

2026

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- <i>a</i>	Chlorophyll- <i>a</i>
Board	E-IGHWMO 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 E-IGHWMO will manage activities in the watershed in the ten-year period 2026-2035.

The E-IGHWMO 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 WMO. 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 WMO's purpose is set forth in Minnesota Statutes 103B.201, 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 WMO:

- 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.

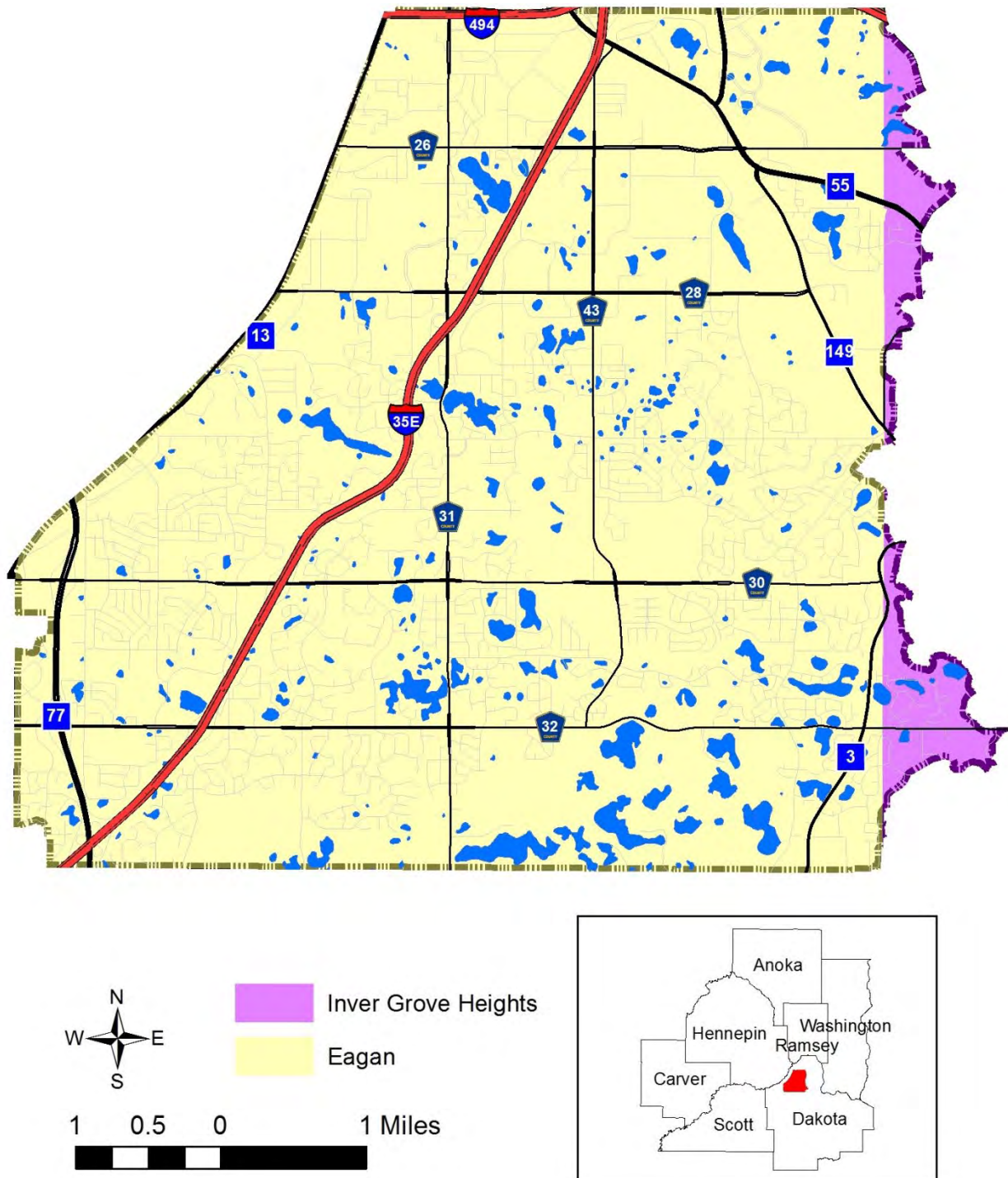


Figure ES.1: Cities in the Eagan-Inver Grove Heights watershed.

Executive Summary (cont.)

Second-Generation Watershed Management Plan

The E-IGHWMO initiated work on the Second-Generation Plan on June 18, 2024. 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 the WMO 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. E-IGHWMO is the successor to the former Gun Club Lake WMO that disbanded in 2014 when one member city withdrew. 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 to reduce redundancy. In addition, because both the Cities of Eagan and Inver Grove Heights already operate comprehensive stormwater and water-quality programs, the E-IGHWMO will focus its direct efforts on the below areas of focus:

WATERSHED MANAGEMENT PLAN AREAS OF FOCUS

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

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

Executive Summary (cont.)

state's administrative agency for WMOs; 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, Met Council, and MPCA), local Soil and Water Conservation District (SWCD), 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.

Board-Identified Priority Issues

Through this process the Board identified three priority issues that will guide actions in 2026 - 2035:

1. **Nutrient Pollution:**
Excess nutrients—primarily phosphorus—remain a persistent water quality threat in the watershed.
2. **Chloride Contamination:**
Rising chloride levels from cumulative winter de-icing and water softener practices pose a growing risk to aquatic life and water quality.
3. **Groundwater Use and Sustainability:**
High summer irrigation demand places stress on local aquifers and groundwater.

Management Plan Priorities

Through the identification of issues in the watershed, the E-IGHWMO developed priorities 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.

Executive Summary (cont.)

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 efforts for healthy shoreline initiatives, aquatic vegetation surveys, or aquatic invasive species & aquatic macrophyte monitoring.

Implementation Plan Highlights

Implementation of the Second-Generation Plan will consist primarily of an education and outreach program. The E-IGHWMO 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 E-IGHWMO's activities throughout 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.

Looking Ahead

From 2026 to 2035, the WMO will continue to support its member cities in implementing best management practices that protect local lakes, wetlands, and groundwater. The Plan emphasizes

Executive Summary (cont.)

measurable, achievable goals and coordination among local and state partners. Progress will be reviewed annually through reporting to the Board of Water and Soil Resources.

1.1 WATERSHED OVERVIEW

The E-IGHWMO is a joint powers organization established in 2014. The watershed covers approximately 30 square miles in northwest Dakota County and drains toward the Minnesota River. About 96 percent of the watershed lies within Eagan, with the remaining portion in Inver Grove Heights. The landscape is characterized by numerous glacially formed lakes, wetlands, and rolling topography that influence local drainage patterns. Major lakes include Fish Lake, Baldwin Lake, and Thomas Lake.

The area's soils and landform patterns produce a mix of surface-water and groundwater interactions. Many wetlands and lakes have outlets connected to stormwater conveyance systems, while others remain landlocked. The watershed's position near the Mississippi and Minnesota Rivers makes it an important contributor to downstream water quality.

Most of the watershed was surveyed as part of the Public Land Survey of 1856, and settlement and land-use conversion followed soon after. Urban development expanded rapidly from the 1960s through the early 2000s. Today, the watershed is largely built out, with limited remaining undeveloped land.

Eagan and Inver Grove Heights 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. 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 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.

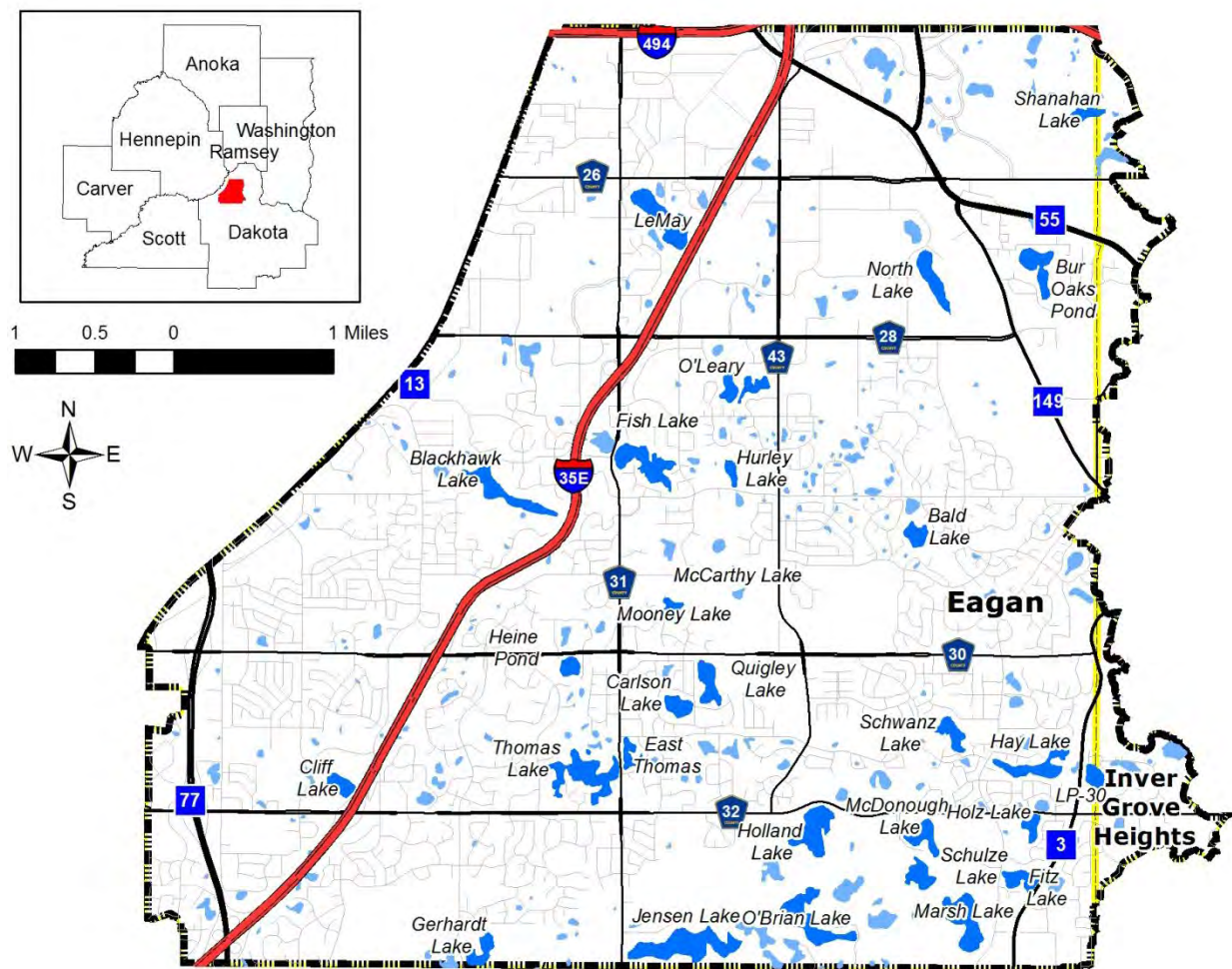


Figure 1-a. The Eagan-Inver Grove Heights watershed in Dakota County, Minnesota.

1.2 PURPOSE AND LEGAL FRAMEWORK

The E-IGHWMO prepares this Second-Generation Watershed Management Plan to meet the requirements of Minnesota Statutes §103B.231 and Minnesota Rules Chapter 8410. These laws require each metropolitan watershed organization to prepare and implement a plan that protects, preserves, and uses natural surface and groundwater systems to best serve the public’s health and welfare.

This Plan serves as the guiding document for the WMO’s programs and priorities from 2026 through 2035. It establishes measurable goals, policies, and implementation strategies designed to maintain or improve water quality, reduce flooding risk, promote groundwater sustainability, and protect wetlands. The Plan also provides a framework for coordinated action with the Cities of Eagan and Inver Grove Heights, Dakota County, the Dakota Soil and Water Conservation District (SWCD), and state and regional agencies.

1.3 RELATIONSHIP TO LOCAL AND REGIONAL PLANNING

The E-IGHWMO is a partner to, not a substitute for, local water management. Both member cities operate stormwater utilities, hold MS4 permits from the Minnesota Pollution Control Agency (MPCA), and have their own approved local water management plans. The WMO provides coordination, technical review, and education to ensure those local plans and activities align with shared watershed goals.

This Watershed Plan also supports and complements regional efforts by the Metropolitan Council, Dakota County, and the Board of Water and Soil Resources (BWSR), as well as state programs related to chloride reduction, groundwater sustainability, and wetland protection.

Examples of related plans and how they inform this document include:

- City of Eagan Water Quality and Wetland Management Plan (2018): Reports improving lake and wetland conditions due to long-term stormwater retrofits and wetland protection, but continuing nutrient and chloride challenges.
- City of Inver Grove Heights Fourth-Generation Water Resources Management Plan (2018): Focuses on runoff volume control, retrofitting older developments, and enhancing coordination with regional partners.
- Dakota County Groundwater Plan (2021): Identifies high municipal pumping-to-recharge ratios in some areas and promotes conservation through smart irrigation and land-use planning.

- Metropolitan Council Water Supply Planning Atlas (2025): Provides subregional data confirming that this area relies entirely on groundwater and that demand rises sharply in summer months.

Together, these plans establish a strong foundation for continued collaboration. The E-IGHWMO will use this Plan to focus on actions that add value through education, partnership, and targeted investment, rather than duplicating city or county efforts.

1.4 PLANNING PROCESS AND PUBLIC INVOLVEMENT

This Plan was developed through a Board-led process during 2025. The WMO prioritized a clear, concise Plan that highlights achievable goals and measurable outcomes. The process included:

- Soliciting input from technical partners (Dakota County, SWCD, BWSR, MPCA, MDH, MDNR, MnDOT, and others);
- Engaging advisory commissions and residents through the Cities of Eagan and Inver Grove Heights; and
- Reviewing the previous Plan and identifying which sections no longer served practical or regulatory purposes.

The Board emphasized simplifying the Plan to improve its usability for decision-making and public understanding. Redundant sections and technical appendices from the prior Plan were condensed or removed, while maps and figures were retained as visual aids.

1.5 WMO STRUCTURE AND ROLE

The E-IGHWMO operates under a Joint Powers Agreement (JPA) between the Cities of Eagan and Inver Grove Heights. The Board of Managers, composed of appointed representatives from each city, governs the WMO. The Board is supported by city staff, contracted technical consultants, and the Dakota SWCD as needed.

The WMO's primary role is to:

- Provide education and outreach on watershed and groundwater issues;
- Support member cities through cost-share and partnership programs;
- Participate in coordination among local, county, and state partners when requested by member cities; and
- Report annually on progress to BWSR and the member cities.

1.6 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 WMO's 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, its responsibilities, and discusses ongoing operations.

4 – Issues and Goals:

This section presents the WMO 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. Stormwater 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 towards 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 landlocked. Many of these outlets are connected through the storm sewer system. The cities maintain a storm sewer map that is maintained in their local watershed map. There are no perennial streams within the watershed.

Geology and Geomorphology

The C-57 Geologic Atlas of Dakota County provides an overview 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 of the seven county Twin Cities Metropolitan Area is a humid continental climate, characterized by moderate precipitation, wide daily temperature variations, large seasonal variations in temperature, warm humid summers, and cold winters with moderate snowfall. Climate data is often presented according to 30-year “climate normal” periods, the most recent spanning the period from 1991-2020. Several of the wettest years on record have been observed during the most recent climate normal period, including several wet years since 2010.

Table 2-b. Average temperatures 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.

The annual mean over the last 30 years is 31 inches of precipitation in 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. 30-year precipitation mean in inches for the Eagan-Inver Grove Heights watershed.

Minneapolis-St. Paul International Airport (1995-2025)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation	0.87	0.90	1.90	2.93	3.89	4.48	3.85	4.36	2.69	2.47	1.42	1.31	31.13
Snow	8.9	11.2	8.6	4.2	0	0	0	0	0	0.6	4.5	12.8	50.7

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

The University of Minnesota Climate Adaptation Partnership and State Climatology Office have calculated regionalized climate projections for Minnesota extending through mid-century (approximately 2050–2059) (University of Minnesota, 2024). These projections are based on long-term observed climate trends since 1895 and simulations using multiple models under a range of conditions. While these projections extend beyond the 2025–2035 Watershed Plan period, many of the changes are already being observed. For southeastern Minnesota, including Dakota County, projections include rising annual temperature and shifting precipitation:

- Winter: Shorter snowfall season
- Winter: Fewer Days below 32F
- Winter: Warmer wintertime lows
- Winter: Increased number of freeze / thaw cycles
- Spring: Wetter
- Summer: Drier, with longer dry spells without measurable rain
- Summer/Fall: More days above 90F

Soils

Most of the watershed’s upland area is composed of well-drained Kingsley sandy or Kingsley-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).

Hydrologic Soil Group

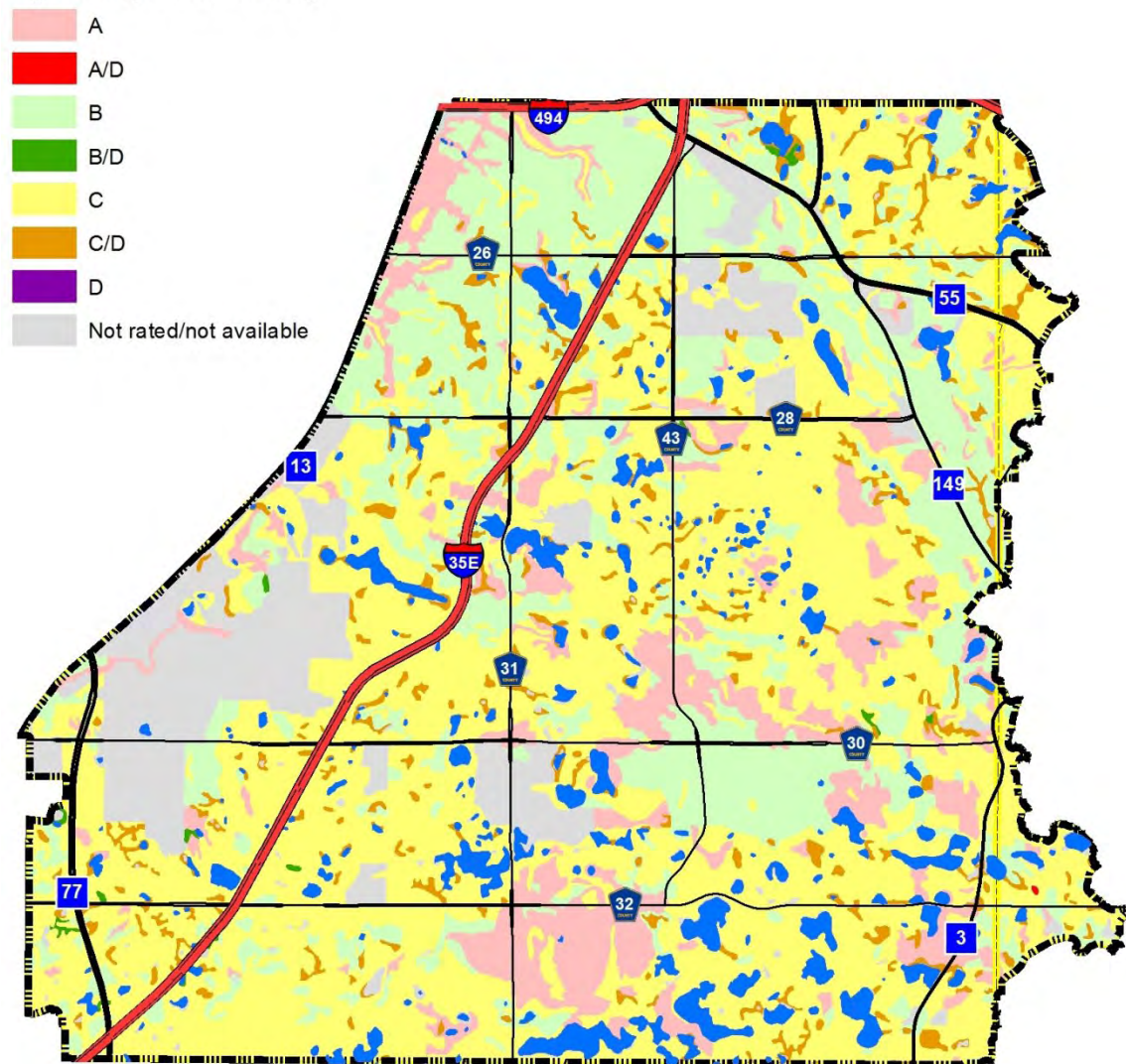


Figure 2-a. Soils by Hydrologic Soil Group classification.

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

2.2 WATERSHED BIOLOGICAL ENVIRONMENT

Vegetation

At the time of the Public Land Survey conducted by the U.S. Surveyor General’s Office in 1854, after the signing of the 1851 Traverse de Sioux Treaty in Mendota at Pilot Knob between the Dakota and Americans, just over a mile from the present data boundary of the WMO, the watershed was dominated by the Big Woods of maple-basswood forest. Aspen-oak lands 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 these 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-Euro-American 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).

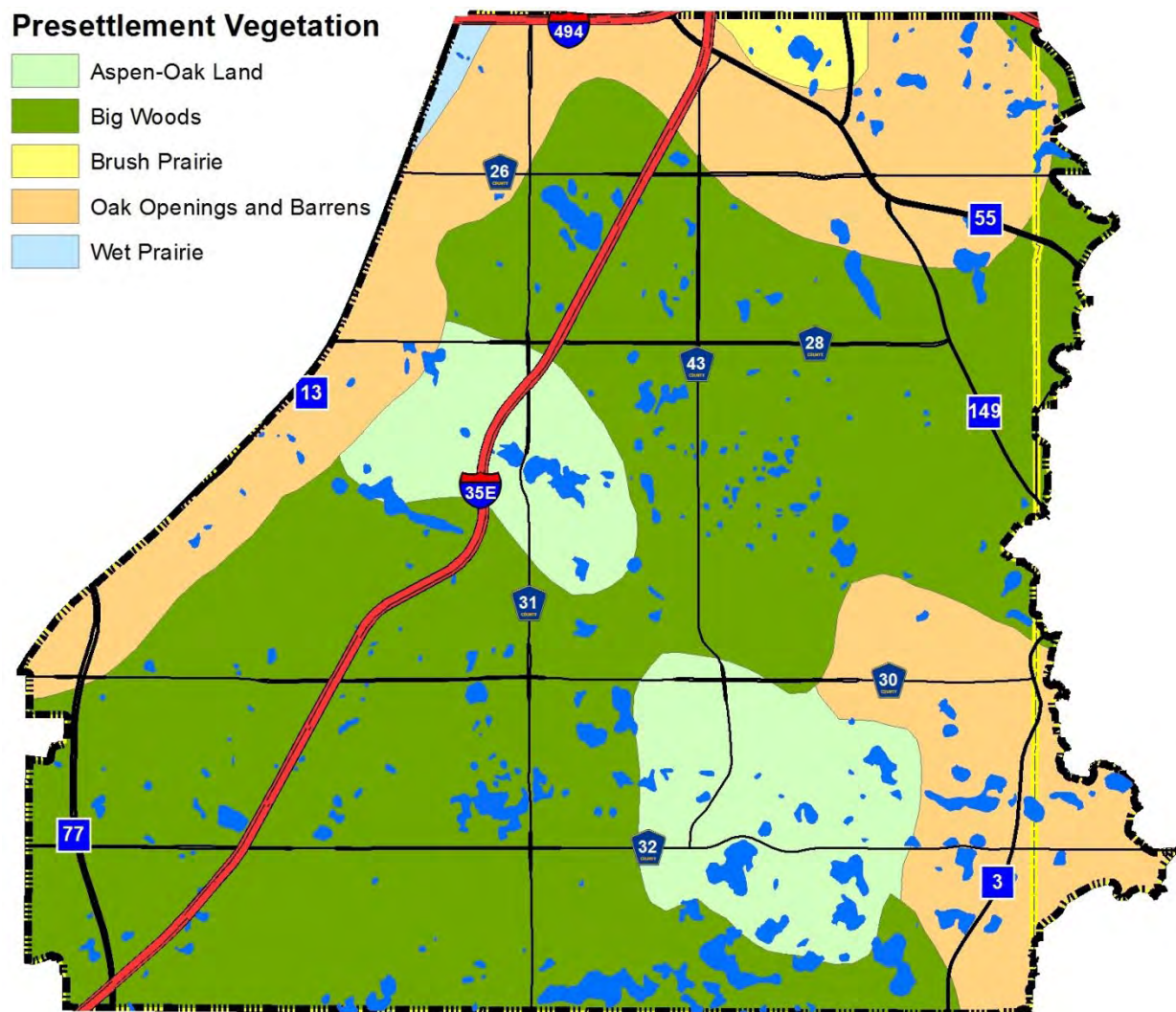


Figure 2-b. Pre-Euro-American settlement vegetation.

Source: Minnesota MDNR.

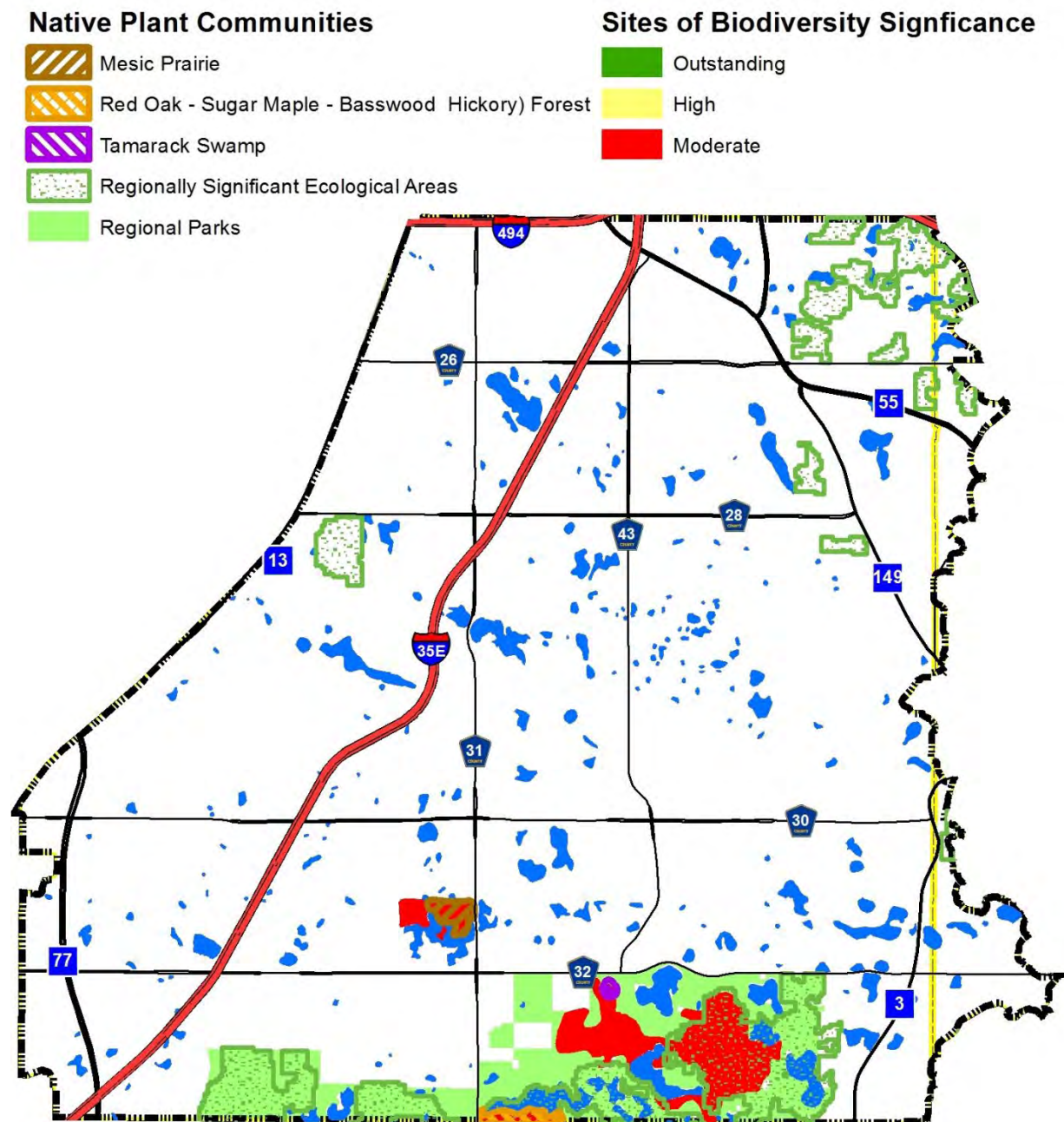


Figure 2-c. Sites of ecological diversity and significance.
Source: Minnesota County Biologic Survey (CBS), Minnesota MDNR.

Fish and Wildlife

Fish

Fish have been an important feature of human interaction with water resources for food in this area as long as there have been people. The first written account of this being from the people of Black Dog's Mdewakanton Dakota village trading fish at the newly formed Fort Snelling. The village, Ohanska, was less than a mile from Blackhawk Lake within the WMO boundary. Fishing is possible on many of the lakes in the Eagan-Inver Grove Heights watershed. 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](#) (MDNR 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
YFish	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 DNR, 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	Federal Status	State Status
<i>Buteo lineatus</i>	Red-shouldered Hawk	-	SPC
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Chondestes grammacus</i>	Lark sparrow	-	SPC
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Crotalaria sagittalis</i> var. <i>sagittalis</i>	Rattlebox	-	SPC
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Etheostoma microperca</i>	Least darter	-	SPC
<i>Notropis anogenus</i>	Pugnose shiner	-	THR
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Etheostoma microperca</i>	Least darter	-	SPC
<i>Notropis anogenus</i>	Pugnose shiner	-	THR
<i>Etheostoma microperca</i>	Least darter	-	SPC
<i>Notropis anogenus</i>	Pugnose shiner	-	THR
<i>Emydoidea blandingii</i>	Blanding's turtle	-	THR
<i>Cygnus buccinator</i>	Trumpeter Swan	-	SPC
<i>Etheostoma microperca</i>	Least darter	-	SPC
<i>Notropis anogenus</i>	Pugnose shiner	-	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 MDNR with 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 for 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.

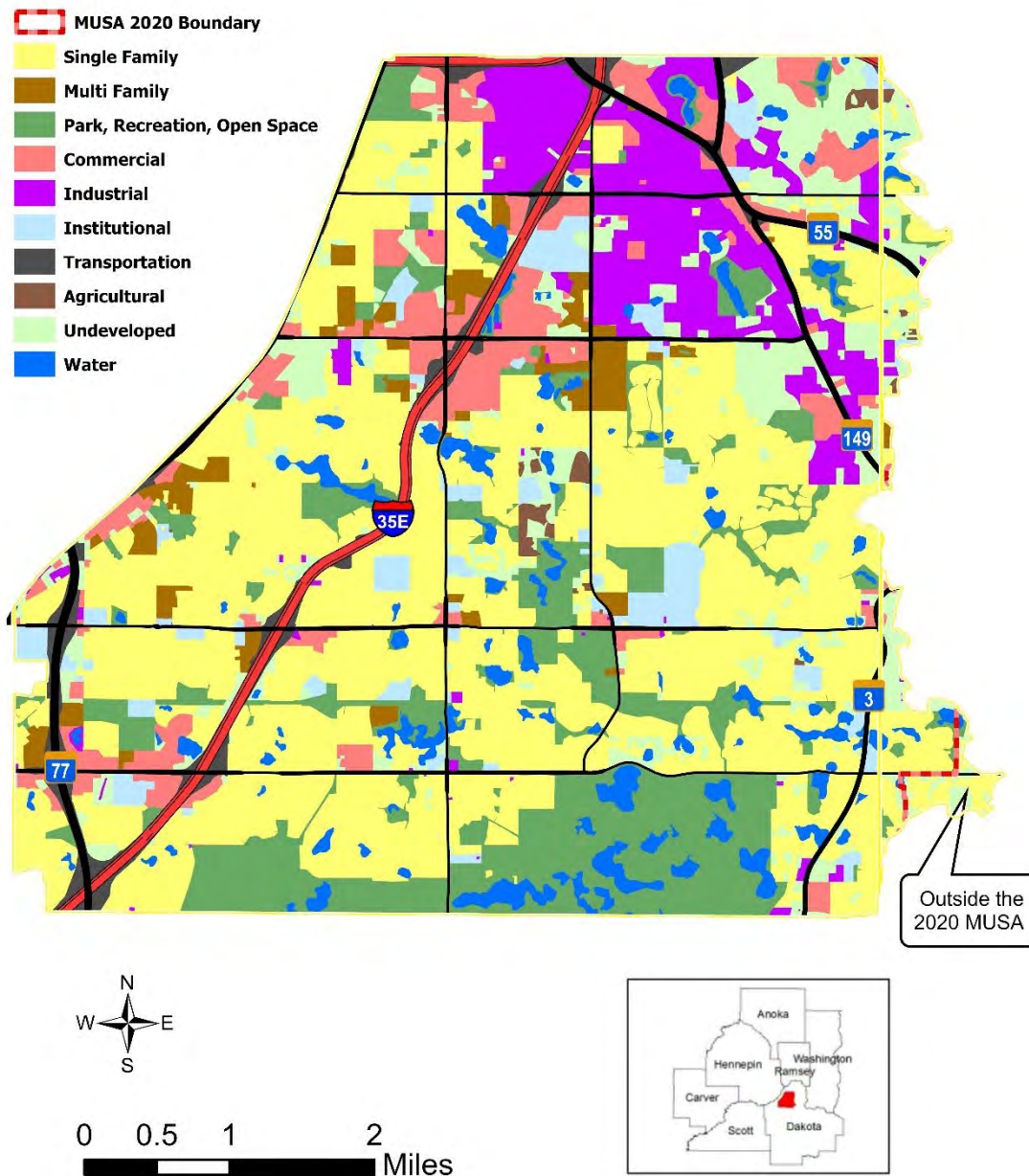


Figure 2-d. 2020 land use in the Egan-Inver Grove Heights watershed.

Source: Metropolitan Council.

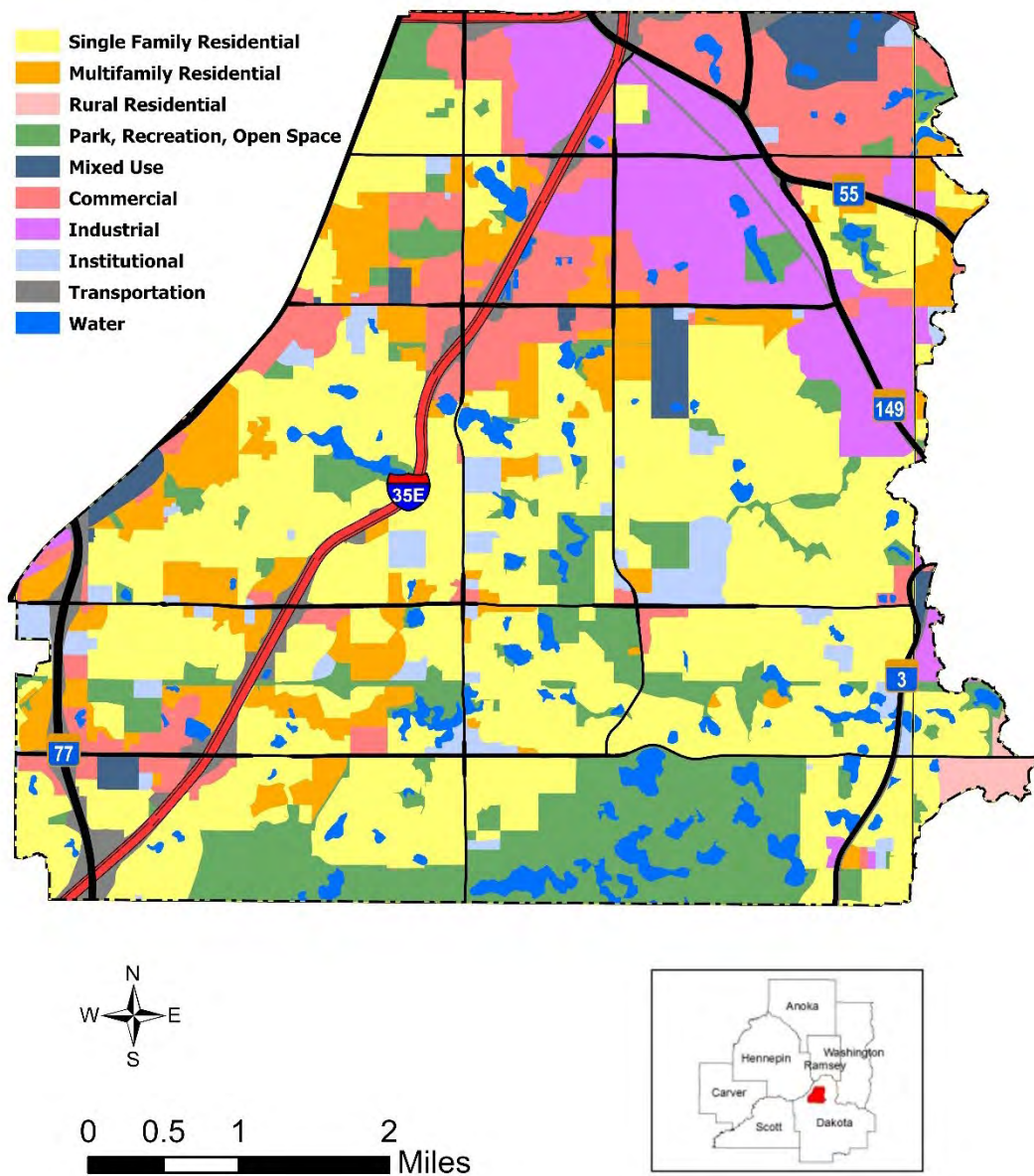


Figure 2-e. Planned 2040 land use in the Egan-Inver Grove Heights watershed.

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 (i.e. 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 estimated 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 estimated 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 estimated chloride with the two cities. The SST tools allow an entity to create a chloride assessment and a chloride action plan.

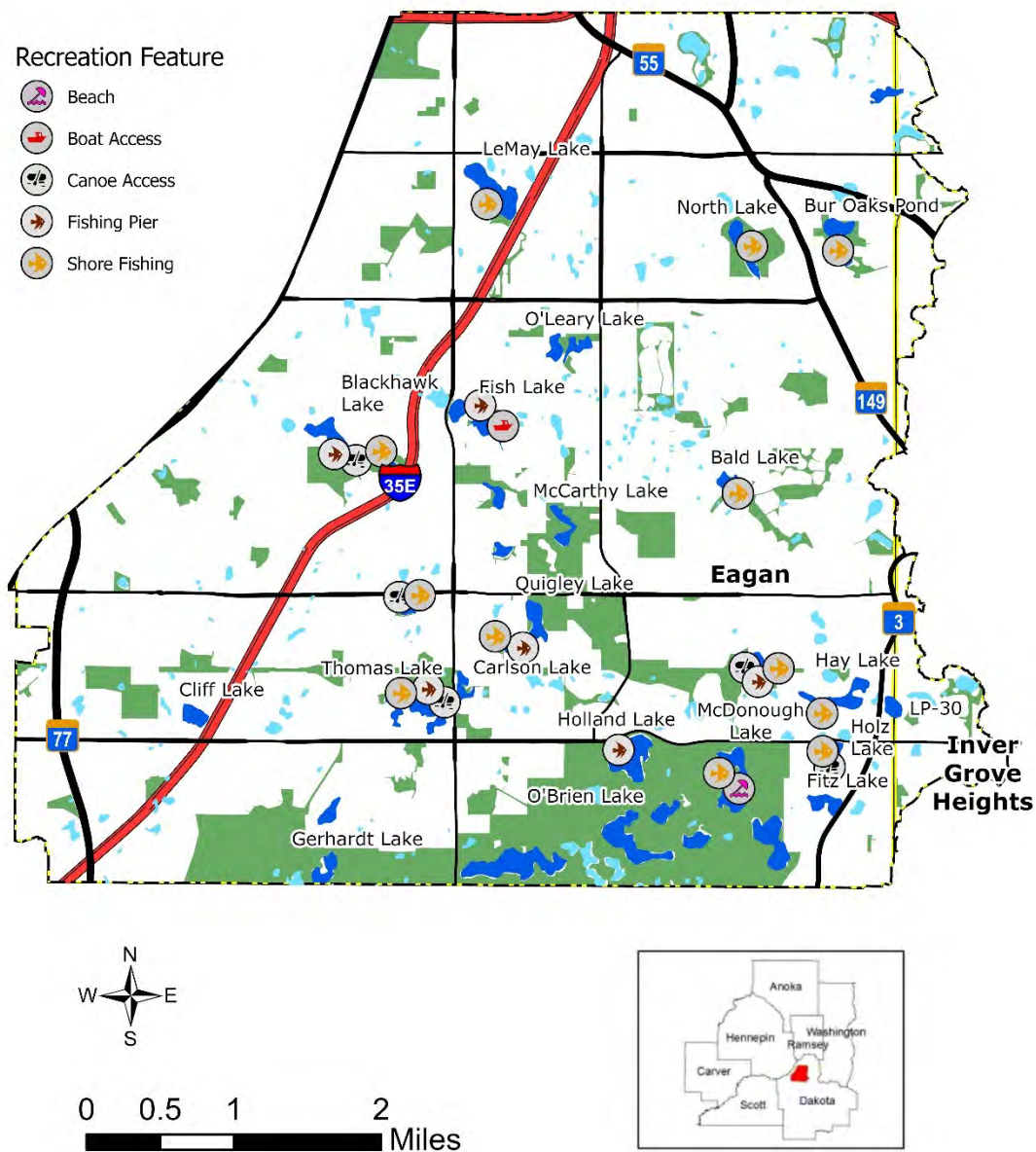


Figure 2-f. Water-based recreation in the Eagan-Inver Grove Heights watershed, 2025.
 Source: Minnesota MDNR, City of Eagan.

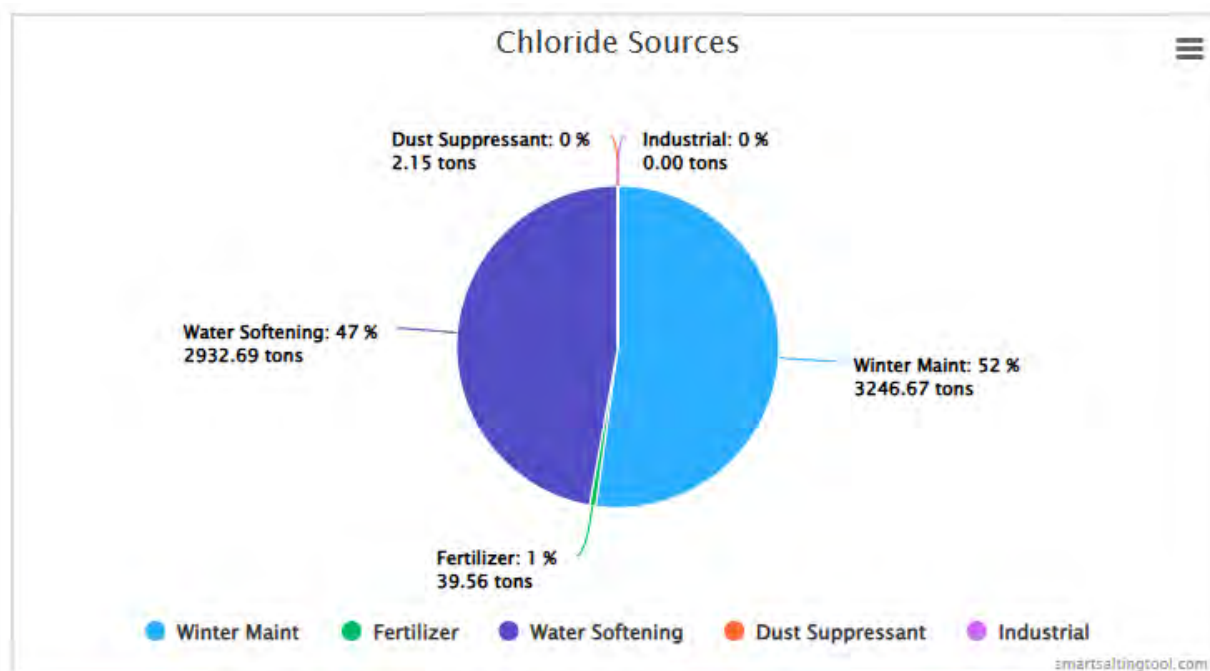
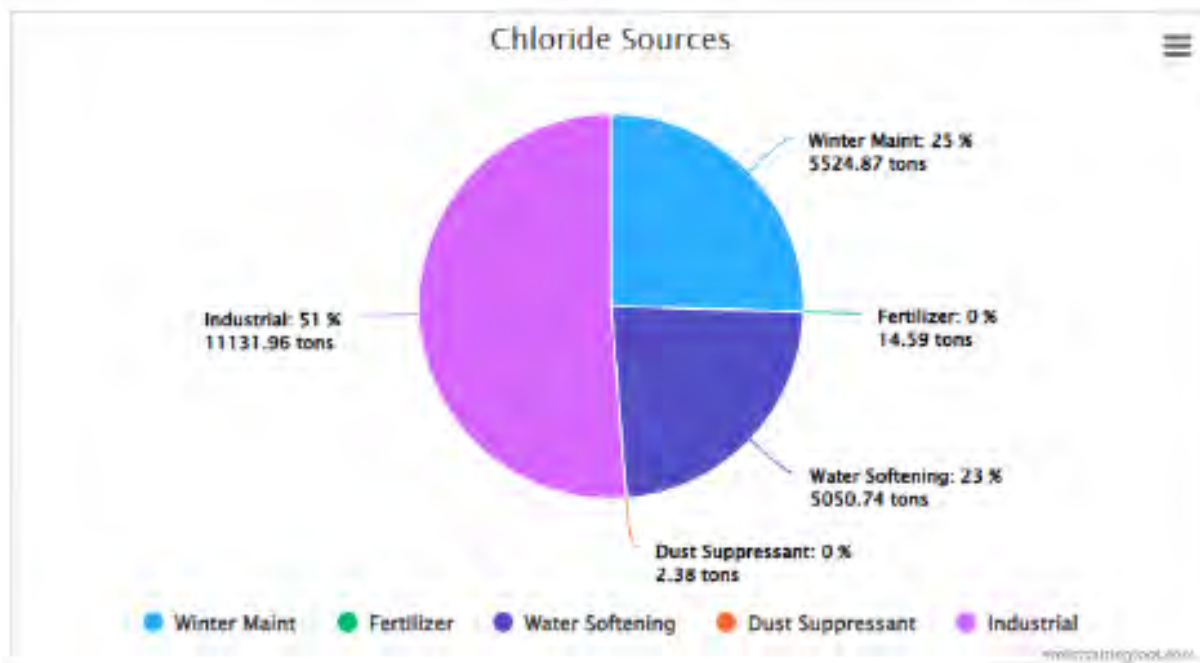


Figure 2-g. Estimated chloride sources in the Cities of Eagan (top) and Inver Grove Heights (bottom).

Source: MPCA Smart Salting Tool.

2.4 WATERSHED WATER RESOURCES

Lakes

There are 29 waterbodies managed as lakes in the E-IGHWMO watershed, shown in Figure 2-h. The data for 24 of those lakes with their MDNR lake number, 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. Most of the waterbodies managed as lakes in Eagan meet the definition of a shallow lake. Some of the smallest and shallowest of these waterbodies are considered wetlands by MPCA standards and those eutrophication standards would not apply to those waterbodies. However, they are managed locally as lakes locally and are therefore included. More information about each can be found online at the [MDNR's LakeFinder](#) application.

Aquatic invasive species are present in several Eagan lakes. The following have Eurasian Watermilfoil (*Myriophyllum spicatum*): 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. Flowering Rush (*Butomus umbellatus*) is found in Hay Lake, Holz Lake, and an Unnamed Lake (19006400). Furthermore, numerous other lakes and wetlands contain non-native Purple Loosestrife (*Lythrum salicaria*) and Curly-leaf Pondweed (*Potamogeton crispus*), which are prohibited invasive species, but not tracked under the "infested waters" classification.

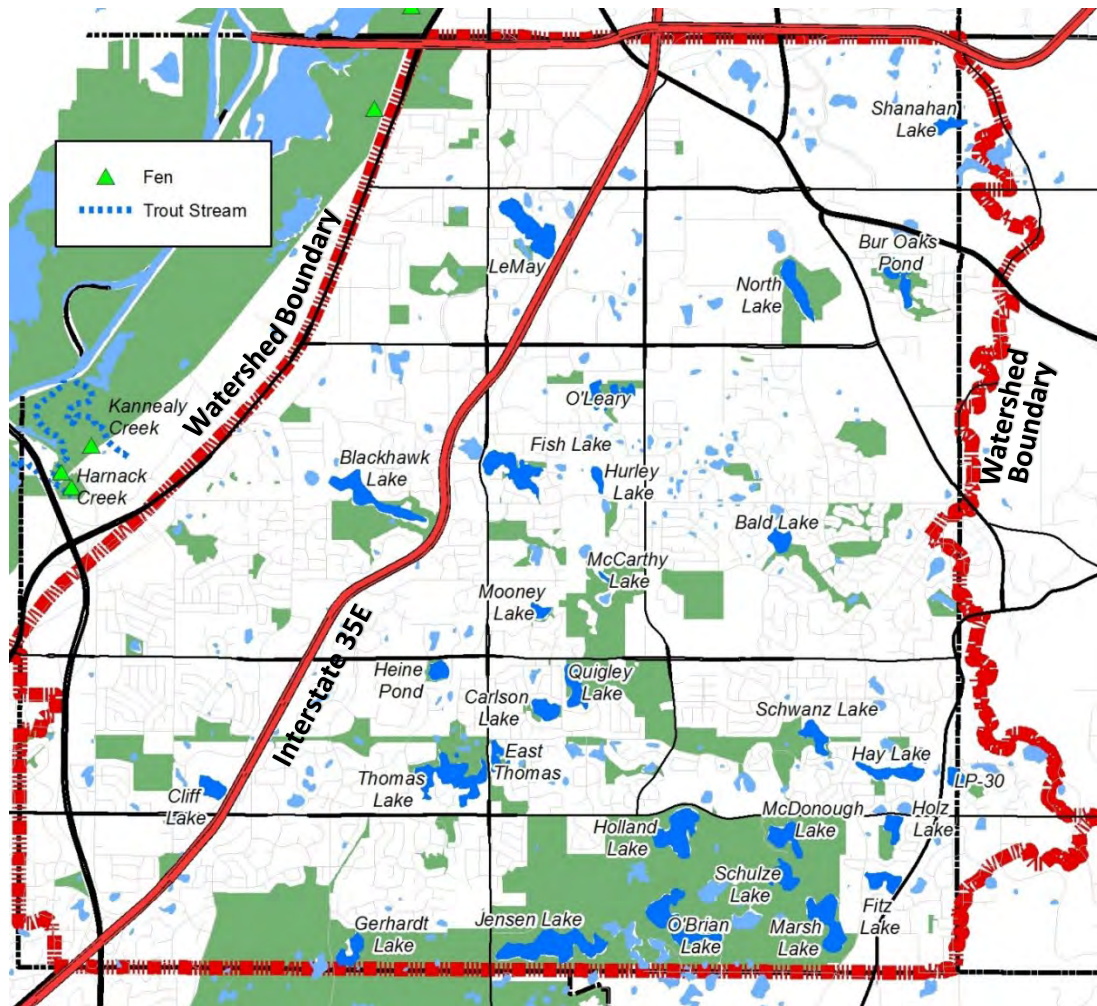


Figure 2-h. Lakes in the Eagan-Inver Grove Heights watershed boundary (red dashed). Note: background green areas are parks. The fens marked with a green triangle and blue dashed trout streams are outside the jurisdiction of the WMO but are nearby.
Source: Minnesota MDNR.

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)	Known AIS (Veg)	Depth Class	MDNR Class	Summer Average (May-Sept)		
								TP (µg/L)	Chl- <i>a</i> (µg/L)	SD (m)
Bald	JP-20	0061	10.3	9	No	Shallow	GD	59	18	1.6
Blackhawk	BP-1	0059	37.7	10	Yes	Shallow	RD	27	9	1.7
Bur Oaks	GP-1	0259	10.0	9	No	Shallow	-	82	13	1.5
Quigley (Carlson)‡	LP-42	0066	12.0	19	No	Deep	GD	31	25	2.0
Cliff (Pitts)‡	AP-11	0068	11.8	8	No	Shallow	GD	43	11	1.2
East Thomas	BP-8	0161	8.8	9	No	Shallow	-	32	12	1.6
Fish	JP-4	0057	28.9	33	Yes	Shallow	GD	152	15	2.4
Fitz (Unnamed)‡	LP-26	0077	11.5	9	No	Shallow	GD	25	21	1.4
Gerhardt*	BLP-2	0069	14.9	17	No	Shallow	NE	-	29	0.9
Hay (Unnamed)‡	LP-31	0062	19.8	9	Yes	Shallow	GD	27	9	1.8
Heine Pond (Unnamed)‡	BP-5	0153	7.2	30	Yes	Deep	-	11	6	3.2
Holland*	LP-38	0665	36.4	75	Yes	Shallow	NE	-	4	3.9
Holz	LP-28	0064	9.2	9	Yes	Shallow	GD	25	18	1.7
Jensen*	LP-12	0071	51.9	6	No	Shallow	NE	-	12	1.6
LeMay	DP-2	0055	36.5	16	No	Shallow	GD	47	12	1.8
McCarthy	JP-9	0060	11.3	6	No	Shallow	RD	189	118	0.7
McDonough*	LP-45	0076	16.7	11	Yes	Shallow	RD	-	14	2.2
North (Unnamed)‡	EP-2	0136	14.2	11	No	Shallow	-	51	14	2.2
O'Brien*	LP-18	0072	35.1	10	Yes	Shallow	NE	-	7	3.5
O'Leary †	DP-7	0056	16.1	5	No	Shallow	GD	156	46	1.0
Schulze (Schultz)‡ *	LP-24	0075	11.9	13	No	Shallow	NE	-	12	2.6
Schwanz	LP-32	0063	11.5	13	Yes	Shallow	RD	24	13	2.1
Shanahan	FP-8	0054	13.1	7	No	Shallow	GD	33	9	1.4
Thomas	BP-7	0067	40.4	7	Yes	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- <i>a</i> (chl- <i>a</i>) (mg/L)	≤20	≤14
Secchi Depth transparency (SD) (meters)	≥1.0	≥1.4

Impaired Lakes

Three of the lakes in the watershed (Fish, North, and Blackhawk) have been designated by the MPCA and EPA as Impaired Waters and are listed on the state’s draft 2026 303(d) list: 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 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 (230 mg/L), but past monitoring includes one or more sampling equal to or greater than 120mg/L. For this lake, there are large amounts of impervious surface in the vicinity used for highway commercial (big box retailers).

Delisted Lakes

Five lakes in the watershed (LeMay, Fitz, Fish, Carolson, and Holz) have been delisted from the state’s list of impaired waters (under section 303(d) of the Clean Water Act). 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 Egan-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 2024 303(d) list

Table 2-l. Waterbody-specific fish consumption guidance for the Egan-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.

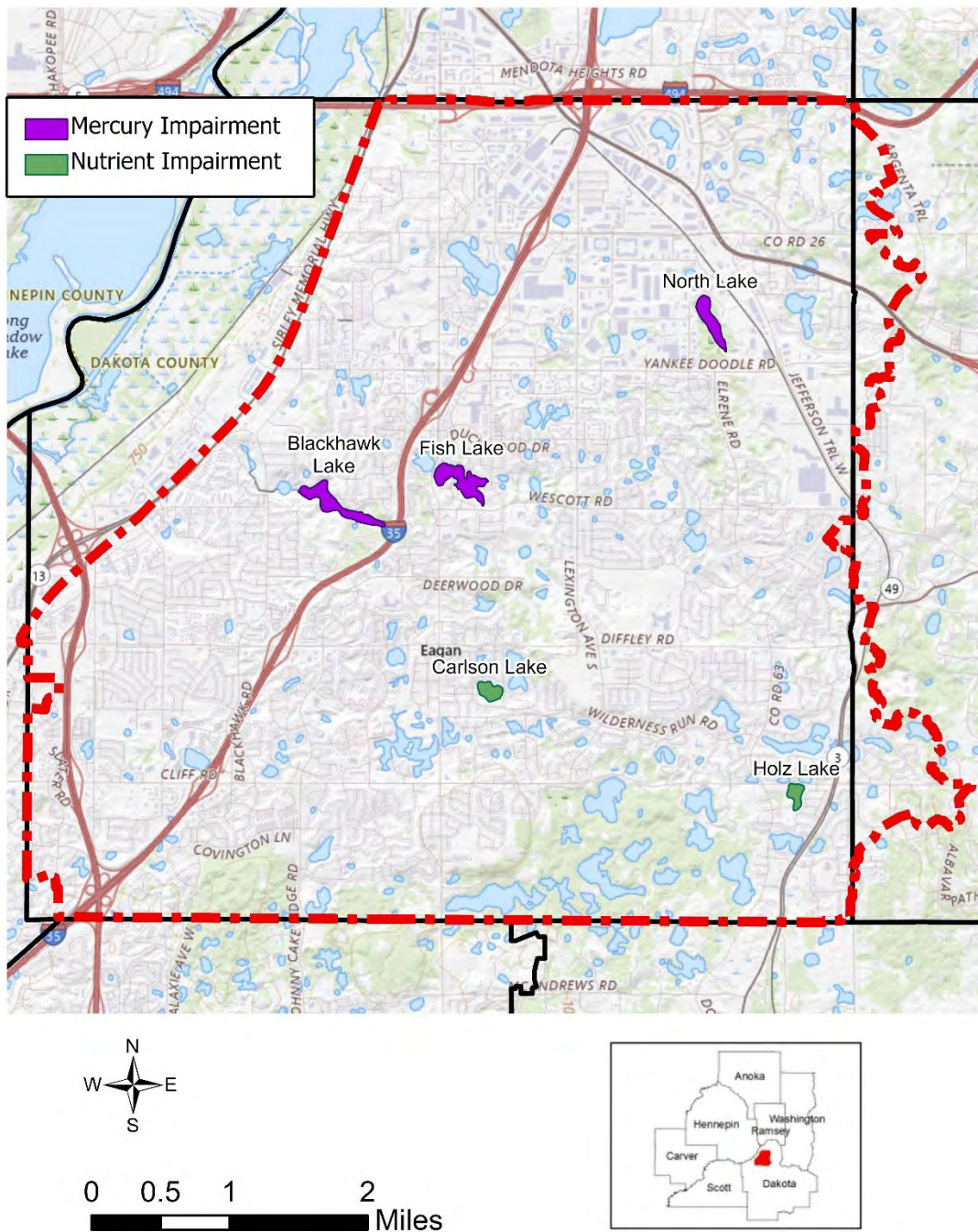


Figure 2-i. Impaired waters in the Eagan-Inver Grove Heights watershed. Fish Lake was delisted in 2014. Carlson and Holz Lakes are expected to be delisted by 2026.

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

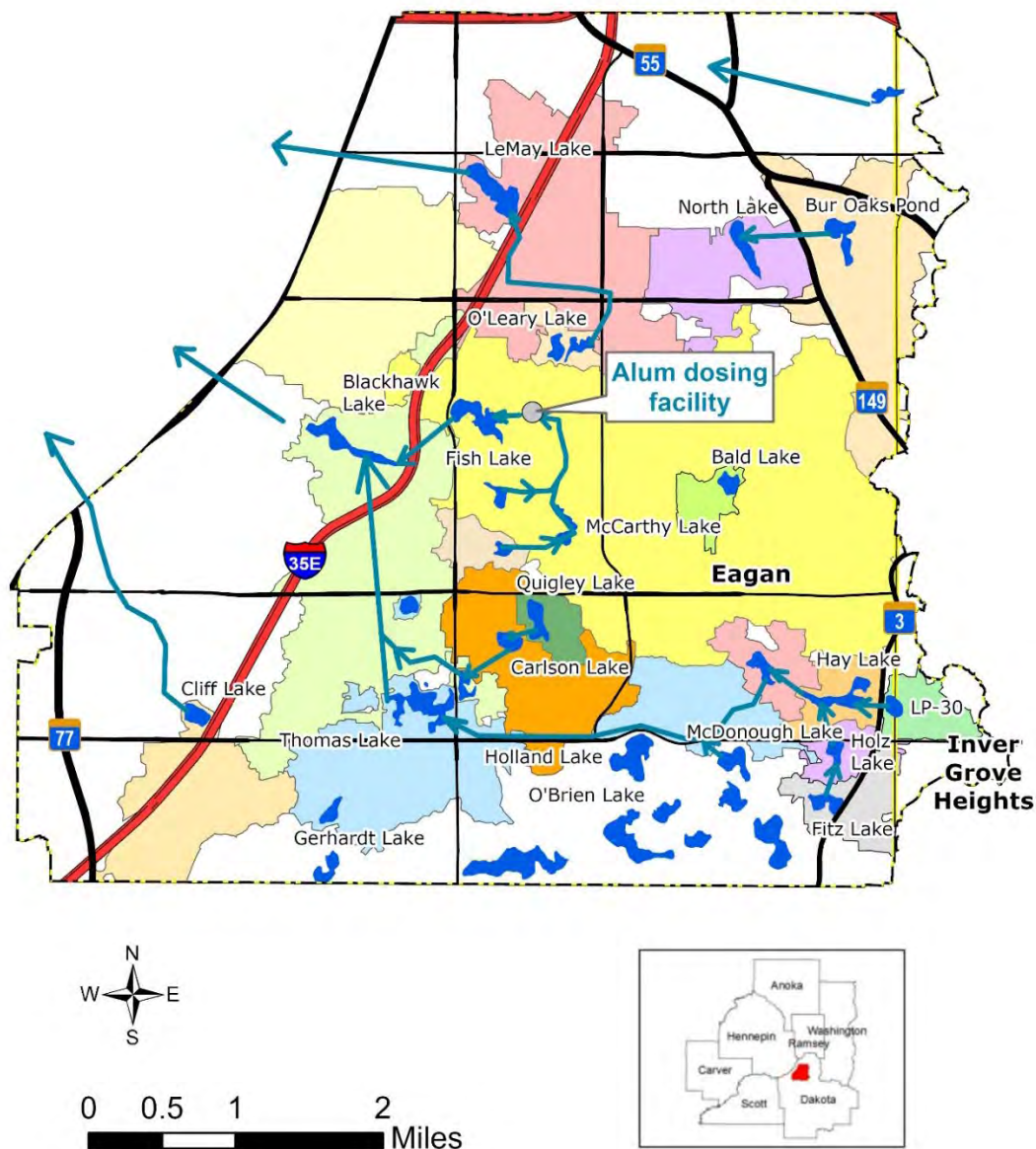


Figure 2-j. Mapped sub-watersheds within the WMO and flow direction. White areas have not been mapped.

Source: MDNR, City of Eagan

Priority Lakes

There are twenty-nine 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.

The City of Eagan and the Eagan-Inver Grove Heights WMO do not specifically prioritize one lake over another. Many of the lakes are of similar quality and value. However, the city does categorize

those lakes that provide specific benefits, such as recreation, wildlife habitat, and those within regional parks. With regards to Eagan-Inver Grove Heights WMO outreach efforts, they will be focused primarily on those waterbodies outlined in the [City of Eagan’s Water Quality & Wetland Management Plan](#) as Full Recreation Lakes or Limited Recreation Lakes.

Monitoring Data

The City of Eagan has a robust monitoring dataset that informs lake decisions. The most comprehensive dataset can be found in the [City of Eagan’s Water Quality Monitoring Trends 1991-2024 document](#).

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

Wetlands are an abundant feature throughout the watershed and a valued part of many neighborhoods. 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.

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	Cowardin Type	Acres	Percent
1 - Seasonally Flooded	9.0	<0.1%	Unconsolidated Bottom (UB)	996.3	5.1%
2 - Wet Meadow	3.9	<0.1%	Emergent (EM)	409.9	2.1%
3 - Shallow Marsh	401.0	2.0%	Forested (FO)	47.3	0.2%
4 - Deep Marsh	135.1	0.7%	Scrub-shrub (SS)	29.9	0.2%

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	

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.

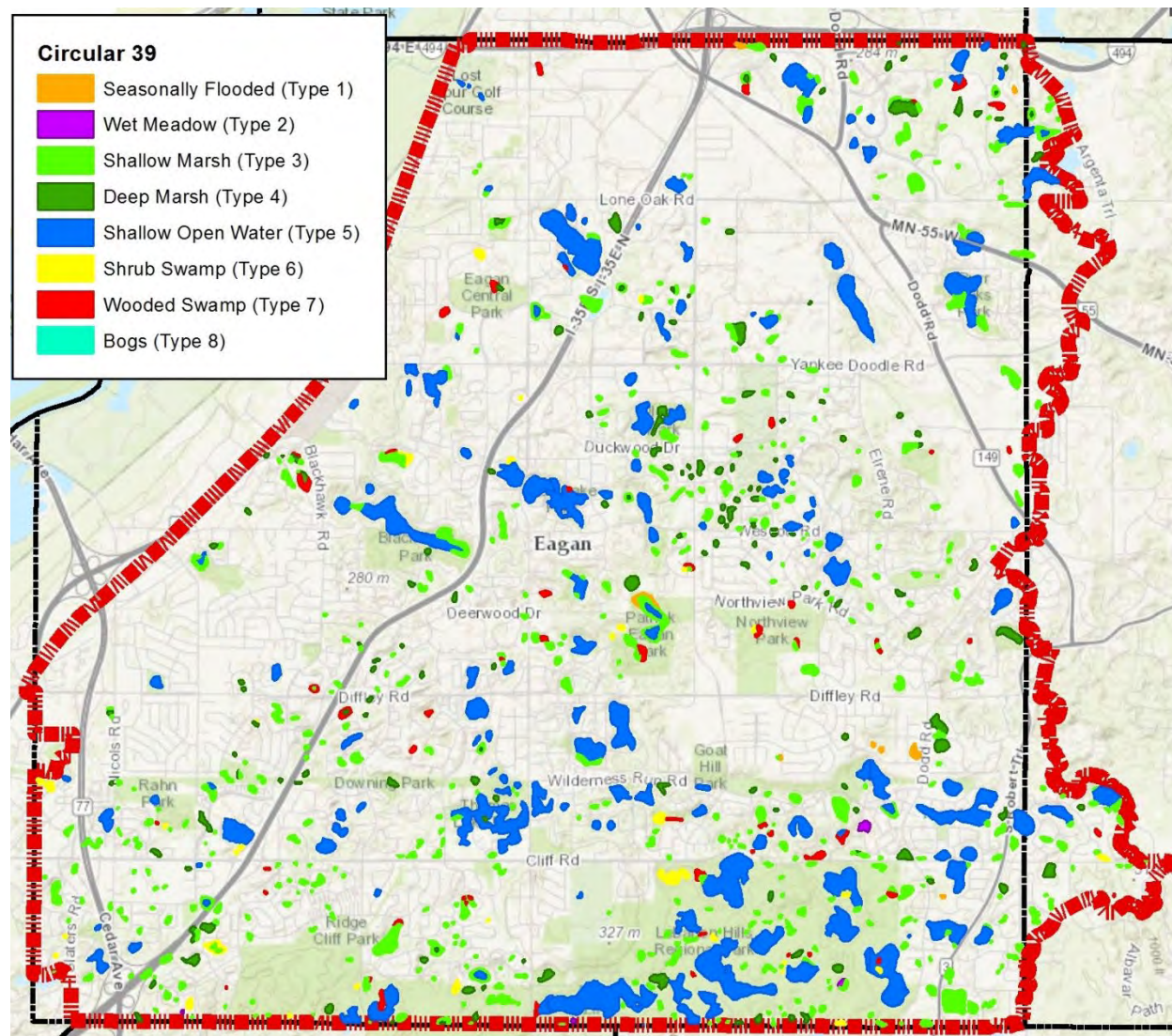


Figure 2-k. National Wetlands Inventory wetlands in the Eagan-Inver Grove Heights watershed.

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 Fourth-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 floodproofing 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

Groundwater is the drinking source for all City residents through municipal or private wells. 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 septic systems 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 private wells, likely from septic systems, as they were mostly in areas of highly clustered homes with 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).

3.0 Watershed Organization and Operations

This section describes how the E-IGHWMO 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 3 of the JPA for more detail. The Joint Powers Agreement, setting forth the authorities granted to the Board is included in Section 9.1.

Operations

The E-IGHWMO has no employees; it contracts with the Dakota County SWCD for administrative, education & outreach, technical, and other 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 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 various initiatives that positively affect water resources within the WMO, 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 [2050 Water 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. Metropolitan 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](https://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, and 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.¹ 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

¹ 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 Second-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
9. Updating E-IGHWMO website
10. Sponsoring City Hall Best Management Practices and Educational Signage
11. Selling low-cost rain barrels
12. Developing water-themed educational kits that can be checked out at Westcott (Eagan) or Inver Glen (Inver Grove Heights) locations
13. Organizing community clean-up days
14. Organizing and facilitating neighborhood meetings to educate and engage citizens in water quality improvements
15. Partnering with CLIMB Theater for elementary education and outreach programming
16. Leading Minnesota Water Stewards program
17. Presenting at City Council meetings to communicate WMO's purpose and projects
18. Funding contributions for elementary school educational water quality programs
19. Landscaping for Clean Water project support
20. Advocating for the protection and improvement of water resources in the E-IGHWMO watershed
21. Providing targeted support as a partner with member cities to implement actions that will achieve the WMO's and member cities' water resource goals
22. 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, Met Council, 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 E-IGHWMO conducted an assessment of watershed issues based on technical review, partner input, and local plan data. The assessment focused on areas where the WMO can add value through coordination, education, and cost-sharing, rather than duplicating city functions.

Prioritized Issues

The Board selected three top issues for the 2026–2035 plan period. Other resource concerns remain relevant but are primarily managed by the member cities.

Board-Identified Priority Issues

Through this process the Board identified three priority issues that will guide actions during 2026–2035:

- 1. Nutrient Pollution:**

Excess nutrients—primarily phosphorus—remain a persistent water quality threat in the watershed, from direct land use practices, human-created interconnectivity with impervious surface and stormwater conveyance systems, and many areas of the city developed prior to required stormwater treatment. Both member cities (Eagan and Inver Grove Heights) have made significant capital investments over time to reduce nutrient loading, but it remains an issue requiring vigilance. Several waterbodies have been removed from the impaired waters list over the past decade and continued focus in this area will help sustain those improvements and protect past investments.

- 2. Chloride Contamination:**

Rising chloride levels from cumulative winter de-icing and water softener practices pose a growing risk to aquatic life and water quality. Since the last Watershed Plan, the state has adopted a chloride water quality standard (230 mg/L) and issued a Chloride Management Plan. Fish Lake has been identified by the MPCA as an at-risk waterbody for chloride impairment.

- 3. Groundwater Use and Sustainability:**

High summer irrigation demand places stress on local aquifers and groundwater demand remains a concern, with consistently high winter-to-summer pumping ratios over 10-year period. Long-term groundwater sustainability is a concern in this mature suburban watershed.

Supporting Issues

While not top priorities for direct intervention by the E-IGHWMO, the Board did identify the following relevant issues:

1. Fishing and Fish Consumption Awareness:

Fishing fosters lake stewardship, but there are some known consumption concerns related to mercury and emerging contaminants like PFAS.

2. Data Centers:

A new watershed-scale stressor across Dakota County is high-capacity data centers. They pose high-volume groundwater withdrawal and thermal-discharge challenges that fall right at the intersection of water-quantity, water-quality, and interjurisdictional coordination. No known data centers are proposed within the WMO at the writing of this Plan. If a project of this type is proposed within or near the watershed, the WMO will coordinate with appropriate government units to evaluate potential groundwater and stormwater implications and determine whether plan amendments or monitoring support are warranted.

4.3 WATERSHED MANAGEMENT PLAN PRIORITIES

The E-IGHWMO 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.*

Through the identification of issues in the watershed, the E-IGHWMO developed priorities 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.

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 issue 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.

The goals in this section define how the E-IGHWMO will carry out its mission from 2026 through 2035. They translate the priority issues into achievable, measurable outcomes.

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 (Section 5). 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 progress every five years.

To meet its broad goal areas in Water Quality and Quantity, Groundwater, and Education, the E-IGHWMO will implement public involvement and education on management and protection of all water resources within the WMO. When appropriate and based on the given outreach efforts to improve lake water quality, the E-IGHWMO will focus efforts on priority lakes listed in Eagan's Water Quality & Wetland Management Plan as Full Recreation or Limited Recreation Lakes.

Table 4.3. Eagan's priority lakes.

Lake	City ID	MDNR ID#	Neighborhood Fishing Lake	Acres	Max Depth (ft)	Depth Class	Shoreland Class ³	Water Quality Status ⁴	Summer Water Quality 10-Year Average ⁵		
									TP (µg/L)	Chl-a (µg/L)	Secchi (m)
L1 - Full Recreation Lakes											
Fish	JP-4	19005700	Yes	28.9	33	Shallow	GD	Impaired (Mercury)	44	21.9	2.2
Carlson	LP-42	19006600	Yes	12.0	19	Deep	GD	Impaired (Nutrients)	47	27.0	1.5
Heine ¹	BP-5	19015300	Yes	7.2	30	Deep	N/A	Unassessed	22	6.3	3.4
L2 - Limited Recreation Lakes											
Schwanz ¹	LP-32	19006300	Yes	11.5	13	Shallow	RD	Meets Standards	38	19.4	2.0
Blackhawk	BP-1	19005900	Yes	37.7	10	Shallow	RD	Impaired (Mercury)	52	12.5	2.1
Thomas	BP-7	19006700	Yes	40.4	7	Shallow	GD	Meets Standards	47	10.2	1.6
LeMay	DP-2	19005500	Yes	36.5	16	Shallow	GD	Impaired (Nutrients)	65	25.7	1.6
North ¹	EP-2	19013600	Yes	14.2	11	Shallow	N/A	Impaired (Mercury)	49	19.1	2.1
Hay ¹	LP-31	19006200	Yes	19.8	9	Shallow	GD	Meets Standards	29	6.5	1.6
Bur Oaks	GP-1	19025900	Yes	10.0	9	Shallow	N/A	Meets Standards	39	7.0	1.7
Cliff ²	AP-11	19006800	No*	11.8	8	Shallow	GD	Meets Standards	72	10.0	1.7
Bald	JP-20	19006100	Yes	10.3	9	Shallow	GD	Meets Standards	53	11.5	1.4
Holz ¹	LP-28	19006400	Yes	9.2	9	Shallow	GD	Impaired (Nutrients)	81	30.9	1.3
East Thomas	BP-8	19016100	Yes	8.8	9	Shallow	N/A	Unassessed	ISD	ISD	ISD

The priority classification, as outlined in the Eagan Water Quality and Wetland Management Plan, are as follows:

Class L1 (Full Recreation) – The city intends Class L1 lakes to support recreation including swimming, fishing, boating, and canoeing. Except for Fish, these are deep lakes. Historical water quality data suggest Class L1 lakes can provide long-term support of intended uses with a reasonable level of

management effort. Where in-lake quality is better than numerical classification standards, the city will manage Class L1 lakes to prevent degradation of water quality, with allowances for natural variability.

Class L2 (Limited Recreation) – The city intends Class L2 lakes to support recreation such as fishing and canoeing. These shallow lakes support limited recreation for most of the summer in most years.

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.

Because the Cities of Eagan and Inver Grove Heights already operate comprehensive water-management programs, the WMO's role is primarily to support, coordinate, and educate. Its work emphasizes:

- Encouraging behaviors and investments that protect and improve water quality;
- Helping secure funding for partner-led projects; and
- Ensuring consistency with state and regional goals.

Progress toward these goals will be evaluated annually in the WMO's report to the Board of Water and Soil Resources (BWSR) and member cities.

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 WMO's 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 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.

Water Quantity Goal Priorities and Progress Measure

- **Priority Goal 1 – Protect existing flood-storage and conveyance capacity.**
Continue to support city management of stormwater infrastructure to maintain designed flood protection levels.
- **Priority Goal 2 – Promote infiltration and volume-control practices.**
Through outreach and cost-share incentives, encourage projects that reduce runoff volume and peak flow—especially in redevelopment areas.
- **Priority Goal 3 – Support stormwater reuse.**
Assist cities and partners in identifying opportunities for irrigation reuse or stormwater harvesting where technically feasible and safe.

Measure of Progress: Evaluate summary of city system upgrades that reduce localized flooding, Two WMO-supported or funded projects that include infiltration or reuse elements; Review intercommunity stormwater runoff design and planning every five years, Projects funded through LCW program (10 per year), Volume reduction messaging (2 per year), Attend three community outreach events annually.

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.	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.
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. E. 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. F. 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 Egan 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. Additionally, water quality is monitored and analyzed regularly to evaluate and prioritize lakes where projects should be implemented, should water quality decline during this plan period. Projects to improve water quality may also be implemented as generational opportunities arise through related projects such as street reconstructions. 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. While member cities do not contain any public ditch systems, EIGHWMO supports city maintenance of storm sewer systems and water quality enhancements.

Water Quality & Habitat Goal Priorities and Progress Measure

- **Priority Goal 1 – Reduce nutrient loading to lakes and wetlands.**
Promote best management practices (BMPs) that lower phosphorus and nitrogen inputs from urban runoff. Support programs such as *Landscaping for Clean Water* and *Lawns Re-Imagined* that encourage native or low-input plantings. Success is measured in no new nutrient impairments and also improvements or reductions in nutrient loading to lakes or wetlands.
- **Priority Goal 2 – Reduce chloride inputs.**
Support and participate in behavior changing efforts such as:
 - o The **Low Salt, No Salt Initiative** (Dakota County), can be paired with popular salt cup distribution efforts;
 - o The **Low Salt Model City Program** (Eagan); and
 - o Promoting the **MPCA Smart Salting Program** to enact changes in winter maintenance service providers and the businesses and HOAs that engage their services.
- **Priority Goal 3 – Support nutrient and chloride focused retrofits.**
Provide cost-share assistance for retrofit or maintenance projects that improve impaired or at-risk waterbodies.

- **Priority Goal 4 – Support responsible fishing and lake stewardship.**

Partner with cities and the MDNR to promote fishing as a community recreation activity. Assist with signage or outreach regarding mercury and PFAS fish-consumption advisories and explore helping fund fish-testing efforts led by member cities.

Measure of Progress: Participation in salt-reduction programs, BMP installations near priority lakes, and public engagement metrics (events, workshops, or materials distributed).

Public Stormwater System Goal Priorities and Progress Measure

- **Priority Goal 1 – Support maintenance of city-owned stormwater systems.**

Assist member cities with identifying and pursuing grants or cost-share funding for maintenance, repair, or retrofit projects that provide measurable water-quality improvements.

- **Priority Goal 2 – Prioritize water-quality enhancements in drainage projects.**

When streets or drainage systems are reconstructed, encourage inclusion of water-quality BMPs (e.g., pretreatment basins, iron-enhanced sand filters, underground infiltration).

Measure of Progress: Support member cities with implementation of two water quality capital improvement projects, support 10 projects funded through LCW program annually, provide two educational messages on water quality topics annually, and provide deicing salt reduction education at two events annually.

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 Highest TP to lowest TP when assessing project options.	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 Growing 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. G. Provide access to the Dakota County SWCD's Landscaping for Clean Water program through introduction class, design course, and maintenance workshop. H. If requested, participate in and provide water quality education at community events such as LakeFest and the Eagan Home and Leisure Show. I. 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.
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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 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.

Goal Area 2: Water Quality & Habitat		
#	Goals	Action Items
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 (i.e., 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 and city led monitoring of submerged aquatic vegetation 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)
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.

Groundwater Goal Priorities and Progress Measure

- **Priority Goal 1 – Encourage groundwater conservation.**
Support education about efficient outdoor water use, smart-irrigation controllers, and advances in low-input turf such as fine fescue lawns.
- **Priority Goal 2 – Promote awareness of surface- and groundwater connections.**
Through outreach, highlight how salt, fertilizer, and household chemical use affect both groundwater quality and surface-water ecosystems.
- **Priority Goal 3 – Coordinate with Dakota County and member cities on groundwater planning.**
Participate in county and regional planning efforts that promote sustainable groundwater management.

Measure of Progress: Monitor winter/summer pumping ratio annually with Member City data, Attend semi-annual Dakota County Groundwater Collaborative meetings, Develop visual display of groundwater/surface water interaction, Support 10 small scale infiltration projects funded through LCW program annually to recharge groundwater aquifers, Provide targeted education outreach to at least fifty community members, Disseminate one educational piece each on well sealing and septic maintenance for water quality, Promote water conservation through programs such as Lawns Re-Imagined and fund one workshop annually.

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 Lawns Re-Imagined, 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.

Wetland Goal Priorities and Progress Measure

- **Priority Goal 1 – Support small-scale restoration and enhancement projects.**
Provide matching or partnership funding for wetland restoration or enhancement when aligned with city priorities.
- **Priority Goal 2 – Increase public understanding of urban wetlands.**
Develop or sponsor educational materials explaining how wetlands store runoff, filter pollutants, and support wildlife—even in developed areas.

Measure of Progress: Number of outreach efforts or restoration projects supported by the WMO.

<i>Goal Area 4: Wetlands</i>		
#	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). B. Provide matching or partnership funding for wetland restoration or enhancement when restoration results in water quality improvement on a nearby lake or improves a wetland in a pre-MS4 development that has been used for stormwater management.

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 shall 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 relies on and coordinates with member cities for water monitoring data through their existing and extensive water quality monitoring program. The WMO finds the existing data collection is sufficient to evaluate progress toward plan goals and manage water resources. The WMO will coordinate annually with partners to evaluate data and trends to make data-driven decisions about water resource management. Additional water monitoring and lake water quality data can be found on the [City of Eagan's lake management web page](#) (City of Eagan 2025) as well as on the [MDNR's LakeFinder](#) application.

The WMO will work together with its partners to disseminate monitoring results in its annual report and in other formats as desired.

Focus Areas

- Support city and county monitoring programs, through funding assistance, analysis, or information dissemination.

Performance Measures

- Number of waterbodies with monitoring data reported annually.
- Summary statistics (e.g., trends in phosphorus or chloride).
- Amount of WMO funding dedicated to data support.

E-IGHWMO will support outreach efforts upon city-led monitoring of submerged aquatic vegetation and shoreline health in watershed lakes to support comprehensive lake management evaluations. E-IGHWMO will promote existing aquatic vegetation and aquatic invasive species training programs, such as Starry-Trek, for community volunteers to spot invasive species and track changes in aquatic vegetation.

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 is a core function of the E-IGHWMO. 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.

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.

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 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
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.

Efforts will emphasize practical, Minnesota-appropriate actions that residents, businesses, and maintenance crews can take to protect water resources. The Board will prioritize the following activities and performance measures in its education and outreach efforts:

Priority Activities

- Continue participation in residential-based behavior changing and stormwater improvement initiatives like Dakota SWCD's Landscaping for Clean Water and Lawns Re-Imagined programs.
- Support chloride reducing initiatives like Low Salt, No Salt and MPCA Smart Salting outreach to winter maintenance staff, HOAs, and businesses.
- Sponsor and distribute informational materials on our priority issues of nutrient pollution reduction, chloride reduction, and groundwater protection.
- Collaborate with city communications staff to share seasonal tips through newsletters, social media, and city websites.
- Help fund fishing and lake-stewardship signage including addressing fish-consumption advisories (mercury / PFAS).

Performance Measures

- Number of residents or properties reached annually through WMO-supported programs.
- Number of chloride-reduction trainings or outreach events supported.
- Feedback from participant surveys or partner agencies.

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. • Post signage raising awareness of invasive species and/or native landscapes at five	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
	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 de-icing 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 de-icing 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 water conservation and recharge, potentially using a watershed model.	WaterSmart Yards U of Mn Extension Water Wisely Met Council EPA WaterSense MDH (Mercury awareness event) Dakota County (Groundwater recharge education) WHEP

Program Area	Action Items	Partners
	• 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 Re-Imagined 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, 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. Upon the decision to implement such a program, the WMO will develop cost share program policies that meet the requirements in MR 8410.0105 Subpart 7, Incentive Program.

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. The WMO 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).

Eligible Project Types

- Retrofit of stormwater ponds or basins near impaired or at-risk lakes.
- Raingarden or infiltration retrofits where appropriate.
- Wetland enhancement or buffer-restoration projects.
- Education and monitoring projects led by partners.

Funding Approach

- Maintain flexible annual allocations approved by the Board.
- Prioritize projects demonstrating clear water-quality benefit, visibility, and partner commitment.
- Use state or regional grants (e.g., BWSR Clean Water Fund) whenever possible.

Performance Measures

- Number of cost-shared projects completed per year.
- Estimated pollutant reductions or volume reductions reported by partners.
- Total outside funding leveraged.

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.

Efficient administration ensures that resources are directed toward on-the-ground results.

Ongoing Responsibilities

- Prepare annual budget and report to BWSR and member cities.
- Conduct periodic plan reviews and updates consistent with Minn. R. 8410.
- Maintain accurate financial and project records.
- Provide administrative support for Board operations and partner coordination.

Performance Measures

- Timely submission of annual reports and audits.
- Documentation of measurable outcomes.
- Board evaluation of program effectiveness every five years.

Implementation Framework

Implementation occurs through four main avenues:

1. Education and Outreach – Building community understanding and engagement.
2. Partnership and Cost-Share Support – Funding or assisting with local projects.
3. Monitoring and Data Support – Helping track conditions and results.
4. Administration and Reporting – Maintaining accountability and compliance.

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

Because the WMO's role is primarily supportive and educational, most implementation actions involve:

- Coordinating with member cities and partner agencies;
- Assisting with funding and grant opportunities;
- Conducting public education and outreach; and
- Reporting progress to BWSR and the member cities.

The WMO will review implementation progress annually and update the program as needed.

See Table 5.7 to view the full Implementation Plan. The Board will review the table annually; update actions as needed and ensure consistency with evolving city and county plans. For each action, the Implementation Table identifies:

- Responsible party,
- Implementation timeframe,
- Estimated cost, and
- Evaluation metric.

5.8 IMPLEMENTATION FUNDING SUMMARY

The E-IGHWMO operates with a modest annual budget that reflects its supportive and partnership-based role. Most implementation activities are carried out by the member cities or partner entities (SWCD, County), with the WMO providing coordination, education, and targeted funding assistance.

Primary Revenue Sources

Funding Source	Description	Typical Range / Notes
Member City Assessments	Annual financial contributions from the Cities of Eagan and Inver Grove Heights as established in the Joint Powers Agreement (JPA). These assessments support administration, education, and small cost-share projects.	~\$45,000–\$55,000 total annually (shared between cities)
Grants	Competitive grants from the Board of Water and Soil Resources (BWSR) Clean Water Fund, Metropolitan Council, or other state and regional programs.	Variable; applied for as opportunities arise
Partner Cost-Share Contributions	Matching funds from member cities, Dakota County, or the Dakota SWCD for specific education or retrofit projects.	Typically, 25–50% match
In-Kind Support	Technical assistance, communications, and project management provided by city and SWCD staff.	Non-monetary value, reported annually

Fiscal Management

- Annual budgets are adopted by the Board of Managers and incorporated into city assessments.
- The Administrator and Fiscal Agent maintain transparent accounting consistent with Minnesota Statutes § 103B.227.
- The WMO submits annual financial reports and audits to BWSR and the State Auditor.

Summary

The E-IGHWMO maintains a lean structure focused on leveraging partnerships and external funding to achieve its mission. While its annual budget is small, the Organization's investments in education, collaboration, and cost-sharing continue to generate measurable benefits for local and downstream waters.

Table 4. Estimated 10-Year Implementation Costs (2026–2035)

(Rounded to nearest thousand dollars)

Program Area	Estimated Annual Investment (2025 Dollars)	10-Year Total (2025 Dollars)	10-Year Inflation-Adjusted Total (2.5 % Annual Increase)	Typical Funding Sources
Education & Outreach	\$18 000 / yr	\$180 000	≈ \$210 000	City assessments, Dakota SWCD, BWSR Clean Water Fund, grants
Cost-Share & Partnerships	\$12 000 / yr	\$120 000	≈ \$140 000	WMO cost-share budget, city matches, Clean Water Fund grants
Monitoring & Data Support	\$5 000 / yr	\$50 000	≈ \$58 000	MPCA Citizen Monitoring Program, city programs, WMO funds
Administration & Reporting	\$15 000 / yr	\$150 000	≈ \$175 000	City assessments (operating budget)
Plan Evaluation & Update Reserve	\$3 000 / yr	\$30 000	≈ \$35 000	City assessments, carryover reserves, BWSR planning grants
Total Estimated 10-Year Cost	≈ \$53 000 / yr	≈ \$530 000 (2025 \$)	≈ \$620 000 – \$630 000 (adjusted)	Combined city assessments, partner contributions, and grants

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 approved 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 city's 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 WMO and the Metropolitan Council and Dakota County for review before adoption by its governing body. The Metropolitan Council and Dakota County review period is 45 days and the WMO review period is 60 days after Plan receipt.

The WMO will verify that member city official controls are updated, as needed, within two years of WMO plan adoption or amendment.

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.

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9.0 Appendices

9.1 JOINT POWERS AGREEMENT

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
<i>Water Quality and Quantity</i>		
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's 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
<i>Education</i>		
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
<i>Groundwater</i>		
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.
<i>Other Issues</i>		
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 E-IGHWMO goals, the Board voted to incorporate a community survey as part of the Second-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].

10. The following are the issues the Eagan-Inver Grove Heights Watershed Management Organization and the two cities in the watershed will be tackling in the coming 10 years. Which one is the most important to you?

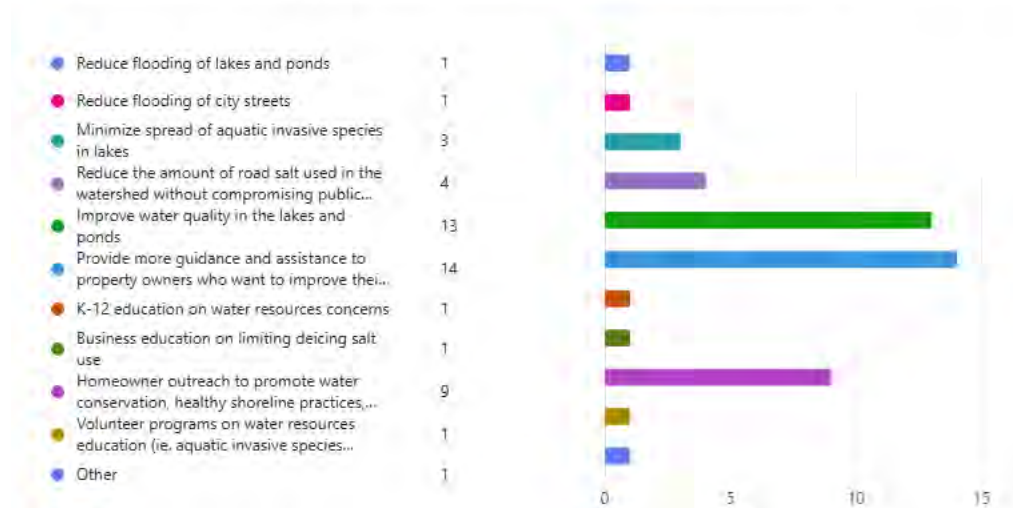


Figure 9-a. Community survey results from Question 10 regarding which E-IGHWMO issue is the most important to respondents.

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

9.6 WATER QUALITY TRENDS

Program	Goal #	Action Item ID	Goal Category	Goal	Action Item	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	A, D, F	Water Quantity	Reduce stormwater runoff volume and increase infiltration and groundwater recharge through city NPDES stormwater permit requirements.	1.2.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. 1.2.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. 1.2.F. 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 Quantity	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										

Monitoring & Technical Assistance	2.3	D	Water Quality & Habitat	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.	2.3.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.	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 and City led monitoring of submerged aquatic vegetation 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	\$ 15,000	-	\$ 15,000			\$ 5,000			\$ 5,000			\$ 5,000	
	2.4	B	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.B. Leverage financial resources to improve and increase fishing access points (ie, new piers, shore fishing spots to reduce shoreline erosion impact) 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		

	1.2	E	Water Quantity	Reduce stormwater runoff volume and increase infiltration and groundwater recharge.	1.2.E. 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							
	1.2, 3.1	C, 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.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. 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 Dakoat SWCD Lawns Re-Imagined, 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 Lawns Re-Imagined WaterSmart Yards U of MN Extension Water Wisely MetCouncil EPA WaterSense Local Events such as LakeFest	E-IGHWMO	\$ 2,000	-	\$ 2,000		\$ 2,000								
	2.1, 3.1	G, 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.	G. 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 Re-Imagined	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
	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
	2.1	H, I	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.	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

Program	Goal #	Action Item ID	Goal Category	Goal	Action Item	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 & Outreach	2.2	A, E	Water Quality & Habitat	Protect water resources from chloride impacts in priority city waterbodies towards no new impairments.	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 on efforts for reducing deicing salt use through development of low salt design standards that minimize the need for deicing salt in key areas as needed for water quality protection and improvement.	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	\$ 500
	2.2	B	Water Quality & Habitat	Protect water resources from chloride impacts in priority city waterbodies towards no new impairments.	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	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
	2.3	C	Water Quality & Habitat	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.	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	C	Water Quality & Habitat	Protect and enhance fish and wildlife habitat and water recreational facilities.	2.4.C. Partner with MDNR 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								
	2.4	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)	\$ 5,000	\$25,000	\$ 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	\$ 11,000	-	\$ 11,000	\$ 2,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
	2.5	A	Water Quality & Habitat	Raise public awareness about fish consumption advisories in watershed 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	\$ 12,500	-	\$ 12,500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 8,000	\$ 500	\$ 500
	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									
	2.2	C, D	Water Quality & Habitat	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 DVSMAs. 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

Program	Goal #	Action Item ID	Goal Category	Goal	Action Item	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
Cost Share	1.2, 2.3, 3.1	B, B, A	Water Quantity, Water Quality & Habitat, and Groundwater	Reduce stormwater runoff volume and increase infiltration and groundwater recharge. 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. Protect the quality and quantity of groundwater resources. Promote groundwater recharge where protective of groundwater quality and human health.	1.2.B. 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
	4.1	B	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.B. Provide matching or partnership funding for wetland restoration or enhancement when restoration results in water quality improvement on a nearby lake or improves a wetland in a pre-MS4 development that has been used for stormwater management.	City of Eagan City of Inver Grove Heights	E-IGHWMO	\$ 5,000	-	\$ 5,000						\$ 5,000				

Capital Improvement	1.1	B	Water Quantity	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	1.1.B. 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			

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 Expenses	\$ 5,381,500	\$ 66,500	\$ 72,000	\$ 121,500	\$ 72,000	\$ 67,000	\$ 79,000	\$ 66,000	\$ 148,000	\$ 93,500	\$ 96,000
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