water Stewards (2), and the E-IGHWMO Annual Report (2) [Question 4].

Respondents elected the following as the most pressing land use or environmental problems affecting the lakes, ponds, and wetlands in the watershed:

1. Pollutants like heavy metals, sediment, road salt, and pet waste entering our lakes and wetlands, contributing to nutrient, mercury, and chloride impairments (38).

2. Maintaining an adequate supply of clean, safe, and potable groundwater is critical to human and environmental health in the watershed (26).
3. Climate change is altering rainfall, snowfall, and snowmelt patterns, which affects deicer usage, lake levels, and flooding concerns, requiring updated water resource management and education needs (22).

Participants also expressed concerns that aquatic invasive species can degrade lake quality and use (12), there is a lack of abundance and diversity of wildlife and health of habitats for aquatic life (fish, bugs, plants) (11), that some groups are not targeted effectively in watershed education and outreach, such as K-12 students (7), chloride is an emerging contaminant for lakes due to road salt inputs (6), needing more water quality-centric shoreline practices (5), reducing erosion along shorelines (3), local watershed management planning overlapping with other agencies with competing priorities (2), difficulties tracking how watershed educational programs affect behavioral change (2), and flooding (1) [Question 5].

Residents participated in conservation practices on their properties, including planting native plants in their yards (40), limiting use of salt on pavements (36), participating in the Landscaping for Clean Water program (28), picking up trash or volunteering (23), picking up their pet's waste regularly (22), direct downspouts to rain barrels (18), putting a rain garden in their yard (8), adopting a storm drain (5), adding vegetative buffers to their property's shorelines (4), and taking a smart salting course (3), planting trees (1), and opposing development (1) [Question 6].

Many respondents would like additional information or support about planting drought tolerant or no mow grass seed (35), installing a rain garden or native plant garden (20), converting concrete areas to pervious pavers (13), adopting a storm drain to keep free of debris (13), reducing or eliminating salt use in the winter (12), joining a neighborhood community group to support each other in improving water quality (10), keeping grass clippings and leaves off the street (8), promoting shoreline health vegetation restoration (8), and aquatic invasive species identification (7) [Question 7]. Respondents are also interested in learning more about what their city is doing to protect water quality in lakes and wetlands (25), how to best maintain their property to protect lakes and wetlands through the Landscaping for Clean Water and Water Smart Yard programs (22), and activities they can do with their children or grandchildren to help them learn about water quality (16). Folks also want to learn more about identifying aquatic invasive species (10) and using less salt for ice control while still conserving safety (8) [Question 9].

Respondents were asked what has prevented them from participating in water quality conservation activities (such as planting native plants and rain gardens, limiting salt use, installing rain barrels, enrolling in the Landscaping for Clean Water program, adopting a storm drain, implementing vegetative buffers on shorelines, and more). Factors that have prevented respondents from participating in E-IGHWMO water quality conservation activities include support not being offered during available times (8), a preference for online programming (6), changes being costly and desiring grant support (5), grants not being large enough to help (5), and programs not being in a format that would work for the respondent (2). Nine respondents reported that they have participated in programming and did not have any issues becoming involved. Several respondents wrote that factors such as working during typical volunteer hours, lack of time, being unaware of

programming, and living in a townhome that does not respond to requests for greener lawn options contributed to their inability to participate [Question 8].

Survey respondents all chose one issue that would be most important for the E-IGHWMO to tackle in the next ten years (Figure 9-a). The top issues were:

1. Providing more guidance and assistance to property owners who want to improve their own properties to protect water quality (14)
2. Improving water quality in lakes and ponds (13)

Other issues selected were homeowner outreach to promote water conservation, healthy shoreline practices, and water smart yards (9), reducing the amount of road salt in the watershed without compromising public safety (4), and minimizing spread of invasive species in lakes (3). One respondent each chose the following issues as their most important focus: reducing flooding of lakes and ponds, reducing flooding of city streets, K-12 education on water resources concerns, business education on limiting deicing salt use, volunteer programs on water resources education (ie. aquatic invasive species education, adopt-a-drain), and educating lawmakers on how unchecked development degrades water quality [Question 10].

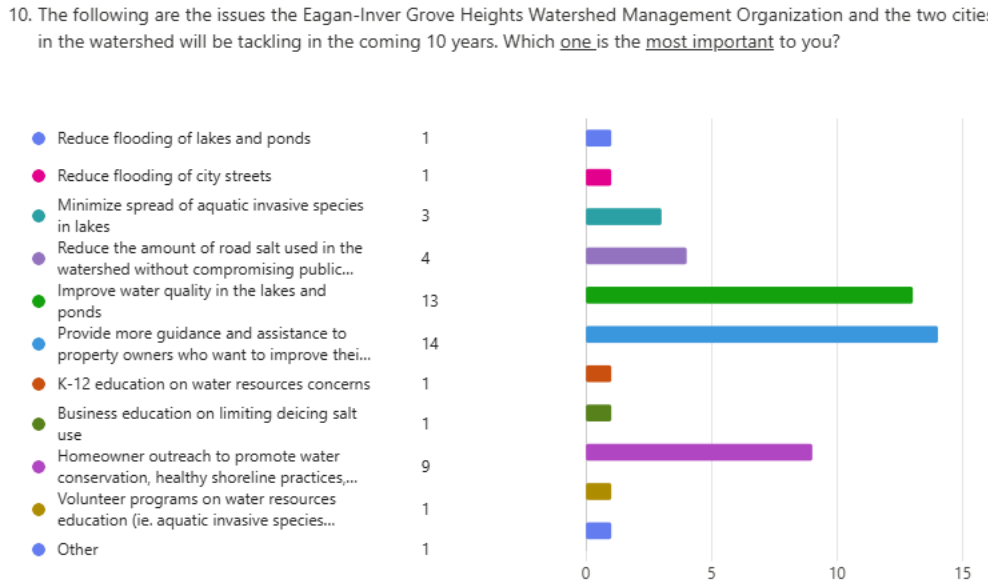


Figure 9-a. Community survey results from Question 10 regarding which E-IGHWMO issue is the most important to respondents.

Most respondents wanted to learn more about actions to protect and improve local lakes and ponds through community education classes (23) and grant programs with supportive trainings (ie. Landscaping for Clean Water). Other respondents wanted to learn more about protective actions through group volunteering (ie. drain stenciling), K-12 school education (13), and community events (ie. Climb Theatre) (11) [Question 11].

Finally, community members were asked to share any additional comments or questions about the education and outreach program in the watershed. Respondents hoped to see more direct canvassing homes in the community (i.e., door knocking) on water resources topics, more awareness about the Landscaping for Clean Water Program in the community, more educational signage near lakes, ponds, and wetlands, more information and assistance with planting native plants in residential yards, tapping into other local groups to achieve WMO goals, hosting free sustainability courses, more neighborhood outreach for property owners, educating townhome and condominium members on introducing native plants, educating policy-makers, local lawmakers, and the public about reducing development, collaborating with the Dakota County Master Gardener volunteers, and integrating watershed management programs as a whole [Question 11].

The following lakes are used the most frequently by community survey respondents.

1. Schulze Lake
2. Thomas Lake
3. Holland Lake
4. Blackhawk Lake
5. Holz Lake
6. Fish Lake
7. McDonough Lake

Community members designated the following as the three most pressing land use or environmental problems affecting the lakes, ponds, and wetlands in the E-IGHWMO watershed:

1. Pollutants like sediment, road salt, and pet waste entering lakes and wetlands and contributing to nutrient, mercury, and chloride impairments
2. Maintaining an adequate supply of clean, safe, and potable groundwater is critical to human and environmental health in the watershed
3. Climate change is altering rainfall, snowfall, and snowmelt patterns, which affects deicer usage, lake levels, and flooding concerns, requiring updated water resource management and education needs

The following issues that the E-IGHWMO will be tackling in the next 10 years were identified as the most important to residents of Eagan and Inver Grove Heights in the community survey:

1. Provide more guidance and assistance to property owners who want to improve their own properties to protect water quality
2. Assist cities in improving water quality in the watershed's lakes and ponds by supporting waterbody capital improvement projects and providing monitoring and technical assistance to watershed cities
3. Homeowner outreach to promote water conservation, healthy shoreline practices, and water smart yards

Top issues that community survey respondents would like to learn more about include:

1. How their cities protect lakes and wetlands and how to learn more about water quality
2. How best to maintain their properties to protect lakes and wetlands through the landscaping for Clean Water and Water Smart Yards programs

3. What activities to undertake with children or grandchildren to help them learn more about water quality
4. How to identify aquatic invasive species and reduce the spread to water bodies

9.5 INITIAL AGENCY INPUT LETTERS

BOARD OF WATER AND SOIL RESOURCES

MN Board of Water and Soil Resources
520 Lafayette Road North
St. Paul, MN 55155

September 5, 2024

Ashley Gallagher
E-IGHWMO Administrator via Dakota SWCD
4100 220th St. W.
Farmington, MN 55024

RE: Eagan-Inver Grove Heights Watershed Management Organization's Watershed Management Plan Update

Dear Ashley,

This letter is in response to your July 9, 2024, request for input to the 2nd Generation Eagan-Inver Grove Heights Watershed Management Organization's (E-IGHWMO) Watershed Management Plan (Plan).

Thank you for the opportunity to provide preliminary comments. I also appreciated the opportunity to talk with you about the planning process and Plan content requirements back in June. Through implementation of the inaugural E-IGHWMO Watershed Management Plan, the organization has built a solid foundation from which to launch the next 10-year Plan. I look forward to working with the E-IGHWMO on their Plan update.

The Board of Water and Soil Resources (BWSR) has expectations for the Plan update that focus on:

1) Process. Provide opportunities to discuss relevant topics and affirm, align, or change direction based on initial input and issue identification.
2) Coordination. Good planning is collaborative from the beginning and engages with multiple units of government, partners, and the public at many different levels of the process.
3) Plan Contents. Plans should focus on priority issues, clearly describe actions to be taken over the next 10 years, incorporate relevant and timely data and trends, and contain short-, mid-, and long-term measurable goals based on science, local priorities, and targeted implementation plans.
4) Organizational Capacity. Incorporate authentic self-evaluation, accountability, and potential efficiency of implementation to create ambitious yet realistic goals.

The requirements for the planning process and Plan content are outlined in Minnesota Rule 8410 (https://www.revisor.mn.gov/rules/8410/) and Minnesota Statute 103B (https://www.revisor.mn.gov/statutes/?id=103B). Please reference these documents throughout the process.

Additional resources that may be helpful for developing implementation actions and measurable goals can be found in the *One Watershed One Plan Guidebook* (https://bwsr.state.mn.us/one-watershed-one-plan-resources):

- *Identifying and Prioritizing Resources and Issues* (pages 7-10)
- *Setting Measurable Goals* (pages 11-14)
- *Targeting Implementation Activities* (pages 23-26)

Note that these resources are useful for watershed planning throughout the state, regardless of whether a plan is developed as part of the One Watershed, One Plan process or the metro update process.

Below are a few specific comments for E-IGHWMO to consider as the planning process begins.

Measurable Goals (*please refer to MN Rule 8410.0080*):

- The Plan must include measurable goals for water quantity, water quality, public drainage systems, groundwater issues, wetland management, and any other priority issues identified during the input process.
- Goals need sufficient detail to determine what will be accomplished by the end of the Plan and whether success has been achieved. BWSR recommends the following process:
    - define a strategy to prioritize the top resource concerns,
    - create *specific* and *quantifiable* goals for implementation activities, and
    - develop metrics to demonstrate progress.
- While the E-IGHWMO's current Plan contains strategic goals that are well thought-out and important for implementing successful programming, progress towards these goals is difficult to measure. We encourage the E-IGHWMO to develop quantifiable goals and associated actions to achieve them. Quantifiable goals could include pollution reductions, educational events, assessments, studies, or model ordinances, to name a few.
- In addition to utilizing studies, models, partner data, and/or TMDLs, we encourage the E-IGHWMO to consider estimated and actual results from completed projects to inform potential numeric goals for the next ten years. For example, incorporate pollution reductions associated with "Landscaping for Clean Water" projects or water quality improvement practices from LeMay Lake to help set quantifiable goals over the next 10 years.
- Developing clear and quantifiable goals also provides an excellent opportunity for the E-IGHWMO to highlight progress on protecting and restoring resources that are important to residents. This can help build local support for ongoing watershed work and foster increased community capacity and buy-in.

Implementation Actions (*please refer to MN Rule 8410.0100*):

- BWSR recommends that the Plan be written to ensure that prioritized projects are identified and targeted to specific water resources, making it easier to show how the E-IGHWMO is addressing both resource and constituent concerns. A clearly prioritized and well-targeted plan can help communicate the need for specific projects and programs in terms of achieving water quality improvements.
- Minnesota Rule 8410.0105 Subpart 1. Item A. states that plans need to include a table that briefly describes each component of the required implementation actions (subparts 2-6), the schedule, estimated cost, and funding sources, including annual budget totals.
- BWSR recommends that the implementation section of the Plan clearly identifies a range of activities and programs that the E-IGHWMO, either as a lead or supporting entity, may want to pursue within the next 10 years. A table (or tables) will provide an essential and easy-to-interpret summary of prioritized activities and resources, partners, timelines, budgets, and (ideally) associated measurable goals, among other information.
- BWSR's Watershed-Based Implementation Funding requires that activities are identified in the *implementation section* of a state-approved, locally adopted watershed management plan under Minnesota Statue §103B.231 to be eligible. A comprehensive implementation table (or tables) can help both the E-IGHWMO and its partners easily identify eligible projects/programs and recognize when Plan amendments may be needed to incorporate new projects for funding. For example, chloride reduction

BMPs are not included in the E-IGHWMO's current Plan implementation section. BWSR recommends including chloride reduction BMPs in the implementation section of the next Plan not only because chloride is an important resource concern, but also to ensure continued opportunities for BWSR grant funding to municipalities.

Other comments:

- Board Conservationists are often asked what makes a "good" plan. In general, "good" plans are those that are ***fundamentally useful*** to the organization, and the most successful plans are concise, easy to follow, and help the organization achieve its goals. "Good" plans clearly describe:
    - current conditions (assessment),
    - desired conditions (measurable goals),
    - actions being considered to produce change (prioritization and implementation),
    - and how the activities will be paid for (budget).
- Similarly, BWSR encourages the E-IGHWMO to consider how they can best utilize the Plan's Executive Summary. For example, an "elevator speech" approach can make important Plan information accessible to a broad constituency while also providing a concise summary of issues, main goals, and major actions. Utilizing an array of graphics and/or bulleted lists can clearly illustrate main points and still meet plan content requirements.
- BWSR strongly encourages prioritization of activities related to climate change and resiliency in the updated Plan, particularly with respect to increasingly volatile precipitation and warming temperature regimes. Among other resources, the BWSR Climate Resiliency Toolbox (https://bwsr.state.mn.us/bwsr-climate-resiliency-toolbox) may be useful. Another new resource to be aware of is Minnesota CliMAT[1] from the University of Minnesota Climate Adaptation Partnership. Minnesota CliMAT is an interactive, online tool that provides climate projections at spatial scales down to 2.5 miles, enabling local governments to visualize potential impacts in the coming decades.
- BWSR applauds the E-IGHWMO's focus on community outreach and education in the current Plan and hopes the E-IGHWMO continues expanding efforts that foster relationships with residents, landowners, businesses, community organizations, and other partners over the next ten years.
- The current Plan largely defers to city partners with respect to protecting groundwater quality and quantity. Given that increasingly complex groundwater issues and greater public concern have emerged over the past 10 years, BWSR encourages the E-IGHWMO to thoughtfully consider how they can best address groundwater resource issues and related outreach.
- As the E-IGHWMO develops its public input process for the Plan update, BWSR encourages the incorporation of diversity, equity, and inclusion elements that ensure robust engagement in communities whose demographics have changed over the past 10 years[2]. Tools such as EJScreen: Environmental Justice Screening and Mapping Tool[3], the Social Vulnerability Index[4], and the American Community Survey[5] may be helpful in developing an understanding of community demographics and dynamics.

I look forward to providing additional input and assistance as the E-IGHWMO works through development of the Plan. Please forward information regarding your proposed public input process once it has been finalized, and please also invite me to workshops, public input events, and advisory committee meetings.

[1] Minnesota CliMAT. University of Minnesota Climate Adaptation Partnership. Accessed 9/5/2024.
[2] Minnesota County Profiles. Minnesota Department of Employment and Economic Development. Accessed 9/5/2024.
[3] US Environmental Protection Agency, accessed 9/5/2024.
[4] Agency for Toxic Substances and Disease Registry, US Centers for Disease Control, accessed 9/5/2024.
[5] US Census Bureau, accessed 9/5/2024.

If you have questions or need additional information, feel free to contact me by phone at 651-392-5064 or via email at anne.sawyer@state.mn.us.

Sincerely,

Anne Sawyer

Anne Sawyer
BWSR Board Conservationist

CC: Marcey Westrick (Central Region Manager, BWSR, via email)
State Review Agencies (via email)
Megan Moore (DNR)
Abby Shea (MDH)
Jeffrey Berg (MDA)
Maureen Hoffman (METC)
Jeff Risberg (MPCA)
Katie Kowalczyk (MNDOT)

DEPARTMENT OF NATURAL RESOURCES

Central Region Headquarters
1200 Warner Road
Saint Paul, MN 55106

July 26, 2024

Ashley Gallagher
District Manager, Dakota County SWCD
Administrator via SWCD for E-IGHWMO
4100 220th Street West
Farmington, MN 55024
ashley.gallagher@co.dakota.mn.us

Re: Eagan – Inver Grove Heights Watershed Management Organization's 2026 Watershed Management Plan Update

Dear Ashley,

This letter is in response to your notification soliciting input on Eagan - Inver Grove Heights Watershed Management Organization (E-IGHWMO) 2026 Watershed Management Plan Update. This is an exciting time for E-IGHWMO as work begins on the 10-year update of the commission's Watershed Management Plan (WMP). This process allows time to review and update past goals, strategies, and actions, and to think through watershed plans for the next ten years. To aid in this process, DNR has compiled this resource assessment letter to provide up-to-date information on DNR's priority issues for the watershed and useful data available through DNR that can help support watershed management organization planning, program management, and project development/design. The following narrative is divided into topics relevant to watershed resource management and included under each topic are DNR recommended actions. Continue to utilize information from State studies developed for the Watersheds including TMDLs and WRAPS to drive implementation programs and targeting.

Taylor Huinker, the DNR South Metro Area Hydrologist, will be participating on the Technical Advisory Committee for E-IGHWMO Watershed Management Plan preparation process. If you have questions regarding the content of this letter or would like to discuss individual topics or recommendations further, please do not hesitate to contact her (taylor.huinker@state.mn.us; 651-259-5790). The DNR looks forward to working with E-IGHWMO on your next generation Watershed Management Plan and on future public waters projects.

Sincerely,

Megan JC Moore

Megan Moore
South District Manager – Ecological and Water Resources

cc: Anne Sawyer, BWSR

Dan Lais, DNR
Jack Gleason, DNR
Abby Shea, MDH
Jeff Berg, MDA
Maureen Hoffman, Metropolitan Council
Jeff Risberg, MPCA
Katie Kowalczyk, MnDOT

General Watershed Management Strategies

DNR recommends that the following general watershed management strategies be a part of your watershed management plan (WMP):

- Keep water where it falls by protecting and restoring wetlands, ensuring water courses are connected to their floodplains, and managing stormwater runoff with rate control and volume reduction standards.
- Protect and create buffers of native perennial vegetation along watercourses and water bodies.
- Reduce the flow of water volume and nutrients through drainage systems.
- Design culverts and bridges to retain floodplain functions and bank stability on natural channels and other drainage systems.
- Support land use planning and practices that protect, restore, and enhance priority ecological resources.
- Maintain and enhance perennial vegetation including protection of working forest lands.
- Use water efficiently and implement conservation measures that further reduce water demand.

Integrated Water Resource Management

As the Eagan-Inver Grove Heights Water Management Organization begins the WMP update process, it's important that water resource issues and goals be addressed not as independent prescriptions, but as integrated activities strategically applied toward the improvement of the entire watershed system. DNR's Watershed Health Assessment Framework approach uses a five-component framework (hydrology, biology, connectivity, geomorphology, and water quality) to address the interdependent nature of ecological systems that operate within a watershed. Placing the goals and actions identified by the Committee into this framework may help to:

- Evaluate watershed goals and actions in the context of the five aspects of watershed health.
- Identify gaps between goals and actions.
- Prioritize chosen actions effectively.
- Examine the potential for unintended consequences.

Use the Watershed Health Assessment Framework interactive online map and downloadable data sets to help refine and organize the WMP within the context of a comprehensive watershed landscape.

Additional, specific recommendations by topical area follows:

Groundwater Sustainability

DNR continues to manage the state's groundwater resources to meet sustainability goals set out in Minnesota Statutes, section 103G.287. DNR recommends the E-IGHWMO's WMP contain some key objectives and actions in the plan, including:

- Increase communication about the risks of overuse and degradation of groundwater resources and promote water conservation.
- Maintain and enhance aquifer recharge.
- Maintain and enhance quality of water recharging aquifers.
- Explore opportunities for stormwater and rainwater harvest and use to reduce reliance on groundwater.
- Increase coordination of monitoring activities between organizations with water management responsibilities, including monitoring water level trends using water level measurements from member communities.
- Increase coordination of communication activities between organizations with water management responsibilities.

Stormwater Management

The E-IGHWMO's land use is largely developed. To reduce the resultant impact of increased runoff and pollutant loading to water bodies requires improvements to existing urban stormwater management infrastructure.

E-IGHWMO plays an important role in urban stormwater management and DNR encourages the E-IGHWMO to continue to work with its partners to:

- Monitor and protect the water quality of the E-IGHWMO's water resources.
- Implement best management practices to reduce stormwater runoff.
- Investigate new stormwater management techniques.
- Promote green infrastructure such as rain gardens, permeable pavement, and swales.
- Address storm sewer infrastructure capacity and corresponding flooding problems.

One of the primary drivers of degraded water quality and habitat in rivers, streams, lakes and wetlands is nutrient and sediment-laden runoff from surrounding commercial, residential, and agricultural land uses. Minimum Impact Design Standards (MIDS) were developed by the Minnesota Pollution Control Agency to minimize stormwater runoff, minimize the amount of pollution reaching lakes, rivers, and streams, and to recharge groundwater. The development of MIDS is based on low impact development (LID), an approach to storm water management that mimics a site's natural hydrology as the landscape is developed. Continue to support the incorporation of MIDS (and the LID approach) into future development and redevelopment in the watershed.

Additionally, High Potential Zones for the federally endangered Rusty-patched Bumble Bee occur within the Eagan-Inver Grove Heights Water Management Organization. The Monarch Butterfly is also likely to be federally listed in the near future. Therefore, DNR encourages the use of BWSR-approved, weed-free, native seed mixes to the greatest degree possible in stormwater features and other landscaping in order to provide pollinator habitat, reduce runoff and erosion potential, and reduce the need for irrigation and fertilizer.

Septic Systems

Consider promoting homeowner education on the proper use and maintenance of septic systems to preserve their function. The University of Minnesota's Onsite Sewage Treatment Program designed a homeowner tool that allows users to create a custom guide for their septic system. The tool, known as H_2O&M, can be found at this website.

Chloride

Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city applicator participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. More information and resources can be found at MPCA's Smart Salting training website. Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.

We encourage E-IGHWMO to request that project proposers who wish to significantly increase impervious surfaces develop a chloride management plan that outlines what BMP's and strategies will be used to reduce chloride use within the project area. We also encourage cities, counties, and watershed districts to consider how they may participate in the Statewide Chloride Management Plan and provide public outreach to reduce the overuse of chloride. Please consider metrics in your plan that includes encouraging member communities to consider adopting an ordinance regarding chloride use using the MPCA's chloride reduction model ordinance MPCA's chloride reduction model ordinance.

Natural Shorelines

Since Minnesotans started developing around our lakes and rivers, our state has lost an estimated 40 – 50% of its natural shorelines. The loss of natural shorelines allows more naturally occurring phosphorus to flow directly into surface waters, increasing algae growth. An average suburban style lakeshore contributes seven to nine times more phosphorus per summer compared to a lot with a natural shoreline. This increase in phosphorus can result in the generation of 100 pounds of algae along the shore, compared to 15 pounds under natural shoreline conditions. On the other hand, natural shorelines help keep lakes clean for recreation and fishing. They stabilize shorelines, protecting property from wind and wave erosion, and they provide important wildlife habitat. Natural lakeshores also provide a place for relaxation and are central to Minnesota's identity as a good place to live.

We encourage E-IGHWMO to invest in education for lakeshore property owners and provide opportunities for natural shoreline restoration and enhancement. DNR's Natural Shorelines webpage contains links to a number of helpful resources, including DNR's Score your Shore and Restore Your Shore tools.

Fisheries

Fisheries staff appreciate the E-IGHWMO's previous and continuing work to improve water quality and fisheries resources. For more information and coordination on fisheries management projects, please contact TJ Debates (timothy.debates@state.mn.us; 651-259-5770), East Metro Area Fisheries Supervisor.

Aquatic Invasive Species

Aquatic invasive species (AIS) pose a significant threat to Minnesota's lakes and rivers and continue to be a high priority issue for DNR. Aquatic invasive plants such as Eurasian watermilfoil and curly-leaf pondweed form thick vegetative mats on the water surface, limiting recreational opportunities and often negatively affecting water quality. Both the control of existing AIS and the prevention of new infestations are important efforts in terms of AIS management.

In most cases, eradication of invasive aquatic plants is not an option. Therefore, herbicide treatments are generally used to target abundant beds of invasive plants that may create a recreational nuisance. In most cases, the use of herbicides on lakes classified as Natural Environment (NE) lakes is not appropriate, and mechanical means (e.g., commercial aquatic plant harvester) may be a management option.

The establishment of both aquatic and terrestrial invasive species is a major threat to the ecological functions of both wetland and upland plant communities. Include plans to combat invasive species and best management practices (BMPs) in watershed project plans and designs. Promote education of the public on the control and spread of invasive species – public awareness efforts targeting riparian property owners (lakeshore owners) are needed to increase overall compliance with AIS laws. DNR will continue to support local efforts to educate the public in AIS prevention and encourage local units of government to take a leadership role.

To avoid the accidental spread of AIS during routine watershed activities, DNR recommends developing plans for work that involve visits to multiple lakes, such as water quality sampling. Plans should include 1) a thorough documentation of the presence of AIS in E-IGHWMO lakes, including infestations like curly-leaf pondweed that may not be widely reported, 2) consideration of the order in which lakes are visited, and 3) decontamination procedures. Please contact April Londo (april.londo@state.mn.us; 651-259-5861) for information on AIS infestations in E-IGHWMO lakes, and Christine Hokkala-Kuhns (christine.hokkala-kuhns@state.mn.us; 320-223-7845) for information on decontamination procedures.

For more information on the AIS Program, contact April Londo (april.londo@state.mn.us; 651-259-5861), invasive species specialist.

Conservation Partners Legacy Grant Program

The Conservation Partners Legacy (CPL) Grant Program funds conservation projects that restore, enhance, or protect forests, wetlands, prairies and habitat for fish, game, and wildlife. The types of projects funded under this grant program include prairie restoration, river restoration, lake habitat enhancement, wildlife habitat restoration, floodplain forest restoration, bluff prairie restoration, fish barrier installation, buckthorn removal, fish passage restoration, and others.

Participate in the Conservation Partners Legacy (CPL) Grant Program where possible. To learn more about this grant program, contact the CPL Grant Program coordinator (LSCPLGrants.DNR@state.mn.us; 651-259-5233).

Consideration of plant communities, rare species, and special features

Information on the biology, distribution, ecology, habitat use, conservation, and management of rare species of interest is available in the DNR's Rare Species Guide. The locations of state-listed species maintained in the Rare Features Database are considered sensitive information and is protected under the Minnesota Data Practices Act. This information is only available through a Natural Heritage Information System (NHIS) data request or by license agreement and should be used for internal planning purposes only.

Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. Please note that the only way to screen a project for impacts to state-listed species that are protected by law is (1) to query the NHIS database by submitting a review request to Minnesota Conservation Explorer (MCE) or (2) to use a private NHIS license agreement to understand how the project may impact protected state-listed species and rare features. If rare features are identified within one mile of a project using a private license, the project should be submitted for review through MCE for further coordination with DNR. If protected species are identified within a mile, the project will be manually reviewed by Natural Heritage review staff who will follow up with next steps.

A Natural Heritage review is only considered current for 12 months because the NHIS database is continually updated as new information becomes available and will include current records and surveys. You can visit the online Minnesota Conservation Explorer tool to explore public data available for conservation planning, to request an automated Natural Heritage Review, and, for authorized users, to access nonpublic data.

DNR recommends using assessment data of watershed characteristics and natural resource features when completing long-range watershed planning efforts. The assessment of watershed characteristics and natural resource features is valuable for evaluating landscape functions and guiding land management decisions. These assessments provide important information on a landscape's integrity and its ability to provide benefits to ecosystems. For example, assessment data can be used to examine how projects will improve or affect flora and fauna, determine the cumulative impacts of land use, make regional scale land use decisions, and to balance land use development and natural resource protection.

The presence of rare species can be an indication of the health of a watershed, and plant and animal diversity help landscapes to maintain important watershed functions. DNR recommends that the E-IGHWMO's WMP include goals and policies to address how rare species and habitat will be protected.

We encourage E-IGHWMO to require an NHIS review as early in the planning stage of projects as possible in order to allow sufficient time for review and coordination with DNR. If the proposer waits until WCA TEP review to consider potential impacts to rare species, it is often late in the planning stages and could cause significant delays to the project.

DNR data layers have been developed that are helpful in watershed planning. These are free and available to the public from the Minnesota Geospatial Commons. Some key data layers include:

- DNR managed lands such as Scientific and Natural Areas, Wildlife Management Areas, and Aquatic Management Areas
- DNR native plant communities
- Karst features
- Minnesota Biological Survey (MBS) Sites of Biodiversity Significance
- Central Region Regionally Significant Ecological Areas (CRRSEA) – The purpose of this data is to inform regional scale land use decisions, especially as it relates to balancing development and natural resource protection.
- Regionally Significant Ecological Areas and Regional Ecological Corridors – Identifies potential habitat movement corridors that may be important for wildlife connections.

DNR encourages the use of site-appropriate native plants for shoreline stabilization, buffers, and erosion control for all watershed projects. These species provide important soil stabilization and erosion control functions, require less water and fertilizer, have the greatest chance of establishment success, and contribute to biodiversity of landscape vegetation. Query the DNR's Your Shore Native Plant Encyclopedia for a list of plants tailored to specific site characteristics. DNR recommends the establishment of native, deep-rooted grassland and herbaceous plant communities in the place of shallow-rooted, mowed turf grasses on watershed and highway projects as a means to support native insect pollinator communities and other wildlife. Interest in pollinators has grown since the term Colony Collapse Disorder appeared in 2006. This phrase refers to the puzzling disappearance of honey bees from their hives. While this disorder does not affect native pollinators, many of the challenges that face honey bees also affect native insects, including pesticide use, habitat loss, pathogens, parasites, climate change, and invasive species. DNR has developed a Best Management Practices Guide for restoring and enhancing native plant community habitat for native insect pollinators.

Forest Management Considerations

Importance of forested riparian areas to water resources cannot be understated. Forested riparian areas provide an array of goods and services for plant diversity, wildlife and fish habitat, nutrient, sediment, and water interception, storage, and transformation and recreational opportunities. Keeping riparian areas intact so that the functions and roles of terrestrial and aquatic ecosystems can continue to provide these services is imperative. We recommend keeping forested riparian areas forested, which does not necessarily preclude forest management activities. If riparian forests are managed in the E-IGHWMO's area, we highly recommend consulting and using the Minnesota Forest Resource Council's *Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers, and Resource Managers* to protect these valuable ecosystems into the future.

Emerald ash borer (EAB) will continue to impact communities in the E-IGHWMO area within the next 10-year watershed plan cycle. Communities should plan for EAB impacts and take action now to reduce the sudden financial burden that comes with EAB. More information is available from the University of Minnesota Extension website. The Minnesota Department of Health's interactive mapping website shows the status of EAB in Minnesota. The E-IGHWMO area is within the "Generally Infested Area" and all of Washington County is within the quarantine area. To minimize pesticide exposure in the environment and to save people's money, we do not recommend applying insecticides to save ash trees until the symptoms of EAB infestation are within about ¼ - ½ mile of any given location. Ash trees can still be saved from EAB if they are lightly infested (they must still have over 50% of their normal number of leaves that are normally sized). Ideally, ash trees should be treated when they are 100% healthy and not infested at all, so there is some risk of waiting until EAB infestation symptoms are visible within a ½ mile. In natural areas, forested wetlands with ash dominant in the canopy will experience a more drastic change in plant community composition and hydrology than upland communities with a minor ash component.

The Forest Stewardship Program at the DNR provides private landowners with at least 20 acres of forested land (or land that will have trees) professional forest management advice from a qualified DNR forester or private land forestry consultant. For a fee, landowners will consult with a forester to talk about their goals for forest

management. The forester will write a forest management plan and the land will be eligible for property tax relief programs and state cost-share assistance for management work. For more information on the DNR's professional forest management assistance for private landowners, please visit DNR's Forest Stewardship Program webpage.

Communities interested in caring for and managing their urban and community forests can find helpful information at DNR's Community Forestry webpage. The page includes information and links about grant programs, DNR Arbor Month, and best management practices to prevent spreading invasive species and conserving wooded areas.

From: Berg, Jeffrey (MDA)
To: Gallagher, Ashley
Cc: Sawyer, Anne (BWSR)
Subject: RE: Eagan-Inver Grove Heights Watershed Plan
Date: Monday, September 9, 2024 11:18:50 AM
Attachments: image001.jpg
image002.jpg
image003.jpg
image004.jpg
image005.jpg
image006.jpg

Hi Ashley,

I took a look at the current Eagan-Inver Grove Heights Watershed Plan. There does not appear to be much MN Department of Agriculture related items, so I have no comments on the plan update. However if any ag. related issues arise (ex. pesticides, fertilizers), let me know and I can provide input.

Thanks for the opportunity to review.

Jeff
Water Policy Specialist
Minnesota Department of Agriculture
651 201 6338
625 Robert Street North
St. Paul, MN 55155

From: Gallagher, Ashley <Ashley.Gallagher@CO.DAKOTA.MN.US>
Sent: Tuesday, July 9, 2024 13:57
To: Sawyer, Anne (BWSR) <Anne.Sawyer@state.mn.us>; Berg, Jeffrey (MDA) <jeffrey.berg@state.mn.us>; Shea, Abby (She/Her/Hers) (MDH) <Abby.Shea@state.mn.us>; Moore, Megan (DNR) <megan.moore@state.mn.us>; Kowalczyk, Katie (She/Her/Hers) (DOT) <Katherine.Kowalczyk@state.mn.us>; Risberg, Jeff (MPCA) <jeff.risberg@state.mn.us>; Donatell, Jordan (MPCA) <jordan.donatell@state.mn.us>; waterresourcesreviews@metc.state.mn.us; Becker, Brad <Brad.Becker@CO.DAKOTA.MN.US>; Johnson, Cole <Cole.Johnson@CO.DAKOTA.MN.US>; Neppl, Valerie <valerie.neppl@co.dakota.mn.us>; jolson@cityofeagan.com; gthompson@cityofeagan.com; sdodge@ighmn.gov; nportugal@ighmn.gov; Samantha.Berger@applevalleymn.gov; Jane.Byron@rosemountmn.gov;

KSpreiter@mendotaheightsmn.gov; daryl.jacobson@burnsvillemn.gov; Barten, Joe <Joe.Barten@CO.DAKOTA.MN.US>; naiadconsulting <naiadconsulting@gmail.com>; Thiel, Travis <Travis.Thiel@co.dakota.mn.us>; Coudron, Curt <Curt.Coudron@CO.DAKOTA.MN.US>
Subject: Eagan-Inver Grove Heights Watershed Plan

Hello,

Eagan-Inver Grove Heights Watershed Management Organization adopted a resolution at their last Board of Managers meeting on June 18th indicating their intent to update their Comprehensive Watershed Management Plan. Please see the attached letter asking for input and materials that would assist with the plan update. This is the official 60-Day planning notification request for information, we ask for a response by **Tuesday, September 10th**.

In the letter you will also see a request for Advisory Committee members, please let me know who will represent your organization during the planning process.

Thank you!

Ashley Gallagher
District Manager | Dakota County SWCD
Administrator via SWCD | E-IGHWMO and NCRWMO
Office: (651) 480-7781 | ashley.gallagher@co.dakota.mn.us
4100 220th Street West | Farmington, MN 55024 |
www.dakotaswcd.org
Partners in Land & Water Conservation

September 5, 2024

Ashley Gallagher
E-IGHWMO Administrator via Dakota SWCD
4100 220th St W
Farmington, MN 55024
ashley.gallagher@co.dakota.mn.us

Dear Ashley Gallagher,

This letter is in response to your notification soliciting input on the initiation of the update to the Eagan-Inver Grove Heights Watershed Management Organization's (E-IGHWMO) Comprehensive Watershed Management Plan (Plan). Thank you for the opportunity to submit comments regarding water management issues and priorities for consideration in this planning process. Our agency looks forward to providing assistance to the E-IGHWMO and working together to achieve mutual goals.

The Minnesota Department of Health's (MDH) mission is to protect, maintain, and improve the health of all Minnesotans. An important aspect to protecting Minnesotans' health is the protection of drinking water sources. MDH is the agency responsible for implementing programs under the Safe Drinking Water Act.

Source Water Protection (SWP) is the framework MDH uses to protect drinking water sources. The broad goal of SWP in Minnesota is to protect and prevent contamination of public and private groundwater and surface water sources of drinking water using best management practices and local planning.

To aid in the development of E-IGHWMO's updated Plan, and to assist in working together toward addressing mutual goals and priorities, MDH SWP staff have compiled the enclosed recommendations and considerations on various priority issues related to source water and drinking water protection.

Within the recommendations and considerations, you will find various data, information, and resources to aid in the development and implementation of the Plan and associated projects. If you have any questions, or would like additional resources or technical assistance, please feel

free to contact me at (651) 201-4386 or abby.shea@state.mn.us. Again, thank you for the opportunity to be involved in your watershed planning process.

Sincerely,

Abby Shea, Principal Planner
Minnesota Department of Health
Source Water Protection Unit
PO Box 64975
St. Paul, MN 55164-0975
www.health.state.mn.us

Enclosures: MDH Priority Issues

CC: Mark Wettlaufer, MDH Source Water Protection Unit
Anneka Munsell, MDH Source Water Protection Unit
Danielle Nielsen, MDH Source Water Protection Unit
Dereck Richter, MDH Source Water Protection Unit
Anne Sawyer, BWSR
Jeffrey Berg, MDA
Megan Moore, DNR
Katie Kowalczyk, DOT
Water Resources Planning, Metropolitan Council
Jeff Risberg, MPCA

MDH Priority Issues

FOR THE EAGAN-INVER GROVE HEIGHTS WATERSHED MANAGEMENT ORGANIZATION'S 2ND GENERATION COMPREHENSIVE WATERSHED MANAGEMENT PLAN

Groundwater Source Water Protection

Just over one-third of the area of the Eagan-Inver Grove Heights Watershed Management Organization (Watershed) overlaps with a groundwater Drinking Water Supply Management Areas (DWSMA), approximately half of which is of high vulnerability. Additionally, there are some private drinking water wells spread throughout the Watershed.

In order to help protect the aquifers supplying local drinking water, the Minnesota Department of Health (MDH) recommends the following be considered for inclusion in the Watershed's 2nd Generation Comprehensive Watershed Management Plan (Plan) or other Watershed policy documents.

Infiltration Considerations

Consider the following limits on infiltration to protect groundwater quality:

- Limit infiltration in delineated Emergency Response Areas (ERAs) within highly vulnerable DWSMAs.
- Limit infiltration within transportation corridors in highly vulnerable DWSMAs (e.g., highly vulnerable areas along Interstate 35E).
- Limit or prohibit infiltration within 100 feet of a public drinking water well.
- Limit or prohibit infiltration within 50 feet of any drinking water well.

Where the local government unit (LGU) is the project manager, consider recommending or encouraging the above limits on infiltration to protect groundwater quality.

To view DWSMA and vulnerability information, visit MDH's online map viewer: Source Water Protection Web Map Viewer - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/swp/mapviewer.html).

The following webpage contains links to these geospatial data files available for download: Reports and Geospatial Data Source Water Protection - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/swp/maps/index.htm#geospatial). Geospatial data files for ERAs within DWSMAs are not available online. For this information, please contact the appropriate public water supply system. MDH Source Water Protection staff can assist with providing these files to Watershed staff with permission from the public water supply system.

Additional guidance on determining the suitability for infiltration within DWSMAs is available here: Stormwater and wellhead protection - Minnesota Stormwater Manual (https://stormwater.pca.state.mn.us/index.php/Stormwater_and_wellhead_protection).

The locations of many non-public drinking water wells can be found in the following database: Minnesota Well Index (MWI) - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/mwi/index.html). Please note that missing information does not guarantee there is not a well on a property.

Land Use and Potential Contaminant Sources

Recommend LGUs consider the impacts of future land use and zoning changes that could alter groundwater hydrology or introduce new potential contaminant sources in DWSMAs. MDH Source Water Protection staff can provide assistance with evaluating these changes either to the Watershed or to the LGUs directly.

Consider recommending LGUs limit future pollutant-generating development activities within highly and moderately vulnerable DWSMAs.

Examples of such pollutant-generating activities include, but are not limited to, facilities with aboveground and underground chemical storage tanks, feedlots, landfills, hazardous waste generating facilities, and stormwater infiltration BMPs.

Consider recommending LGUs and other entities throughout the Watershed incorporate continuous potential contaminant source management at locations identified in the potential contaminant source inventory for DWSMAs as included in the various associated Wellhead Protection Plans. LGUs should attempt to manage sources within their jurisdiction, regardless of whether the source is within their DWSMA or the DWSMA of a neighboring community. Examples of potential contaminant source management include, but are not limited to:

- Installing secondary containment measures around aboveground and underground storage tanks,
- Maintaining safe salt storage,
- Sealing unused wells, and
- Applying fertilizers and pesticides in accordance with the product manufacturer's directions.

Encourage LGUs to consult the Wellhead Protection Plans for the DWSMAs within their jurisdiction for specific examples and to work with neighboring communities and systems to determine priority sources to manage and recommended BMPs.

Resources for managing potential sources of contamination are available at the following webpage: Resources for Source Water Protection Implementation Source Water Protection - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/swp/resources.html#contaminants).

Copies of Wellhead Protection Plans can be obtained by contacting the appropriate public water supply system or MDH Source Water Protection Staff, who will distribute the plans with the systems' permission.

In the Plan, or in an education and outreach plan, include public outreach and education on contaminant source management strategies to protect groundwater. Encourage and promote the sealing of unused wells.

Source water educational resources are available here from the Minnesota Rural Water Association, in partnership with MDH: Source Water Educational Resources – Minnesota Rural Water Association (https://www.mrwa.com/swedu/).

Well sealing information is available at the following MDH webpage: Sealing of Wells and Borings - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/wells/sealing/index.html).

Consider recommending the prohibition of alterations to the landscape which would place wells within flood prone areas.

A tool to assist in determining what areas may be prone to localized flood risk during short-term, extreme rain events is the Metropolitan Council's Localized Flood Map Screening Tool. This tool can be accessed here: Localized Flood Map Screening Tool (https://metrocouncil.maps.arcgis.com/apps/webappviewer/index.html?id=100fa3012dcc4e288a74cbf4d95027bf).

Karst Features

There are a few karst features and small areas of suspected karst in the Watershed. Karst provides a quick and direct link between the land surface and groundwater. Water management practices should include an evaluation of nearby known or suspected karst features and the impact they may have on the installation of best management practices (BMPs), as well as the BMP installations' impact on groundwater quality.

Maps, geospatial data, and other technical resources for protecting groundwater in areas with karst features are available here from the Minnesota Pollution Control Agency: Resources for protecting waters in karst regions | Minnesota Pollution Control Agency (https://www.pca.state.mn.us/business-with-us/resources-for-protecting-waters-in-karst-regions).

The Minnesota Department of Agriculture and various partners, including MDH, have compiled educational resources relating to karst and groundwater quality. While these are specific to southeast Minnesota, they can be used to understand the impacts karst features have on water resources more generally. These resources are available here: Southeast Minnesota Groundwater Resources | Minnesota Department of Agriculture (https://www.mda.state.mn.us/segwresources).

Private Wells

As mentioned above, there are some private drinking water wells spread throughout the Watershed. While some residents rely on these wells for the water they drink, no public entity is responsible for water testing or management of a private well after drilling is completed and before it is sealed. LGUs are best equipped to assist private landowners through land use management and ordinance development, which can have the greatest impact on protecting private wells.

Other suggested activities to protect private wells include hosting well testing or screening clinics, providing water testing kits, working with landowners to better manage nutrient loss, promoting household hazardous waste collection, managing stormwater runoff, managing septic systems, and providing best practices information to private wells owners.

Protecting private wells not only benefits private well owners, but everyone else who relies on drinking water from the same aquifer.

The Department of Natural Resources now hosts groundwater and drinking water information within the Watershed Health Assessment Framework | Minnesota DNR (https://www.dnr.state.mn.us/whaf/index.html). This framework provides an organized approach for understanding natural resource conditions and challenges. Utilizing the online map tool allows for the ability to make informed land management decisions that lead to groundwater protection. Specific layers that would be beneficial to protecting groundwater sources of drinking water include the following:

Pollution Sensitivity of Near-Surface Materials. This information can help with understanding the ease with which recharge and contaminants from the ground surface may be transmitted into the upper most aquifer on a watershed scale.

Primary Aquifers by Section. This data source displays the general distribution of aquifer use in the watershed, signaling where drinking water is at greatest risk to contaminants from the ground surface. This information allows for targeting of projects to the sources of water people are drinking.

Drinking Water Wells per Section. This layer shows the density distribution of wells within the watershed by showing the number of known wells in each section. Only wells used for drinking water were included in the analysis to create this layer.

Geologic Sensitivity at Wells. This data source displays the geologic sensitivity at wells, as opposed to only at the surface. Well records from the Minnesota Well Index were used to create this layer. This information can help with understanding the ease with which contaminants can enter the aquifers and wells that watershed residents are obtaining their drinking water from.

Information on well water testing and drinking water quality for private well owners is available at the following webpage: Water Quality/Well Testing/Well Disinfection - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/wells/waterquality/index.html)

Dakota County Groundwater Plan

The 2020-2030 Dakota County Groundwater Plan was approved by the Board of Water and Soil Resources in December 2020 and was adopted by the Dakota County Board of Commissioners in January 2021. This plan should be used as a resource by the Watershed and LGUs when updating and implementing the Watershed's plan.

Surface Water Source Water Protection

While no portion of the Watershed is within a surface water DWSMA, the local groundwater is vulnerable to contamination from infiltration of surface waters. In order to help protect this source of drinking water, MDH recommends the following be considered for inclusion in the Plan or other Watershed policy documents.

Land Use and Potential Contaminant Sources

Recommend LGUs consider the impacts of future land use and zoning changes that could alter source water hydrology and, subsequently, water quality.

Encourage non-point potential contaminant source management by LGUs and other entities and individuals throughout the Watershed. Examples of this include, but are not limited to:

- Maintaining safe salt storage,

- Maintaining effective erosion control measures around construction sites, and
- Applying fertilizers and pesticides in accordance with the product manufacturer's directions.

In the Plan, or in an education and outreach plan, include public outreach and education on non-point potential contaminant source management strategies to prevent negative impacts to surface water contributing to drinking water sources.

Source water educational resources are available here from the Minnesota Rural Water Association, in partnership with MDH: Source Water Educational Resources – Minnesota Rural Water Association (https://www.mrwa.com/swedu/).

General Source Water Protection

In addition to actions specific to either groundwater or surface water, the following are general recommendations for broader source water and natural resource protection in the Watershed.

It is recommended to review MDH source water DWSMA maps when developing and implementing comprehensive watershed management plans, subwatershed plans, rule or policy changes, and other related documents and efforts.

MDH Source Water Protection staff are available for technical assistance as requested.

Consider implementation and promotion of Smart Salting initiatives to reduce chloride applications in the winter.

In the Plan, or in an education and outreach plan, include outreach and education on the importance of proper water softener maintenance as it relates to chloride contamination of surface water and groundwater resources.

Promote septic system maintenance to limit non-functioning septic systems. Work with LGUs to encourage connection to sanitary sewer where available, as well as proper abatement of unused septic systems.

Septic system maintenance resources are available from the Minnesota Pollution Control Agency and others at this webpage: Keep your septic system healthy | Minnesota Pollution Control Agency (https://www.pca.state.mn.us/news-and-stories/keep-your-septic-system-healthy).

On this webpage, there is an issue paper available on the potential impacts to drinking water from septic systems: Resources for Source Water Protection Implementation Source Water Protection - MN Dept. of Health

(https://www.health.state.mn.us/communities/environment/water/swp/resources.html#contaminants).

Consider assessing and addressing potential climate change impacts on source water and drinking water supply.

Funding Resources

MDH would like to make the Watershed aware of two funding opportunities for groundwater and drinking water projects: the Groundwater Protection Initiative Accelerated Implementation Grant and the Drinking Water Sub-Grant through the Clean Water Fund Projects & Practices Grant.

The purpose of the Groundwater Protection Initiative Accelerated Implementation Grant is to accelerate implementation of groundwater projects across the state. Funds can be used to conduct pre-project identification, planning, and design work that is required before on-the-ground projects can be implemented. For more information, visit the grant webpage: Accelerated Implementation Grant Groundwater Protection Initiative - MN Dept. of Health (https://www.health.state.mn.us/communities/environment/water/groundwater/accimpgrant.html).

The Drinking Water Sub-Grant within the Projects & Practices program was established to support drinking water protection through land treatment projects that will protect or improve the quality of drinking water sources. This can be for a groundwater or surface water source of drinking water and is administered by the Board of Water and Soil Resources (BWSR). More information can be found on the project factsheet Drinking Water Sub-Grant Factsheet (PDF) (https://www.health.state.mn.us/communities/environment/water/docs/swp/bwsrgrant.pdf) as well as in the RFP on the BWSR grant webpage Grant Profile: Projects and Practices | MN Board of Water, Soil Resources (https://bwsr.state.mn.us/grant-profile-projects-and-practices).

METROPOLITAN
COUNCIL

September 9, 2024

Ashley Gallagher
E-IGHWMO Administrator via Dakota SWCD
4100 220th St W
Farmington, MN 55024

RE: Eagan-Inver Grove Heights Watershed Management Organization Plan Update

Ms. Gallagher,

Thank you for the opportunity to submit our priority concerns for inclusion in the Eagan-Inver Grove Heights Watershed Management Organization Plan (E-IGHWMO) updated Watershed Management Plan (Plan), as well as the Metropolitan Council's (Met Council) expectations for the Plan outcomes. I have included a list of Met Council resources that may be of use in the Plan preparation.

Council Expectations and Priorities for Plan Preparation and Review
Met Council staff will review the plan through the lens of the Council's *Thrive MSP 2040* document which is the Regional Development Framework for the seven county Twin Cities Metropolitan Area and the *2040 Water Resources Policy Plan*, both of which can be found on the Council's web page (www.metrocouncil.org).

In particular, the *2040 Water Resources Policy Plan* (Policy Plan) includes policies and strategies to achieve the following goal:

> *To protect, conserve, and utilize the region's groundwater and surface water in ways that protect public health, support economic growth and development, maintain habitat and ecosystem health, and provide for recreational opportunities, which are essential to our region's quality of life.*

The Policy Plan takes an integrated approach to water supply, water quality, and wastewater issues. This approach moves beyond managing wastewater and stormwater only to meet regulatory requirements by viewing wastewater and stormwater as resources, with the goal of protecting the quantity and quality of water our region's needs now and for future generations.

The Policy Plan includes policies and strategies to:

- Maximize regional benefits from regional investments in the areas of wastewater, water supply and surface water management and protection.
- Pursue reuse of wastewater and stormwater to offset demands on groundwater supplies.
- Promote greater collaboration, financial support, and technical support in working with partners to address wastewater, water quality, water quantity and water supply issues.
- Promote the concept of sustainable water resources through collaboration and cooperation, with the region taking steps to manage its water resources in a sustainable way with goals of:
    - Providing an adequate water supply for the region.

- Promoting and implementing best management practices aimed at protecting the quality and quantity of our resources.
- Providing efficient and cost-effective wastewater services to the region.
- Efficiently addressing nonpoint and point sources pollution issues and solutions, and,
- Assessment and monitoring of lakes, rivers, and streams to direct adequate management, protection, and restoration of the region's valued water resources.

The updated watershed management plan should include policies related to the protection of area water resources with these strategies in mind, with the end goal of water sustainability.

In addition to being consistent with the Met Council's policy plan, the Plan also should include quantifiable and measurable goals and policies that address water quantity, water quality, recreation, fish and wildlife, enhancement of public participation, groundwater, wetlands, and erosion issues.

Met Council staff will be looking for the Plan to address the issues and problems in the watershed and to include projects or actions and funding to address them. At a minimum the Plan should address:

1. Any problems with lake and stream water quality and quantity, including information on impaired waters in the watershed and the Organization's role in addressing the impairments,
2. Flooding issues in the watershed,
3. Climate and resilience planning,
4. Information on emerging contaminants within the watershed, outlining watershed district and partners' roles,
5. Stormwater rate control issues in the watershed,
6. Impacts of water management on the recreation opportunities,
7. Impact of soil erosion problems on water quantity and quality,
8. The general impact of land use practices on water quantity and quality,
9. Policies and strategies related to monitoring of area water resources,
10. Policies and strategies related to use of best management practices,
11. Issues concerning the interaction of surface water and groundwater in the watershed,
12. Erosion and sediment control standards and requirements,
13. Volume reduction goals at least as restrictive as requirements in the NPDES construction general permit, and,
14. Capital improvement plan with itemized list of actions, estimated costs, and timeline,
15. Specifics on long-term maintenance of projects identified in the capital improvement plan, including identification of entities responsible for funding and conducting maintenance, as well as how long-term maintenance will be documented, and,
16. Specify to what degree the Plan may be adopted by reference by a local government unit for all or part of its local water plan. Additionally, please include information in the Plan on what information local municipalities must include in their local water management plans to receive approval from the E-IGHWMO.

The Met Council also encourages the plan to leverage partnership opportunities where possible and to state them clearly within the Plan. We believe that to achieve productive and effective water governance within Minnesota we must all work together, this includes partnering with the cities and townships within the watershed.

Specific Priority Issues

Based on Council policies, the following issues are specific to the Eagan-Inver Grove Heights watershed and are viewed as priorities by the Council for inclusion in the Plan:

- Lebanon Hills Regional Park is located in the watershed. The Council has made a substantial investment in the regional park system through its park implementing powers. Improvement of water quality in the watershed would likely have a positive impact on the parks, through improving fisheries and wildlife and/or by reducing risks to public health. The Plan needs to address any issues, problems, capital projects, or land use changes related to these regional parks.

- The Met Council has updated its Priority Waters list, formerly known as the Priority Lakes list, which now includes rivers and streams. It will provide a key lens for developing policies and activities to include in the 2050 Water Resources Policy Plan. It will inform how the Met Council can align with the priorities of local and state partners, like E-IGHWMO, and provide value for the region.

  The list includes Jensen Lake.

  While the list was developed after the adoption of the 2040 Policy Plan and is a foundational dataset for the 2050 Policy Plan, it would be appreciated if the E-IGHWMO could include these water designations in the Land and Water Resources Inventory.

Available Council Resources

- **Local Planning Handbook:** The Met Council provides information about the cities and townships within your watershed boundaries, including community designations, forecasted population counts, generalized land uses, and other information that might be useful in your planning efforts.

  Local Planning Handbook – Metropolitan Council (metrocouncil.org)

- **Place-based equity research dataset:** The Met Council has published a new dataset, “Equity Considerations for Place-Based Advocacy and Decisions in the Twin Cities Region,” that provides equity-relevant characteristics for each of the 704 census tracts in the Twin Cities region. Formerly known as the Areas of Concentrated Poverty dataset, it has been expanded to provide a much more nuanced portrait of neighborhoods and their residents.

  Place-based Equity Research - Metropolitan Council (metrocouncil.org)

- **Climate vulnerability assessment (CVA)**: The CVA is a tool that can assist in Met Council and community planning efforts in preparing and adapting to climate change because the CVA can reveal system vulnerabilities to currently occurring and, to some extent, expected climatic changes. Tools and resources currently include an extreme heat map tool and localized flood map screening tool.

  Climate Vulnerability Assessment - Metropolitan Council (metrocouncil.org)

- **Growing shade, tree canopy enhancement and preservation tool**: Growing Shade combines local stories and an interactive mapping tool to inform tree canopy enhancement and preservation. The tool, designed in partnership with The Nature Conservancy and Tree Trust, allows users to generate reports based on various presets like climate change, conservation, environmental justice, and public health at a range of scales from city-township to census block groups. By combining different variables of your choosing, you can generate data to meet your

specific needs, whether you want to set canopy goals for a community or produce supporting data for grant applications.

Tree Canopy - Metropolitan Council (metrocouncil.org)

The Council is in the process of updating the 2050 Regional Development Guide and associated Water Policy Plan. It will be adopted in early 2025. If there are any significant changes to regional water policy that may affect the content of the Plan, we will bring them to your attention. Additionally, I will be happy to direct you to load spreadsheets and any other Environmental Services' data and analyses, as well as any spatial data, and look forward to serving on the Technical Advisory Committee during plan preparation.

Sincerely,

Maureen Hoffman
Senior Planner
Water Resources Policy and Planning
Metropolitan Council Environmental Services

cc: Anne Sawyer
Water Resources Reviews, Metropolitan Council

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

September 10, 2024

Ashley Gallagher
E-IGHWMO Administrator via Dakota SWCD
Eagan-Inver Grove Heights Watershed Management Organization
4100 220th St W
Farmington, MN 55024

RE: Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) 60-Day Priority Concerns Request

Dear Ashley Gallagher:

The Minnesota Pollution Control Agency (MPCA) appreciates the invitation to participate in the Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) Watershed Plan process. As you begin, we hope you will consider the following comments as our priority issues and concerns, and we look forward to discussing these further with you in the months ahead.

The MPCA has developed technical information, reports, total maximum daily load (TMDL) studies, Watershed Restoration and Protection Strategies (WRAPS) reports, and tools that may be useful for inclusion in a local water plan.

We recommend:

- Incorporating and implementing strategies and goals from completed TMDL and WRAPS reports.
- Determine quantitative accounting of efforts and reductions you hope/intend to accomplish over the 10-year plan cycle relative to water quality targets.
- Identify geographic priority areas and implementation to match those prioritized waters.

Priority issues

The MPCA has identified several strategic goals including:

- Assist local partners to accelerate targeted reductions for identified priority impaired waters.
- Assist to develop strategies to protect priority waters that are meeting water quality goals.
- Reduce chloride to surface and ground water.
- Protect groundwater.
- Incorporate environmental justice into planning.
- Increase community and environmental resilience to climate change.

Links to reports and pertinent information can be found at:

- Lower Minnesota River Watershed TMDL page with TMDL and WRAPS reports.
    - There is a section halfway down that lists the Dakota County TMDLs; basin-wide projects are at the top of the page.
    - MPCA Lower Minnesota River Watershed TMDL projects
    - The MPCA monitoring will begin in 2025. Impairments that are determined during that assessment cycle will go on the 2028 Impaired Waters List.

- Lower Minnesota River Watershed monitoring reports.
    - MPCA Lower Minnesota River Monitoring Reports
- Data viewers:
    - Can assist in prioritizing waters.
        - MPCA Water Quality Assessment Results Data Viewer
    - Public data summaries for water, air, wastewater, and stream data.
        - MPCA Public Data Reports - Tableau
- Point Source Phosphorus Mapping Tool: Provides summaries of annual phosphorus loads and flow volumes discharged from National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permitted facilities since 2005. The Phosphorus loads and flow volumes link on the page will take you to the mapping tool.
    - MPCA Phosphorus Loads and Flow Volumes
- Minnesota Nutrient Reduction Strategy – Includes reduction strategies and a five-year progress report.
    - MPCA Nutrient Reduction Strategy
- Minnesota Stormwater Manual
    - MPCA Stormwater Manual - Home Page
    - A section of the manual is related to applying better site design and may be helpful if reviewing development ordinances.
        - MPCA Stormwater Manual - Better Site Design
- MPCA funding options
    - MPCA Grants, Loans, and Contracts
    - MPCA Wastewater and Stormwater Financial Assistance
    - Infrastructure Funds and Programs/Public Facilities Authority (mn.gov)
- Groundwater protections – Towards the bottom of the page there are reports on the groundwater condition and best management practices (BMPs) for groundwater protection.
    - MPCA Groundwater Monitoring

Chloride Reduction

The major sources of chloride around the state include application of chloride-based salts for winter maintenance activities, residential and commercial water softening, and agricultural inputs.

While the E-IGHWMO does not have any chloride impairments, chloride reduction at the source is key to protecting water quality, as there are currently no known economically feasible remediation strategies to remove chloride once it enters the environment.

- The MPCA maintains resources (technical, educational, and financial) that may be of use to local partners in designing ways to reduce chloride.
    - MPCA Statewide Chloride Resources

Environmental Justice

The MPCA has resources to assist in identifying areas with environmental justice concerns. Increasing outreach and engagement can create a culture of meaningful involvement that could lead to addressing issues in communities that may be more adversely impacted than others.

- Understanding Environmental Justice in Minnesota (arcgis.com)
- MPCA and Environmental Justice

Climate Change

Planning should incorporate changing weather patterns to help our communities be better prepared for extreme weather events. Planning can include items such as:

- Protecting and expanding wetland and infiltration areas.
- Requesting infrastructure be built for increased rainfalls.
- Having collaborative discussions about what to do in the event of a major disaster.
- Plan for impacts to natural resources.
    - Fish communities could become more stressed as warming waters lead to decreased oxygen.
    - Plan for diversifying vegetation/trees when restoring or stabilizing areas.
- MPCA Climate Adaptation Resources
- MPCA Climate Resilient Communities

Climate data interactive tools:

- Climate Change and Minnesota's Surface Waters | Tableau Public
- Minnesota CliMAT - Climate Mapping and Analysis Tool (CMIP6) | University of Minnesota Climate Adaptation Partnership (umn.edu)

Background information:

- Five impaired waters identified on the 2024 EPA approved 303(d) impaired waters list. Table 1.
    - Location of impaired waters list and viewer: MPCA Impaired Waters List
        - Typing in the assessment unit identification (AUID) will take you to the waterbody.
- Three impaired waters have been removed and have been delisted. Table 2.
- Two lakes have been identified as “Nearly/Barely”.
    - These may be waters to protect since they are still meeting standards.

Table 1. 2024 Impaired Waters List.

WATER BODY NAME	WATER BODY TYPE	AUID	AFFECTED DESIGNATED USE	POLLUTANT OR STRESSOR	YEAR ADDED TO LIST	YEAR TMDL APPROVED
Holz	Lake	19-0064-00	Aquatic Recreation	Nutrients	2014	2015
Carlson	Lake	19-0066-00	Aquatic Recreation	Nutrients	2014	2015
Unnamed (North)	Lake	19-0136-00	Aquatic Consumption	Mercury in fish tissue	2008	2008
Blackhawk	Lake	19-0059-00	Aquatic Consumption	Mercury in fish tissue	2006	2007
Fish	Lake	19-0057-00	Aquatic Consumption	Mercury in fish tissue	2002	

Table 2. Delisted waters.

WATER BODY NAME	WATER BODY TYPE	YEAR ADDED TO LIST	AUID	POLLUTANT OR STRESSOR	DELIST YEAR
Lemay	Lake	2014	19-0055-00	Nutrients	2022
Unnamed (Fitz)	Lake	2014	19-0077-00	Nutrients	2022
Fish	Lake	2006	19-0057-00	Nutrients	2014

Table 3. MPCA identified "Nearly/Barely" waters. Both the lakes listed are still meeting standards, but they are nearly going over the standard.

WATER BODY NAME	WATER BODY TYPE	AUID	NEARLY BARELY	DEPTH CLASS
BALD	Lake	19-0061-00	Nearly	Shallow Water
MCDONOUGH	Lake	19-0076-00	Nearly	Shallow Water

Thank you for the opportunity to provide MPCA priority issues and concerns. If we may be of further assistance, please contact me, Amy Timm, at 651-757-2632.

Sincerely,

Amy Timm

This document has been electronically signed.

Amy Timm
Environmental Specialist
Watershed Division

AT:jdf

9.6 WATER QUALITY TRENDS

Water Quality Monitoring Trends

1991 - 2024

EAGAN

Introduction to Water Quality Monitoring

What data are you collecting?

The City of Eagan has been collecting water quality data since 1991. Every summer between June and September, City staff collect samples from between 12 and 16 waterbodies across Eagan. Those samples are sent to a lab to be analyzed for the following parameters:

- Total phosphorous
- Ortho phosphorous
- Chlorophyll-a
- Secchi depth (clarity)
- Temperature
- Dissolved oxygen
- pH
- Conductivity
- Total dissolved solids
- Kjeldahl nitrogen
- Nitrate / nitrite

What do you do with this information?

At the end of the year, we compare these results against the State of Minnesota's Water Quality Standards, and look at the overall trends in each waterbody over time. Collectively, this gives us a snapshot of ecosystem health - and tells us where we need to focus improvement efforts moving forward.

The Water Resources Team will meet in the fall to discuss the monitoring data, along with any other observations collected over the summer season. We then assemble our list of Capital Improvement Projects for the coming cycle. Every spring, the Public Works Department presents a comprehensive, updated 5-year CIP list to City Council for approval.

What's in this guide?

Surface waterbodies are complex systems that respond to a wide range of natural, and unnatural, variables. Climate change, development, and the introduction of invasive plants and animals are just some of the factors that have significant impacts on the quality of our surface waters from one year to the next. The City has been conducting water quality improvement projects since the early 1990's - these sheets only include the last 5 years of improvements for the sake of space. In future years, we hope to offer a more comprehensive list of improvements, to show how those measures impact the water quality trends in the receiving waterbody.

These fact sheets and the accompanying data tables are designed to provide a broad overview of each waterbody that we have data for. Sampling results for each year are calculated as the median value of all the samples collected during that monitoring season.

My lake or pond is meeting standards, but it still *looks* gross - what gives?

Lakes, ponds, and wetlands contain a whole ecosystem - a complex web of living things that are interacting with their environment, and adjusting their behavior in response. Plants, algae, and other floating and submerged vegetation are part of this system. Just like plants on land, they rely on photosynthesis to absorb sunlight and produce oxygen.

As water quality improves, clarity also improves - which means more sunlight can penetrate further into the water. More sunlight = more plants. This is a normal response, and while it can interfere with fishing access and overall aesthetics, it doesn't mean the waterbody is dirty.

Even after a waterbody meets standards again, we continue to work on restoring the overall balance of the ecosystem. Eventually, plant and algae growth will settle - but restoration takes time and patience. Our team is always here to answer specific questions from our community about a specific waterbody.

How to Read This Guide

While the City monitors for a long list of parameters each year, there are 3 main things we are looking for when we decide whether a specific waterbody is meeting the State of Minnesota's water quality standards. This is because these are the main things that are impacted from developed lands - which lead to our nutrient impairments in the first place.

The following page includes sample graphs, showing a 'thumbs up' or 'thumbs down' for where we want the bars to be in relation to the standard line.

Total Phosphorous (TP)

Phosphorous is an important component in lakes, ponds, and wetlands. Plants and algae are the foundation of these aquatic ecosystems - and they can't exist without phosphorous. However, excess phosphorous from stormwater runoff can overload a waterbody - leading to algae blooms which can choke out other aquatic vegetation. This vegetation provides critical habitat and food sources, and supports dissolved oxygen levels that other aquatic organisms need to survive.

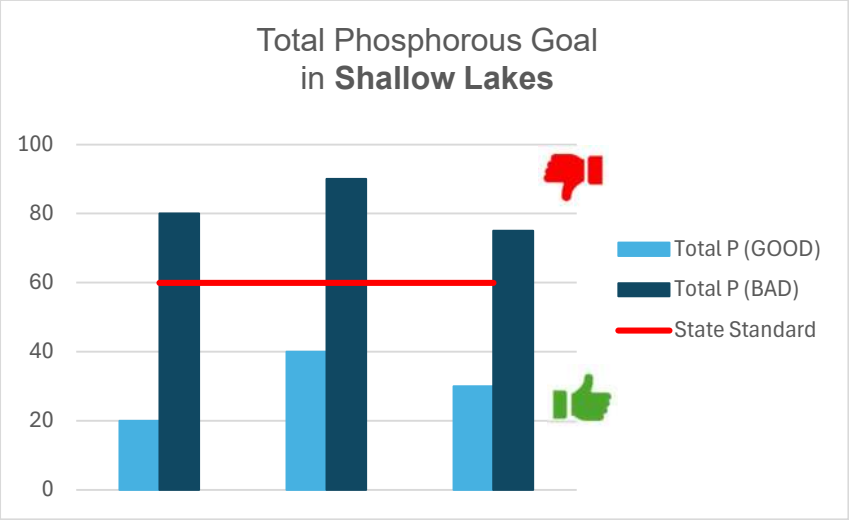
Chlorophyll-a (Chl-a)

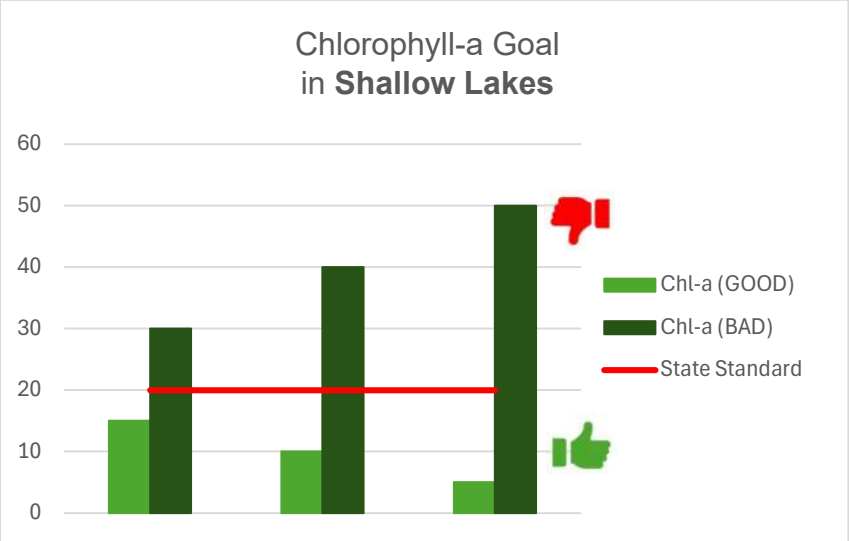
Algae cells need chlorophyll to absorb sunlight and turn it into oxygen - which in turn is used by other organisms in a waterbody in a cycle. Monitoring chlorophyll-a tells us how many active algae cells are in a sample. When levels are too high, the balance is thrown off and algae cells can replicate too quickly, or 'bloom.'

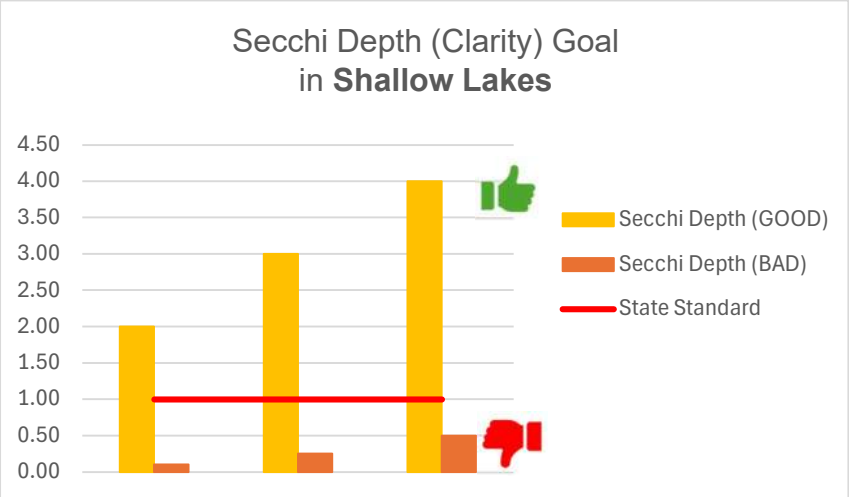
Secchi Depth (Clarity)

Secchi depth tells us how clear the water is at a given time. Better clarity means that light can penetrate further, which allows aquatic plants to grow in their natural cycle. Aquatic plants release dissolved oxygen, and provide critical habitat and food sources for fish and other wildlife.

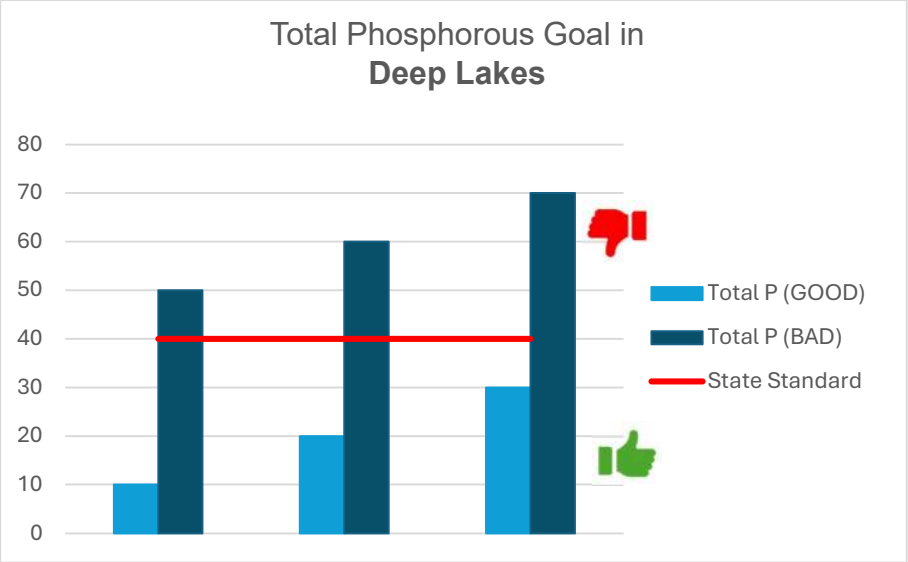
Example Graphs for Shallow Lakes

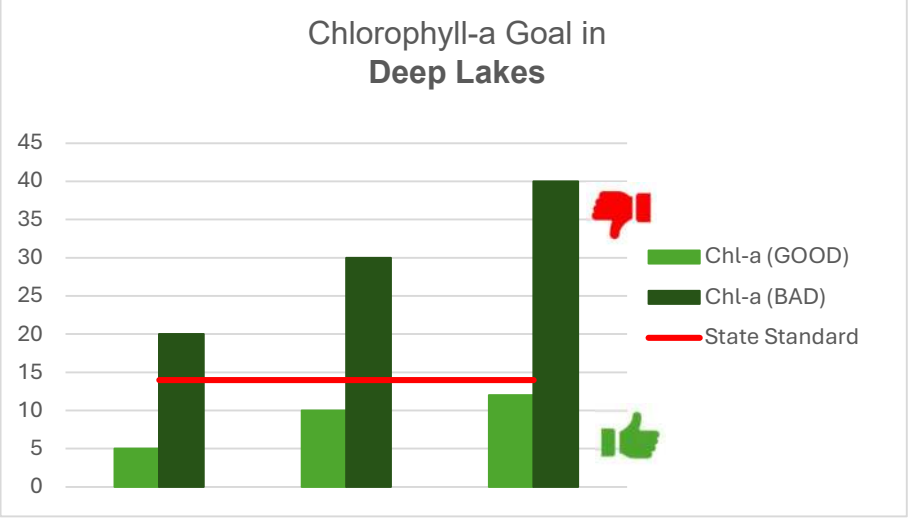


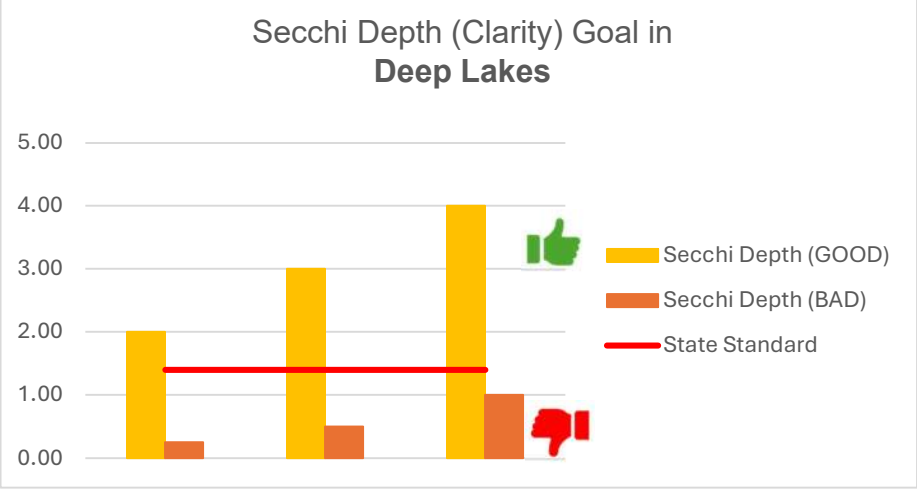




Example Graphs for Deep Lakes



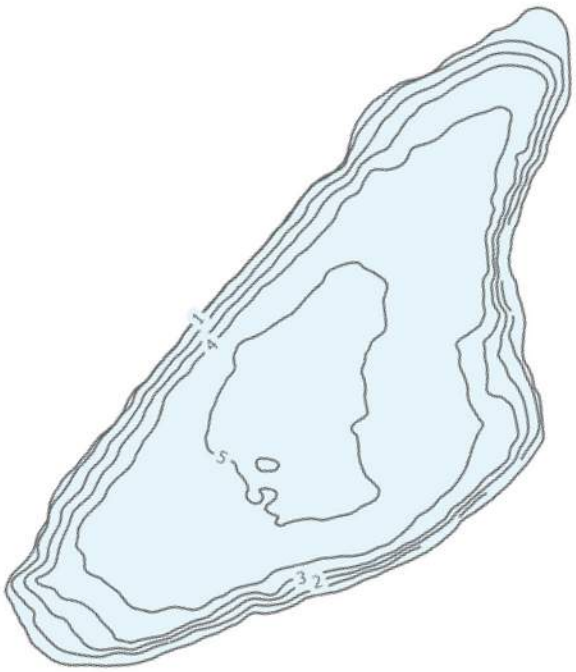




Jump to Your Lake!

Click on the name of the lake below to jump to that section.

Almquist Lake



City ID: BLP-4

Waterbody type: Wetland

Surface area: 9.36 acres

Maximum depth: 5.50 feet

Public access: No

Supported uses: Habitat, Education, Aesthetics

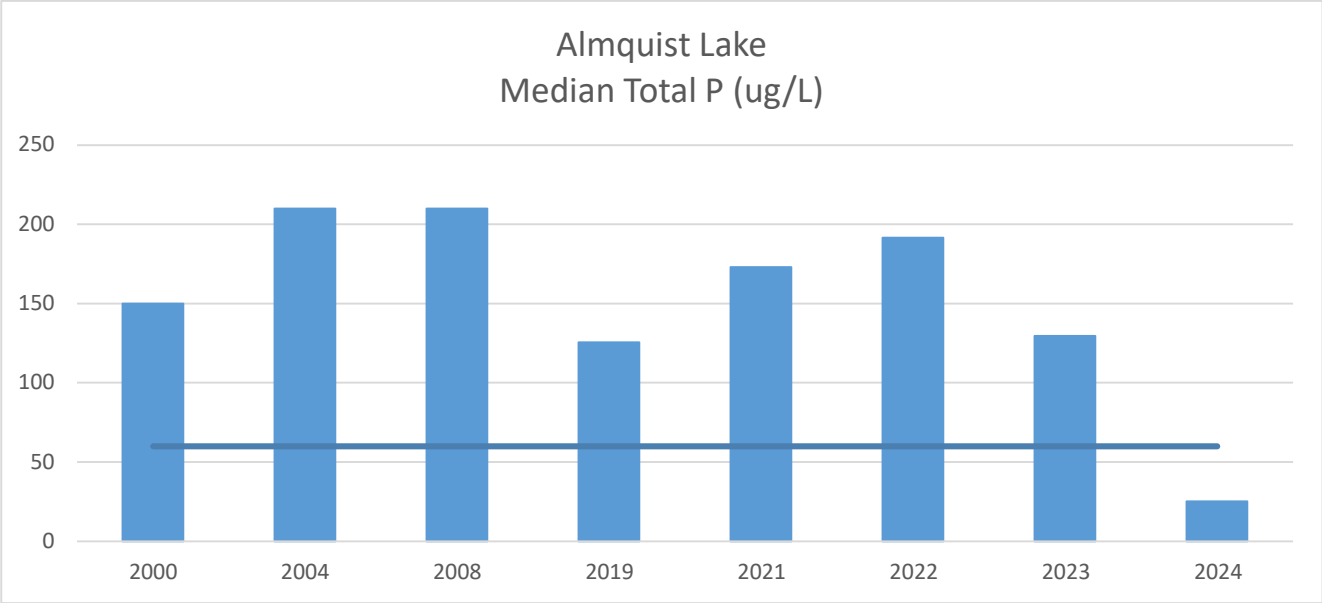
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

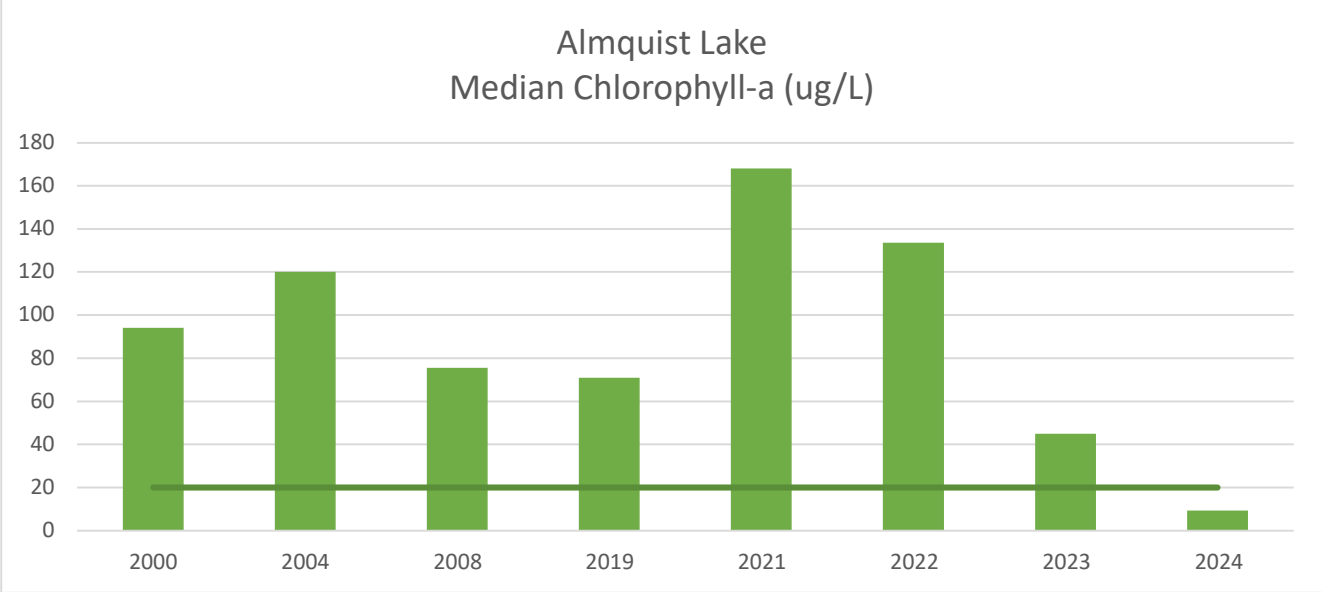
2021 — Fish population survey completed to assess overall health of the lake's fishery (results were excellent)

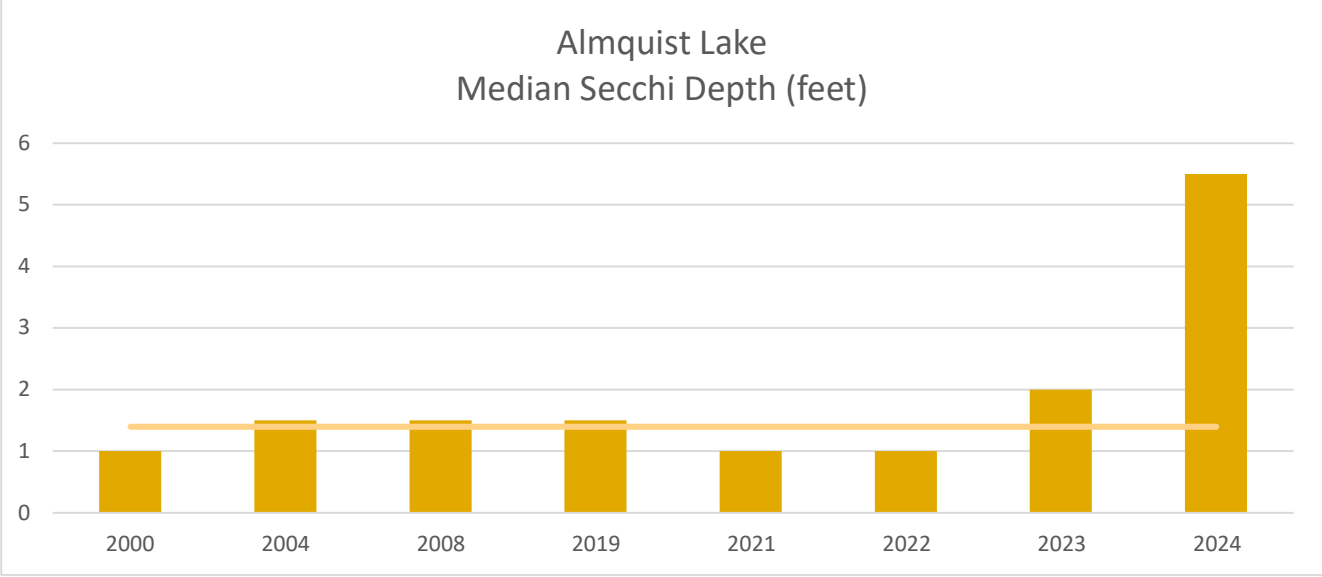
2022 — Rotenone treatment to eliminate goldfish infestation

2023 — Alum application to reduce in-lake nutrient load; Electroshocking to remove additional goldfish

2024 — 450 bluegill sunfish stocked to compete with few remaining goldfish and add native fish species

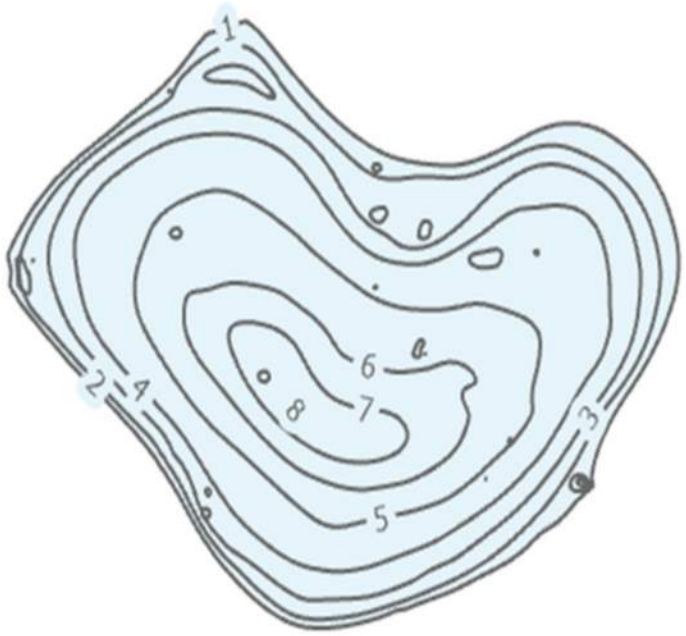

Almquist Lake
Median Total P (ug/L)
250
200
150
100
50
0
2000
2004
2008
2019
2021
2022
2023
2024


Almquist Lake
Median Chlorophyll-a (ug/L)
180
160
140
120
100
80
60
40
20
0
2000
2004
2008
2019
2021
2022
2023
2024


Almquist Lake
Median Secchi Depth (feet)
6
5
4
3
2
1
0
2000
2004
2008
2019
2021
2022
2023
2024

Bald Lake

City ID:	JP-20
Waterbody type:	Shallow Lake
Surface area:	10.30 acres
Average depth:	4.10 feet
Maximum depth:	8.50 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking

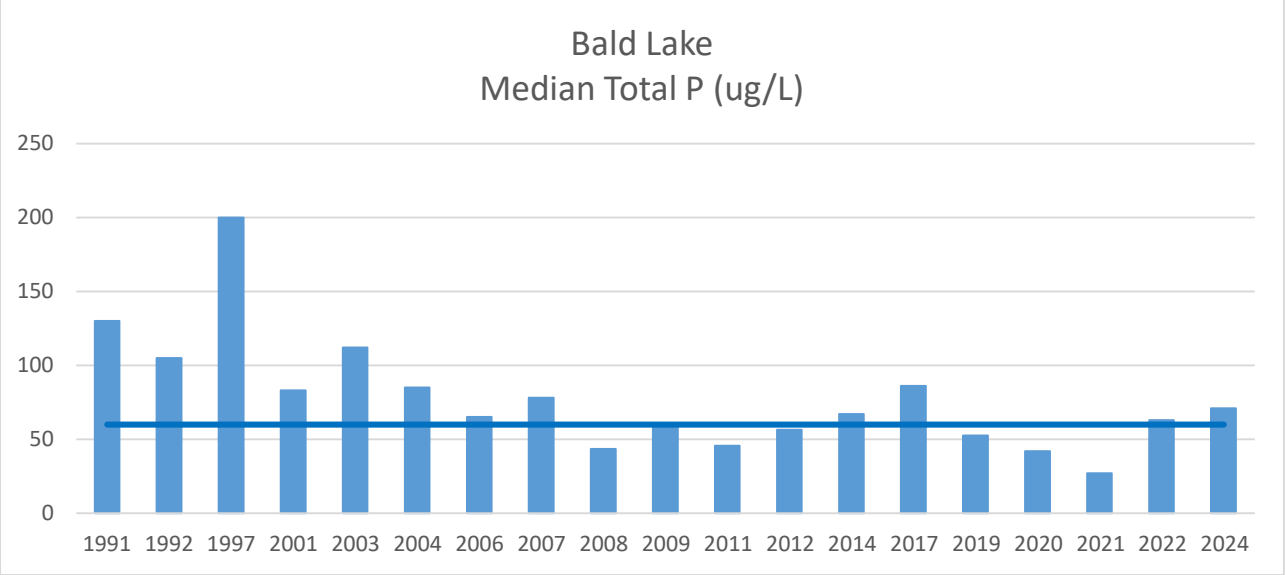


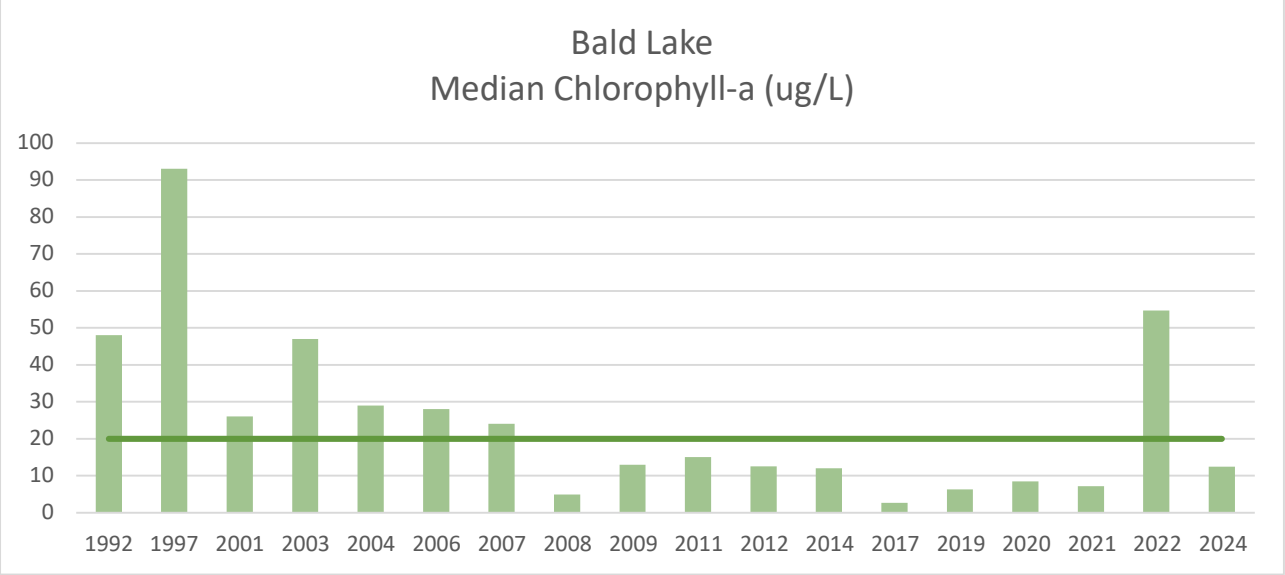
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

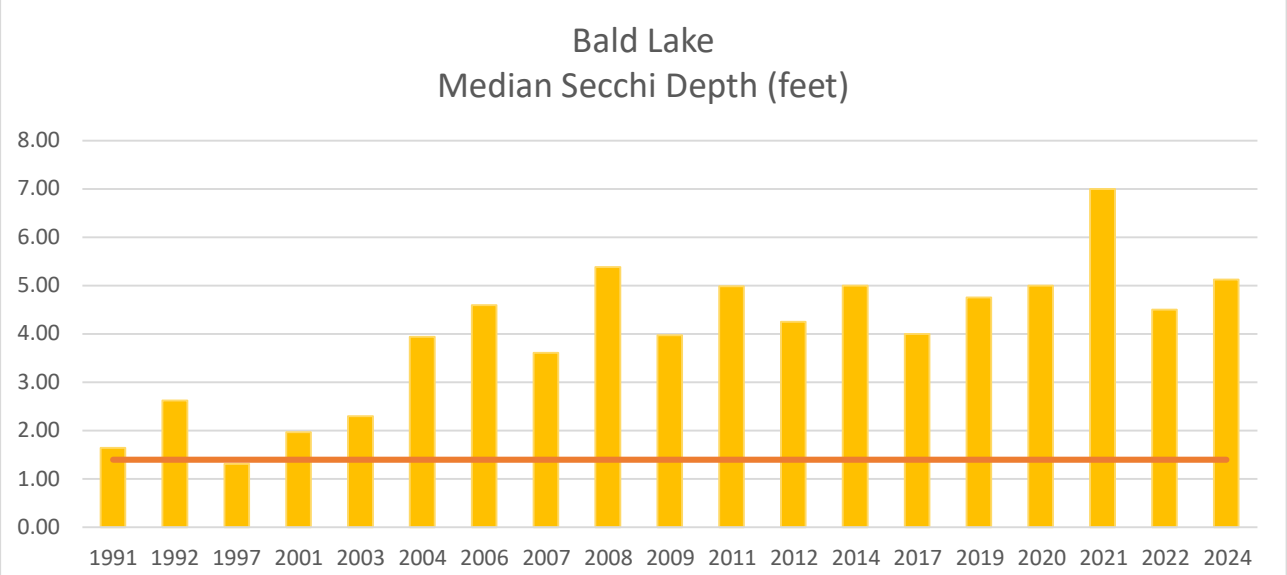
As needed — Aerated in winter as needed to prevent fish kills

2020 — Stocked: 200 pounds of fathead minnows

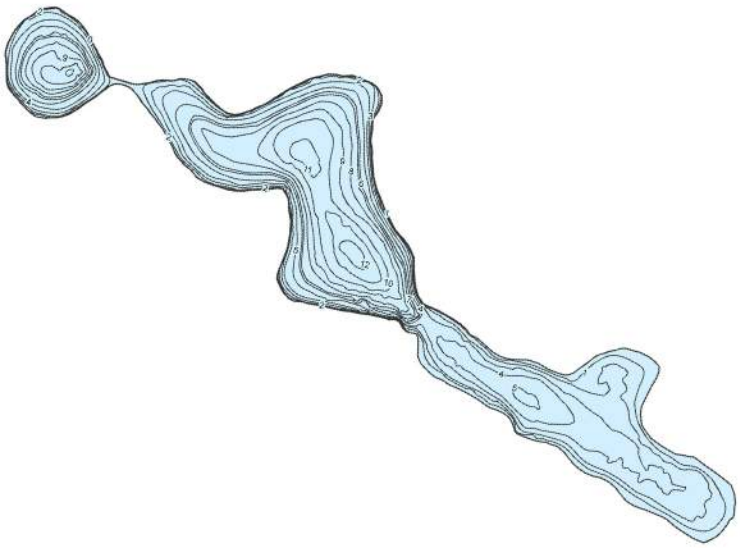
Alum application to reduce in-lake nutrient load


Bald Lake
Median Total P (ug/L)
250
200
150
100
50
0
1991 1992 1997 2001 2003 2004 2006 2007 2008 2009 2011 2012 2014 2017 2019 2020 2021 2022 2024


Bald Lake
Median Chlorophyll-a (ug/L)
100
90
80
70
60
50
40
30
20
10
0
1992 1997 2001 2003 2004 2006 2007 2008 2009 2011 2012 2014 2017 2019 2020 2021 2022 2024


Bald Lake
Median Secchi Depth (feet)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1991 1992 1997 2001 2003 2004 2006 2007 2008 2009 2011 2012 2014 2017 2019 2020 2021 2022 2024

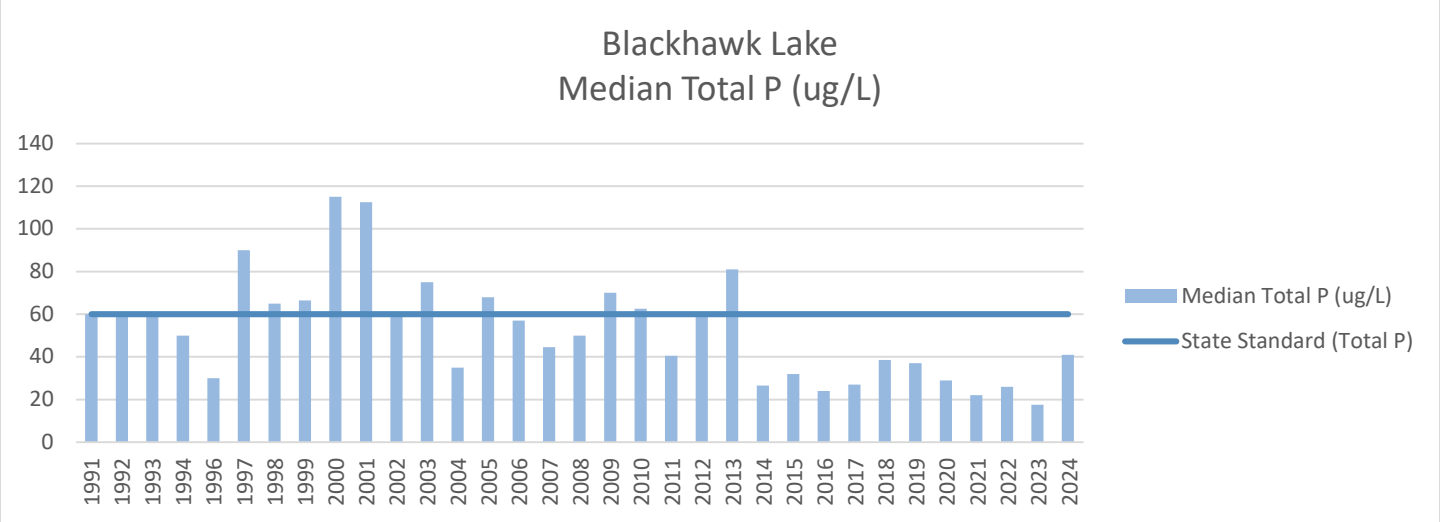
Blackhawk Lake

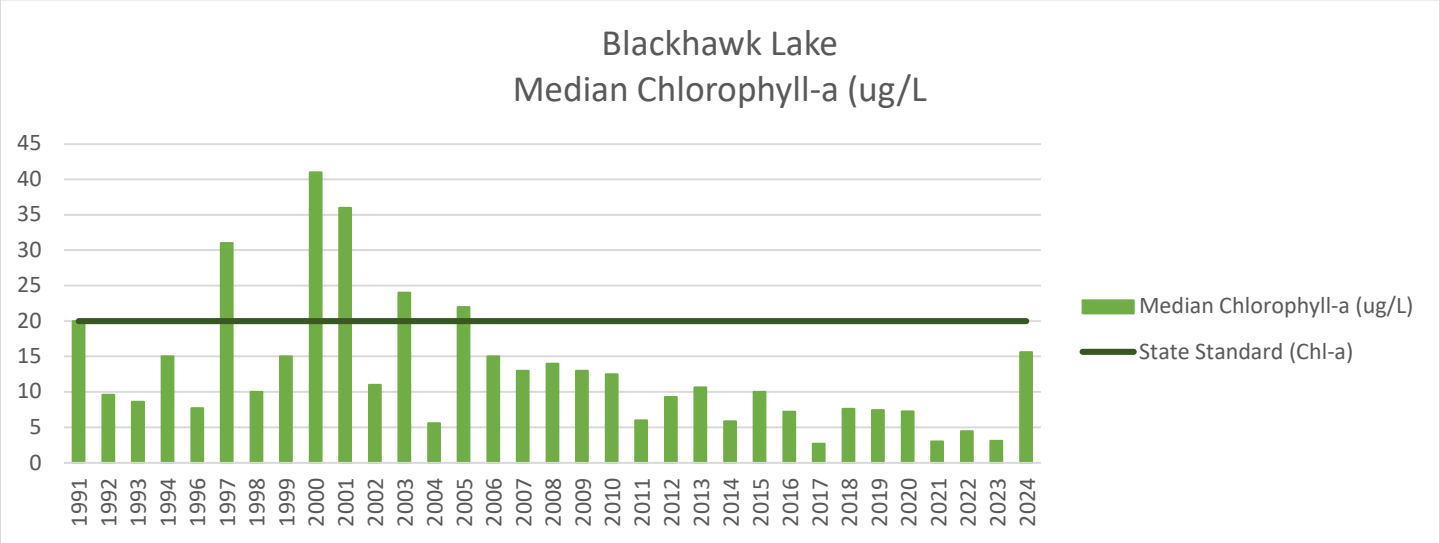


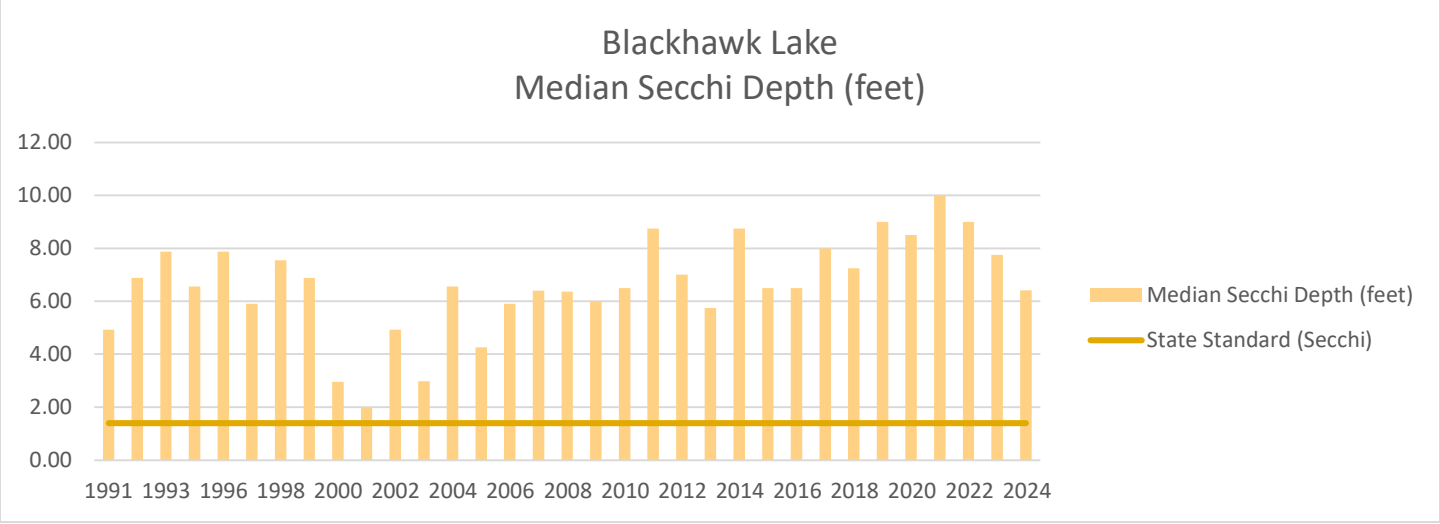
City ID:	BP-1
Waterbody type:	Shallow Lake
Surface area:	46.40 acres
Average depth:	5.00 feet
Maximum depth:	12.20 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking

WATER QUALITY IMPROVEMENTS [2019–PRESENT]

As Needed	Aerated in winter to prevent fish kills
As Needed	Lake plants harvested in summer months to reduce biomass
2019	Alum application to reduce in-lake nutrient load
2021	Stocked: 450 walleye (6–8 inches)


Blackhawk Lake
Median Total P (ug/L)
140
120
100
80
60
40
20
0
1991 1992 1993 1994 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Median Total P (ug/L)
State Standard (Total P)


Blackhawk Lake
Median Chlorophyll-a (ug/L
45
40
35
30
25
20
15
10
5
0
1991 1992 1993 1994 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Blackhawk Lake
Median Secchi Depth (feet)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1991 1993 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

Blackhawk Lake

Year Listed:	2006
Impairment:	Mercury in Fish Tissue
TMDL Approved:	Yes; Southwest Region Mercury TMDL
Impaired Use(s):	Aquatic Consumption

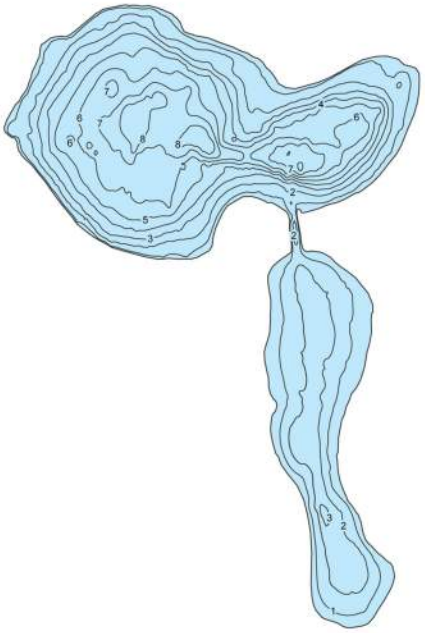
A waterbody is listed as impaired for mercury when more than 10% of a fish species fillets have a mercury concentration of at least 0.20 parts per million (ppm). Mercury accumulates in fish tissue, specifically as 'methylmercury,' which is the most hazardous form of mercury for humans. Once a waterbody is contaminated with mercury, it is very difficult to remove it.

Mercury is a naturally occurring element that is highly toxic to both humans and animals. While most people associate mercury with the liquid, silvery substance from old thermometers, it can also evaporate and become airborne - and in this form can come from a variety of sources.

In Eagan's case, the primary source is atmospheric deposition from coal-fired power plants in North Dakota. Because the source of these contaminants is not local, the state of Minnesota oversees a statewide 'total maximum daily load' or TMDL to manage the sources of mercury accumulating in our surface waters.

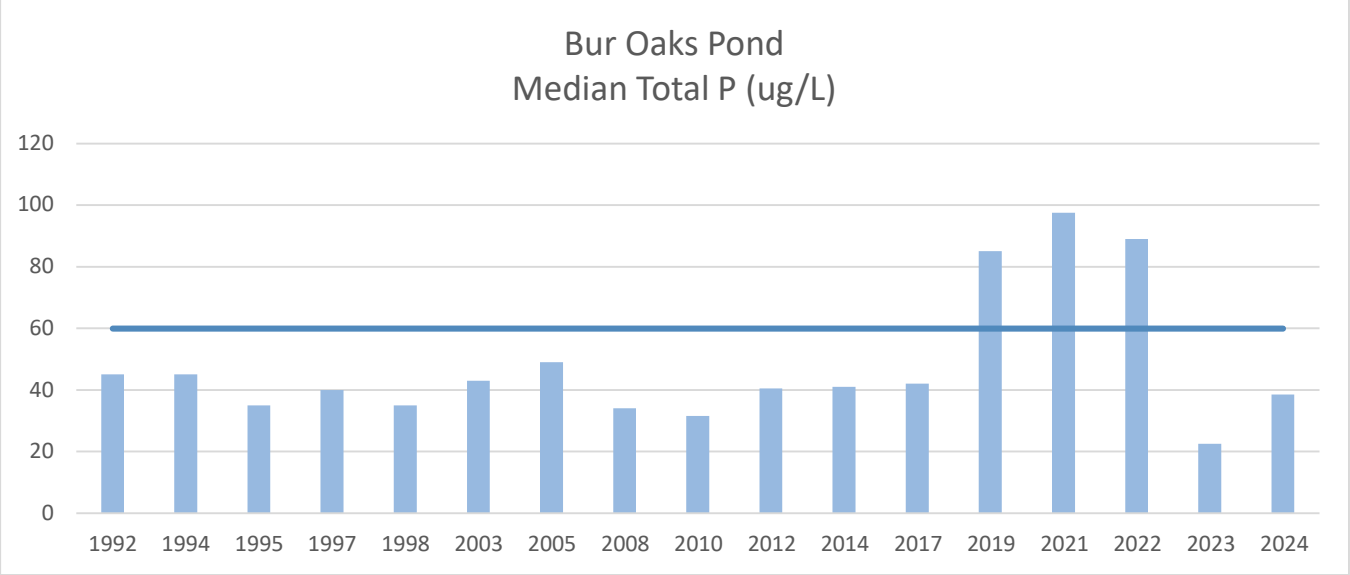
Bur Oaks Pond

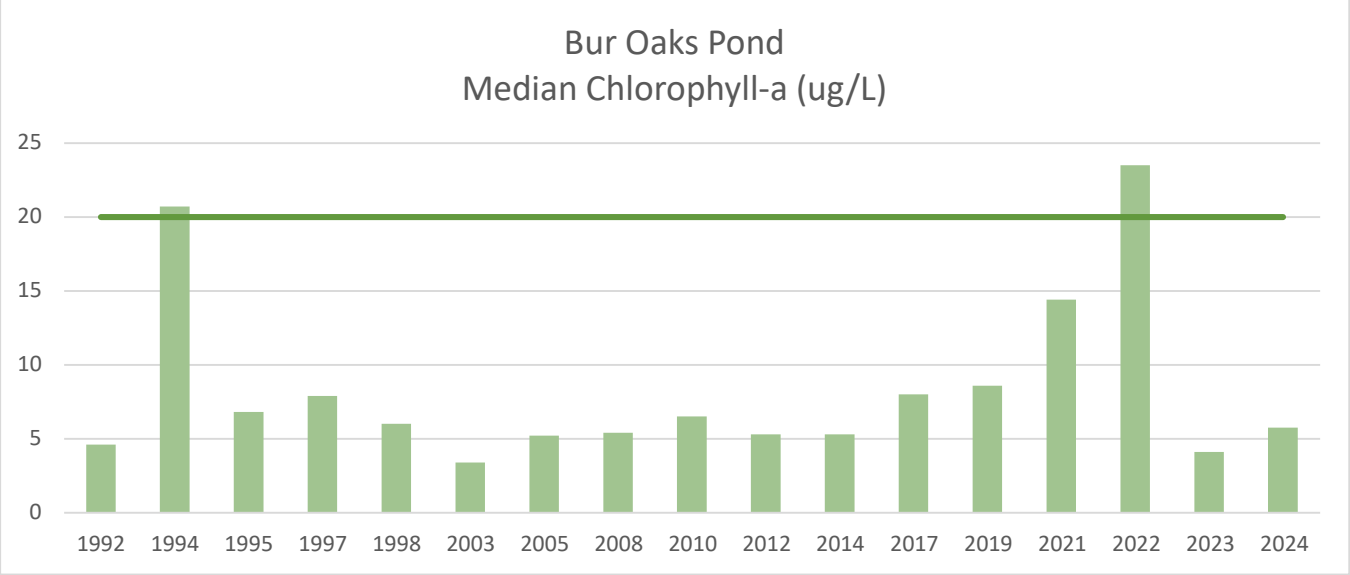
City ID:	GP-1
Waterbody type:	Shallow Lake
Surface area:	15.50 acres
Average depth:	3.51 feet
Maximum depth:	8.92 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking

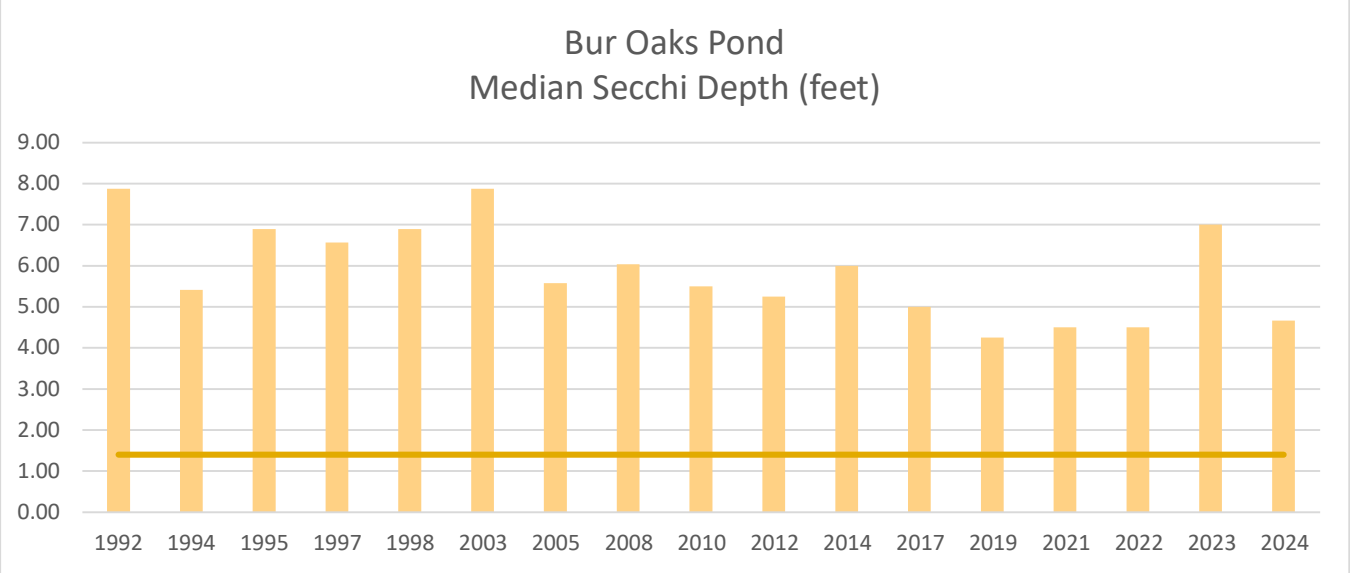


WATER QUALITY IMPROVEMENTS [2020–PRESENT]

As needed	Aerated in winter as needed to prevent fish kills
2020	Fish population survey completed to assess overall health of the lake's fishery. Stocked: 850 bluegills (2–4 inches) and 300 pounds of fathead minnows
2022	Alum application to reduce in-lake nutrient load
2023	Stocked: 1,300 green sunfish (yearlings)

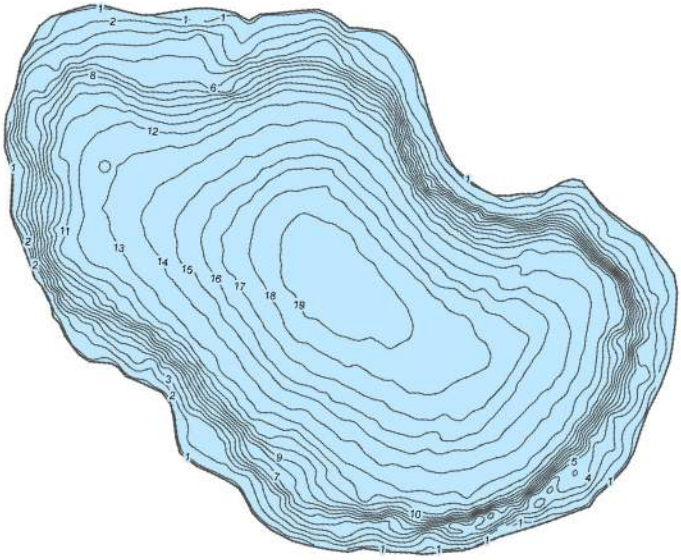

Bur Oaks Pond
Median Total P (ug/L)
120
100
80
60
40
20
0
1992
1994
1995
1997
1998
2003
2005
2008
2010
2012
2014
2017
2019
2021
2022
2023
2024


Bur Oaks Pond
Median Chlorophyll-a (ug/L)
25
20
15
10
5
0
1992
1994
1995
1997
1998
2003
2005
2008
2010
2012
2014
2017
2019
2021
2022
2023
2024


Bur Oaks Pond
Median Secchi Depth (feet)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992
1994
1995
1997
1998
2003
2005
2008
2010
2012
2014
2017
2019
2021
2022
2023
2024

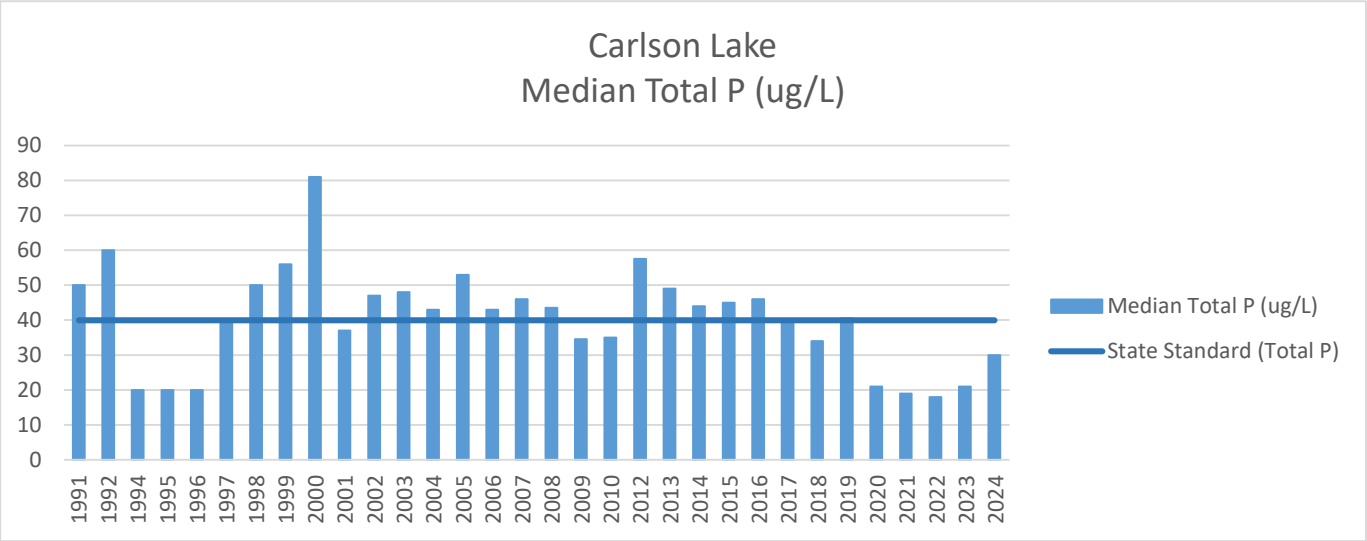
Carlson Lake

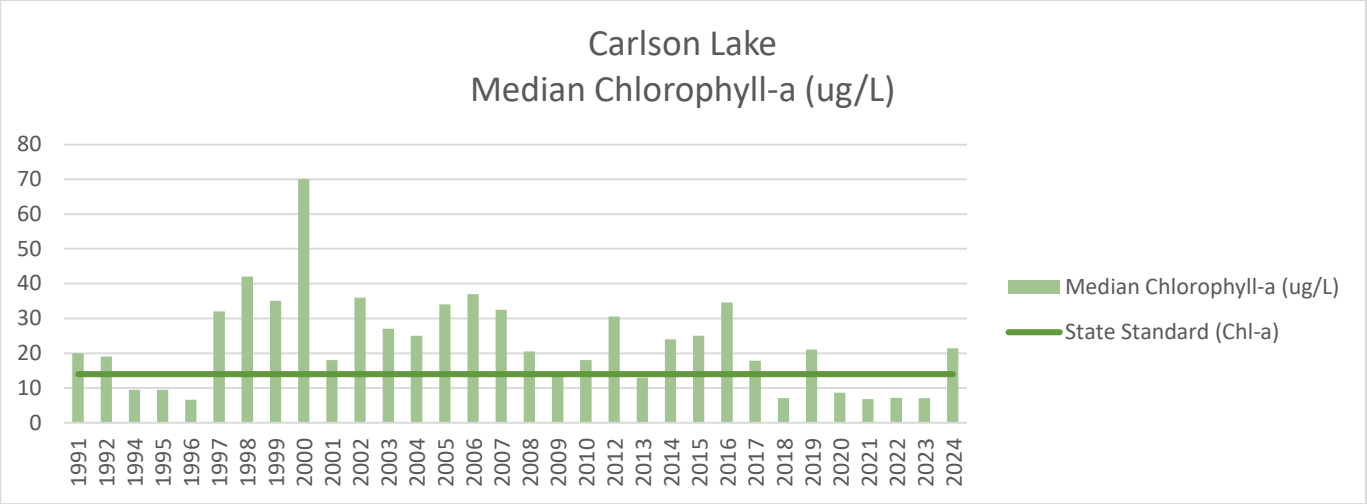
City ID:	LP-42
Waterbody type:	Deep Lake
Surface area:	13.10 acres
Average depth:	10.60 feet
Maximum depth:	20.00 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking, Swimming

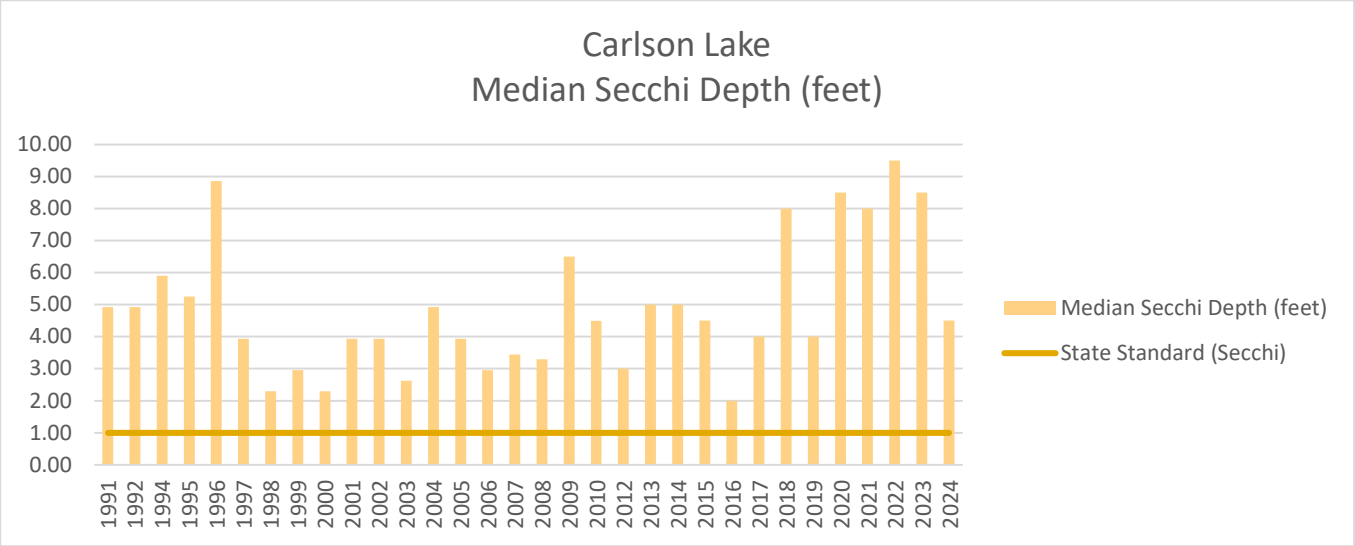


WATER QUALITY IMPROVEMENTS [2019–PRESENT]

As needed	Aerated in winter as needed to prevent fish kills
2019	Alum application to reduce in-lake nutrient load
2022	Subsurface stormwater filters installed upstream to remove nutrients from stormwater entering the lake


Carlson Lake
Median Total P (ug/L)
90
80
70
60
50
40
30
20
10
0
1991
1992
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Total P (ug/L)
State Standard (Total P)


Carlson Lake
Median Chlorophyll-a (ug/L)
80
70
60
50
40
30
20
10
0
1991
1992
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Carlson Lake
Median Secchi Depth (feet)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1991
1992
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

Carlson Lake

Year Listed:	2014
Year Delisted:	*Pending* (2026)
Impairment:	Nutrients (Stormwater)
TMDL Approved:	Yes; 2015
Impaired Use(s):	Aquatic Recreation

Excessive nutrient loading is one of the most common sources of impairment in surface waterbodies, especially those in urban areas like Eagan. In our landscape, nutrients mainly come from developed areas - referred to as 'impervious surfaces' - where water can't soak into the ground. Rather, it runs off the surface into nearby waterways, carrying whatever pollutants have accumulated with it.

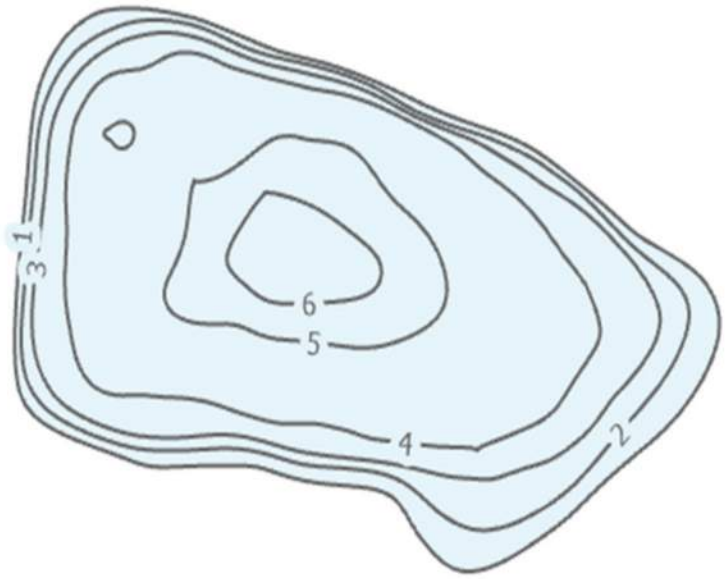
Nutrient pollution can lead to excessive algae growth, low dissolved oxygen levels, and ultimately toxicity to aquatic life.

The City of Eagan has used several strategies to reduce nutrient levels in our lakes. Alum applications, watershed management practices, and regulating developments to require that they treat stormwater before it leaves their properties are just some of the ways we have restored these waters back to meeting standards.

As of 2026, the City will have no nutrient impaired waters listed on the State of Minnesota's 3030(d) List of Impaired Waters. This is a direct result of Eagan's restoration efforts - supported by our community each year!

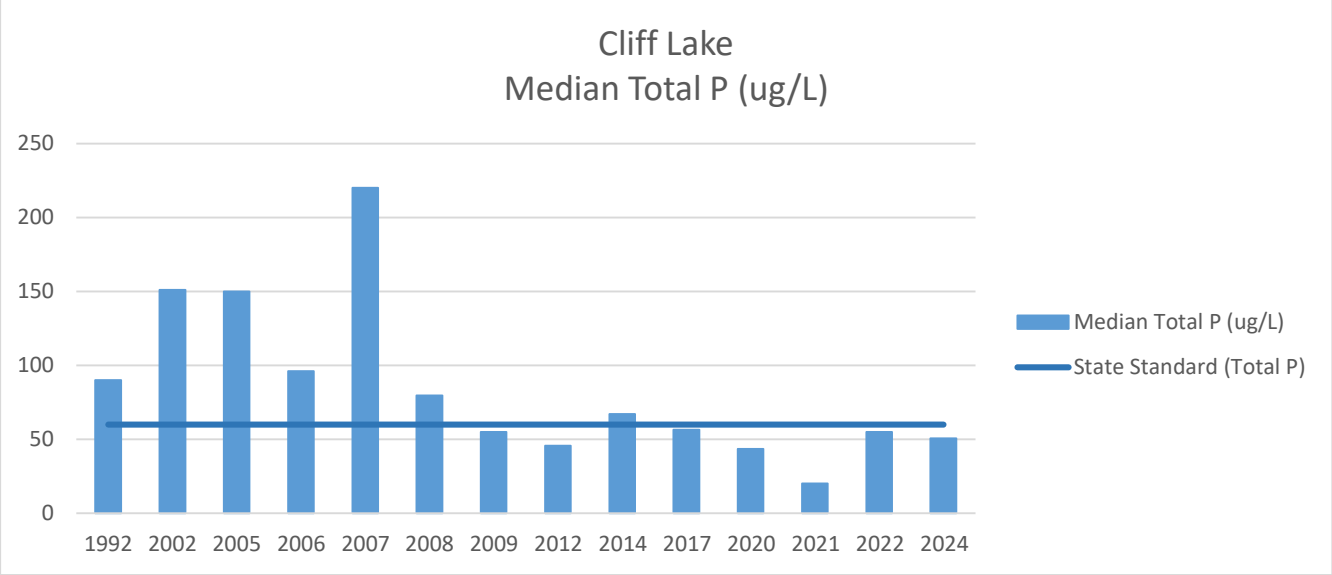
Cliff Lake

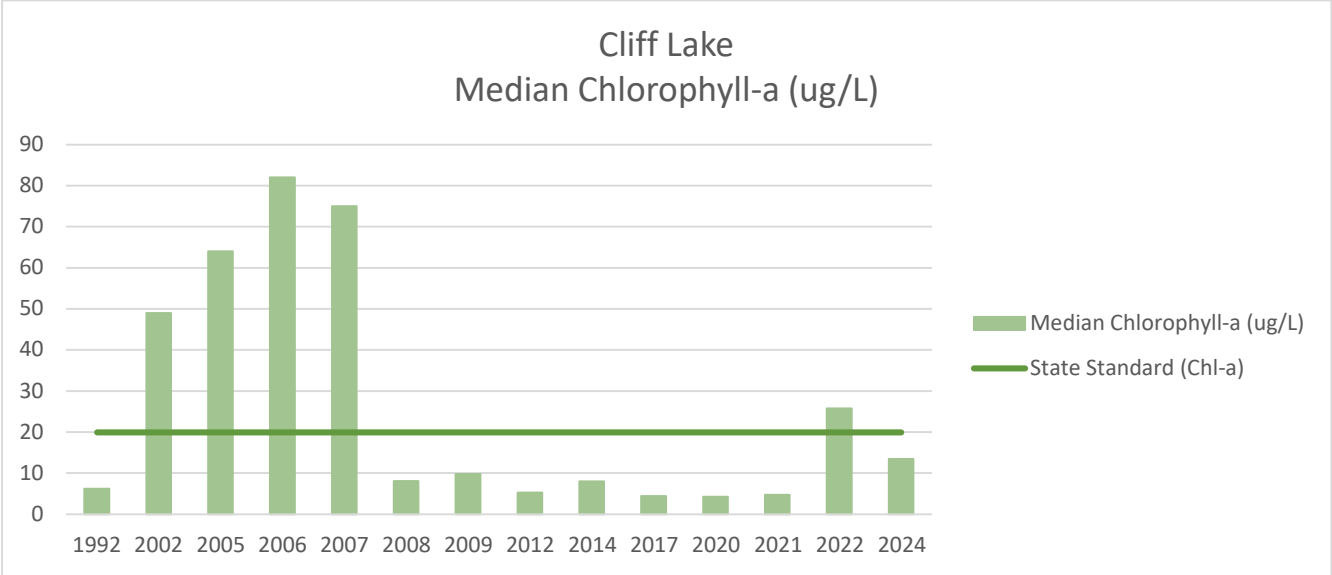
City ID:	AP-11
Waterbody type:	Shallow Lake
Surface area:	11.76 acres
Average depth:	2.77 feet
Maximum depth:	4.76 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing / Kayaking

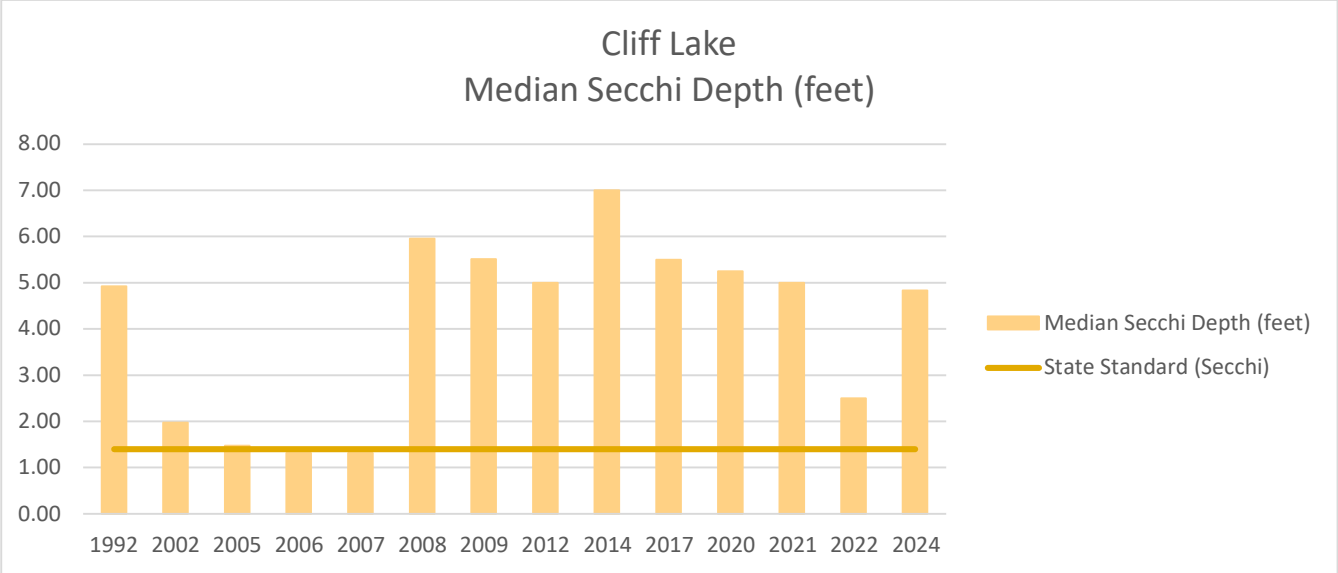


WATER QUALITY IMPROVEMENTS [2020–PRESENT]

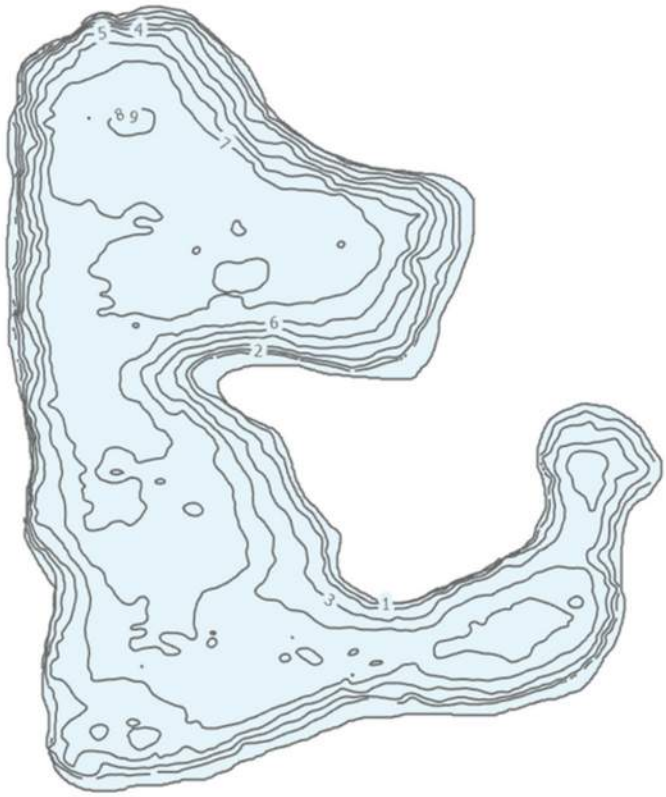
As needed	Aerated in winter as needed to prevent fish kills
2020	Alum application to reduce in-lake nutrient load
2024	Fish population survey completed to assess overall health of the lake's fishery


Cliff Lake
Median Total P (ug/L)
250
200
150
100
50
0
1992 2002 2005 2006 2007 2008 2009 2012 2014 2017 2020 2021 2022 2024
Median Total P (ug/L)
State Standard (Total P)


Cliff Lake
Median Chlorophyll-a (ug/L)
90
80
70
60
50
40
30
20
10
0
1992 2002 2005 2006 2007 2008 2009 2012 2014 2017 2020 2021 2022 2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Cliff Lake
Median Secchi Depth (feet)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992 2002 2005 2006 2007 2008 2009 2012 2014 2017 2020 2021 2022 2024
Median Secchi Depth (feet)
State Standard (Secchi)

East Thomas Lake

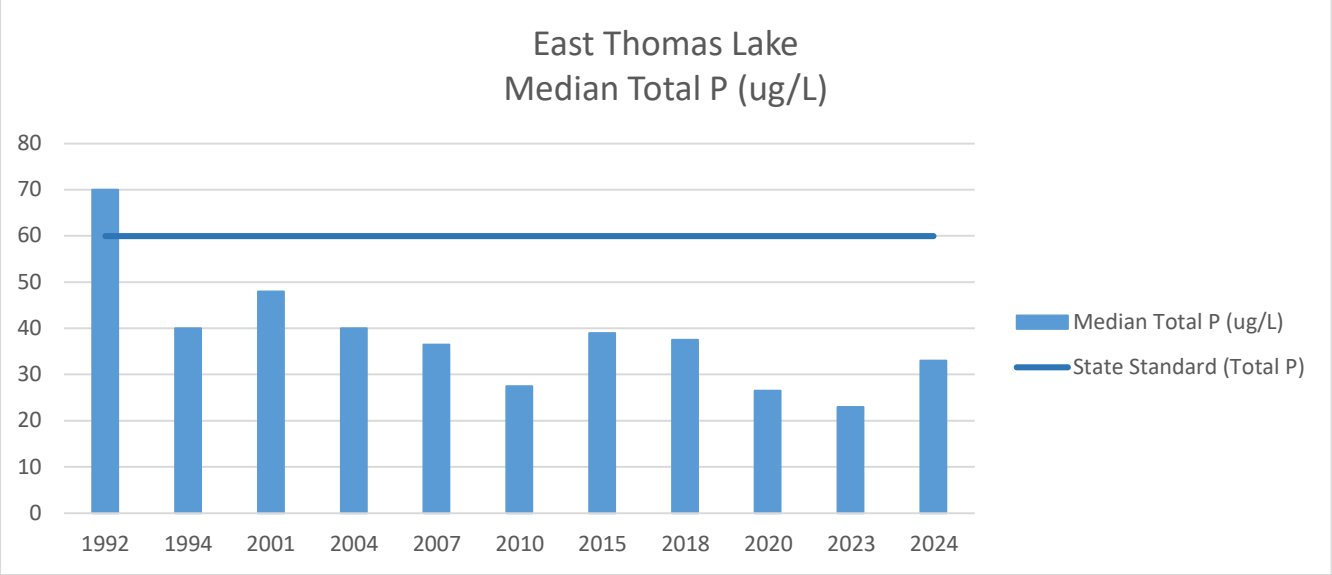


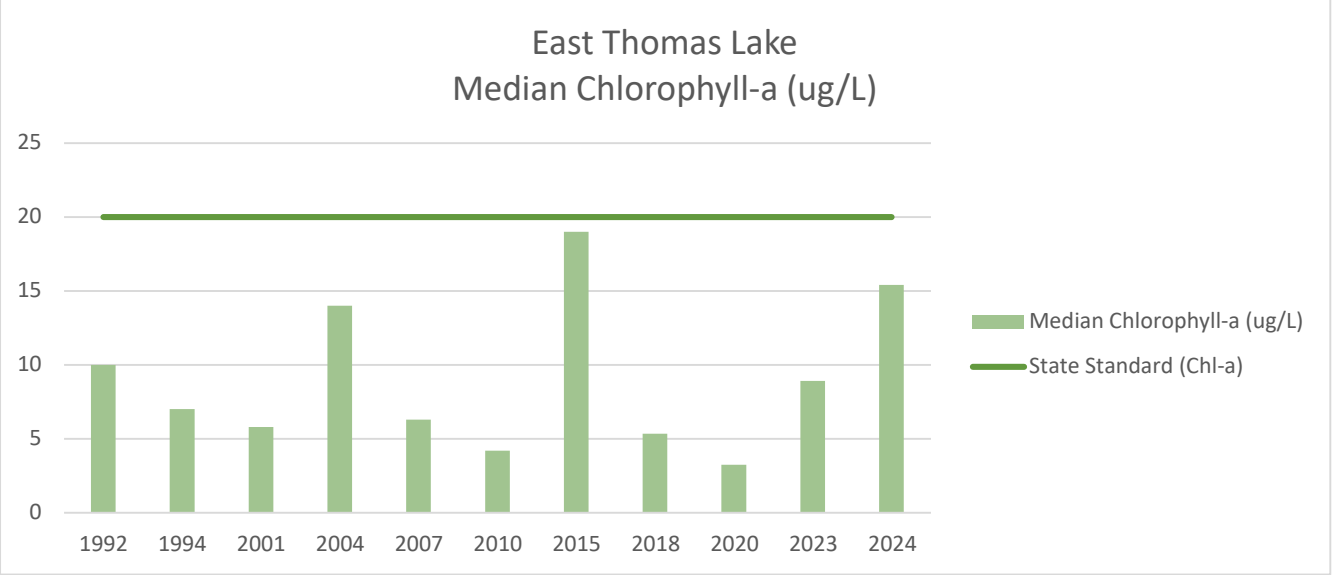
City ID:	BP-8
Waterbody type:	Shallow Lake
Surface area:	9.20 acres
Average depth:	4.80 feet
Maximum depth:	9.50 feet
Public access:	No
Supported uses:	Fishing, Canoeing/ Kayaking

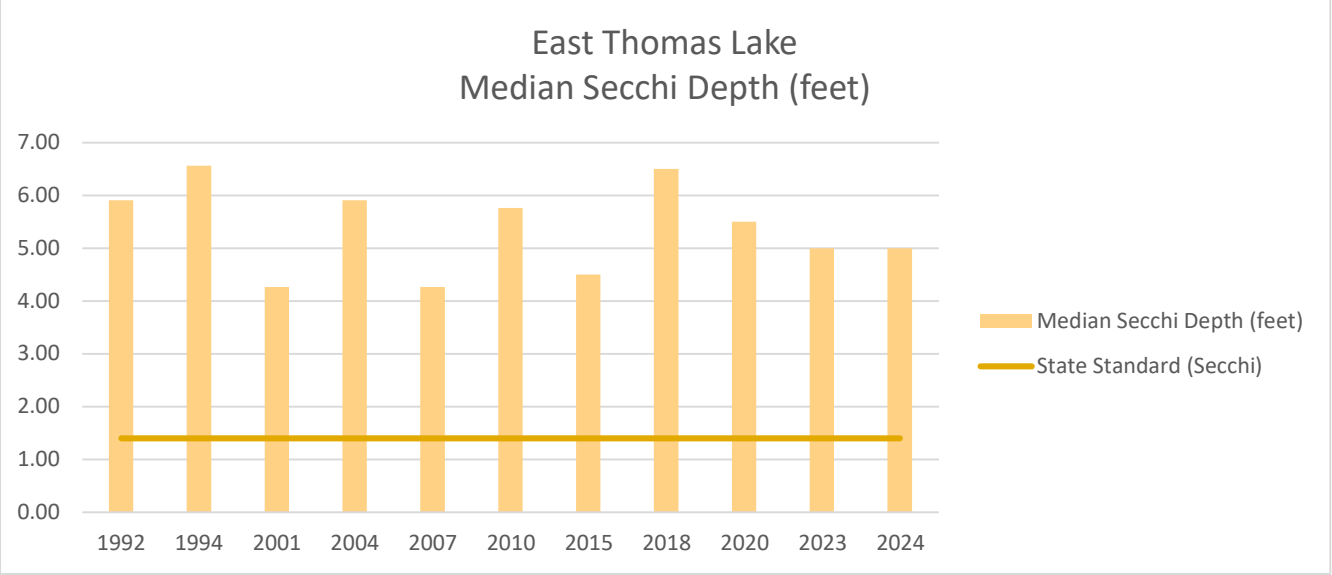
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

As Needed — Aerated in winter as needed to prevent fish kills

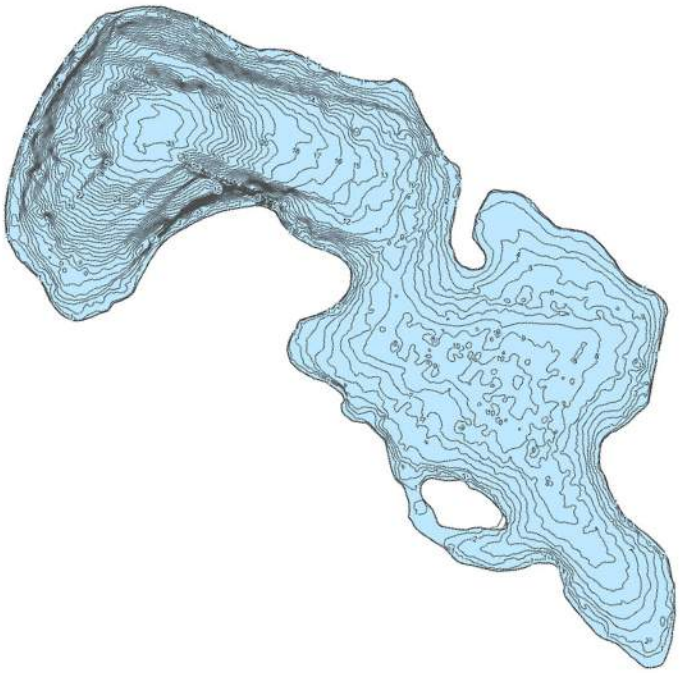
2021 — Fish population survey completed to assess overall health of the lake's fishery (results were excellent)


East Thomas Lake
Median Total P (ug/L)
80
70
60
50
40
30
20
10
0
1992
1994
2001
2004
2007
2010
2015
2018
2020
2023
2024
Median Total P (ug/L)
State Standard (Total P)


East Thomas Lake
Median Chlorophyll-a (ug/L)
25
20
15
10
5
0
1992
1994
2001
2004
2007
2010
2015
2018
2020
2023
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


East Thomas Lake
Median Secchi Depth (feet)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992
1994
2001
2004
2007
2010
2015
2018
2020
2023
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Fish Lake



City ID: JP-4

Waterbody type: Shallow Lake

Surface area: 30.30 acres

Average depth: 9.50 feet

Maximum depth: 33.80 feet

Public access: Yes

Supported uses: Fishing, Canoeing/ Kayaking, Swimming

WATER QUALITY IMPROVEMENTS [2020–PRESENT]

As needed

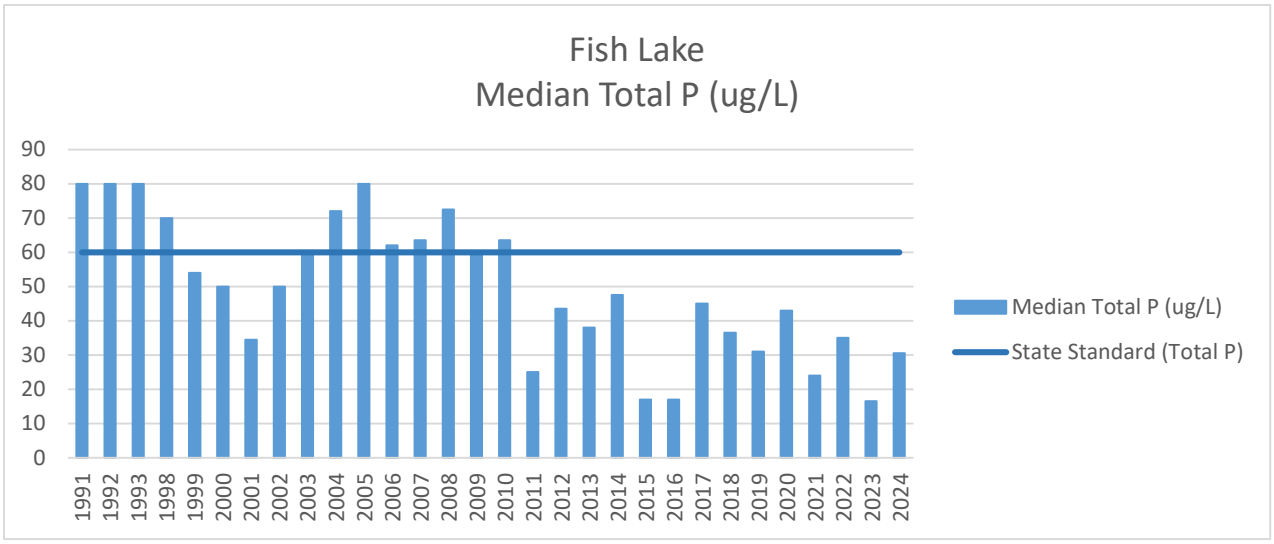
- Aerated in winter as needed to prevent fish kills
- Lake plants harvested in summer months to reduce biomass
- Alum station in place to provide ongoing dosing throughout the summer months when necessary

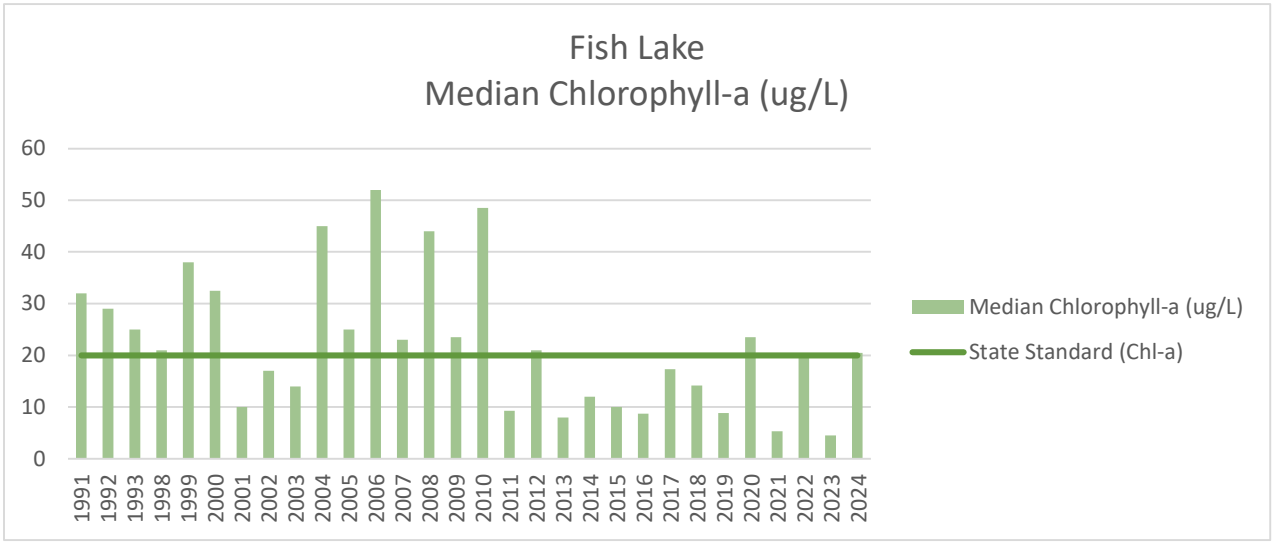
2021

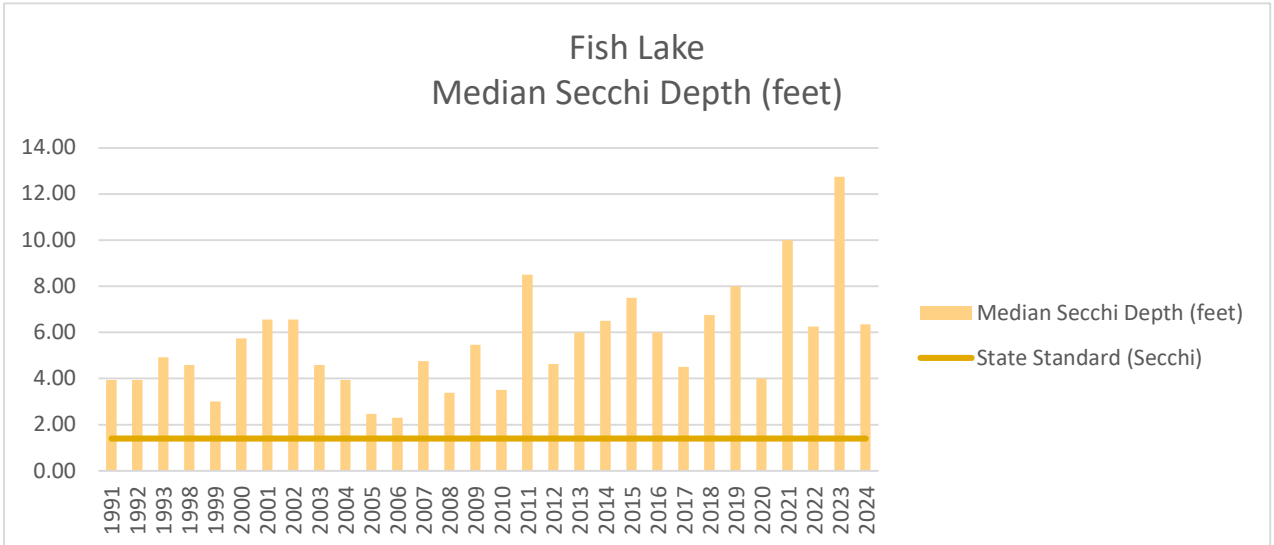
- Stocked: 450 walleye (6–8 inches)

2022

- Alum application to reduce in-lake nutrient load


Fish Lake
Median Total P (ug/L)
90
80
70
60
50
40
30
20
10
0
1991 1992 1993 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Median Total P (ug/L)
State Standard (Total P)


Fish Lake
Median Chlorophyll-a (ug/L)
60
50
40
30
20
10
0
1991 1992 1993 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Fish Lake
Median Secchi Depth (feet)
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1991 1992 1993 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

Fish Lake

Year Listed:	2006
Impairment:	Mercury in Fish Tissue
TMDL Approved:	Yes; Southwest Region Mercury TMDL
Impaired Use(s):	Aquatic Consumption
Additional Impairments:	Previously impaired for nutrients, delisted in 2014 due to restoration efforts.

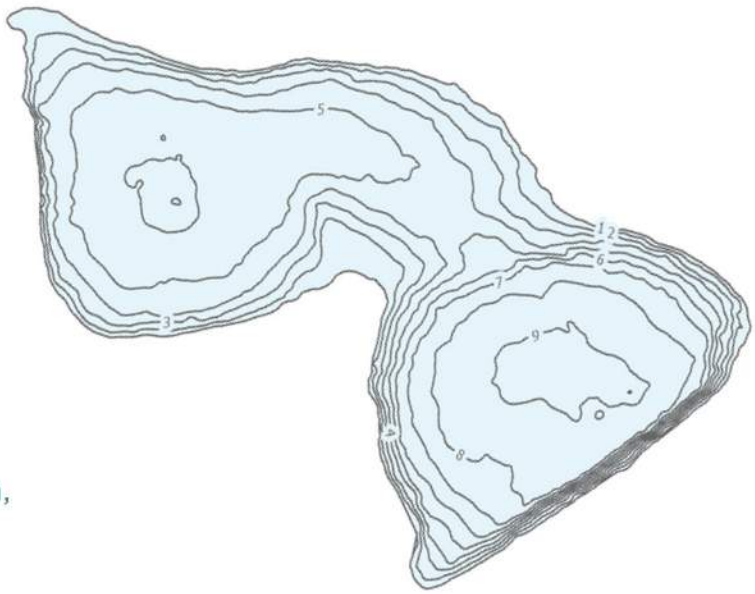
A waterbody is listed as impaired for mercury when more than 10% of a fish species fillets have a mercury concentration of at least 0.20 parts per million (ppm). Mercury accumulates in fish tissue, specifically as 'methylmercury,' which is the most hazardous form of mercury for humans. Once a waterbody is contaminated with mercury, it is very difficult to remove it.

Mercury is a naturally occurring element that is highly toxic to both humans and animals. While most people associate mercury with the liquid, silvery substance from old thermometers, it can also evaporate and become airborne - and in this form can come from a variety of sources.

In Eagan's case, the primary source is atmospheric deposition from coal-fired power plants in North Dakota. Because the source of these contaminants is not local, the state of Minnesota oversees a statewide 'total maximum daily load' or TMDL to manage the sources of mercury accumulating in our surface waters.

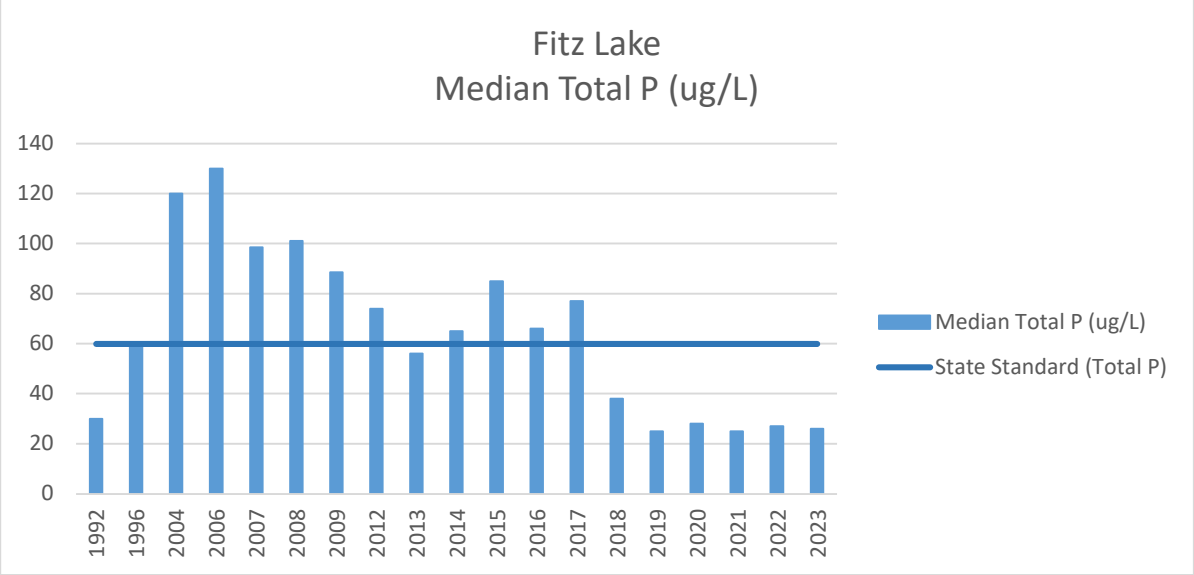
Fitz Lake

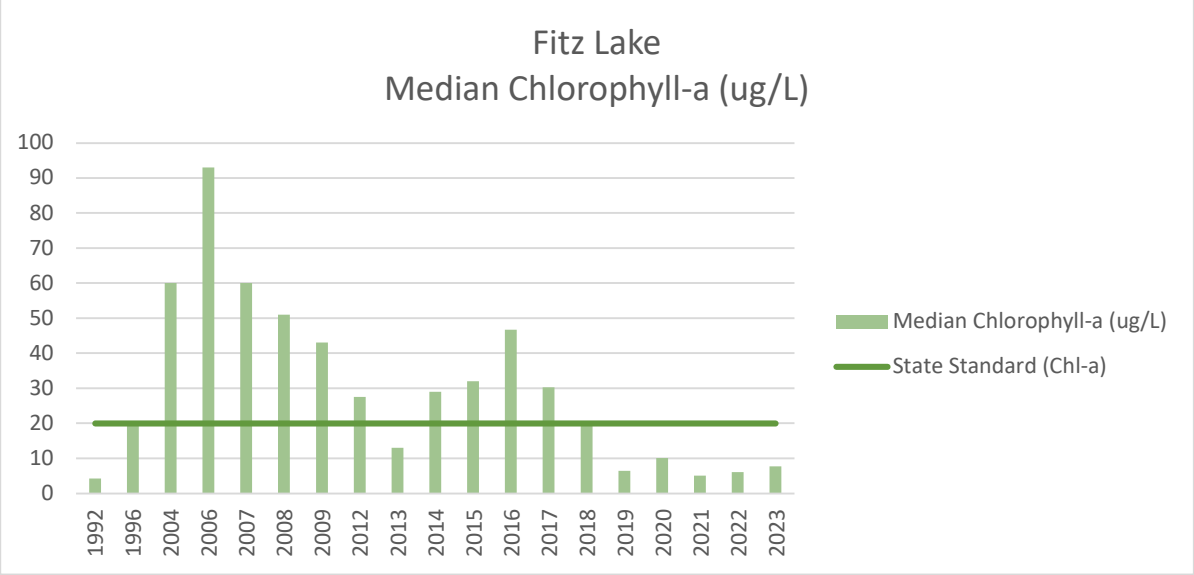
City ID:	LP-26
Waterbody type:	Shallow Lake
Surface area:	14.00 acres
Average depth:	5.10 feet
Maximum depth:	9.40 feet
Public access:	No
Supported uses:	Habitat, Education, Aesthetics

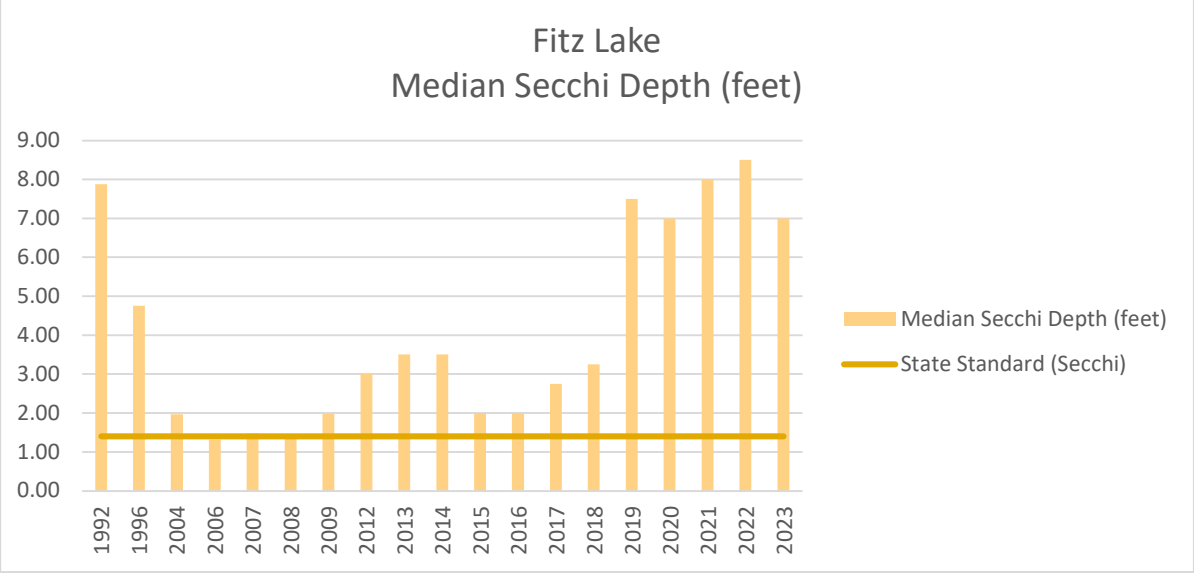


WATER QUALITY IMPROVEMENTS [2020–PRESENT]

No recent improvements. Fitz Lake was removed from the State's list of impaired waters in 2024, following installation of two iron-enhanced sand filters to manage stormwater inputs, and an in-lake alum application in 2017. The lake is known to contain bass, black bullhead, minnows, and non-native goldfish - but is not maintained for public fishing due to a lack of dedicated access.


Fitz Lake
Median Total P (ug/L)
140
120
100
80
60
40
20
0
1992
1996
2004
2006
2007
2008
2009
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Total P (ug/L)
State Standard (Total P)


Fitz Lake
Median Chlorophyll-a (ug/L)
100
90
80
70
60
50
40
30
20
10
0
1992
1996
2004
2006
2007
2008
2009
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Fitz Lake
Median Secchi Depth (feet)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992
1996
2004
2006
2007
2008
2009
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

Fitz Lake

Year Listed:	2014
Year Delisted:	2022
Impairment:	Nutrients (Stormwater)
TMDL Approved:	Yes; 2015
Impaired Use(s):	Aquatic Recreation

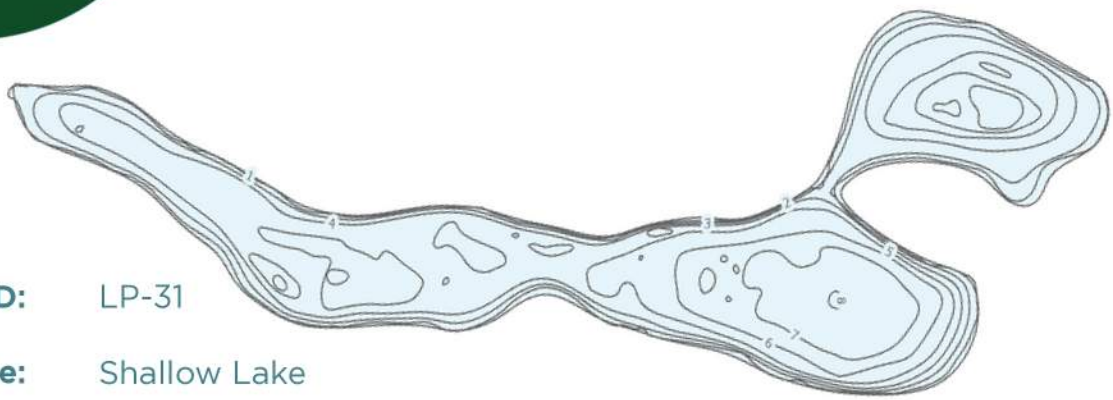
Excessive nutrient loading is one of the most common sources of impairment in surface waterbodies, especially those in urban areas like Eagan. In our landscape, nutrients mainly come from developed areas - referred to as 'impervious surfaces' - where water can't soak into the ground. Rather, it runs off the surface into nearby waterways, carrying whatever pollutants have accumulated with it.

Nutrient pollution can lead to excessive algae growth, low dissolved oxygen levels, and ultimately toxicity to aquatic life.

The City of Eagan has used several strategies to reduce nutrient levels in our lakes. Alum applications, watershed management practices, and regulating developments to require that they treat stormwater before it leaves their properties are just some of the ways we have restored these waters back to meeting standards.

As of 2026, the City will have no nutrient impaired waters listed on the State of Minnesota's 3030(d) List of Impaired Waters. This is a direct result of Eagan's restoration efforts - supported by our community each year!

Hay Lake



City ID: LP-31

Waterbody type: Shallow Lake

Surface area: 23.05 acres

Average depth: 3.40 feet

Maximum depth: 9.87 feet

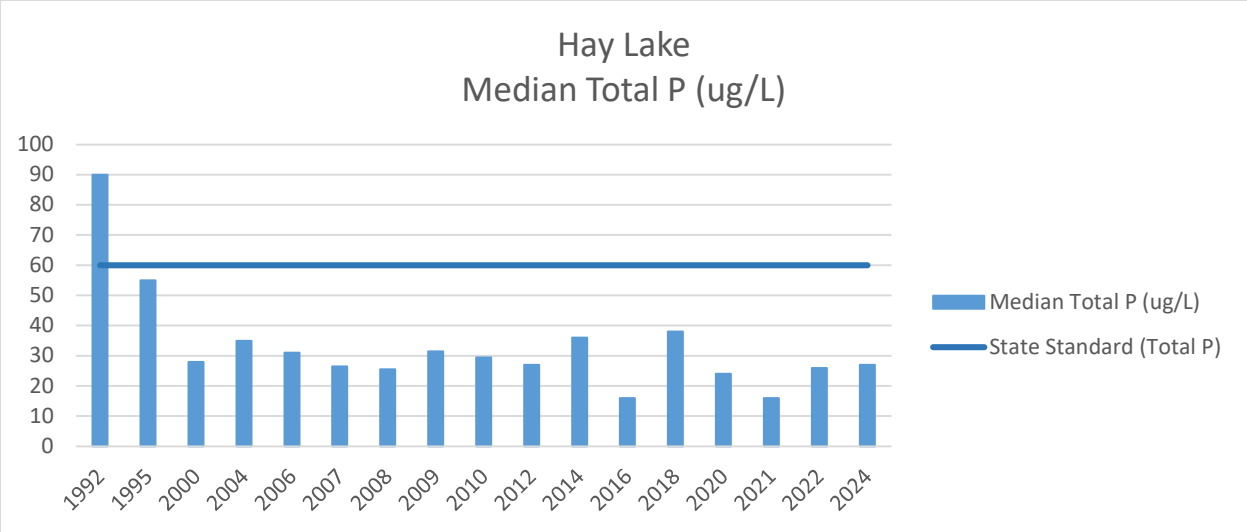
Public access: Yes

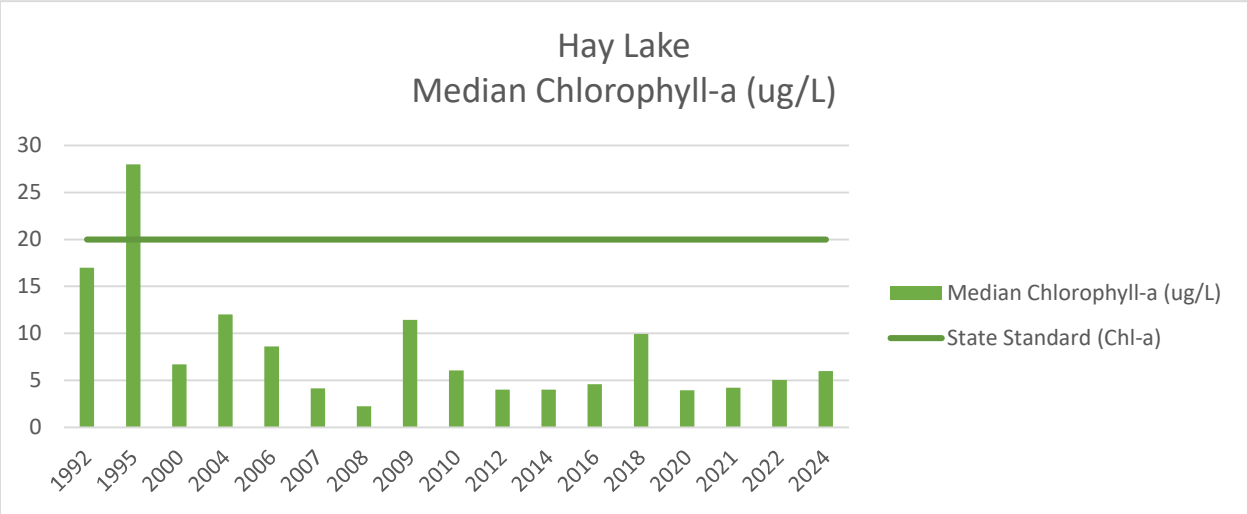
Supported uses: Fishing, Canoeing/ Kayaking

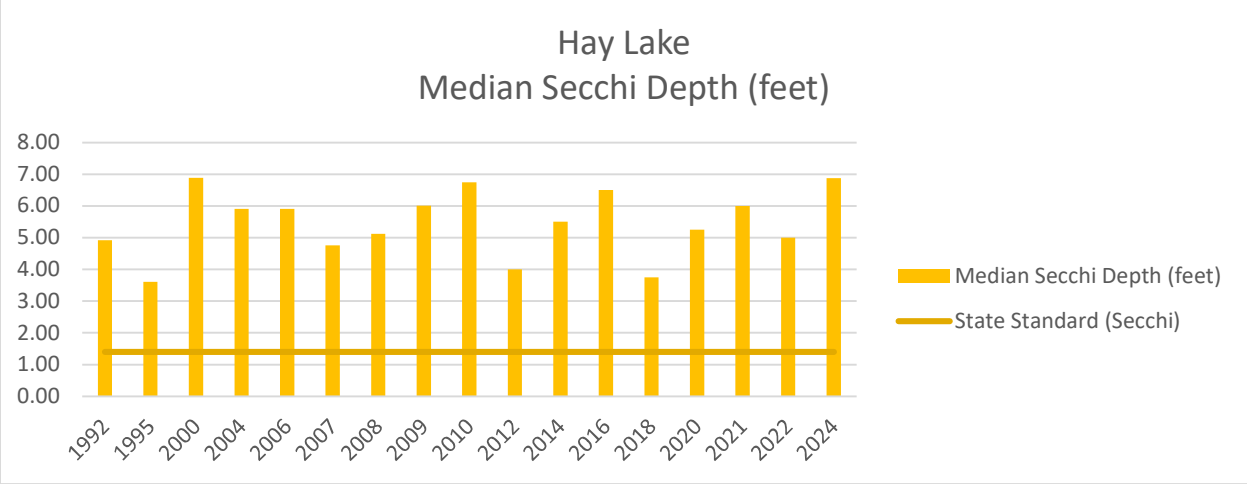
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

As Needed — Aerated in winter as needed to prevent fish kills

2020 — Alum application to reduce in-lake nutrient load

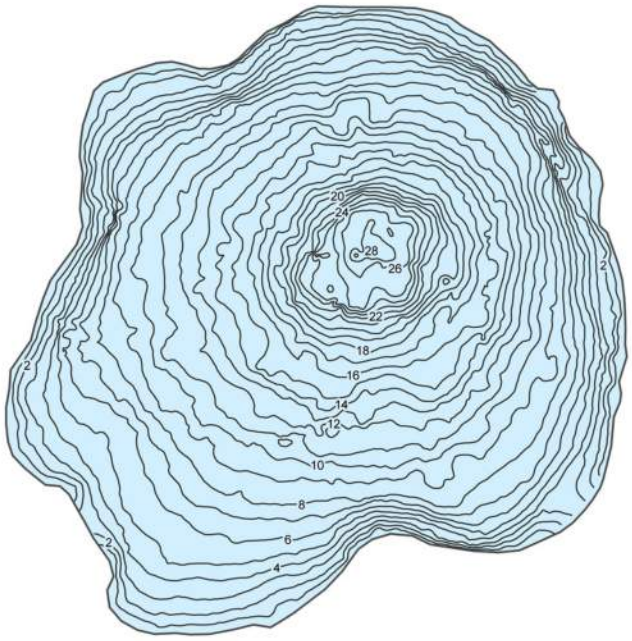

Hay Lake
Median Total P (ug/L)
100
90
80
70
60
50
40
30
20
10
0
1992
1995
2000
2004
2006
2007
2008
2009
2010
2012
2014
2016
2018
2020
2021
2022
2024
Median Total P (ug/L)
State Standard (Total P)


Hay Lake
Median Chlorophyll-a (ug/L)
30
25
20
15
10
5
0
1992
1995
2000
2004
2006
2007
2008
2009
2010
2012
2014
2016
2018
2020
2021
2022
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Hay Lake
Median Secchi Depth (feet)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992
1995
2000
2004
2006
2007
2008
2009
2010
2012
2014
2016
2018
2020
2021
2022
2024
Median Secchi Depth (feet)
State Standard (Secchi)

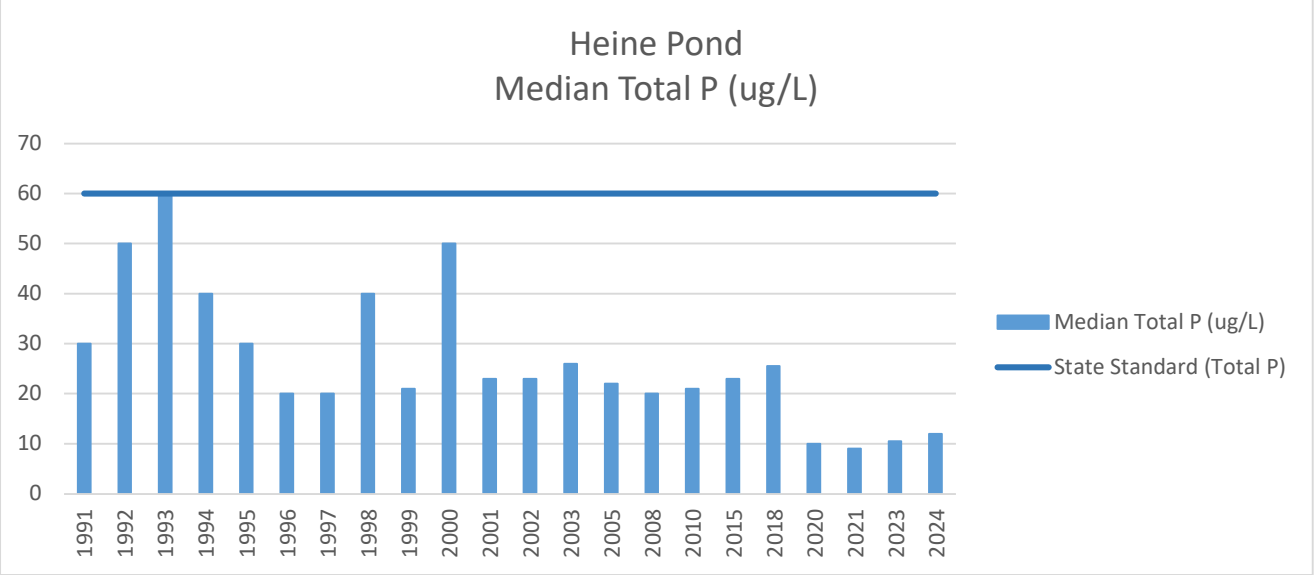
Heine Pond

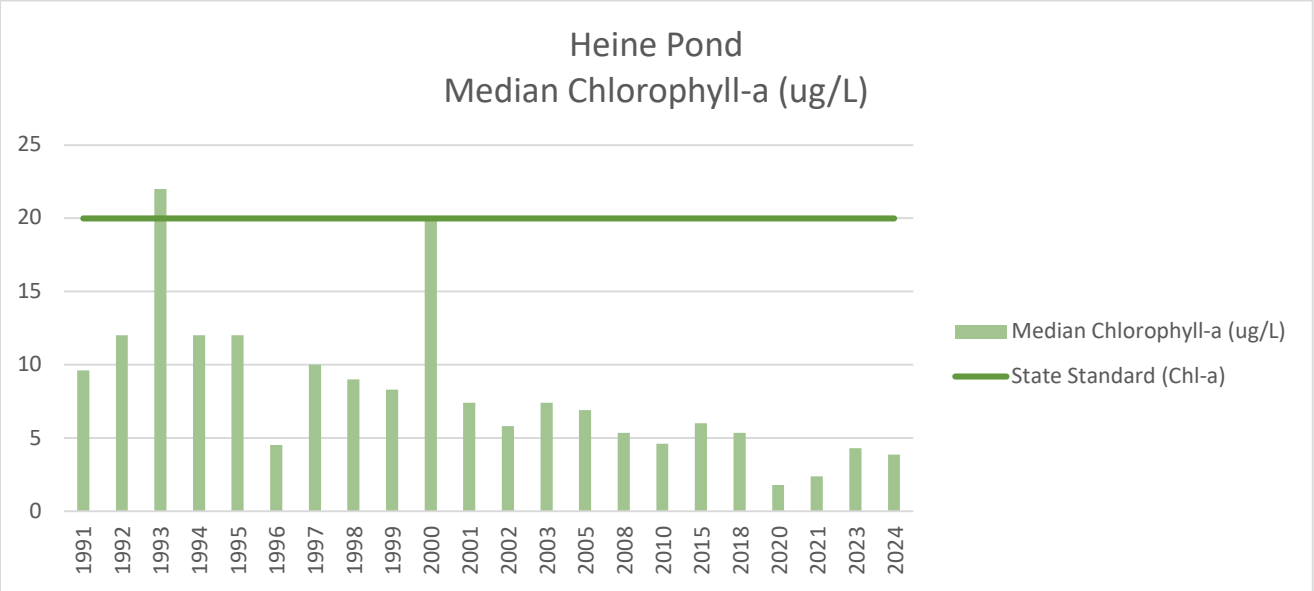
City ID:	BP-5
Waterbody type:	Shallow lake
Surface area:	7.40 acres
Maximum depth:	28.97 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking, Swimming

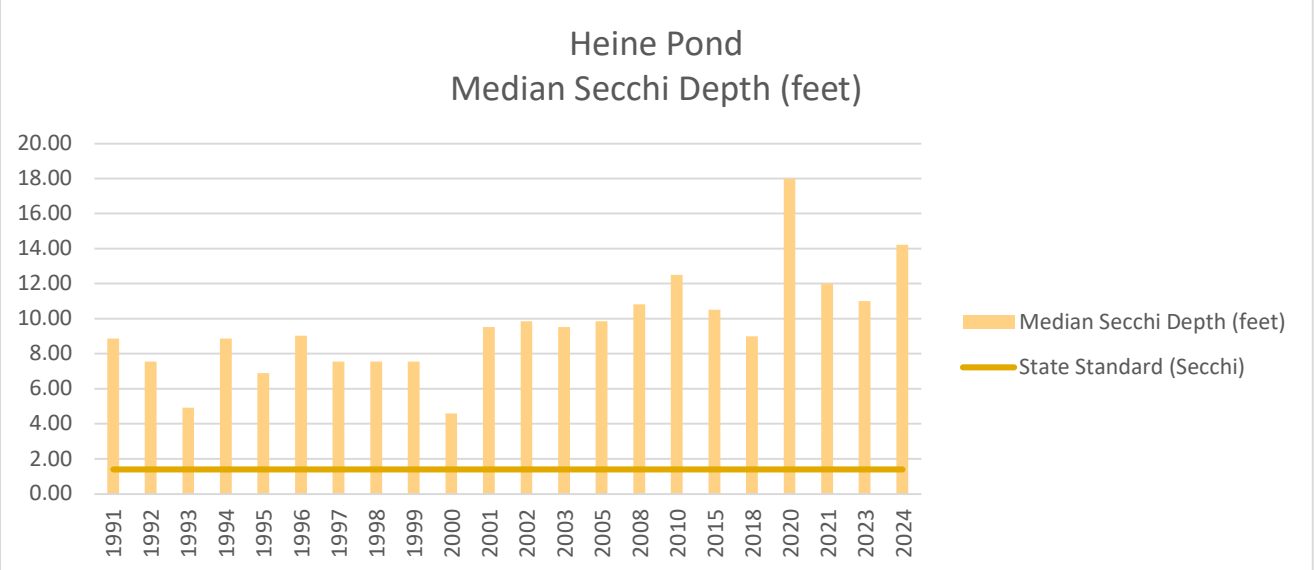


WATER QUALITY IMPROVEMENTS [2019–PRESENT]

As needed	Aerated in winter as needed to prevent fish kills
2019	Alum application to reduce in-lake nutrient load
2022	Stocked: 425 Walleye (6–8 inches)

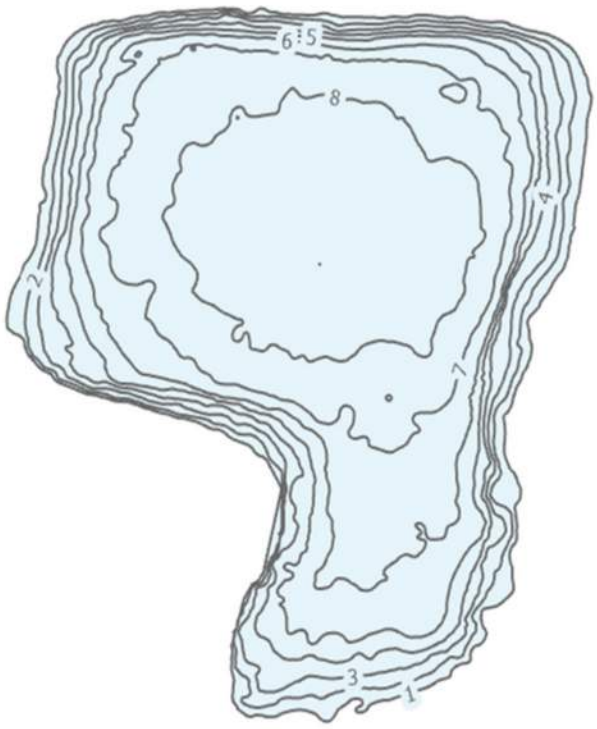

Heine Pond
Median Total P (ug/L)
70
60
50
40
30
20
10
0
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2005
2008
2010
2015
2018
2020
2021
2023
2024
Median Total P (ug/L)
State Standard (Total P)


Heine Pond
Median Chlorophyll-a (ug/L)
25
20
15
10
5
0
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2005
2008
2010
2015
2018
2020
2021
2023
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Heine Pond
Median Secchi Depth (feet)
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2005
2008
2010
2015
2018
2020
2021
2023
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Holz Lake

City ID:	LP-28
Waterbody type:	Shallow Lake
Surface area:	11.26 acres
Average depth:	5.50 feet
Maximum depth:	9.90 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking

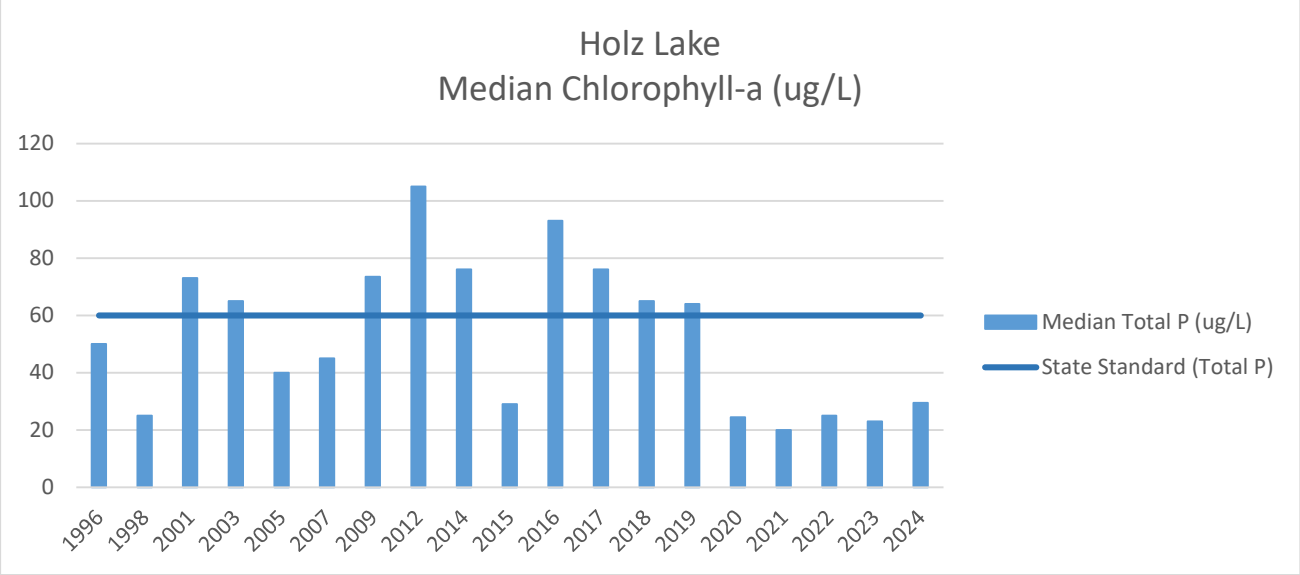


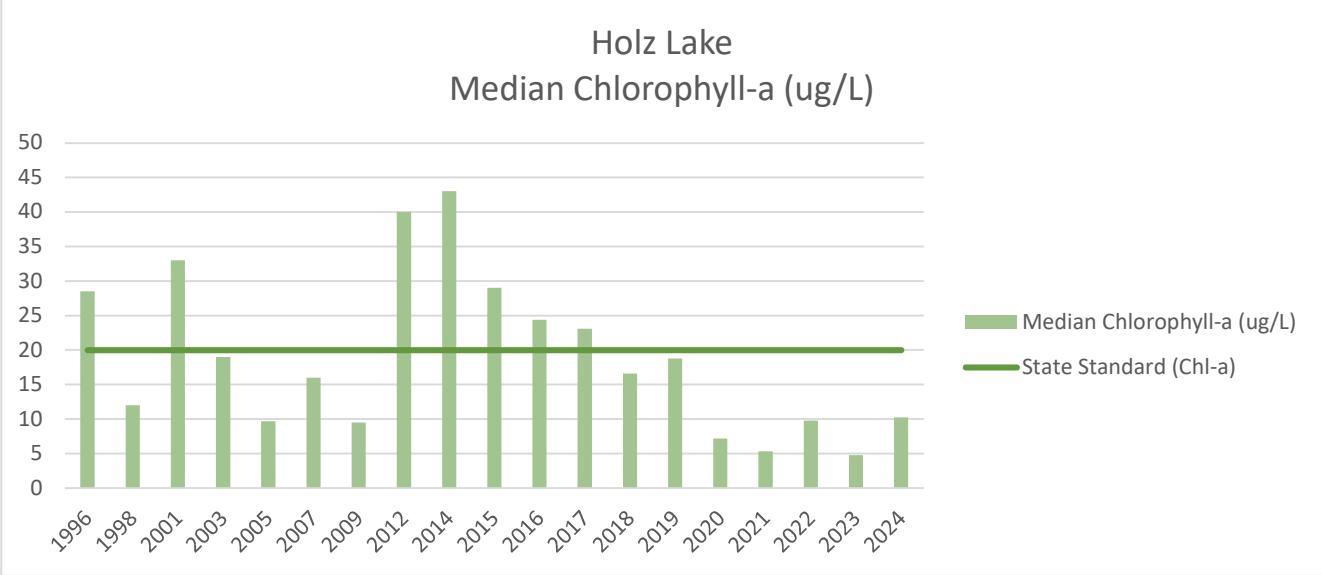
WATER QUALITY IMPROVEMENTS [2019–PRESENT]

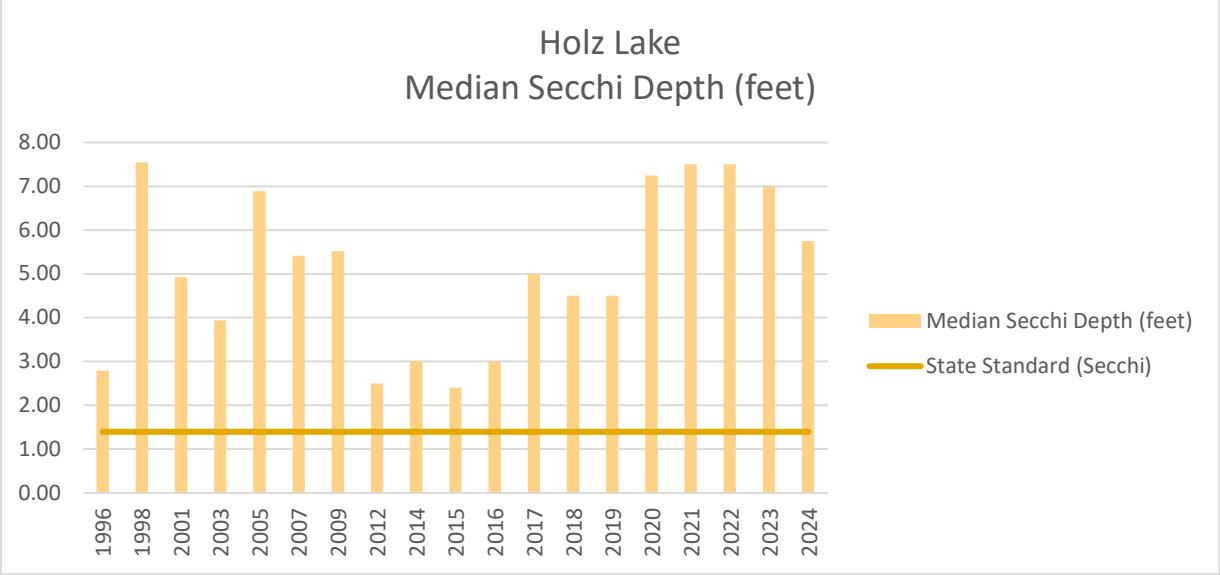
As Needed — Aerated in winter as needed to prevent fish kills

2019 — Alum application to reduce in-lake nutrient load

Stocked - 700 Green Sunfish (yearlings)


Holz Lake
Median Chlorophyll-a (ug/L)
120
100
80
60
40
20
0
1996
1998
2001
2003
2005
2007
2009
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Total P (ug/L)
State Standard (Total P)


Holz Lake
Median Chlorophyll-a (ug/L)
50
45
40
35
30
25
20
15
10
5
0
1996
1998
2001
2003
2005
2007
2009
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Holz Lake
Median Secchi Depth (feet)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1996
1998
2001
2003
2005
2007
2009
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

Holz Lake

Year Listed:	2014
Year Delisted:	*Pending* (2026)
Impairment:	Nutrients (Stormwater)
TMDL Approved:	Yes; 2015
Impaired Use(s):	Aquatic Recreation

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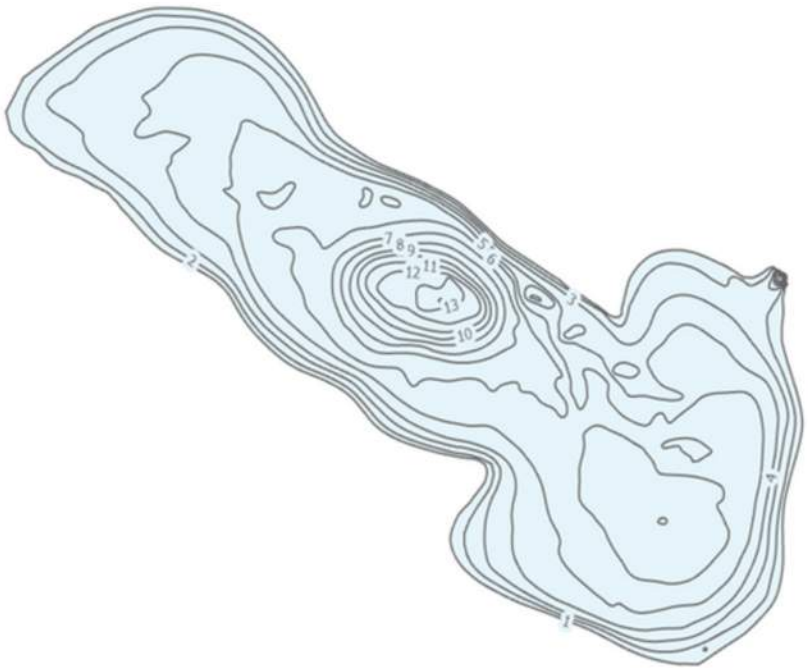
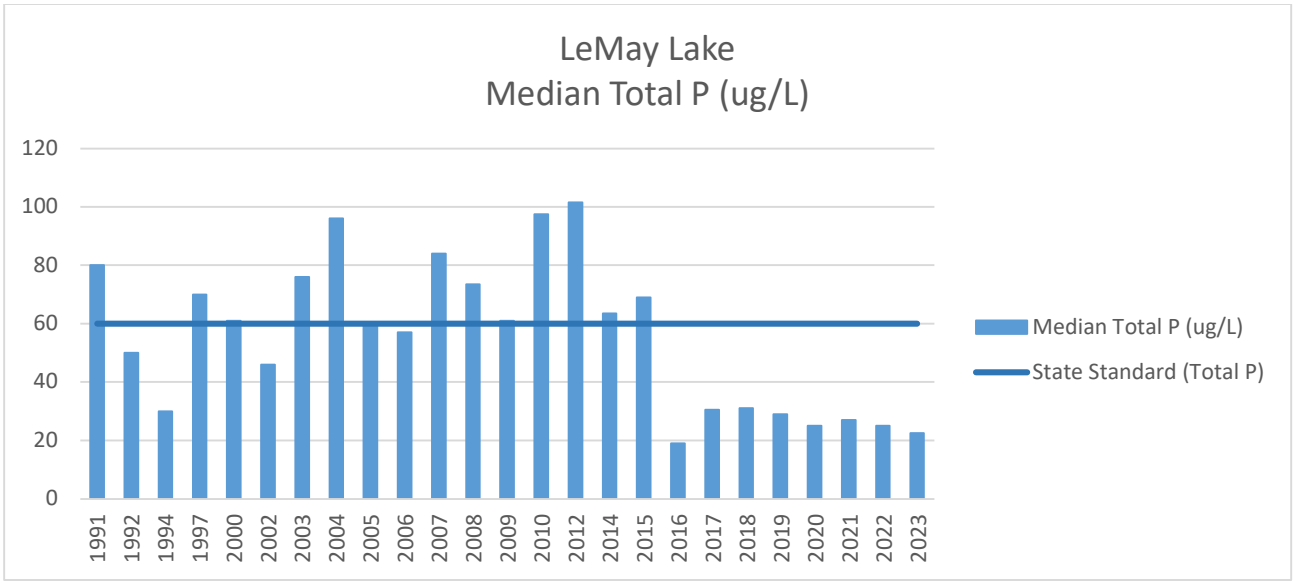
LeMay Lake

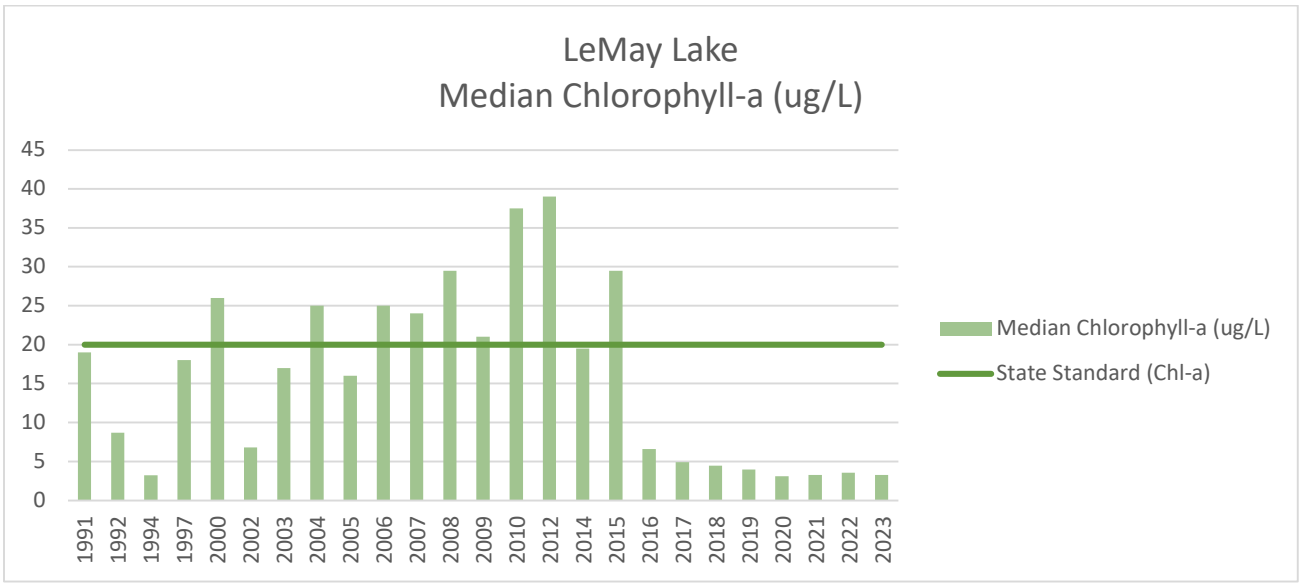
City ID:	DP-2
Waterbody type:	Shallow lake
Surface area:	36.46 acres
Average depth:	4.59 feet
Maximum depth:	14.51 feet
Public access:	Yes
Supported uses:	Fishing, Canoeing/ Kayaking

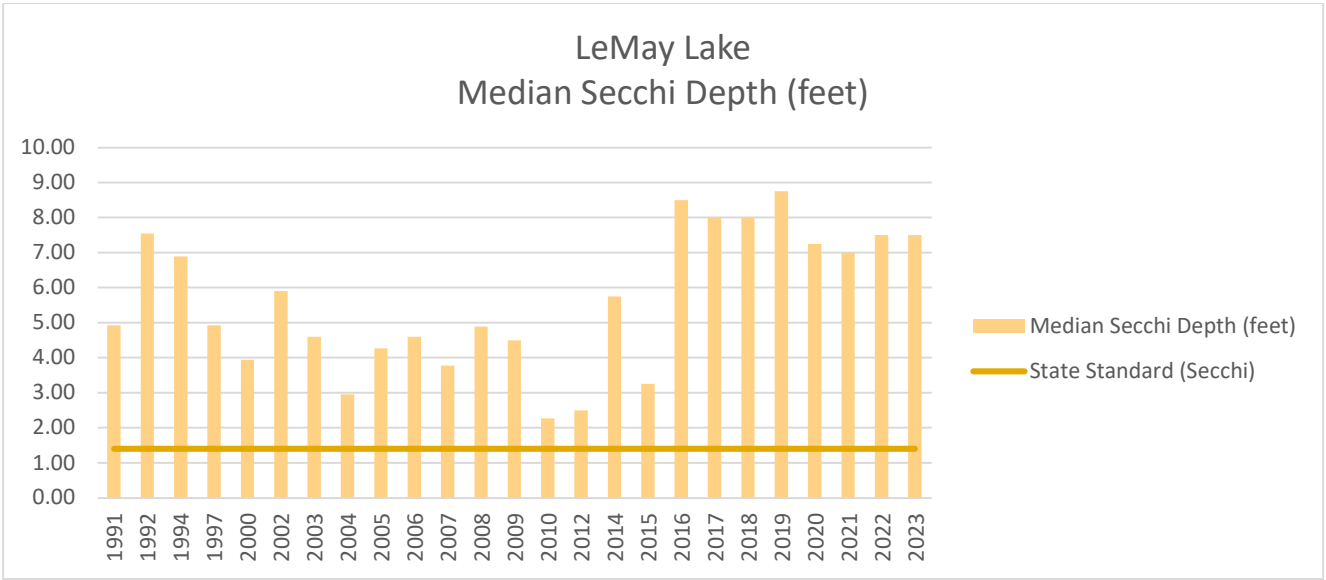


WATER QUALITY IMPROVEMENTS [2019–PRESENT]

As needed	Aerated in winter as needed to prevent fish kills
2019	Alum application to reduce in-lake nutrient load


LeMay Lake
Median Total P (ug/L)
120
100
80
60
40
20
0
1991
1992
1994
1997
2000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Total P (ug/L)
State Standard (Total P)


LeMay Lake
Median Chlorophyll-a (ug/L)
45
40
35
30
25
20
15
10
5
0
1991
1992
1994
1997
2000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


LeMay Lake
Median Secchi Depth (feet)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1991
1992
1994
1997
2000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

LeMay Lake

Year Listed:	2014
Year Delisted:	2022
Impairment:	Nutrients (Stormwater)
TMDL Approved:	Yes; 2015
Impaired Use(s):	Aquatic Recreation

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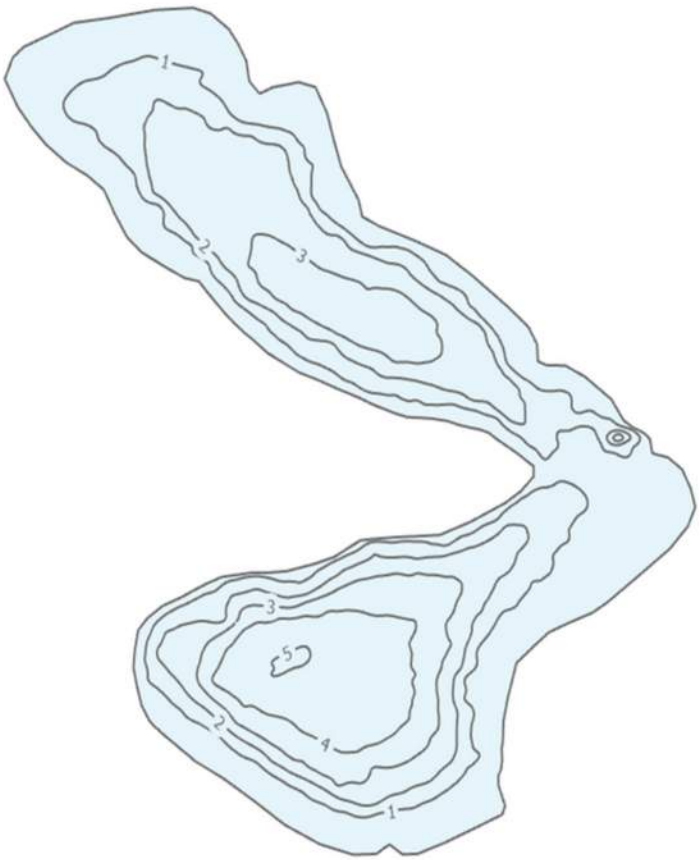
McCarthy Lake

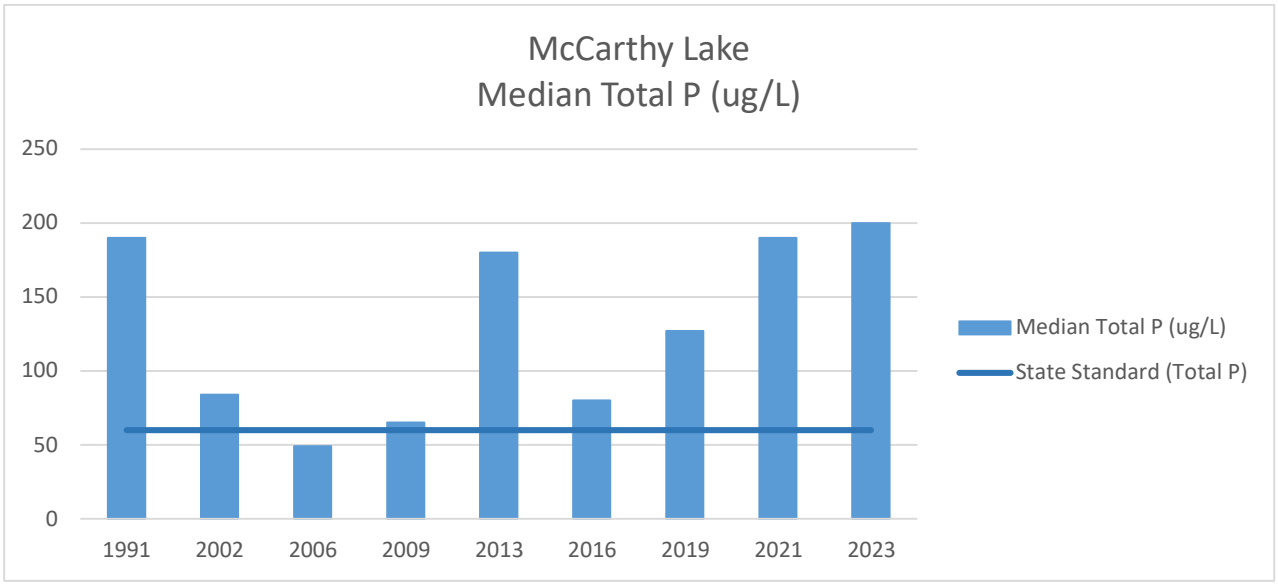


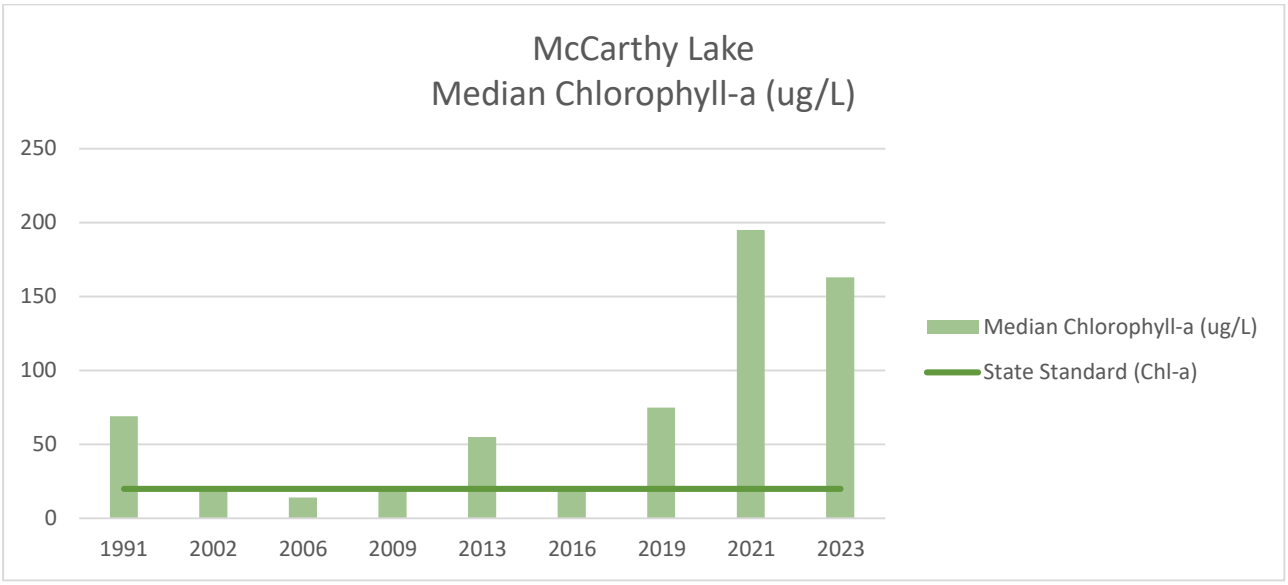
City ID:	JP-9
Waterbody Type:	Shallow Lake
Surface Area:	11.42 acres
Maximum Depth:	5.00 feet
Public Access:	Yes
Supported Uses:	Habitat, Education, Aesthetics

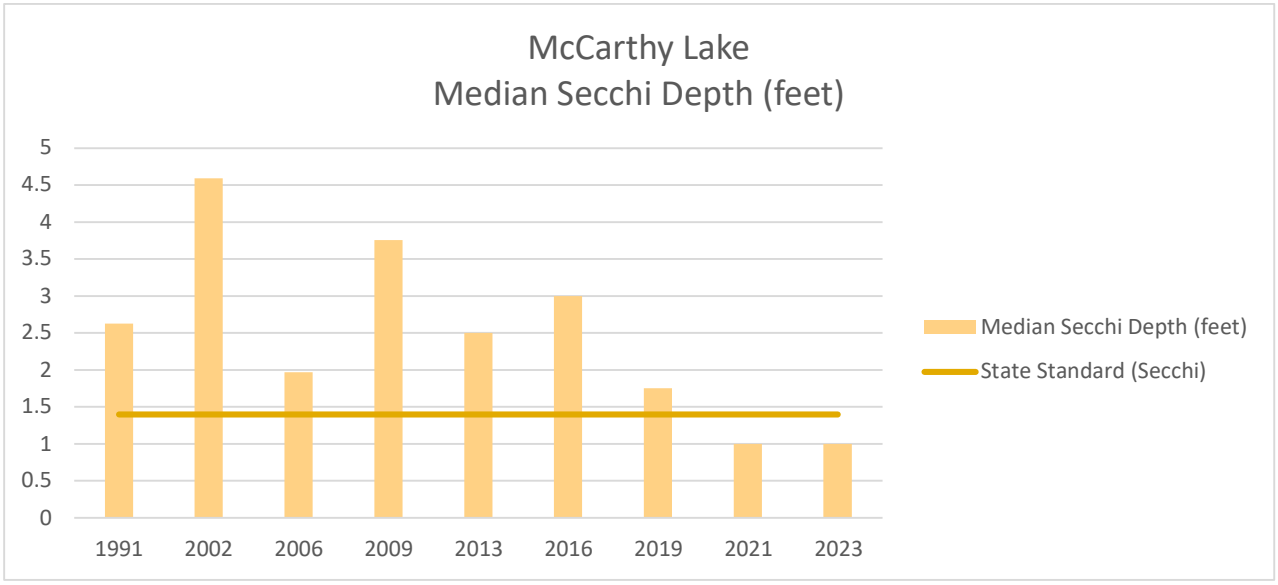
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

2025

Iron-enhanced sand filter installed as part of the new Eagan Art House construction project, designed to capture and treat stormwater from existing and new impervious surfaces prior to discharge into McCarthy Lake

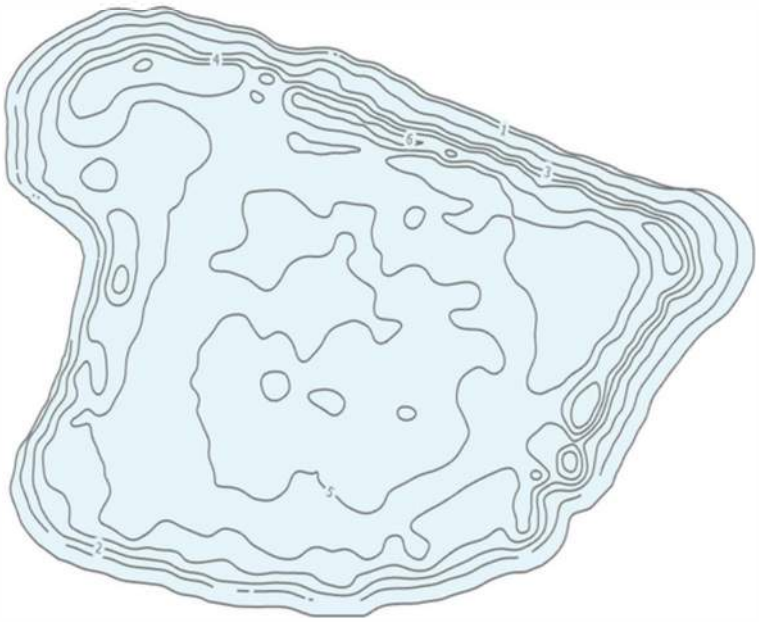

McCarthy Lake
Median Total P (ug/L)
250
200
150
100
50
0
1991
2002
2006
2009
2013
2016
2019
2021
2023
Median Total P (ug/L)
State Standard (Total P)


McCarthy Lake
Median Chlorophyll-a (ug/L)
250
200
150
100
50
0
1991
2002
2006
2009
2013
2016
2019
2021
2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


McCarthy Lake
Median Secchi Depth (feet)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1991
2002
2006
2009
2013
2016
2019
2021
2023
Median Secchi Depth (feet)
State Standard (Secchi)

Mooney Pond

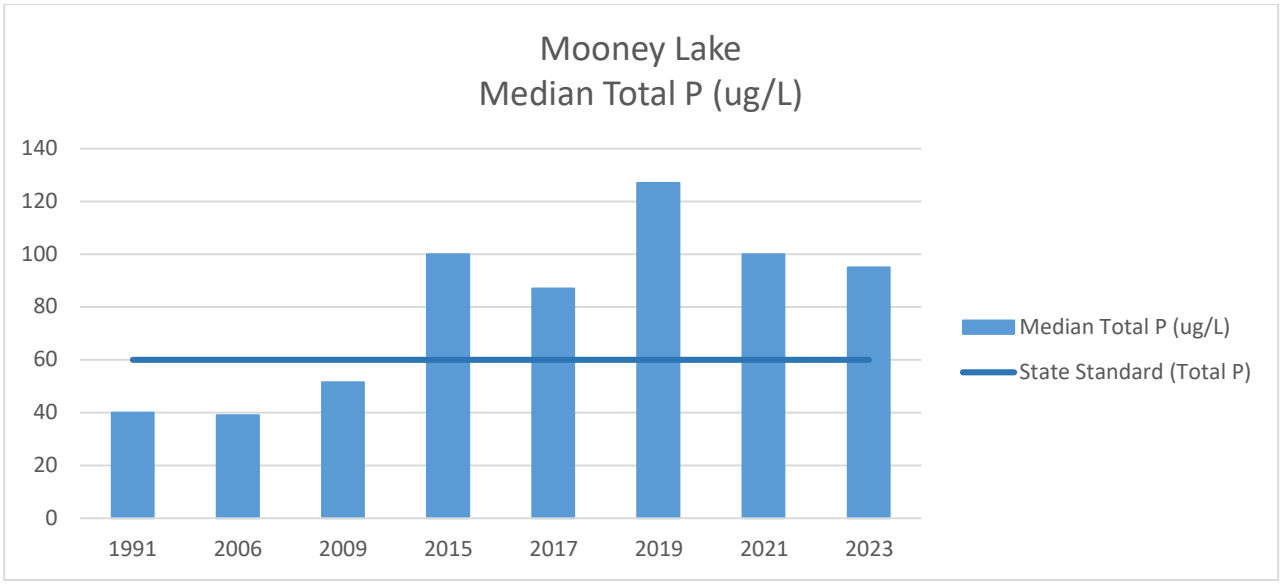
City ID:	JP-7
Waterbody Type:	Shallow Lake
Surface Area:	7.56 acres
Average Depth:	4.02 feet
Maximum Depth:	7.71 feet
Public Access:	Yes
Supported Uses:	Habitat, Education, Aesthetics

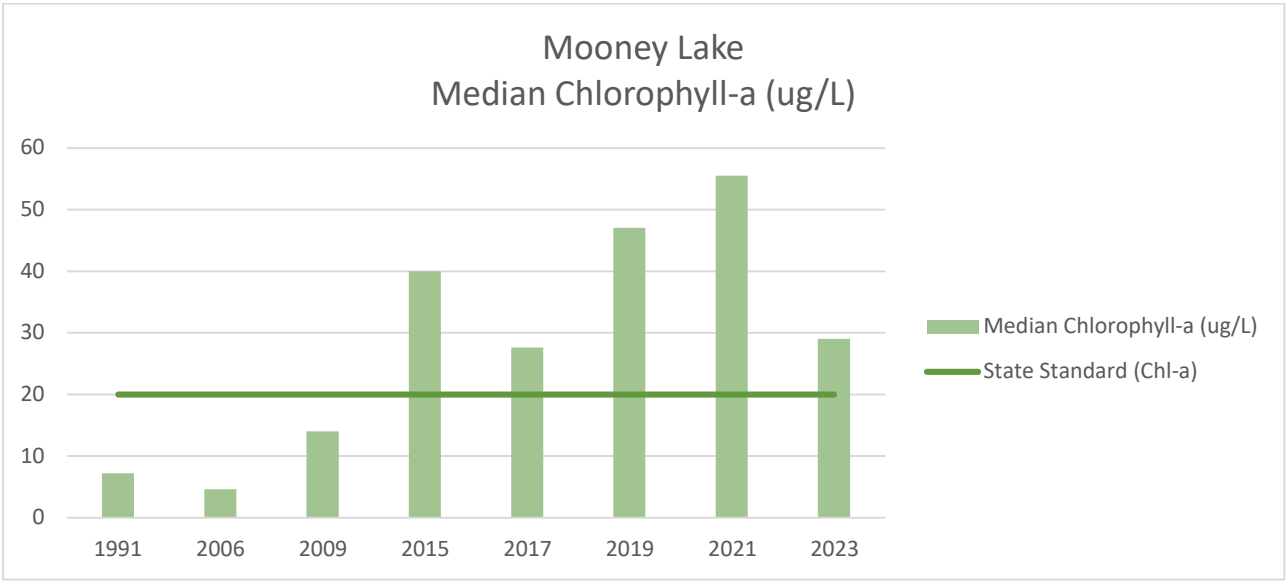


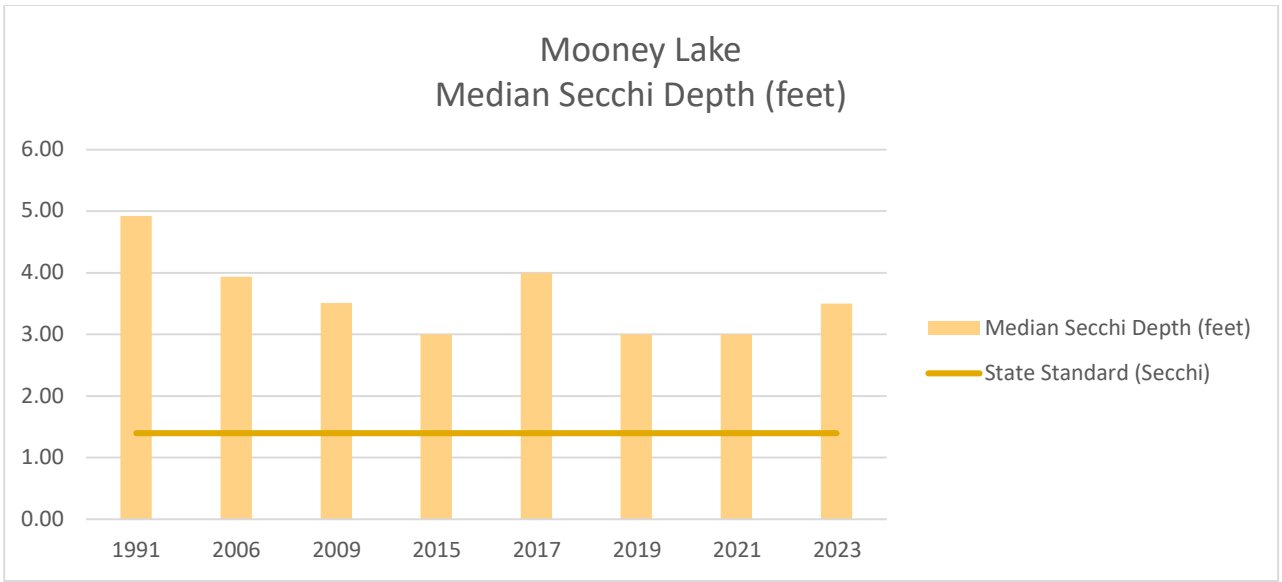
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

Known to support small minnow species, frogs, insects, and native aquatic plants. The surrounding area is accessible for birdwatching and trail walking,

Not currently maintained for recreational fishing.

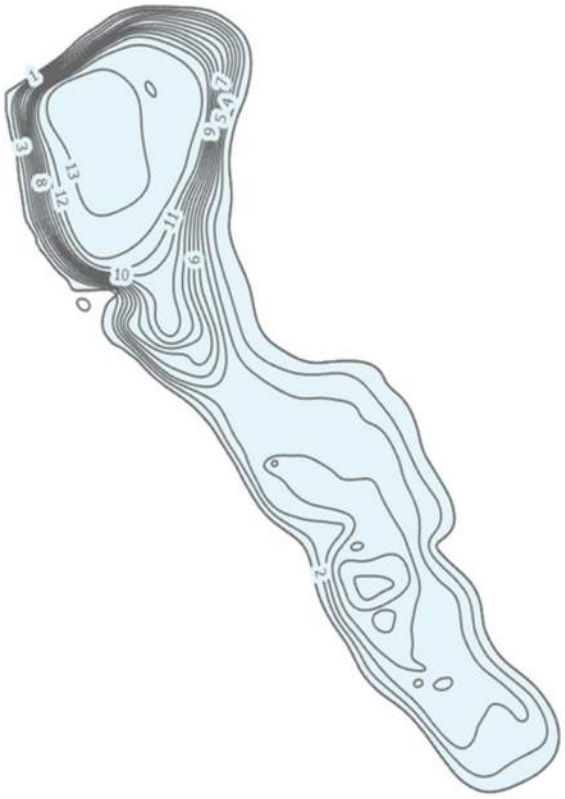

Mooney Lake
Median Total P (ug/L)
140
120
100
80
60
40
20
0
1991
2006
2009
2015
2017
2019
2021
2023
Median Total P (ug/L)
State Standard (Total P)


Mooney Lake
Median Chlorophyll-a (ug/L)
60
50
40
30
20
10
0
1991
2006
2009
2015
2017
2019
2021
2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Mooney Lake
Median Secchi Depth (feet)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1991
2006
2009
2015
2017
2019
2021
2023
Median Secchi Depth (feet)
State Standard (Secchi)

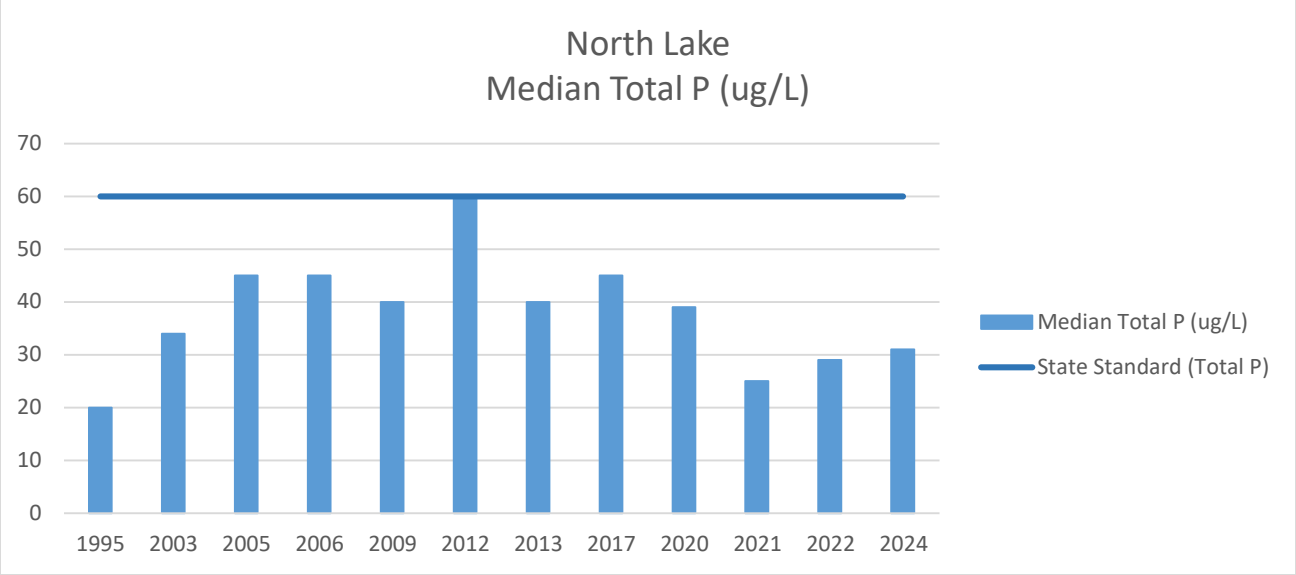
North Lake

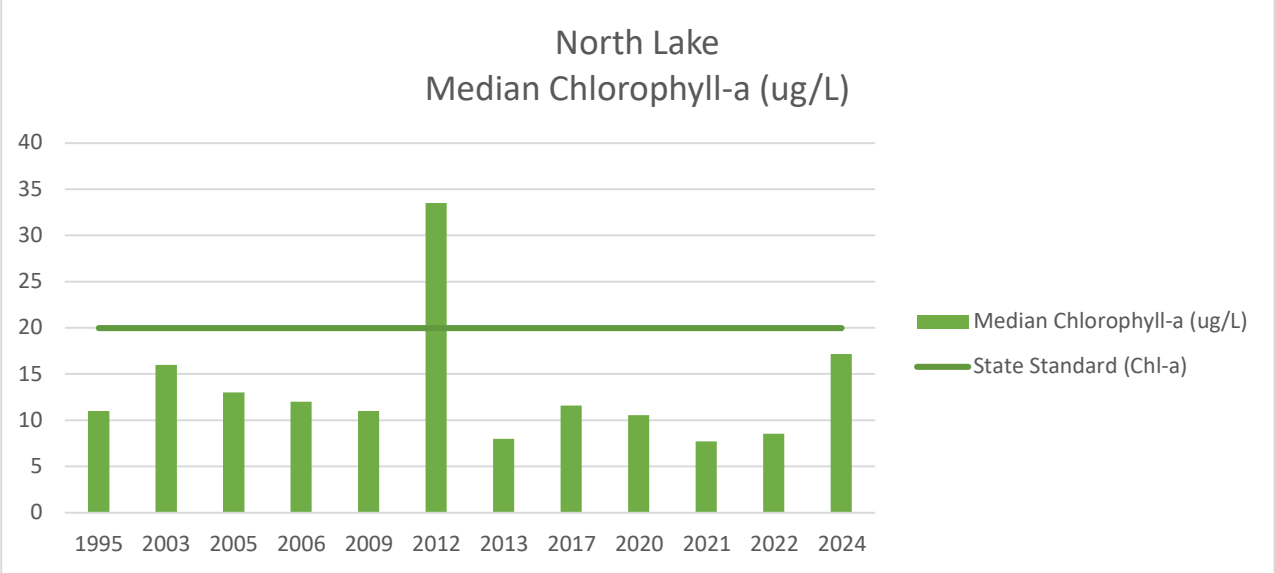
City ID:	EP-2
Waterbody Type:	Shallow Lake
Surface Area:	16.46 acres
Maximum Depth:	12.00 feet
Public Access:	Yes
Supported Uses:	Fishing, Canoeing / Kayaking

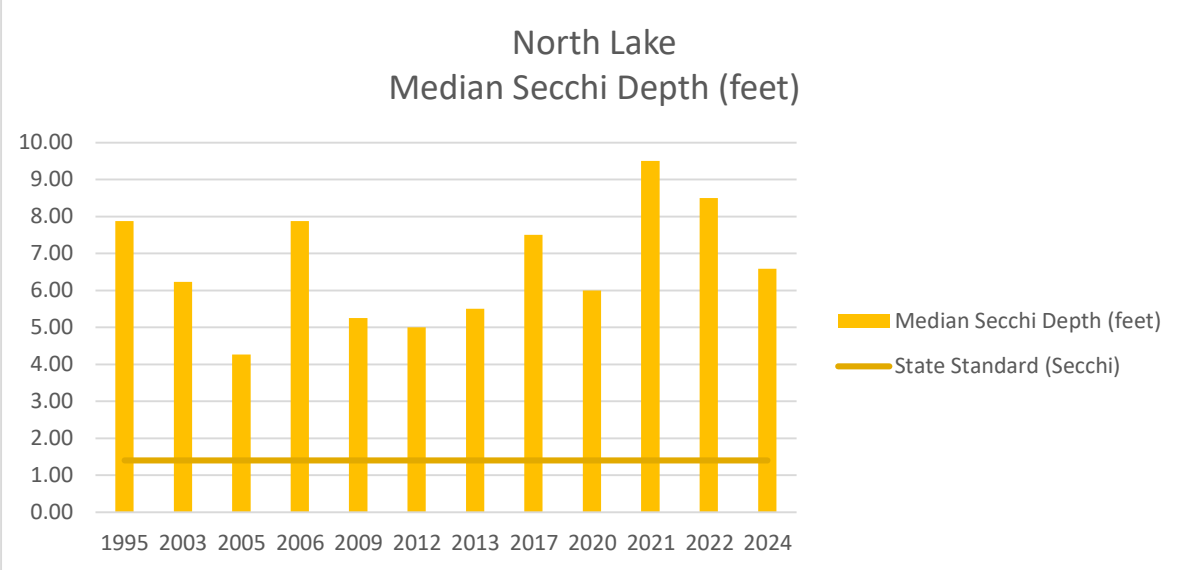


WATER QUALITY IMPROVEMENTS [2020–PRESENT]

2020 — Alum application to reduce in-lake nutrient load


North Lake
Median Total P (ug/L)
70
60
50
40
30
20
10
0
1995
2003
2005
2006
2009
2012
2013
2017
2020
2021
2022
2024
Median Total P (ug/L)
State Standard (Total P)


North Lake
Median Chlorophyll-a (ug/L)
40
35
30
25
20
15
10
5
0
1995
2003
2005
2006
2009
2012
2013
2017
2020
2021
2022
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


North Lake
Median Secchi Depth (feet)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1995
2003
2005
2006
2009
2012
2013
2017
2020
2021
2022
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Impairment Summary

North Lake

Year Listed:	2008
Impairment:	Mercury in Fish Tissue
TMDL Approved:	Yes; Southwest Region Mercury TMDL
Impaired Use(s):	Aquatic Consumption

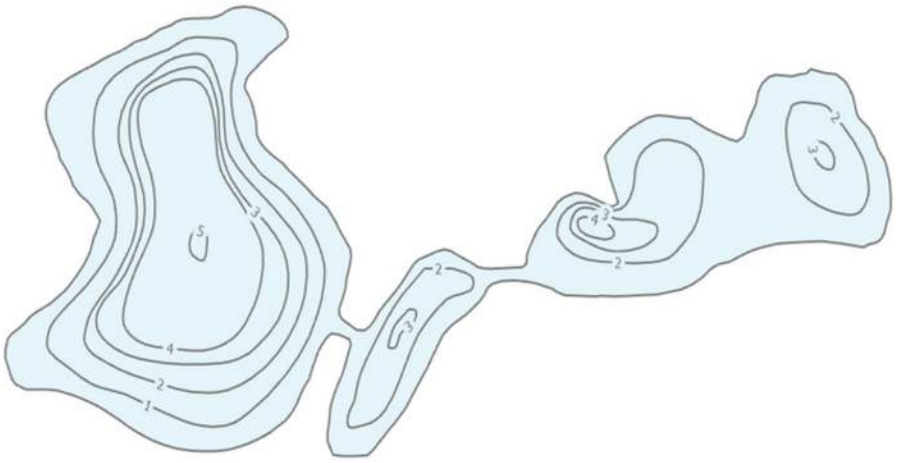
A waterbody is listed as impaired for mercury when more than 10% of a fish species fillets have a mercury concentration of at least 0.20 parts per million (ppm). Mercury accumulates in fish tissue, specifically as 'methylmercury,' which is the most hazardous form of mercury for humans. Once a waterbody is contaminated with mercury, it is very difficult to remove it.

Mercury is a naturally occurring element that is highly toxic to both humans and animals. While most people associate mercury with the liquid, silvery substance from old thermometers, it can also evaporate and become airborne - and in this form can come from a variety of sources.

In Eagan's case, the primary source is atmospheric deposition from coal-fired power plants in North Dakota. Because the source of these contaminants is not local, the state of Minnesota oversees a statewide 'total maximum daily load' or TMDL to manage the sources of mercury accumulating in our surface waters.

O'Leary Lake

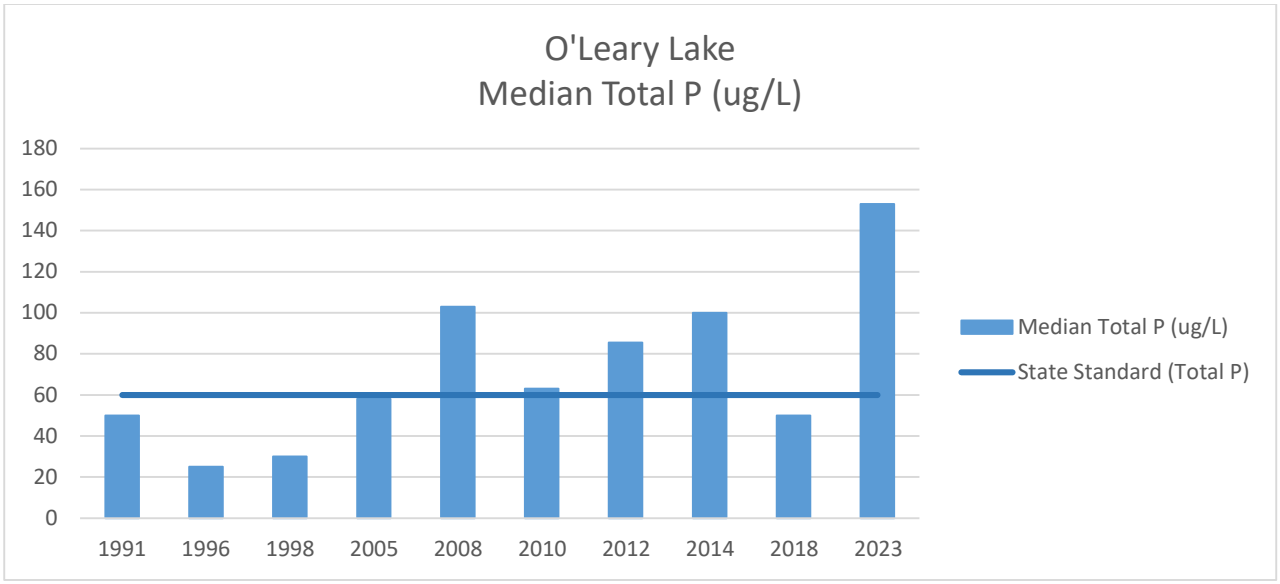
City ID:	DP-7
Waterbody Type:	Shallow Lake
Surface Area:	15.97 acres
Maximum Depth:	4.00 feet
Public Access:	Yes
Supported Uses:	Habitat, Education, Aesthetics

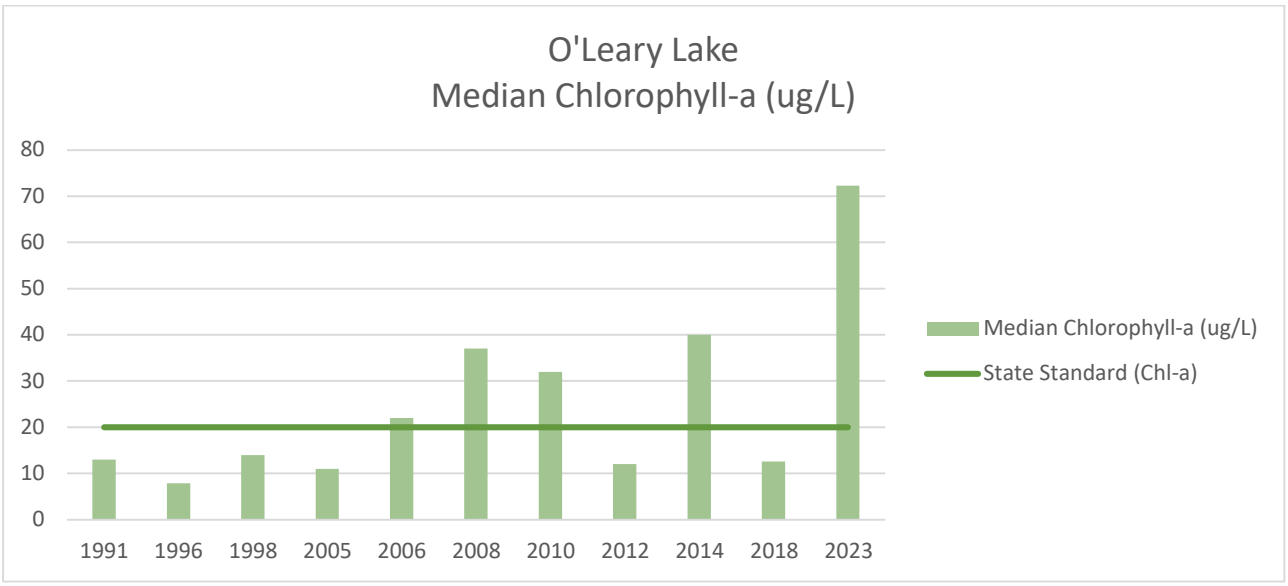


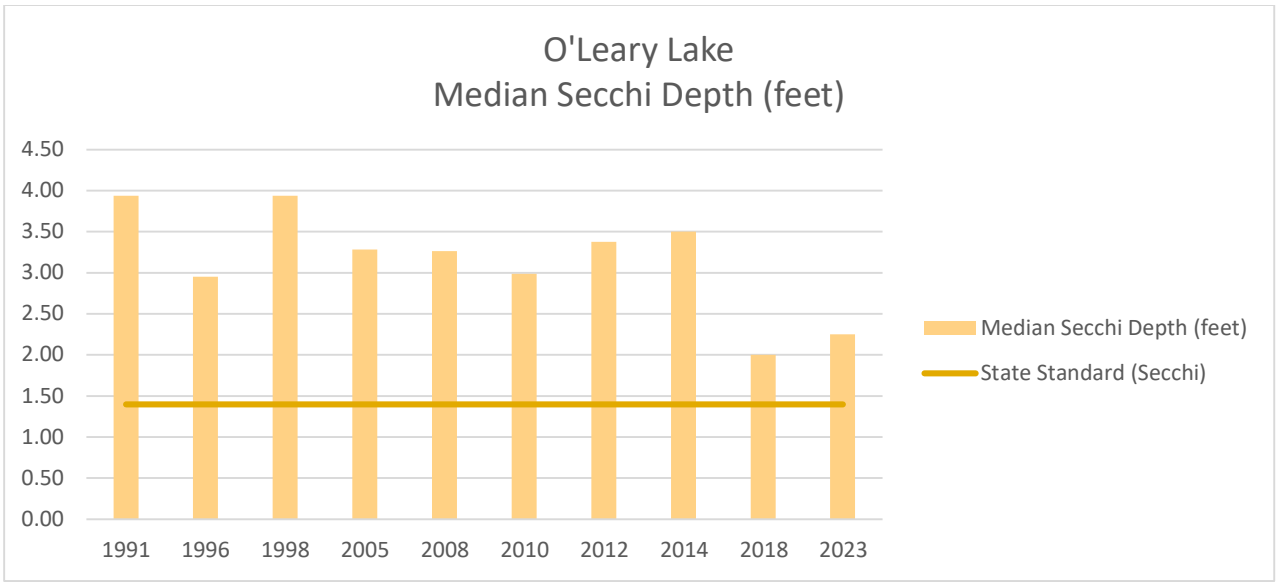
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

Known to support small minnow species, frogs, insects, and native aquatic plants. The surrounding area is accessible for birdwatching and trail walking,

Not currently maintained for recreational fishing.

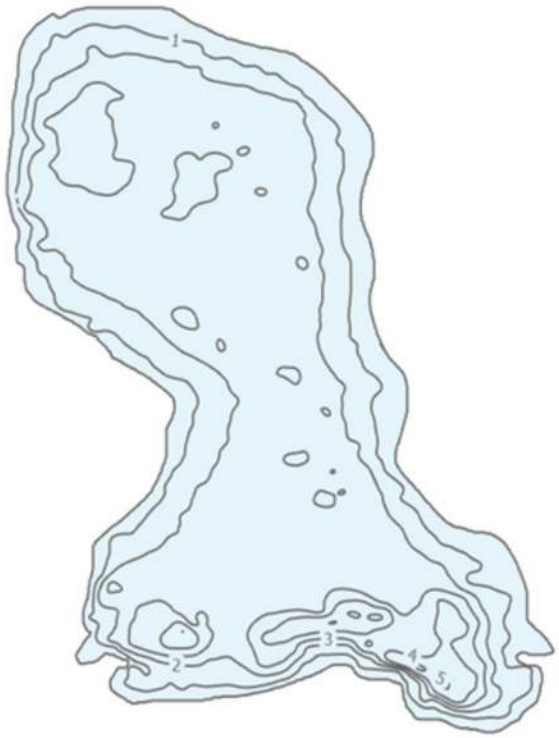

O'Leary Lake
Median Total P (ug/L)
180
160
140
120
100
80
60
40
20
0
1991
1996
1998
2005
2008
2010
2012
2014
2018
2023
Median Total P (ug/L)
State Standard (Total P)


O'Leary Lake
Median Chlorophyll-a (ug/L)
80
70
60
50
40
30
20
10
0
1991
1996
1998
2005
2006
2008
2010
2012
2014
2018
2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


O'Leary Lake
Median Secchi Depth (feet)
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1991
1996
1998
2005
2008
2010
2012
2014
2018
2023
Median Secchi Depth (feet)
State Standard (Secchi)

Quigley Lake

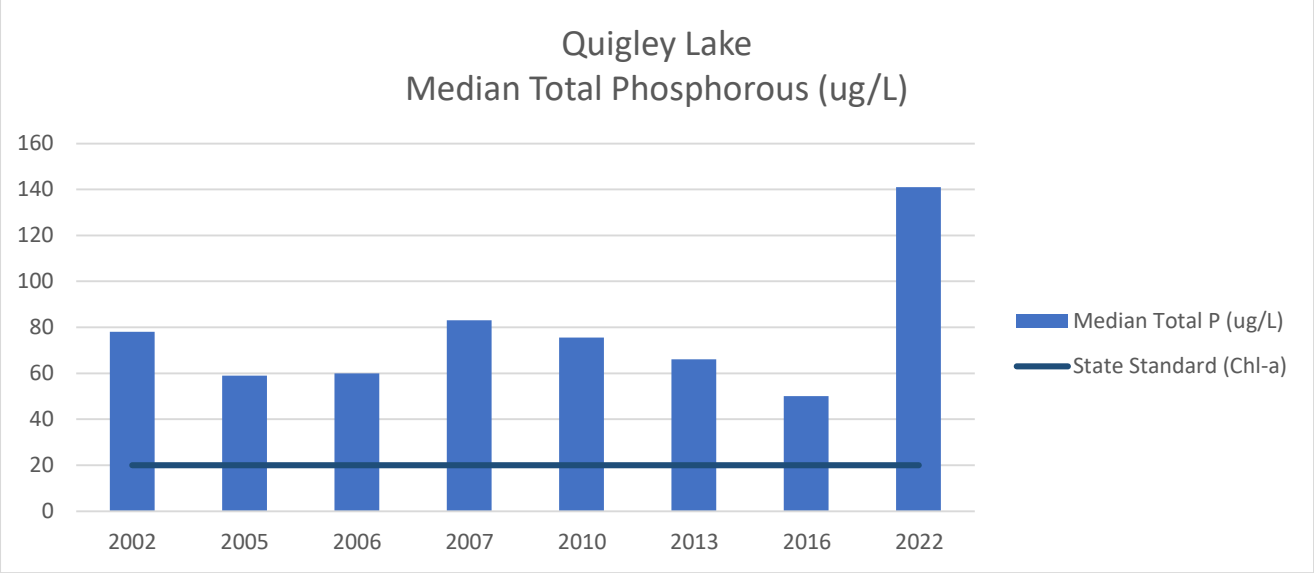
City ID:	LP-43
Waterbody Type:	Wetland
Surface Area:	17.60 acres
Average Depth:	2.00 feet
Maximum Depth:	5.90 feet
Public Access:	Yes
Supported Uses:	Habitat, Education, Aesthetics

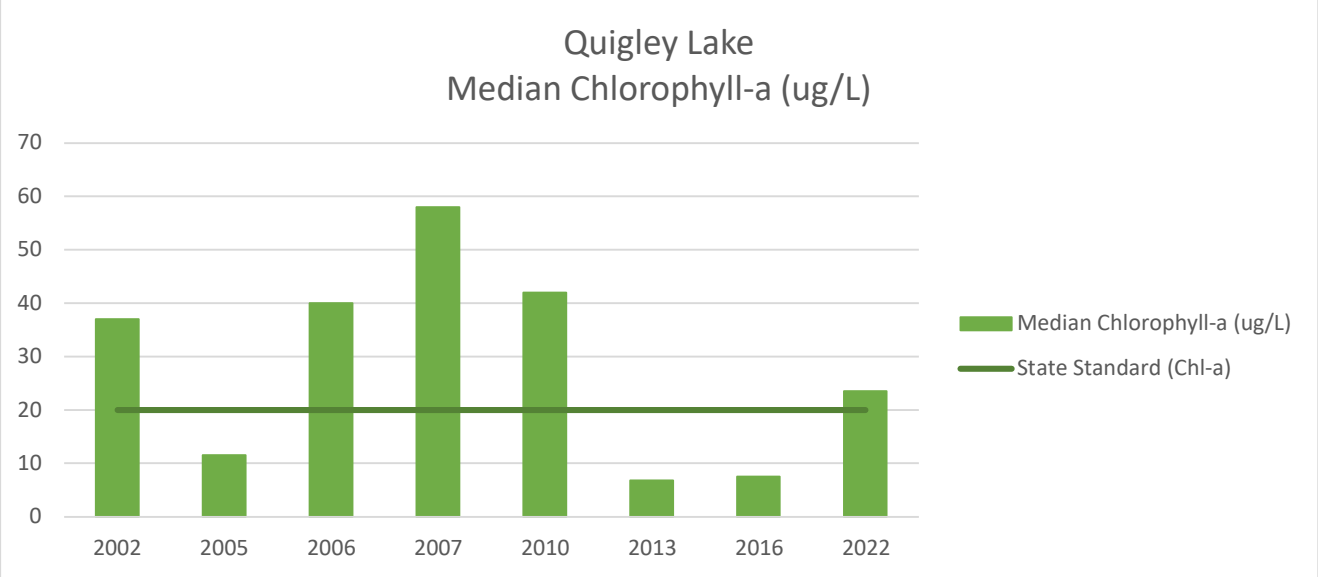


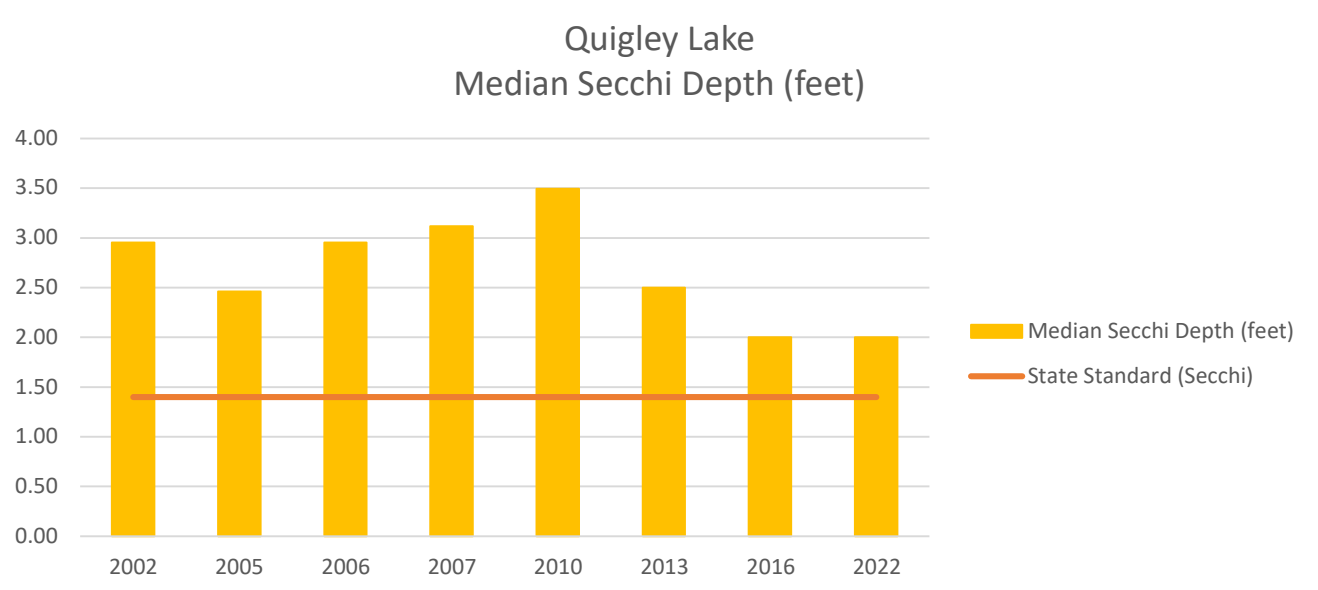
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

Known to support small minnow species, frogs, insects, and native aquatic plants. The surrounding area is accessible for birdwatching and trail walking,

Not currently maintained for recreational fishing.

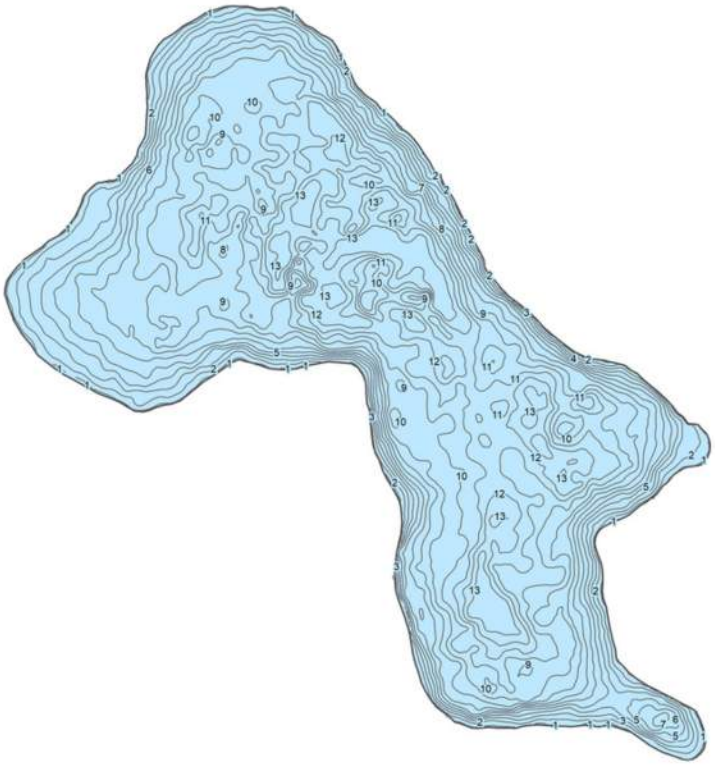

Quigley Lake
Median Total Phosphorous (ug/L)
160
140
120
100
80
60
40
20
0
2002
2005
2006
2007
2010
2013
2016
2022
Median Total P (ug/L)
State Standard (Chl-a)


Quigley Lake
Median Chlorophyll-a (ug/L)
70
60
50
40
30
20
10
0
2002
2005
2006
2007
2010
2013
2016
2022
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Quigley Lake
Median Secchi Depth (feet)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2002
2005
2006
2007
2010
2013
2016
2022
Median Secchi Depth (feet)
State Standard (Secchi)

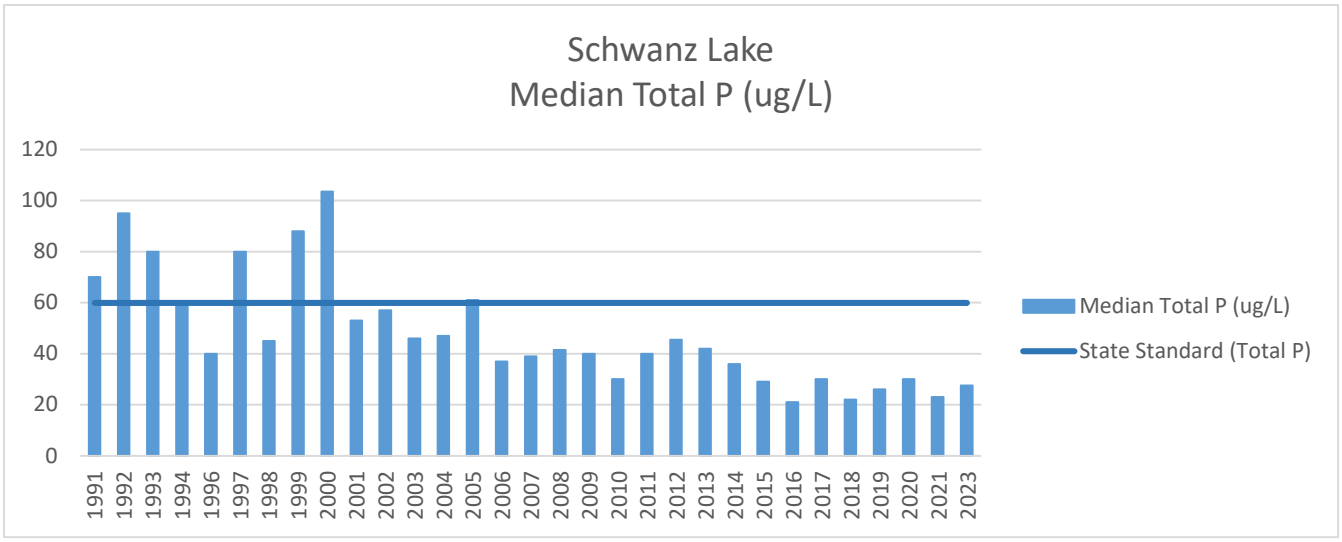
Schwanz Lake

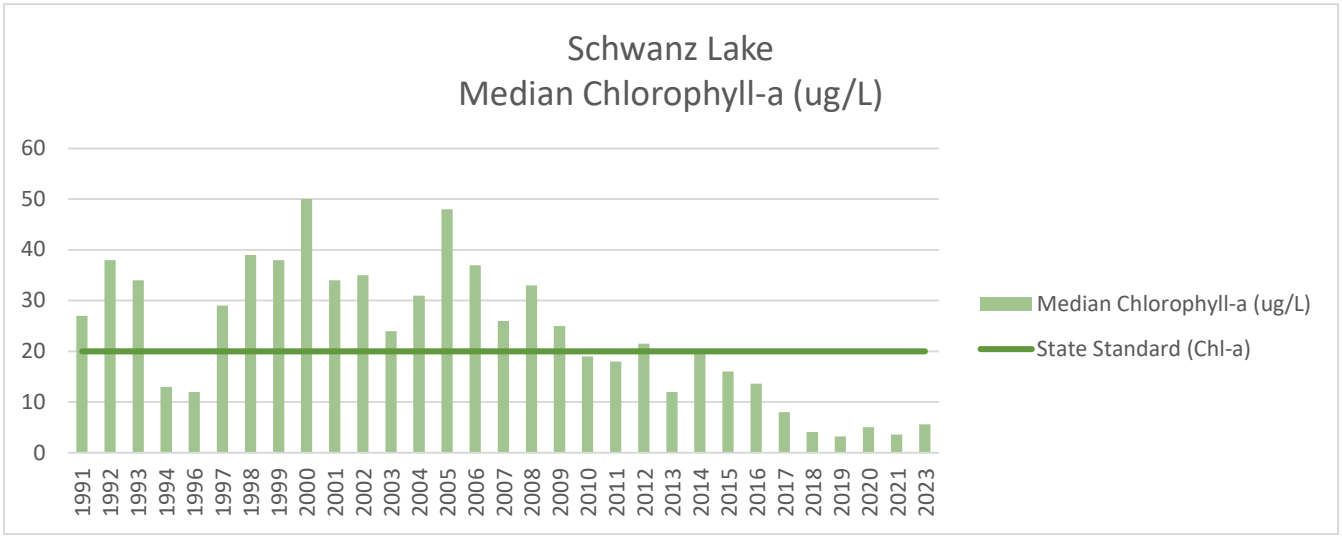
City ID:	LP-32
Waterbody Type:	Shallow Lake
Surface Area:	12.70 acres
Average Depth:	8.20 feet
Maximum Depth:	14.50 feet
Public Access:	Yes
Supported Uses:	Fishing, Canoeing / Kayaking

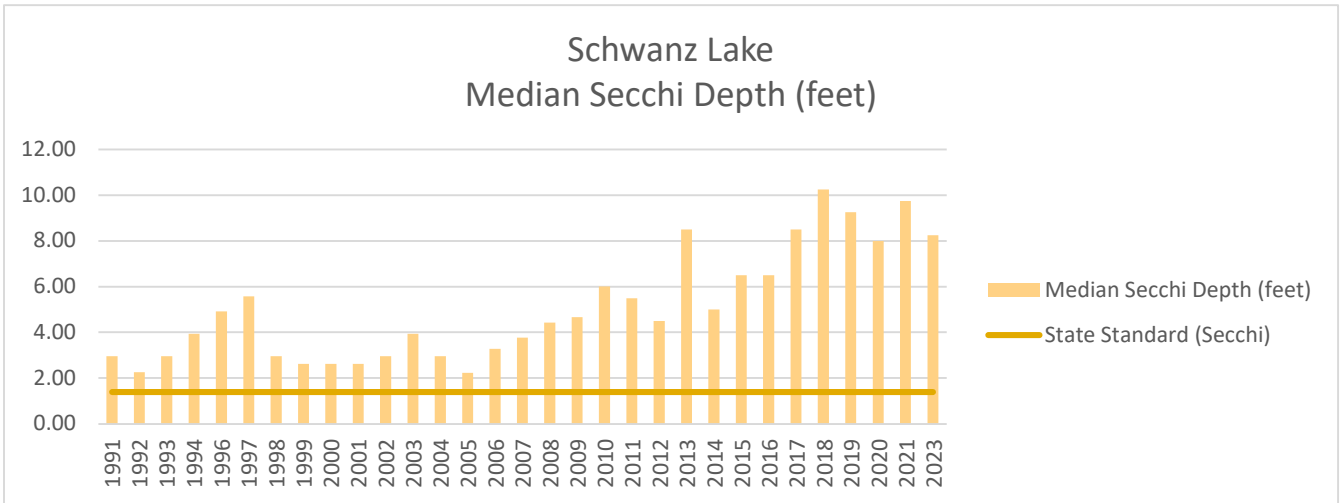


WATER QUALITY IMPROVEMENTS [2020–PRESENT]

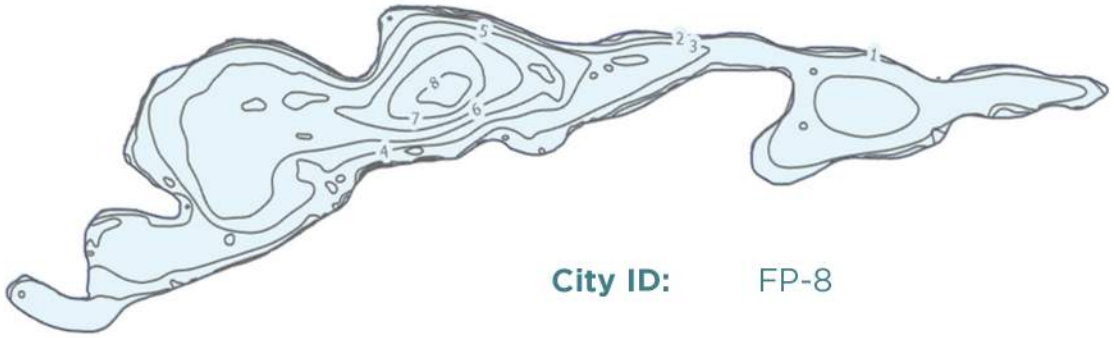
As Needed	Aerated in winter as needed to prevent fish kills
2022	Stocked - 425 Walleye (6-8")
2023	Fish population survey completed to assess overall health of the lake's fishery


Schwanz Lake
Median Total P (ug/L)
120
100
80
60
40
20
0
1991 1992 1993 1994 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2023
Median Total P (ug/L)
State Standard (Total P)


Schwanz Lake
Median Chlorophyll-a (ug/L)
60
50
40
30
20
10
0
1991 1992 1993 1994 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2023
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Schwanz Lake
Median Secchi Depth (feet)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1991 1992 1993 1994 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2023
Median Secchi Depth (feet)
State Standard (Secchi)

Shanahan Lake

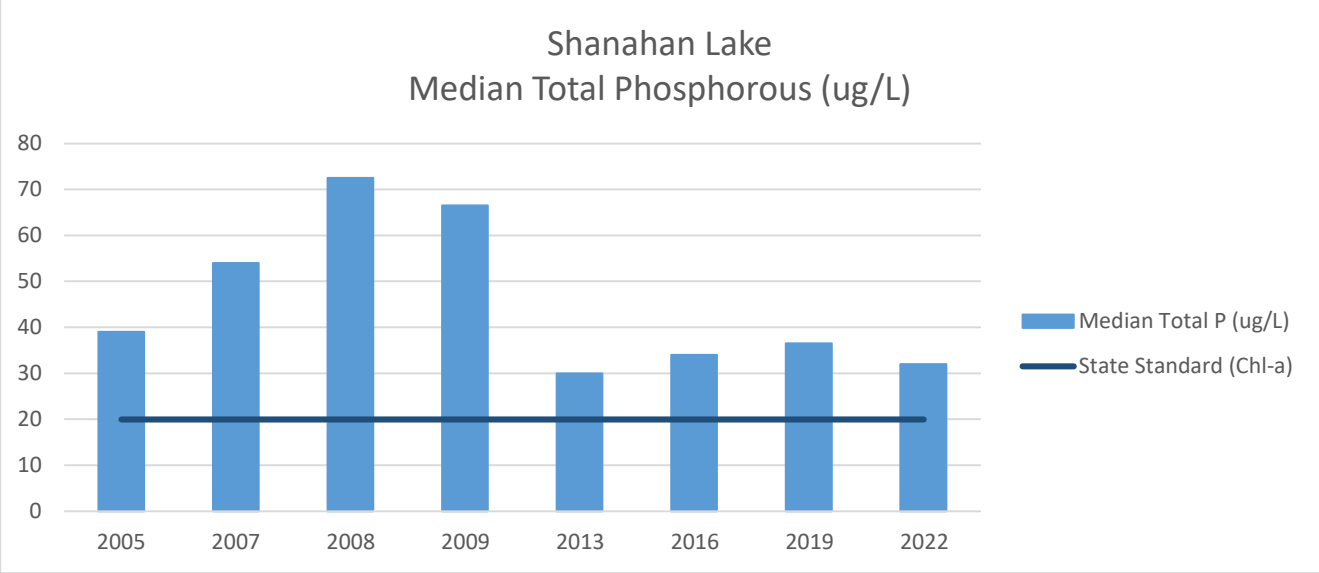


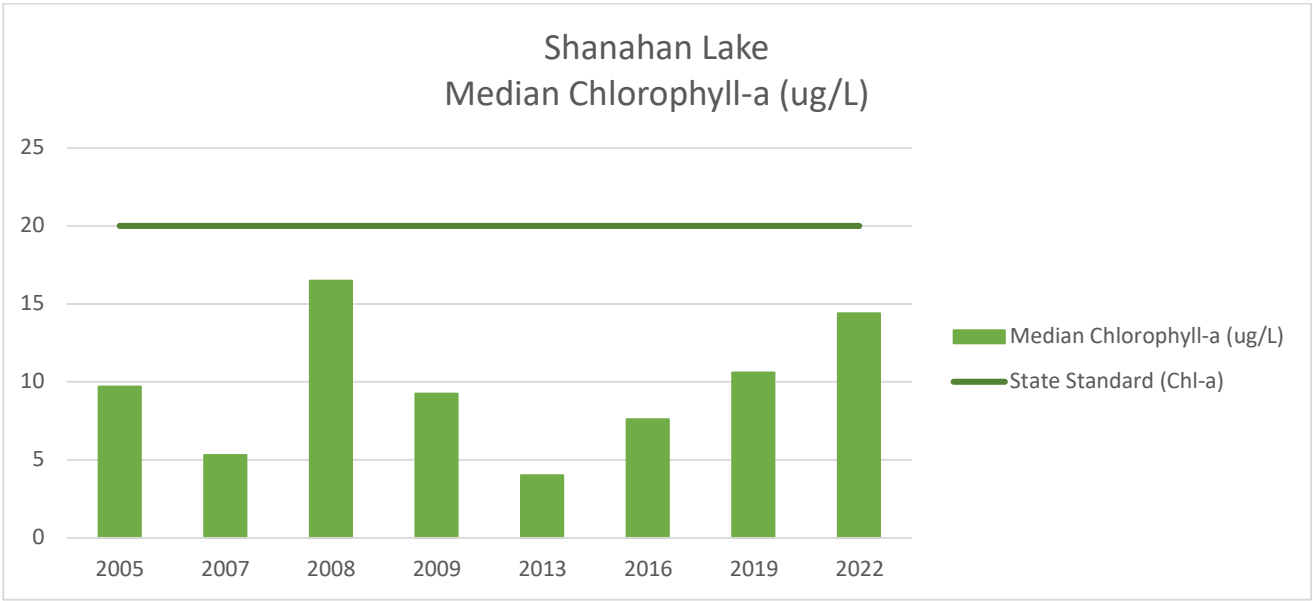
City ID:	FP-8
Waterbody Type:	Shallow Lake
Surface Area:	13.08 acres
Maximum Depth:	9.00 feet
Public Access:	Yes
Supported Uses:	Habitat, Education, Aesthetics

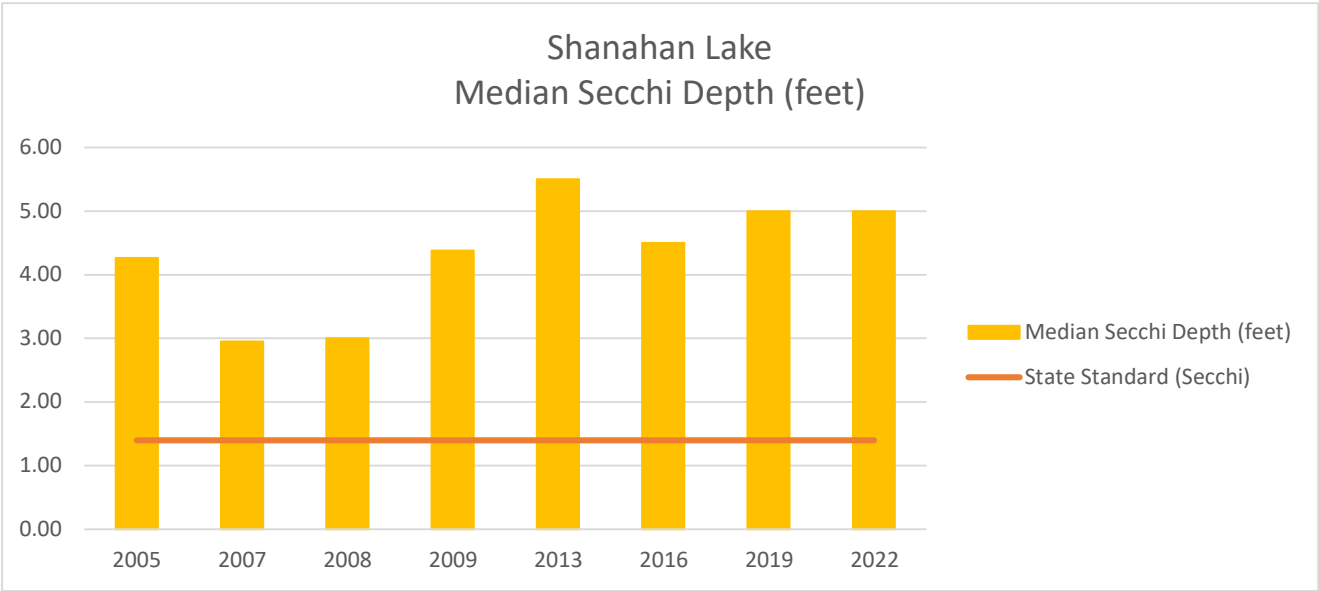
WATER QUALITY IMPROVEMENTS [2020–PRESENT]

Known to support small minnow species, frogs, insects, and native aquatic plants. The surrounding area is accessible for birdwatching and trail walking,

Not currently maintained for recreational fishing.

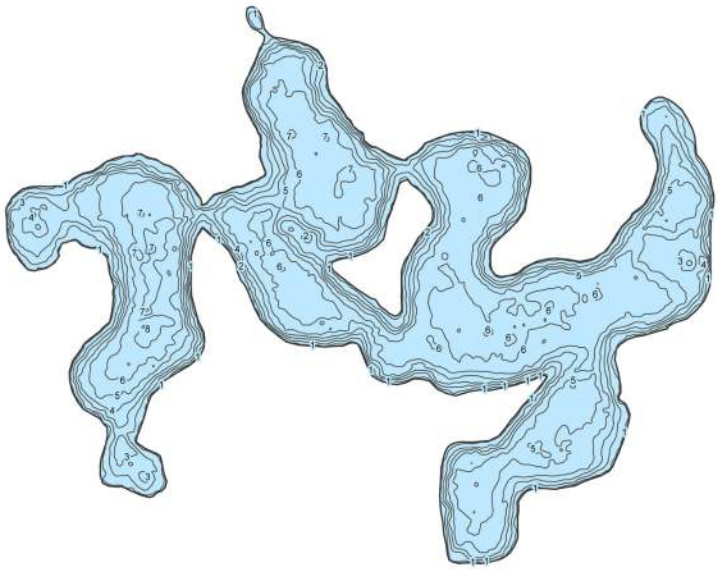

Shanahan Lake
Median Total Phosphorous (ug/L)
80
70
60
50
40
30
20
10
0
2005
2007
2008
2009
2013
2016
2019
2022
Median Total P (ug/L)
State Standard (Chl-a)


Shanahan Lake
Median Chlorophyll-a (ug/L)
25
20
15
10
5
0
2005
2007
2008
2009
2013
2016
2019
2022
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Shanahan Lake
Median Secchi Depth (feet)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
2005
2007
2008
2009
2013
2016
2019
2022
Median Secchi Depth (feet)
State Standard (Secchi)

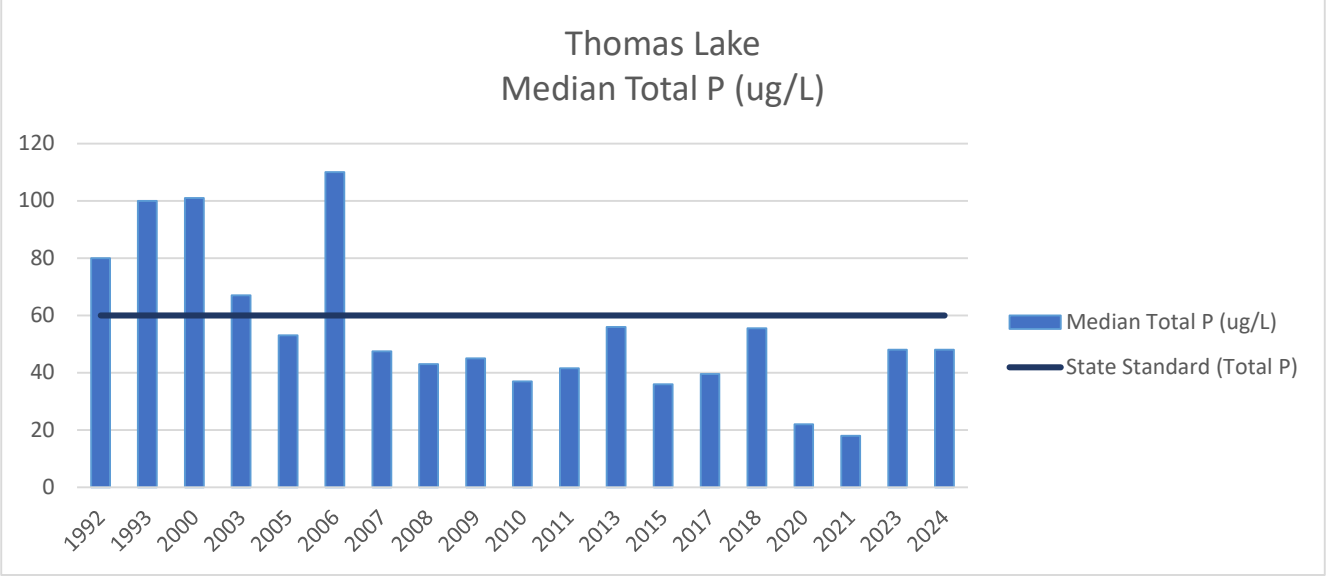
Thomas Lake

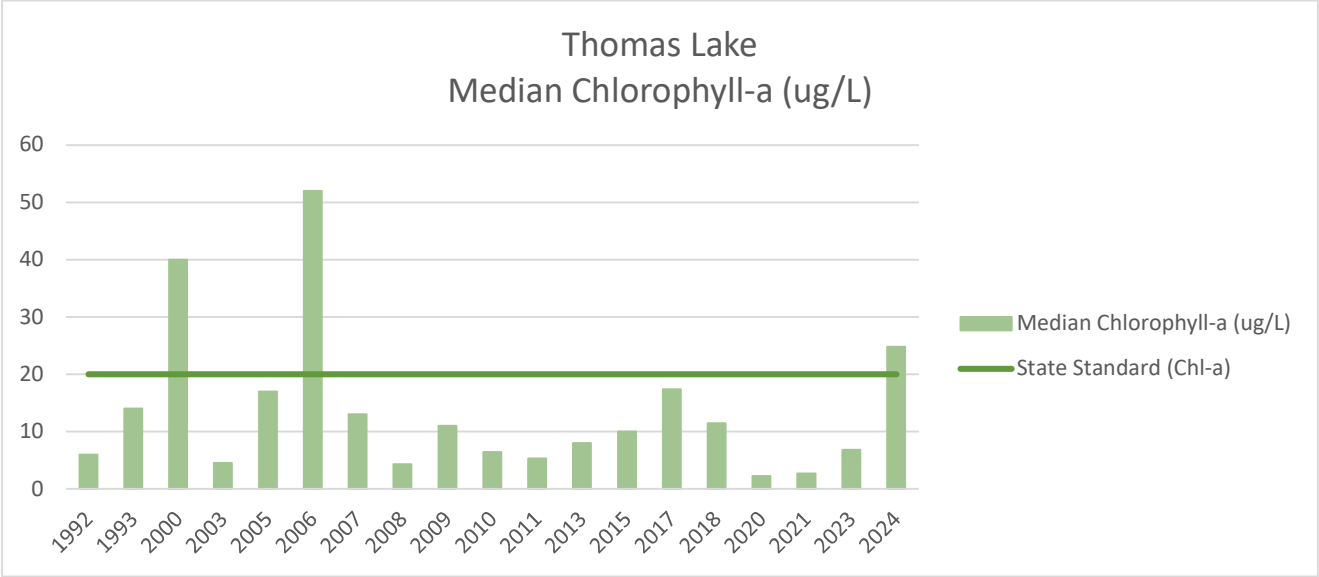
City ID:	BP-7
Waterbody Type:	Shallow Lake
Surface Area:	43.80 acres
Average Depth:	4.20 feet
Maximum Depth:	10.80 feet
Public Access:	Yes
Supported Uses:	Fishing, Canoeing / Kayaking

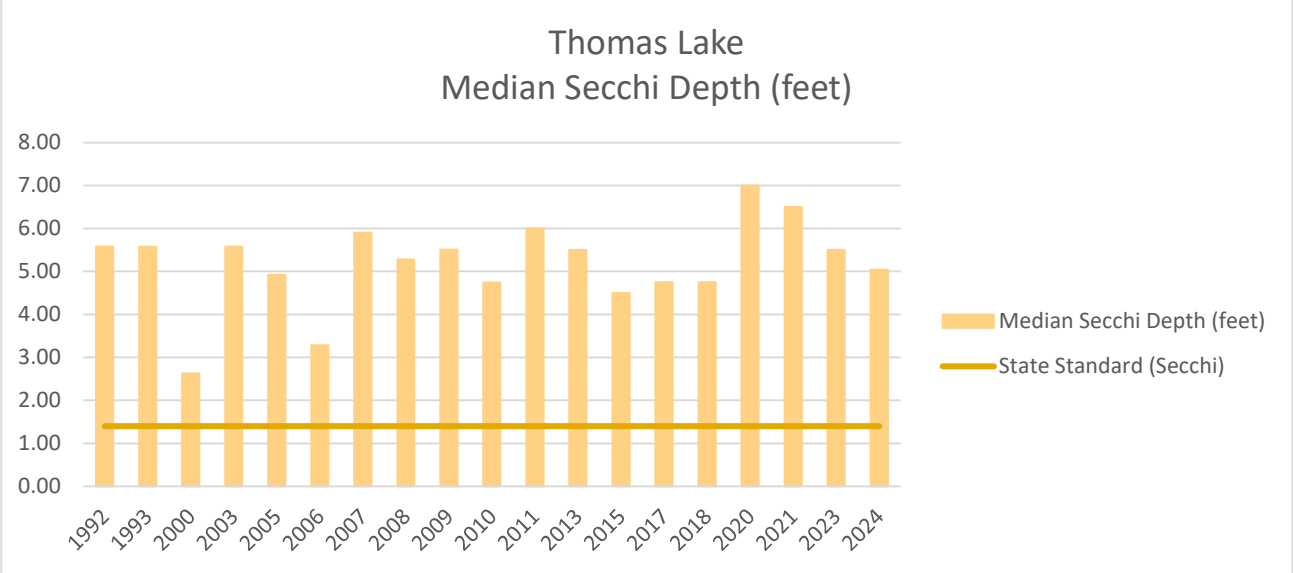


WATER QUALITY IMPROVEMENTS [2019–PRESENT]

As Needed	Aerated in winter as needed to prevent fish kills Lake plants harvested in summer months to reduce biomass
2019	Alum application to reduce in-lake nutrient load
2022	Fish population survey completed to assess overall health of the lake's fishery
2023	Stocked - 1,300 Green Sunfish (yearlings)
2024	Stocked - 465 Bluegill Sunfish (4-6")


Thomas Lake
Median Total P (ug/L)
120
100
80
60
40
20
0
1992
1993
2000
2003
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2018
2020
2021
2023
2024
Median Total P (ug/L)
State Standard (Total P)


Thomas Lake
Median Chlorophyll-a (ug/L)
60
50
40
30
20
10
0
1992
1993
2000
2003
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2018
2020
2021
2023
2024
Median Chlorophyll-a (ug/L)
State Standard (Chl-a)


Thomas Lake
Median Secchi Depth (feet)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1992
1993
2000
2003
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2018
2020
2021
2023
2024
Median Secchi Depth (feet)
State Standard (Secchi)

Climb Theatre, Inc.
6415 Carmen Ave E
Inver Grove Heights, MN
55076-4428
6514539275
afton@climb.org
www.climb.org

Invoice

BILL TO
Eagan-Inver Grove Heights
Watershed Management Organization

INVOICE #	DATE	TOTAL DUE	DUE DATE	TERMS	ENCLOSED
023067	06/04/2025	$1,000.00	06/13/2025	Due on receipt	

PERFORMANCE DATE
5/15/25

SALES REP
SC

DATE	ACTIVITY	QTY	RATE	AMOUNT
	Climb Programming Thomas Lake Elementary	1	1,000.00	1,000.00

BALANCE DUE **$1,000.00**