WATERSHED MANAGEMENT PLAN

JUNE 2016
AMENDED DECEMBER 2020

Eagan-Inver Grove Heights Watershed Management Organization

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dakotacountyswcd.org/watersheds/eagan-igh-wmo/

Eagan-Inver Grove Heights Watershed Management Organization

Watershed Management Plan

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Abbreviations and Acronyms

BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
cfs	cubic feet per second
Chl-a	Chlorophyll-a
Board	Eagan-Inver Grove Heights Watershed Management Organization Board of Managers
CIP	Capital Improvement Program
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
LGU	Local Government Unit
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MDNR	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-IGH WMO	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 (Plan) describes how the Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) will manage activities in the watershed in the ten year period 2016-2025.

The Eagan-Inver Grove Heights Watershed Management Organization (E-IGH WMO) is a Watershed Management Organization (WMO) formed in 2014 using a Joint Powers Agreement (included as Appendix A) developed under authority conferred to the member communities by Minnesota Statutes 471.59 and 103B.201 through 103B.251. This area was previously part of the Gun Club Lake WMO, which disbanded when the City of Mendota Heights withdrew from the WMO. The watershed is located in the southeast part of the Minneapolis-St. Paul seven county Metropolitan Area and encompasses all or part of the following cities in Dakota County:

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

The WMO is governed by a five-person Board of Managers: three members appointed from Eagan and two from Inver Grove Heights by their respective City Councils. The Organization's purpose is set forth in Minnesota Statutes 103B.210, Metropolitan Surface Water Planning, which codified the Metropolitan Surface Water Management Act of 1982:

(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 groundwater.

First Generation Watershed Management Plan

The Gun Club Lake WMO developed and implemented first and second generation Watershed Management Plans prior to disbanding and reorganizing. The E-IGHWMO initiated work on its first Watershed Management Plan in January 2015. This Plan includes information required in Minnesota Administrative Rules Chapter 8410, Local Water Management: a land and water resources inventory, goals and policies; an assessment of problems and identification of corrective actions; an implementation program; and a process for amending the Plan.

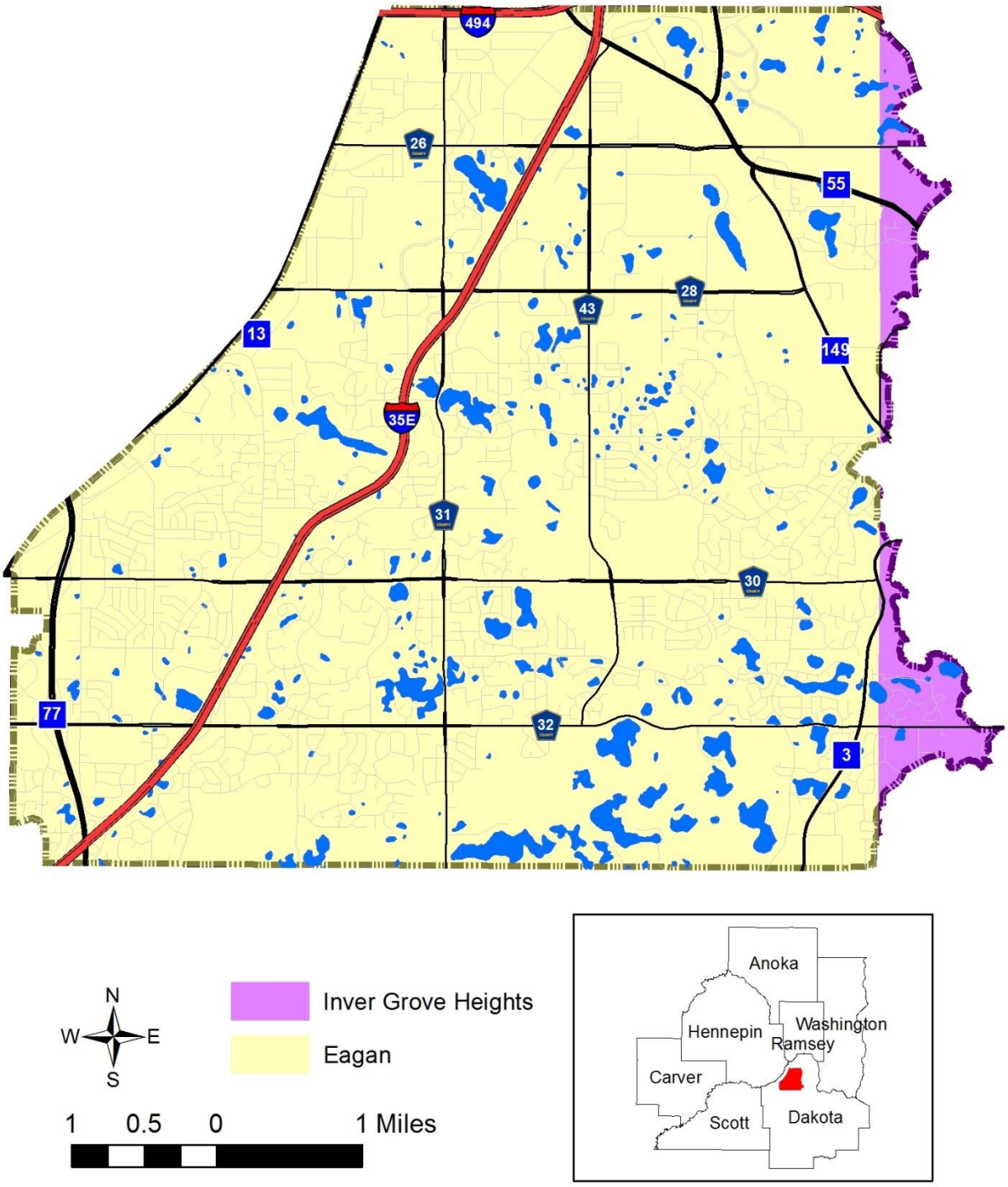

Figure ES.1: Cities in the Eagan-Inver Grove Heights watershed.

Watershed Planning Approach

This WMO is relatively unique in the Twin Cities Metro Area: it is almost entirely comprised of land in one city—Eagan—and encompasses most of that city. It faces some special challenges defining a role for the Board that fulfills its statutory purpose and requirements without creating duplication of effort. This Plan focuses on establishing watershed management goals and policies for the protection and improvement of the resources within the watershed. As set forth in the Plan, the WMO will focus on oversight, communications, and outreach, but much of the daily work of permitting, monitoring, and implementing programs and projects will be accomplished at the City level.

Management Plan Priorities and Goals

The Board and Plan Advisory Committee identified the following issues during the planning process:

- *Awareness:*
  - Lack of a watershed identity.
  - People have other priorities and don't see watershed issues as something to engage in.
  - Lack of understanding of what a watershed management organization can do or be of help.
  - Not enough knowledge to even understand if there are problems.

- *Education:*
  - Need more community involvement.
  - Need more info on how the built environment and other actions affect water resources.
  - Need to affect behavioral change.
  - Lack of information that is understandable and available to the general public.

- *Other Issues:*
  - There are impaired lakes in the watershed as well as lakes with good water quality.
  - Need more funding to be truly effective.
  - Overlap of local water management planning and watershed and other agency planning.

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

Mission Statement

To oversee member city implementation programs and foster civic engagement within the watershed that promotes citizen participation and responsibility in protecting and improving our water resources.

Priorities:

1. Raise awareness of the watershed management organization and what it does.
2. Undertake an active communication and engagement program with multiple stakeholders.
3. Through coordination with the cities, avoid duplication and coordinate water resources management efforts with other agencies and organizations.

Goals:

Goal Area A. Water Quantity

- Goal A.1. Minimize flood damage to private and public property.
- Goal A.2. Reduce stormwater runoff volume and increase infiltration and groundwater recharge.
- Goal A.3. Facilitate the management of intercommunity stormwater flows.

Goal Area B. Water Quality

- Goal B.1. Achieve, maintain, or better water quality standards in the lakes in the watershed consistent with intended use and classification and State of Minnesota water quality standards.
- Goal B.2. Achieve Impaired Waters delisting for Fitz and Holz Lakes by 2024.
- Goal B.3. Reduce pollutant loading to downstream water resources.
- Goal B.4. Track water quality trends in the watershed's lakes and disseminate information about current conditions and trends to the public.

Goal Area C. Groundwater

- Goal C.1. Protect the quality and quantity of groundwater resources.
- Goal C.2. Promote groundwater recharge.

Goal Area D. Wetlands

- Goal D.1. Protect and/or restore wetlands to improve or maintain their functions and values in accordance with the Minnesota Wetland Conservation Act
- Goal D.2. Promote the enhancement or restoration of wetlands in the watershed.

Goal Area E. Communication and Outreach

- Goal E.1. Increase public involvement and knowledge in management and protection of water resources.
- Goal E.2. Provide the public with data and information to protect water resources and to understand the impact of land use decisions on water resources.

Implementation

The E-IGHWMO does not operate a regulatory program or a routine monitoring program. The member cities will regulate, permit, and inspect development and redevelopment projects consistent with the policies established in this Plan. The City of Eagan monitors the water quality in many of the lakes in the watershed and will continue to do so. Over the coming ten years the Board will focus on providing oversight to assure that member cities are implementing actions to help achieve Plan goals and on developing and implementing a communication and engagement plan that will complement the member cities' water resources education programs.

The WMO does not anticipate ordering any capital improvement projects during the life of this Plan, but will work closely with Eagan as it implements actions in the Neighborhood Lakes TMDL and Management Plans Report (Wenck Associates 2015). The member cities will undertake both capital and maintenance projects, many of which are included in the E-IGHWMO's Capital Improvement Program and Implementation Plan.

Local and Watershed Plan Amendments

Cities must update their Local Water Management Plan (LWMP) not more than two years before their Comprehensive Plan updates are due. These updates will be expected to meet the requirements of Minnesota Rules 8410. In addition, Local Plans must explain how the goals and policies of this Plan will be implemented at the local level, and show how the member city will take action to achieve load reductions and other actions identified in any TMDLs and Implementation Plans.

Summary

This Watershed Management Plan provides direction for E-IGHWMO activities through the year 2025. The Managers intend the Plan to provide a flexible framework for managing the watershed and, as such, may initiate amendments to this Plan at any time. Responsibility for implementing actions to achieve the goals in this Plan will primarily be the responsibility of the member cities.

The Board will annually review and refine the budget, education and outreach plan and Capital Improvement Program, including capital and maintenance projects the member cities intend to complete to meet the goals of this Plan. The Board may from time to time adopt plan amendments adding or revising proposed capital improvement projects or making other revisions to the Plan.

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1.0 Introduction and Purpose

The cities of Eagan and Inver Grove Heights created the Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO) on January 7, 2014 using a Joint Powers Agreement (JPA) developed under authority conferred by Minnesota Statutes Sections 471.59 and 103B.201 through 103B.251. The watershed was originally organized on June 1, 1985 as the Gun Club Lake Watershed Management Organization, a joint powers organization that also included the City of Mendota Heights. That WMO was disbanded when Mendota Heights withdrew from the JPA. The Joint Powers Agreement governing the E-IGHWMO is included in Appendix A.

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 Board's purpose is set forth in Minnesota Statutes 103B.201, Metropolitan Surface Water Planning, which codified the Metropolitan Surface Water Management Act of 1982.

(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 groundwater.

1.1 Background and History

The E-IGHWMO is a new joint powers organization, but the member cities are not new to watershed management. The predecessor WMO, the Gun Club Lake WMO, had completed and implemented two ten-year management plans prior to disbanding. The E-IGH WMO is relatively unique in the Twin Cities Metro Area: it is almost entirely comprised of land in one city—Eagan—and encompasses most of that city. It faces some special challenges defining a role for the Board that fulfills its statutory purpose and requirements without creating duplication of effort.

Both member cities have a long history of active water and natural resources management. That part of the watershed that is in Inver Grove Heights is for the most part managed either according to a master plan (the Northwest Area) with stringent volume management requirements or by an existing cooperative agreement between the two cities.

The City of Eagan, which comprises 96 percent of the land area of the watershed, operates a robust water resources program, celebrating 25 years of successes in 2015. 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.

Some specific successes include:

- The MPCA recently determined that Fish Lake is no longer considered impaired, following Eagan's three years of improvement efforts.
- Twenty-five rain gardens have reduced stormwater impacts from a small neighborhood to Schwanz Lake by an estimated 74% in less than five years.
- In 2015 the City completed the Neighborhood Lakes TMDL and Management Plans Report, a study of 12 lakes, quantifying nutrient load reductions where the lakes don't currently meet state water quality standards, and identifying implementation actions both to improve water quality and protect existing good water quality.

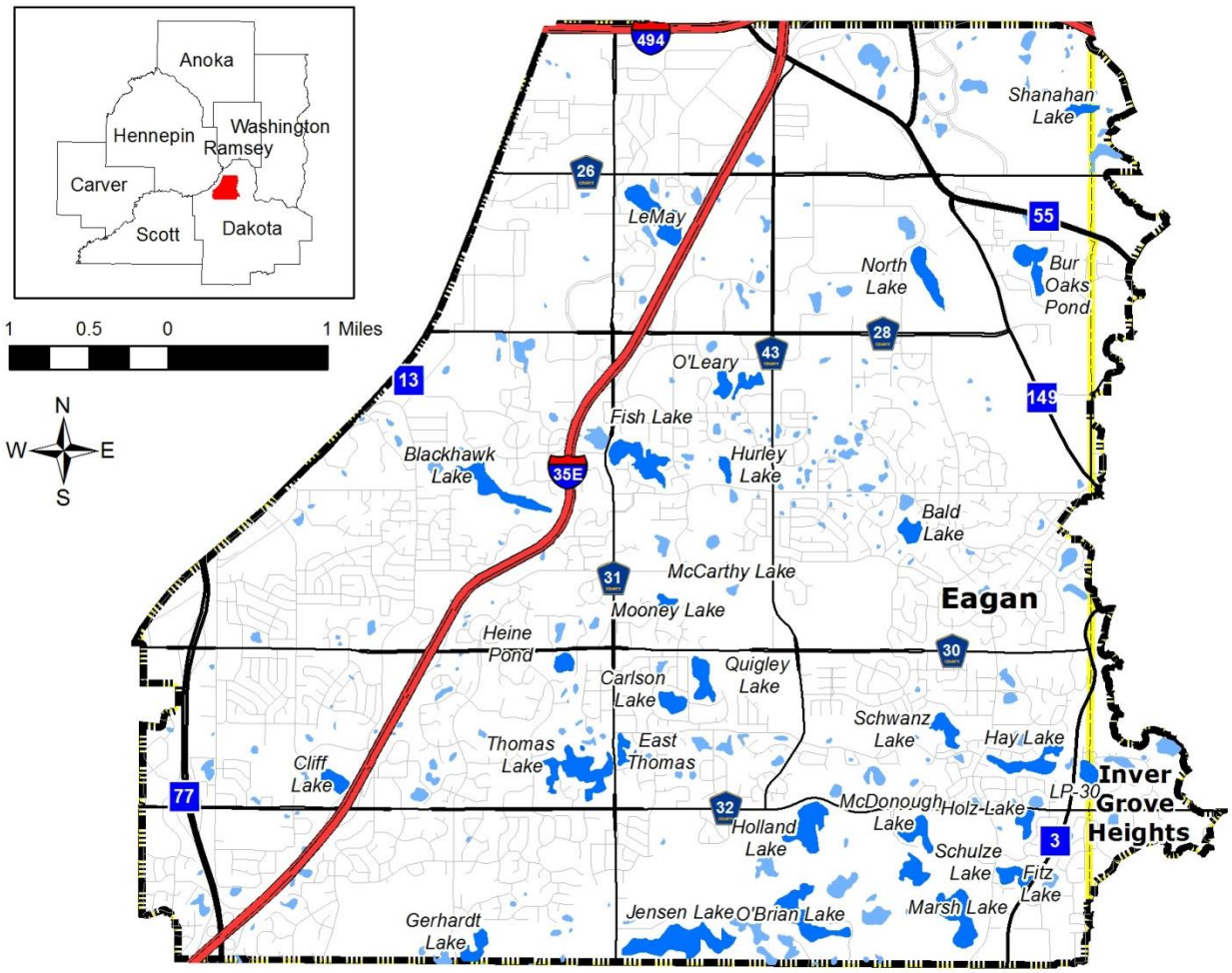

Figure 1.1. The Eagan-Inver Grove Heights watershed in Dakota County, Minnesota.

1.2 PLAN ORGANIZATION

The E-IGHWMO initiated work on its first Watershed Management Plan in January 2015. 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 and Purpose: Describes the authority and composition of the E-IGHWMO the purpose of the Surface Water Management Act and the components of this watershed management plan.

2 – Inventory and Condition Assessment: A physical inventory of the watershed, it 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 2020. This section also contains information on the lakes, streams, and wetlands in the watersheds.

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

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

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

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

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2.0 Inventory and Condition Assessment

This section documents existing conditions and resource characteristics within the Eagan-Inver Grove Heights watershed. Where the Local Water Management Plans or other planning documents provide a detailed inventory of conditions, those data is not repeated here but is referenced and listed in the 8.0 References section. A summary of that information is provided for context, with new or updated information presented in more detail.

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

2.1.1 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 1.1, Table 2.1).

Table 2.1. 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	

2.1.2 Topography and Drainage

The watershed is rolling to hilly and slopes from the south and southeast northwest to the Minnesota River. The topography is characterized by deep, poorly drained depressions that hold wetlands and ponds and are naturally land locked. Many of these outlet through storm sewer. There are no perennial streams draining the watershed.

2.1.3 Geology and Geomorphology

The 2007 Gun Club Lake Watershed Management Plan (WSB 2007) provides a good overview of the surficial and bedrock geology of the watershed. The E-IGH 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.

2.1.4 Climate

The climate is predominately continental. Sitting close to the middle of North America, the weather in the watershed can vary widely and rapidly. Both temperature and precipitation can change abruptly. Table 2.2 shows the watershed's temperature normals, or averages, for the last 30 years.

Table 2.2. Temperature normals in °F for the Eagan-Inver Grove Heights watershed.

Minneapolis-St. Paul International Airport (1981-2010)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Maximum	23.7	28.9	41.3	57.8	69.4	78.8	83.4	80.5	71.7	58.0	41.2	27.1	55.2
Minimum	7.5	12.8	24.3	37.2	48.9	58.8	64.1	61.8	52.4	39.7	26.2	12.3	37.2
Mean	15.6	20.8	32.8	47.5	59.1	68.8	73.8	71.2	62.0	48.9	33.7	19.7	46.2

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

In a normal year, around 30 inches of precipitation falls on the watershed. Table 2.3 shows the watershed's precipitation normals. Winter snowfall averages about 54 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 2.3. Precipitation normals in inches for the Eagan-Inver Grove Heights watershed.

Minneapolis-St. Paul International Airport (1981-2010)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation	0.9	0.8	1.9	2.7	3.4	4.2	4.0	4.3	3.1	2.4	1.8	1.2	30.6
Snow	12.2	7.7	10.3	2.4	0	0	0	0	0	0.6	9.3	11.9	54.4

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

2.1.5 Soils

Most of the watershed's upland area is composed of well-drained Kingsley sandy or Kinsgley-Mahtomedi complex soils. Texture is generally loamy or sandy with moderate infiltration rates when thoroughly wetted. Moderately permeable soils dominate the watershed, as indicated by the large areas covered by soil hydrologic groups B and C (Figure 2.1). Soil hydrologic group characteristics are detailed in Table 2.4.

The soils information in Figure 2.1 and Table 2.4 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 2015).

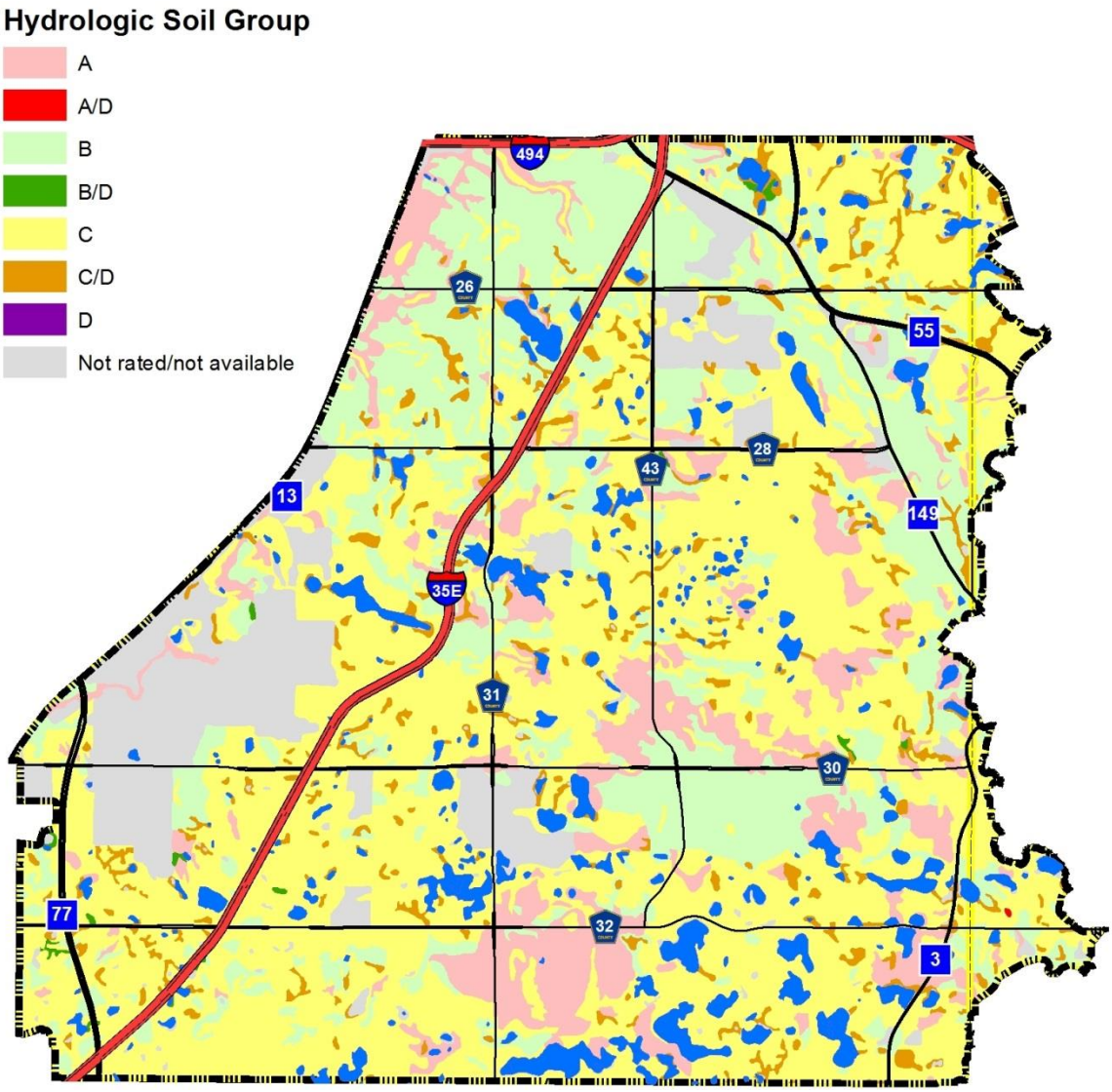

Figure 2.1. Soils by Hydrologic Soil Group classification.
Source: USDA NRCS SSURGO.

Table 2.4. Soil characteristics and infiltration rates by Hydrologic Soil Group (HSG).

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

Source: Minnesota Stormwater Manual (MPCA 2015).

2.2 WATERSHED BIOLOGICAL ENVIRONMENT

2.2.1 Vegetation

At the time of the Public Land Survey, the watershed was dominated by the Big Woods of maple-basswood forest. Aspen-oaklands and oak openings and barrens are ecotones between open prairie and deciduous forest, characterized by small groves of trees interspersed with prairie (see Figure 2.2). Since the area has been converted to urban uses and agriculture only a few remnants of the presettlement vegetation remain, mostly preserved within local and Lebanon Hills Regional Park. The DNR and Minnesota Biological Survey (MBS) have identified those locations in the watershed with intact native plant communities, and those with biodiversity significance (see Figure 2.3).

The DNR 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 on the basis of the number of rare species, the quality of the native plant communities, size of the site, and context within the landscape.

Rare, Threatened, and Endangered Species. The DNR Natural Heritage and Nongame Research Program maintains a database of observations of rare plant and animal species compiled from historical records from museum collections and published information supplemented with data from years of field work. No rare plant species were listed in that database as being observed recently or at some time in the past within the watershed. However, the protected calcareous fens, wet meadows, and Minnesota River bottoms are home to rare and threatened species of concern.

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 2.5 indicates the native plant community types that have been identified in the watershed and their conservation status.

Table 2.5. 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 2015. 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 (DNR).

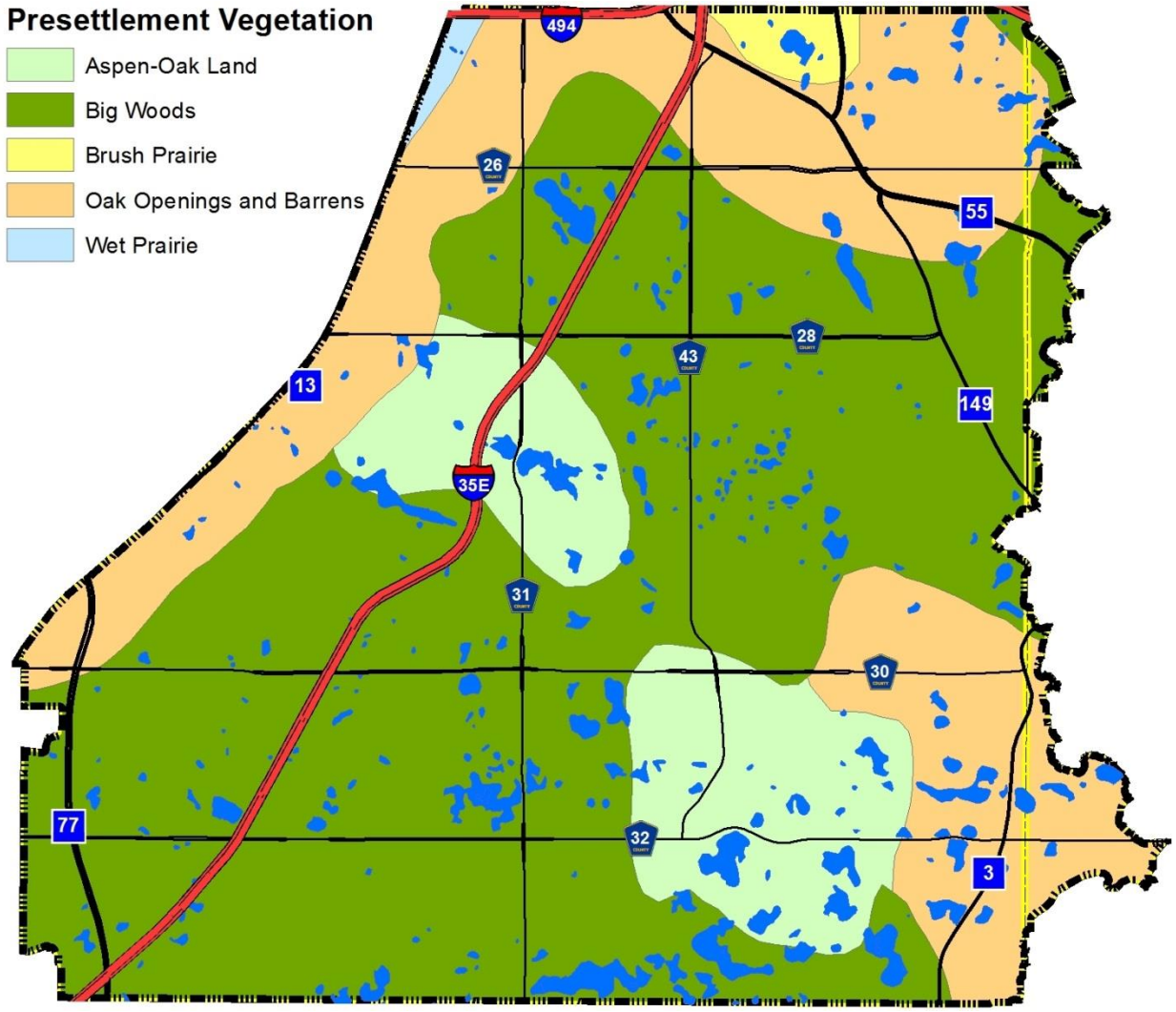

Figure 2.2. Presettlement vegetation.
Source: Minnesota DNR.

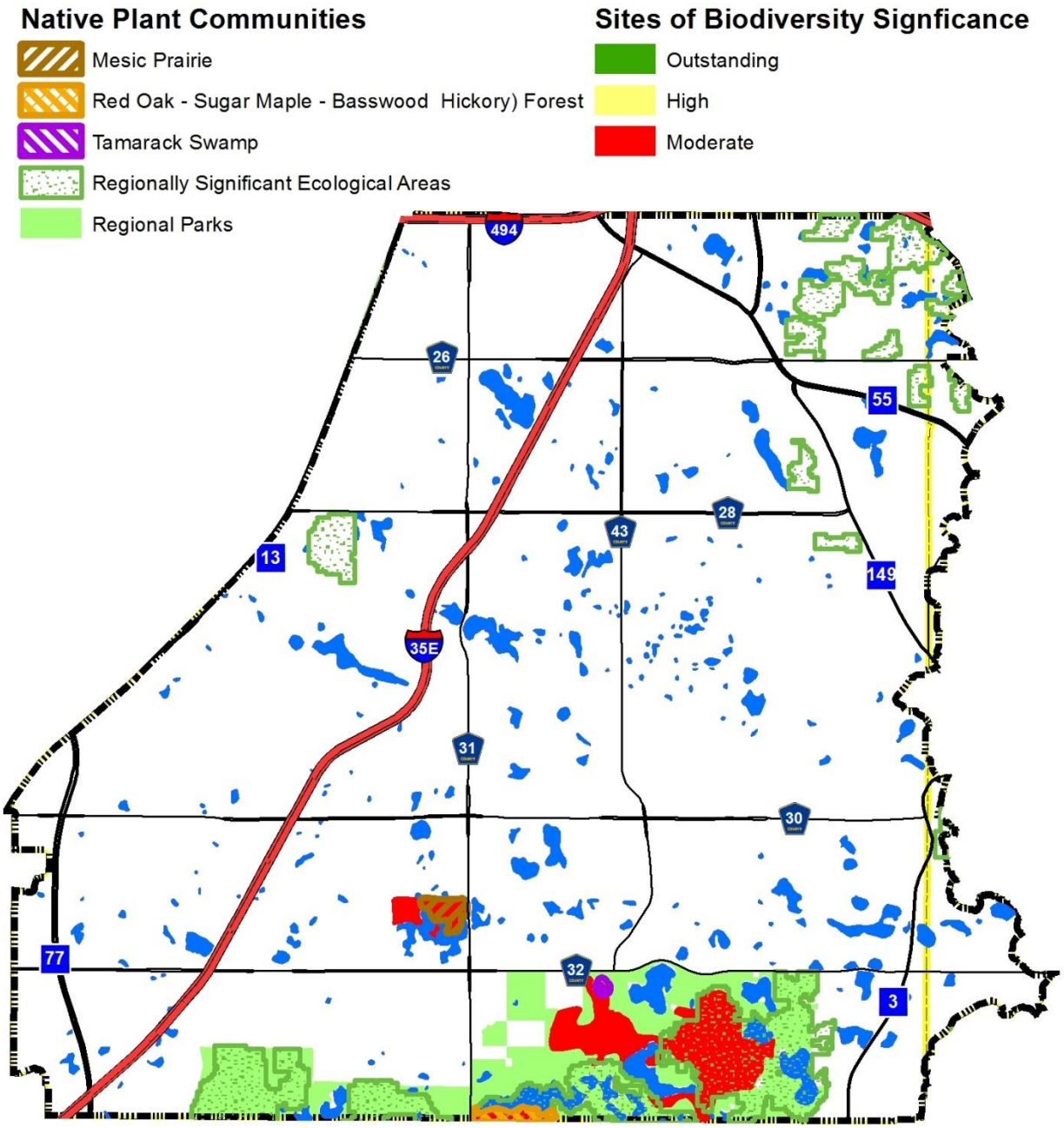

Figure 2.3. Sites of ecological diversity and significance.
Source: Minnesota County Biologic Survey (CBS), Minnesota DNR.

2.2.2 Fish and Wildlife

Fish. Fishing is possible on many of the lakes in the Eagan-Inver Grove Heights watershed. The City of Eagan maintains an online guide (City of Eagan 2015) that includes directions and lake access, common fish species, and information about lake management. Lakes that are regularly stocked with fish by the DNR are shown in Table 2.6. The DNR Lakefinder (MDNR 2015) website may be consulted to find the latest fish survey information for each lake.

Table 2.6. DNR fish stocking in lakes in the Eagan-Inver Grove Heights watershed, 2003-2014.

Lake	Year(s) Stocked	Fish Stocked
LeMay	2014	Largemouth Bass
Fish	2014	Northern pike, yellow perch
Carlson	2010-2014	Walleye, channel catfish
McDonough	2010-2014	Bluegill sunfish, black crappie

Source: Minnesota DNR.

Rare, Threatened, and Endangered Species. The DNR 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 2.7 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 2.7. Rare animal species observed in the Eagan-Inver Grove Heights watershed.

Scientific Name	Name	Last Cataloged	Federal Status	State Status
Buteo lineatus	Red-shouldered hawk	1988	-	SPC
Cygnus buccinators	Trumpeter swan	2011	-	SPC
Emydoidea blandingii	Blanding's turtle	1988	-	THR
Emydoidea blandingii	Blanding's turtle	2008	-	THR
Emydoidea blandingii	Blanding's turtle	2000	-	THR

Minnesota conservation status ranks include END-endangered, THR-threatened, SPC-special concern.
Note: Current as of 2015. 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 (DNR).

Aquatic Invasive Species. As of 2015 five lakes in the watershed have been determined by the Department of Natural Resources (DNR) to be infested with Eurasian Watermilfoil (*Myriophyllum spicatum*), an invasive exotic plant species. The DNR has determined Holz Lake to be infested with Flowering Rush (*Butomus umbellatus*) (see Figure 2.7). Also, numerous other lakes and wetlands contain non-native Purple Loosestrife (*Lythrum salicaria*) and Curly-leaf Pondweed (*Potamogeton crispus*).

2.2.3 Unique Features and Scenic Areas

The 2,000 acre Lebanon Hills Regional Park is located within the watershed. 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 E-IGH watershed, Nicols Fen, a rare calcareous fen, is downstream of the watershed on the Minnesota River bluff. Kennealy Creek and Harnack Creek, DNR-designated trout streams, are also downstream of the watershed.

2.3 WATERSHED HUMAN ENVIRONMENT

2.3.1 Current Land Use and Population

The predominant land use in the watershed is Single Family Residential. Parks and Golf Courses 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 2.8) comprises another 14 percent. Almost the entire watershed (Figure 2.4) is within the existing Metropolitan Urban Service Area (MUSA). The 2010 Census population of the watershed is approximately 69,650 persons.

2.3.2 Future Land Use

Areas of projected urban growth are shown in Figure 2.5. Future land use data was compiled by the Metropolitan Council from cities' most recent Comprehensive Plans, and represents cities' expected 2020 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 2.8. 2010 land use in the Eagan-Inver Grove Heights watershed.

Land Use	Area (acres)	%
Single Family	8,084.0	41%
Parks & Golf Courses	2,797.1	14%
Undeveloped	2,658.6	14%
Industrial	1,525.6	8%
Commercial/Retail	1,238.6	6%
Highway	999.9	5%
Water	898.6	5%
Institutional	752.8	4%
Multifamily	524.6	3%
Agriculture	117.2	1%
Total	19,597.0	

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

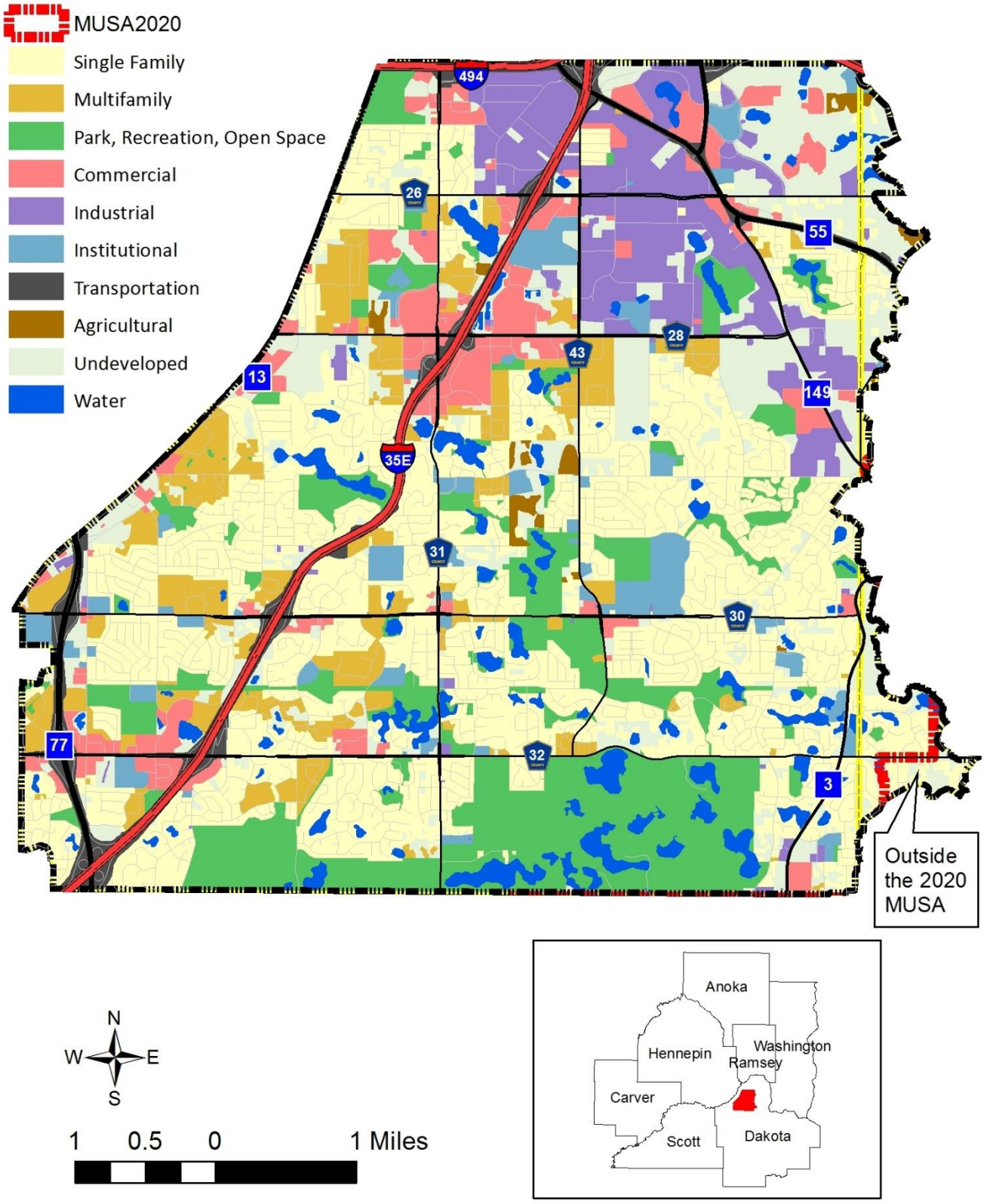

Figure 2.4. 2010 land use in the Eagan-Inver Grove Heights watershed.
Source: Metropolitan Council.

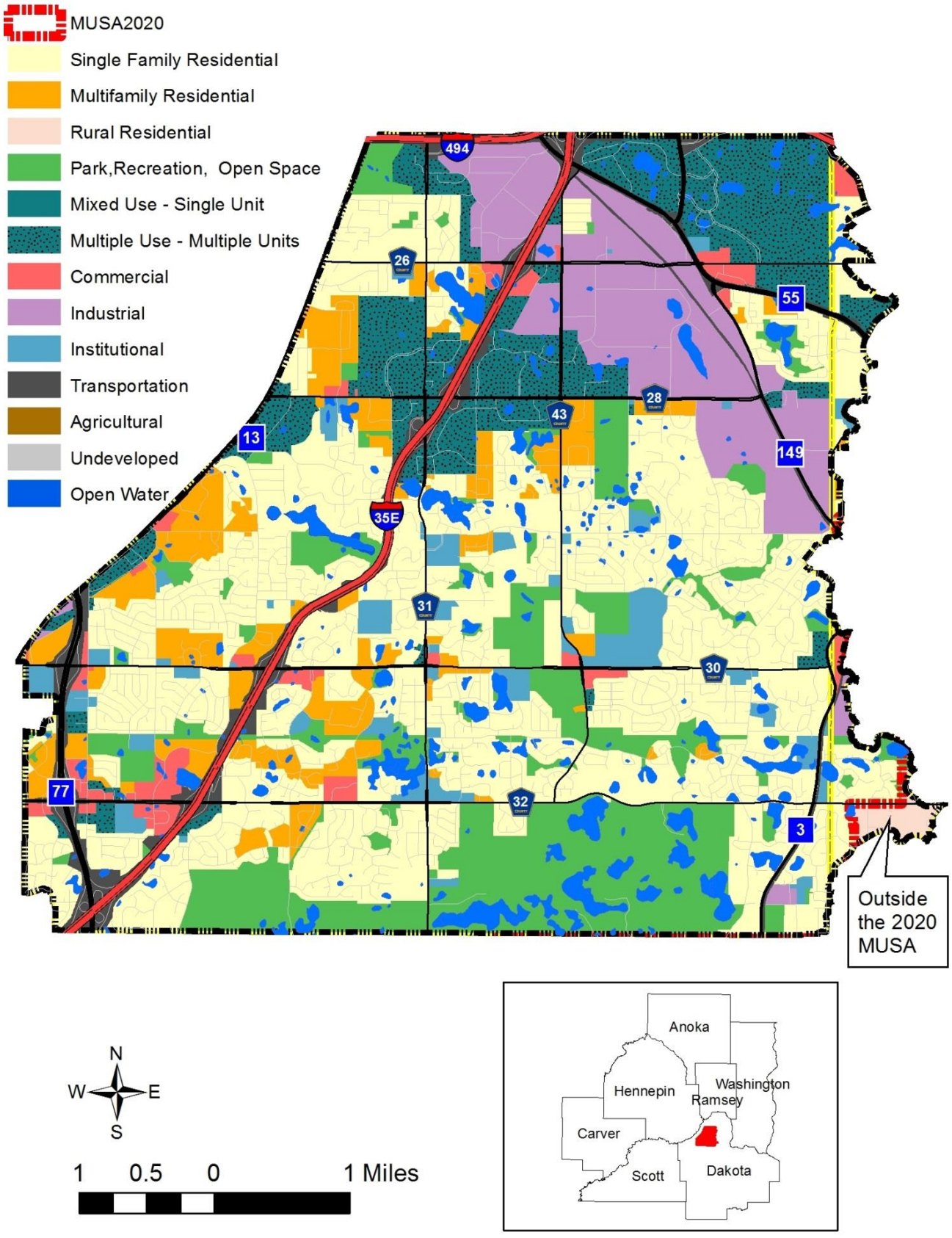

Figure 2.5. Planned 2020 land use in the Eagan-Inver Grove Heights watershed.
Source: Metropolitan Council.

2.3.3 Water-Based Recreation

Public parks abut many of the lakes in the watershed (Figure 2.6). 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 DNR 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 DNR'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.

2.3.4 Potential Environmental Hazards

Groundwater connections, hazardous waste, leaking above- and below-ground storage tanks, and feedlots can be potential sources of surface and groundwater contamination. The MPCA maintains a current on-line mapping tool called What's in My Neighborhood (MPCA 2015b) with information about air quality, hazardous waste, remediation, solid waste, tanks and leaks, and water quality.

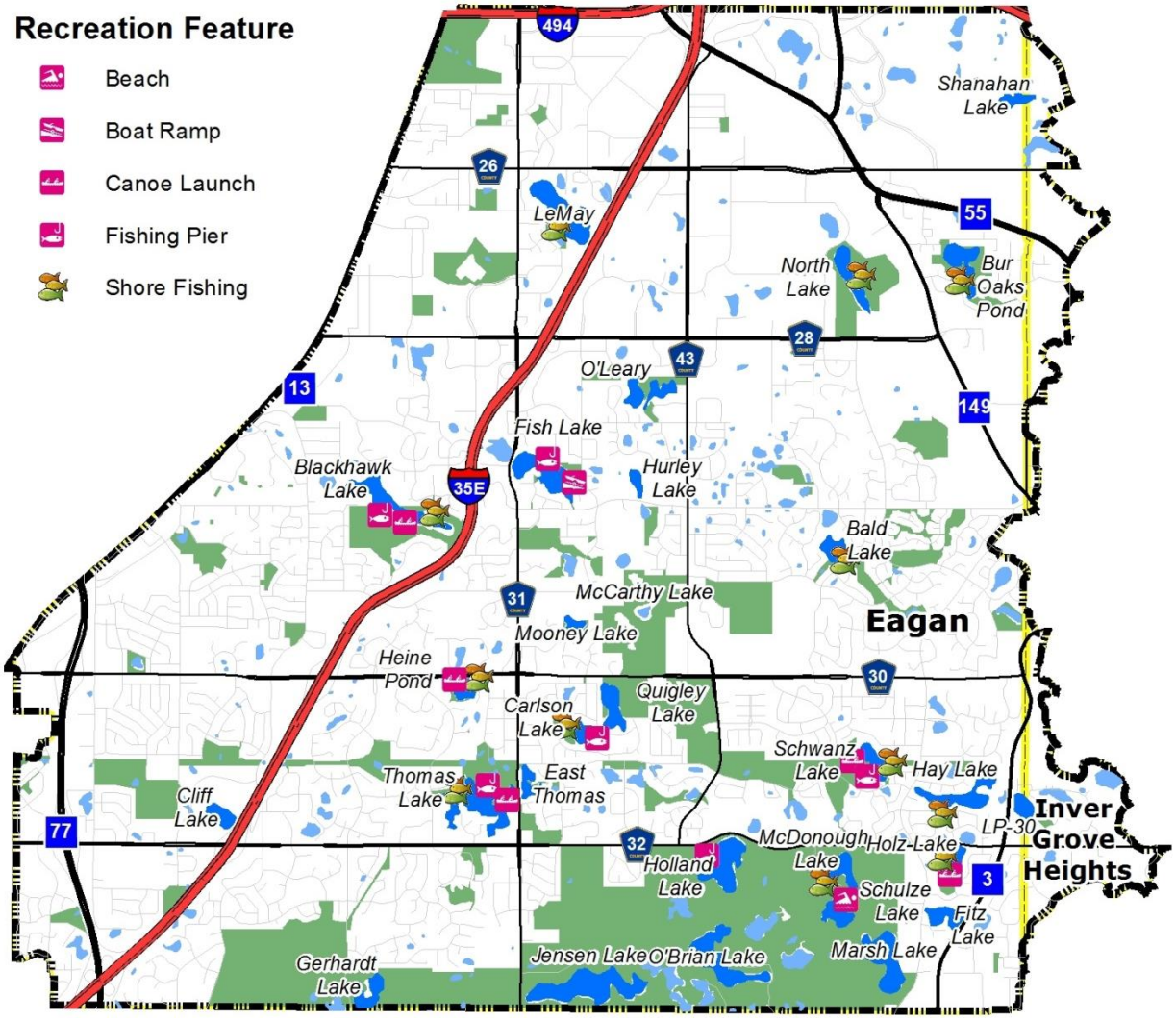

Figure 2.6. Water-based recreation in the Eagan-Inver Grove Heights watershed.
Source: Minnesota DNR, City of Eagan.

2.4 WATERSHED WATER RESOURCES

2.4.1 Lakes

The City of Eagan recognizes thirty priority lakes in the City, based on lake size and publicly-owned shoreline. The DNR lake number and shoreland classification, lake morphometry, and water quality data are shown in Table 2.10. The 29 lakes in the watershed are shown on Figure 2.7.

Minnesota's eutrophication standards for lake water quality vary depending on the depth classification of the lake (Table 2.9). Shallow lakes have a maximum depth of 15 feet or less, or have 80% or more of the lake area shallow enough to support emergent and submerged rooted aquatic plants. Some of the smallest and shallowest of these lakes may be considered wetlands; those eutrophication standards would not apply to those waterbodies. More information about the lakes can be found online at the DNR's LakeFinder website (MDNR 2015).

Table 2.9. Eutrophication water quality standards for lakes in the watershed.

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

Table 2.10. Characteristics of lakes in the Eagan-Inver Grove Heights watershed (2004-2013).

Lake	City ID#	DNR ID# (prefix 19-)	Surface Area (ac)	Max Depth (ft)	Depth Class	DNR Class	Summer Average		
							TP (μg/L)	Chl-a (μg/L)	SD (m)
Bald*	JP-20	0061	10.3	9	Shallow	GD	75	27	1.0
Blackhawk	BP-1	0059	37.7	10	Shallow	RD	63	13	2
Bur Oaks*	GP-1	0259	10.0	9	Shallow	-	42	7	0.7
Carlson* (Quigley)‡	LP-42	0066	12.0	19	Deep	GD	50	33	1.4
Cliff*	AP-11	0068	11.8	8	Shallow	GD	113	46	1.0
East Thomas	BP-8	0161	8.8	9	Shallow	-	39	-	2
Fish	JP-4	0057	28.9	33	Shallow	GD	61	17	2
Fitz*	LP-26	0077	11.5	9	Shallow	GD	105	57	0.6
Gerhardt	BLP-2	0069	14.9	17	Shallow	NE	-	-	1
Hay*	LP-31	0062	19.8	9	Shallow	GD	31	9	1.7
Heine Pond	BP-5	0153	7.2	30	Deep	-	22	8	4
Holland	LP-38	0665	36.4	75	Shallow	NE	33	2	4
Holz*	LP-28	0064	9.2	9	Shallow	GD	72	25	1.5
Jensen	LP-12	0071	51.9	6	Shallow	NE	37	8	1
LeMay*	DP-2	0055	36.5	16	Shallow	GD	76	26	1.5
McCarthy	JP-9	0060	11.3	6	Shallow	RD	-	-	1
McDonough	LP-45	0076	16.7	11	Shallow	RD	44	3	2
Marsh	LP-22	0308	27.5	7	Shallow	-	-	-	2
Mooney	JP-7	0148	7.0	4	Shallow	-	-	-	1
North*	EP-2	0136	14.2	11	Shallow	-	47	18	2.0
O'Brien	LP-18	0072	35.1	10	Shallow	NE	28	4	2
O'Leary* †	DP-7	0056	16.1	5	Shallow	GD	76	26	1
Quigley* † (Carlson)‡	LP-43	0155	15.2	6	Shallow	-	75	46	0.9
Schulze (Schultz)‡	LP-24	0075	11.9	13	Shallow	NE	-	-	2
Schwanz	LP-32	0063	11.5	13	Shallow	RD	48	18	2
Shanahan	FP-8	0054	13.1	7	Shallow	GD	60	6	1
Thomas	BP-7	0067	40.4	7	Shallow	GD	54	25	1
Unnamed	JP-6	0144	6.6	9	Shallow	-	-	-	-
Unnamed*	LP-30	0053	9.2	14	Shallow	-	34	12	1.6

Sources: Minnesota DNR, MPCA EDA

*Water quality data source: Eagan Neighborhood Lakes TMDL (Wenck 2015)

†Considered by the MPCA to be wetlands and not subject to Table 2.9 eutrophication standards.

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

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

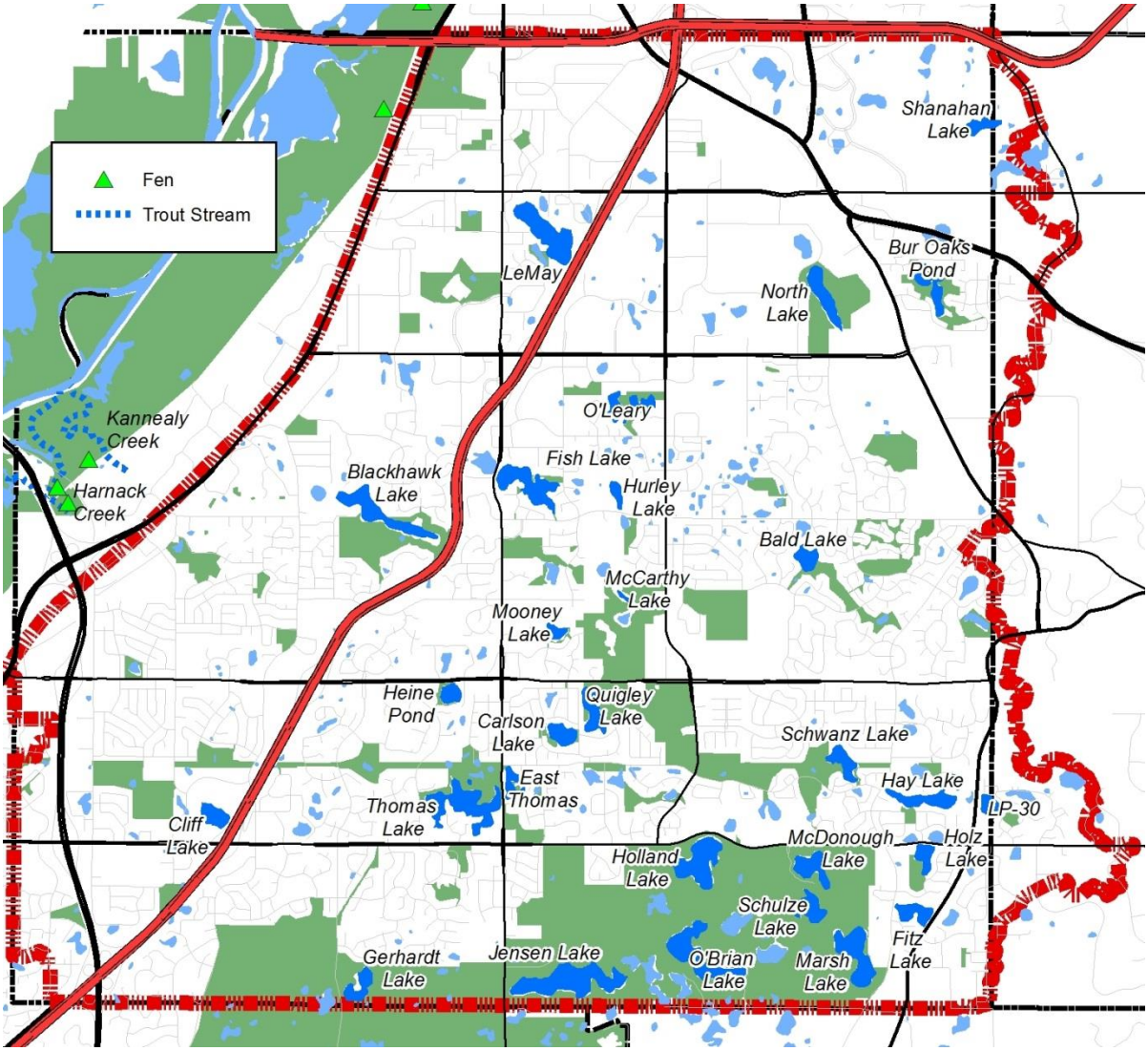

Figure 2.7. Lakes in the Eagan-Inver Grove Heights watershed.
Source: Minnesota DNR.

Impaired Lakes. Seven of the lakes in the watershed have been designated by the MPCA and EPA as Impaired Waters, and are listed on the state's draft 2014 303(d) list: four for not meeting state nutrient concentration standards, and three exceeding mercury in fish tissue standards. Nutrient TMDLs have been completed for the four lakes (Table 2.11) as part of the City of Eagan's Neighborhood Lakes TMDL and Management Plans report (Wenck Associates 2015). The MPCA has completed a statewide TMDL for the listed mercury impairments. The MPCA also has assessed many waterbodies in the state for chloride impairment. The primary source of chloride is salt used on roads and other pavement. The MPCA's draft Twin Cities Metropolitan Area Chloride Management Plan includes Fish Lake among the lakes characterized as "high risk" for chloride impairment, meaning it is not currently listed as impaired, but past monitoring includes results within 10 percent of the chronic criteria (207 mg/L).

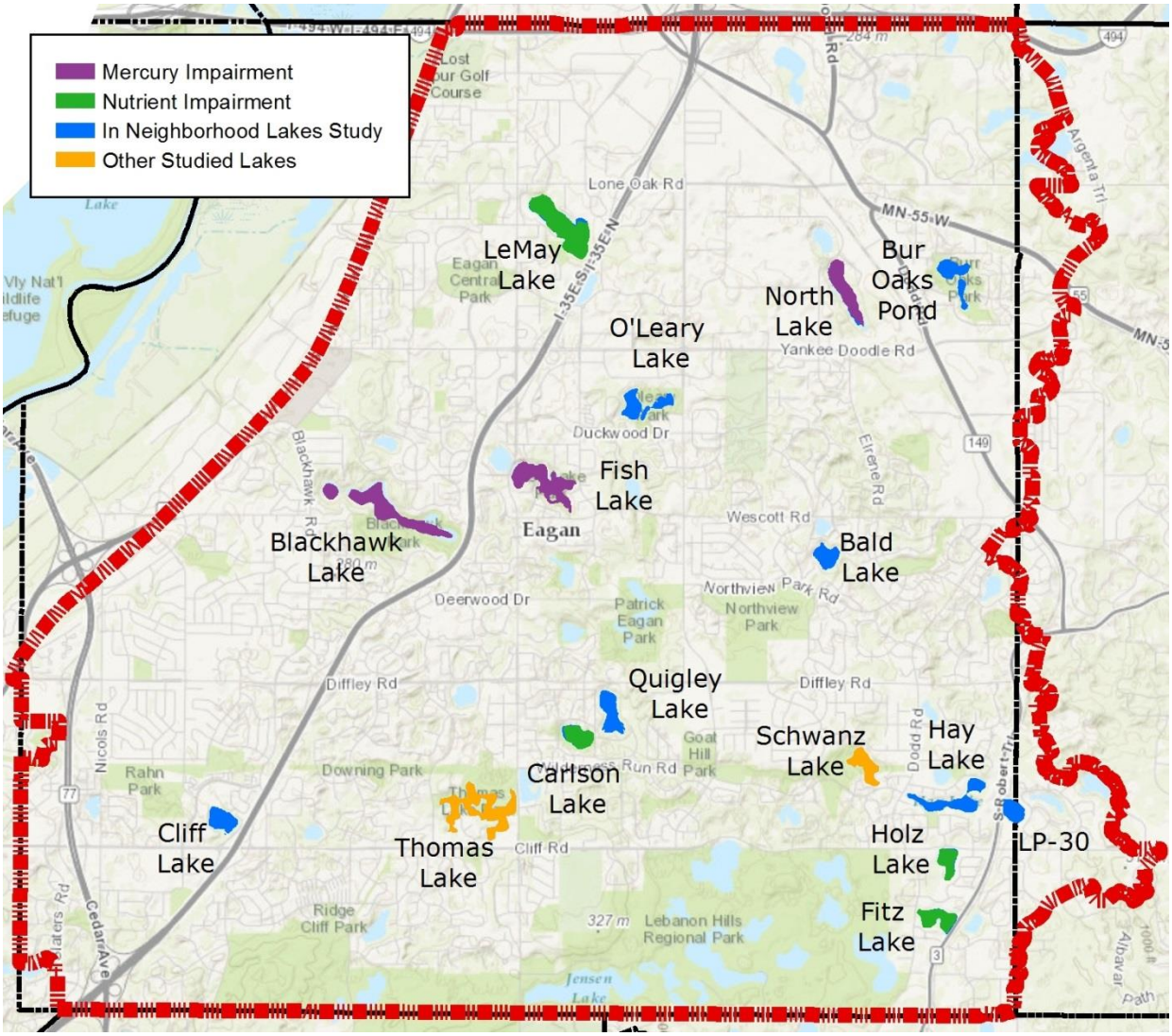

Figure 2.8. Impaired waters in the Eagan-Inver Grove Heights watershed.
Source: Minnesota Pollution Control Agency Draft 2014 303(d) list and Eagan Neighborhood Lakes Study.

Table 2.11. Impaired lakes in the Eagan-Inver Grove Heights watershed.

Lake	DNR Lake #	Affected Use	Pollutant	TMDL Approved
Carlson	19-0066	Aquatic Recreation	Nutrients	In process
Fitz	19-0077	Aquatic Recreation	Nutrients	In process
Holtz	19-0064	Aquatic Recreation	Nutrients	In process
LeMay	19-0055	Aquatic Recreation	Nutrients	In process
Fish	19-0057	Aquatic Consumption	Mercury in fish	
North	19-0136	Aquatic Consumption	Mercury in fish	2008
Blackhawk	19-0059	Aquatic Consumption	Mercury in fish	2008

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

2.4.2 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. Kannealy

Creek and Harnack Creek, DNR-designated trout streams, lie downstream of the watershed along the Minnesota River bluff (Figure 2.7).

2.4.3 Ditches

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

2.4.4 Wetlands

The US Fish and Wildlife Service compiled wetland maps from aerial photo interpretation as part of the National Wetland Inventory (NWI). Wetland scientists use two common classification schemes to identify wetland type – the US Fish and Wildlife Service's "Circular 39" system, and a replacement classification system developed by Cowardin et al. for the Fish and Wildlife Service, commonly referred to as the Cowardin system. The Circular 39 system was originally developed as a means for classifying wetlands for waterfowl habitat purposes. Nine of the Circular 39 freshwater wetland types are found in Minnesota. The Cowardin scheme is a hierarchical classification based on landscape position, substrate, flooding regime, and vegetation. While the Cowardin scheme has been officially adopted by the Fish and Wildlife Service and other agencies, the Circular 39 system is still commonly used because of its simplicity and ease of use. Table 2.12 and Figure 2.9 show the types and areal extent of NWI wetlands in the watershed.

The City of Eagan inventoried wetlands in the community in 2006 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 (Bonestroo 2007) 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 2.12. NWI wetland area by type in the Eagan-Inver Grove Heights watershed.

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

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

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

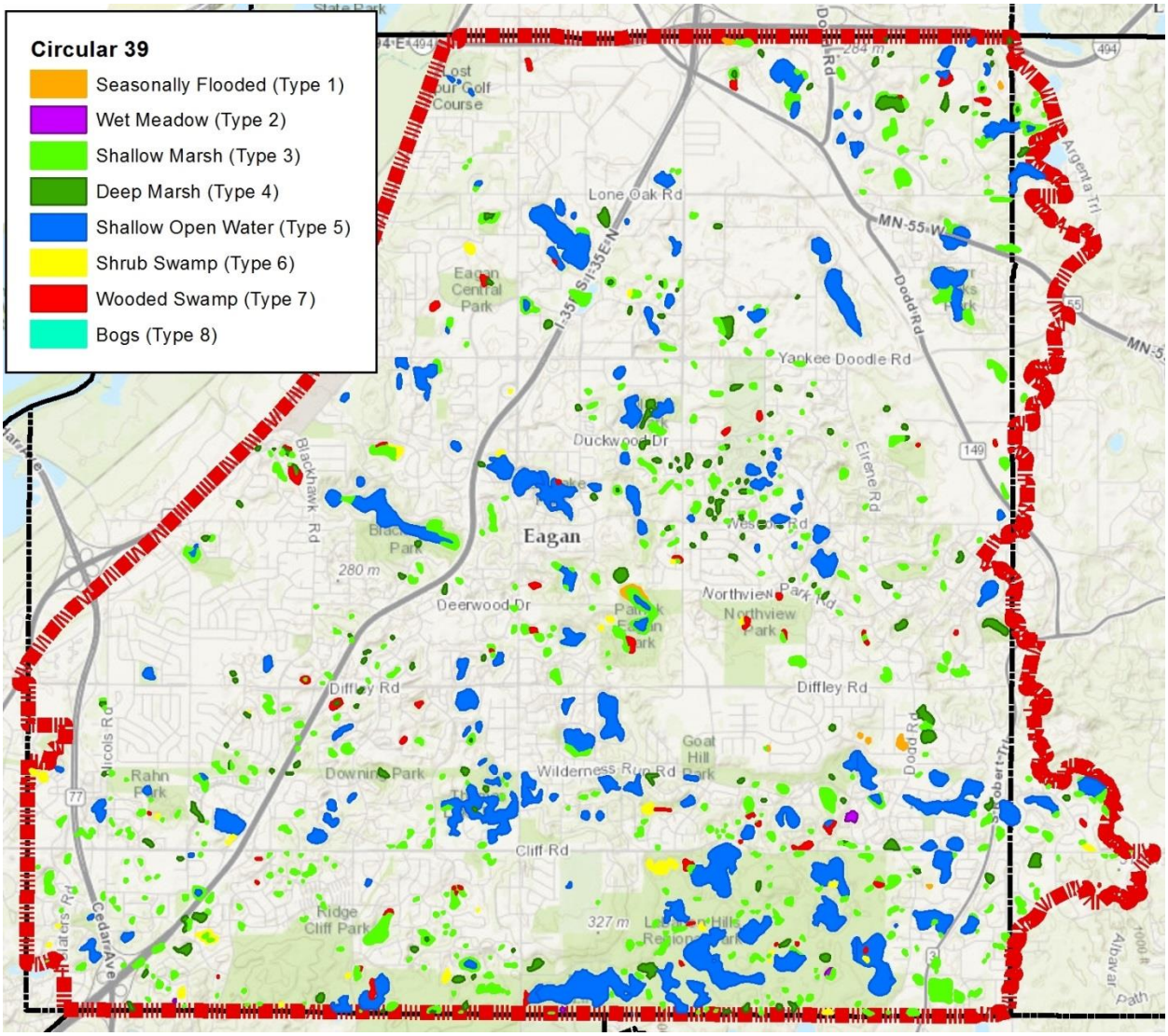

Figure 2.9. National Wetlands Inventory wetlands in the Eagan-Inver Grove Heights watershed.
Source: Minnesota DNR, 2013 NWI Update East-Central Minnesota.

2.4.5 Public Waters

State statutes classify certain waterbodies as Waters of the State and the DNR 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 DNR commissioner as trout streams. Work within waterbodies designated on the PWI is regulated by the DNR.

The Eagan Stormwater Management Plan (Bonestroo 2005) and Inver Grove Heights Water Resources Management Plan (WSB 2014) provide detailed information on Public Waters within each community, and those data is included here by reference.

2.4.6 Floodplain

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

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

FEMA notifies communities by issuing a Flood Hazard Boundary Map (FHBM). This map shows the approximate boundaries of the community's 100-year flood plain. Each participating community has a Flood Insurance Study (FIS). 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.

2.4.7 Groundwater

Each city's groundwater resources are described in more detail in their Local Water Plans. The City of Inver Grove Heights (WSB 2014) obtains its municipal water from the Prairie du Chien-Jordan and the Mt. Simon-Hinckley aquifers. The City of Eagan (Bonestroo 2005) draws its water from the Jordan, Mt. Simon, and Prairie Du Chien-Jordan aquifers. Both cities also have completed or are in the process of completing Wellhead Protection Studies. These studies model groundwater flow and identify Wellhead Protection Areas that should be managed to reduce the risk of contamination of groundwater. Emergency Response Areas show where immediate action should be taken to clean up spills of contaminants to protect groundwater. More information about these Wellhead Protection Plans can be obtained from the respective city.

3.0 Watershed Organization and Operations

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

3.1 Eagan-Inver Grove Heights Watershed Management Organization

3.1.1 Purpose and Authority

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

The Organization's purpose is set forth in Minnesota Statutes 103B.210, Metropolitan Surface Water Planning, which codified the Metropolitan Surface Water Management Act of 1982. Minnesota Statutes 103B.231 and Minnesota Rules 8410 establish requirements for watershed management plans within the Twin Cities Metro Area. The law requires the plan to focus on actions to:

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

3.1.2 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. The Board meets monthly, holding a meeting on the third Tuesday of each month. Meetings are open to the public. The Joint Powers Agreement setting forth the authorities granted to the Board is included in Appendix A.

3.1.3 Operations

The E-IGHWMO was established in January 2014. The WMO has no employees; it contracts with the Dakota County SWCD for administrative services. The Board contracts with a consulting attorney when necessary, but has not yet contracted with a consulting Watershed Engineer. A Planning

Advisory Committee was established for Management Plan development, but the Board has not established any standing Technical or Citizen's Advisory Committees. In its first year the Board focused on self-education and on preparing this, its first Watershed Management Plan. Many of the Board members were new to watershed management planning, so BWSR and SWCD staff made several presentations on the responsibilities and authorities of joint powers WMOs. City and SWCD staff provided information about their policies and programs and reviewed the conditions of their water resources.

3.2 RESPONSIBILITIES

3.2.1 Board

A Board of Managers has been established as the governing body of the Organization. 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.

3.2.2 Relationship to Other Agencies

Cities. Member cities have approved stormwater management plans consistent with the Gun Club Lake Second Generation Watershed Management Plan. The cities have in place ordinances requiring stormwater management, erosion control, and wetland and floodplain management.

Both member cities are National Pollutant Discharge Elimination System (NPDES) Municipal Separate Small Storm Sewer System (MS4) communities and have approved NPDES permits and Stormwater Pollution Prevention Programs (SWPPPs) that include numerous activities to manage stormwater and prevent water resource degradation. Those SWPPPs also contain implementation actions to reduce pollutant loading and manage the rate and volume of stormwater runoff.

The Board may undertake capital projects or order capital projects for construction by member cities. In addition to Board-ordered projects, member cities may undertake projects, such as including BMPs in routine street reconstruction projects.

Member cities also engage in various natural resources management activities such as Adopt-A-Park programs, urban forestry and Arbor Day activities, promotion of recycling and composting, and environmental 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.

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 in protect the land and water resources of the county. Priority focus areas include: preventing soil loss; managing the impacts of stormwater; and protecting and restoring native plant communities.

County. The Dakota County Environmental Resources Department operates a number of programs to conserve natural and water resources in the county and the E-IGH watershed, including establishing minimum septic system standards that are enforced locally, well testing and sealing assistance, and the Wetland Health Program (WHEP), a program for adult volunteers, as well as other activities in the non-urbanized areas of the county. The Dakota County Groundwater Protection Plan is incorporated into the Natural Systems of the Dakota County Comprehensive Plan (Dakota County 2009).

Metropolitan Council. The Metropolitan Council's *Water Resources Management Policy Plan* spells out a wide range of programs and activities undertaken by a variety of governmental and private agencies for management of water resources in the Metro area. 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 Citizens' Assisted Lake Monitoring Program (CAMP); and the Environmental Information Management System.

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 is the state's administrative agency for 90 soil and water conservation districts, 46 watershed districts, 23 metropolitan watershed management organizations, and 80 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 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, Wellhead Protection, Lake and Fish Monitoring (in partnership with DNR/MPCA), Environmental Health Services, Health Risk Assessment, Site Assessment, and Consultation and Well Management.

Minnesota Department of Natural Resources. The DNR 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 DNR 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 DNR's webpage at dnr.state.mn.us/lakefind/index.html is LakeFinder, a DNR supported tool that combines information from various DNR 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 DNR also provides a variety of specialized programs oriented to property owners or neighborhood groups, such as the Aquatic Plant Management, Urban Fisheries and Fishing in the Neighborhood, Neighborhood Wilds, and Metro Greenways programs.

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

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4.0 Goals and Policies

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 and policies the Board will pursue to address them.

4.1 Mission and Vision

The E-IGHWMO is a new joint powers organization, but the member cities are not new to watershed management. The predecessor WMO, the Gun Club Lake WMO, had completed and implemented two ten-year management plans prior to disbanding when one member city withdrew. 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. It faces some special challenges defining a role for the Board that fulfills its statutory obligations without creating duplication of effort.

The City of Eagan has a long history of active water and natural resources management. That part of the watershed that is in Inver Grove Heights is for the most part managed either according to a master plan (the Northwest Area) with stringent volume management requirements or by an existing cooperative agreement between the two cities. Both the member cities are regulated MS4s and are implementing 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.

Through this planning process, the Board discussed its vision for and roles in watershed management, and developed a mission statement.

- Be citizen advocates for the protection and improvement of water resources in the watershed.
- Provide oversight to assure that member cities are implementing actions to help achieve the Board's and member cities' goals.
- Foster and support collaboration with multiple stakeholders.

MISSION STATEMENT

To oversee member city implementation programs and foster civic engagement within the watershed that promotes citizen participation and responsibility in protecting and improving our water resources

4.2 ASSESSMENT OF PROBLEMS AND ISSUES

The Board performed a Visioning and Gaps Analysis in January and February 2015 to identify problems and issues confronting water resources management in the watershed, and to rank those that were of high priority. The Board also took input from the member cities and review agencies. Table 4.1 shows the problems/issues in three general categories, generally in order of the number of high priority rankings received.

Table 4.1. Problems and issues identified in the E-IGH watershed.

#	Problem or Issue	Discussion
Awareness		
1.1	Lack of a watershed identity.	The WMO has no clearly defined role or identity. People are generally not aware of the WMO or what it does.
1.2	People have other priorities and don't see watershed issues as something to engage in.	Unless there is a pressing issue such as localized flooding or the water quality of "their" lake, people aren't engaged.
1.3	Lack of understanding of what a watershed management organization can do or be of help.	People are generally not aware of the WMO or what it does or can do.
1.4	Not enough knowledge to even understand if there are problems.	Even Board members do not clearly understand their roles and the mission of the organization.
Education		
2.1	Need more community involvement.	Unless there is a pressing local issue such as flooding or water quality of "their" lake, people aren't engaged on a watershed-wide scale.
2.2	Need more info on how the built environment and other actions affect water resources.	Need to raise awareness of cause and effect before people can be persuaded to change behaviors.
2.3	Need to affect behavioral change.	What are the most effective ways of delivering information? Some research suggests that person-to-person contacts are more likely to result in behavioral change.
2.4	Lack of information that is understandable and available to the general public.	While the cities provide general water quality and stormwater education and information to the public as part of their NPDES permits, there may be a need to personalize and tailor the information to specific stakeholders.
Other Issues		
3.1	There are impaired lakes in the watershed as well as lakes with good water quality.	Protecting and improving lakes and other resources will require multiple strategies to achieve. Pollutant load and volume reduction projects will need to be supplemented with maintenance practices, regulation, and education and outreach to multiple stakeholders.
3.2	Need more funding to be truly effective.	The WMO operates within a small budget. Collaboration with other partners may help stretch the budget so that additional actions can be undertaken.

#	Problem or Issue	Discussion
3.3	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 cities, through their voluntary actions and those required by their NPDES permits, already undertake nearly all the responsibilities of the WMO. The challenge is if there is a meaningful role for the WMO that does not duplicate what is already being done.

4.3 MANAGEMENT PLAN GOALS AND POLICIES

Based on input and review from the Board and Planning Advisory Committee, the Board of Managers has established the following priorities to guide this Management Plan:

WATERSHED MANAGEMENT PLAN PRIORITIES

1. *Raise awareness of the watershed management organization and what it does.*
2. *Undertake an active communication and engagement program with multiple stakeholders.*
3. *Through coordination with the cities, avoid duplication and coordinate water resources management efforts with other agencies and organizations.*

The Board has developed goals that will guide activities over the coming decade. These goals were derived from the discussions with Managers, Planning Advisory Committee members, state agency staff, and other city staff. These goals will be achieved through implementation of the policies identified for each goal area.

The framework to achieve these goals is set forth in the Implementation Plan detailed in the following sections. Member cities supplement and complement these actions with additional policies and programs tailored to their unique priorities and needs. Successful achievement of the goals in this Plan is dependent on those member cities and their dedication to this effort.

4.3.1 Water Quantity

A statutory responsibility of watershed management organizations is minimizing the public expense to mitigate flooding. This Plan accomplishes this by ensuring that development and redevelopment do not create excessive new volumes and rates of runoff that may cause downstream flooding. 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 by policy limits the rate at which member cities can discharge runoff from development and redevelopment. The Board also encourages the member cities, as well as MnDOT and Dakota County, to limit the volume of runoff by requiring and providing infiltration of runoff greater than the requirements of the NPDES Construction Permit, and by undertaking and encouraging voluntary infiltration BMPs. Eagan and Inver Grove Heights have in place a Joint Powers Agreement establishing intercommunity discharge rates.

Goal Area A. Water Quantity

Goal A.1. Minimize flood damage to private and public property.
Goal A.2. Reduce stormwater runoff volume and increase infiltration and groundwater recharge.
Goal A.3. Facilitate the management of intercommunity stormwater flows.

Water Quantity Policies:

a. Future discharge rates from new development and redevelopment shall not exceed the existing discharge rates for the 2-, 10-, and 100-year events.
b. The E-IGHWMO promotes stormwater volume reduction through infiltration and other abstraction practices on all new development and redevelopment sites where such practices are feasible and do not pose a risk to groundwater resources.
c. Member cities shall encourage reduction of impervious surface and disconnection of impervious surface to reduce peak runoff rates and the volume of runoff to water resources, and infiltration above and beyond the requirements of the NPDES Construction Permit.
d. The E-IGHWMO will promote installation of infiltration BMPs such as rain gardens and native vegetation to reduce runoff from existing impervious surface by providing information and educational opportunities for property owners.
e. Member cities shall manage floodplain activities in accordance with all City, state, and federal regulations.
f. The E-IGHWMO will, as necessary and requested, coordinate intercommunity stormwater runoff design and planning with the member communities, similar to the existing agreement between Eagan and Inver Grove Heights.

4.3.2 Water Quality

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. Four lakes have been designated as Impaired Waters because they do not meet standards for recreational use, and the City of Eagan has developed a plan of action to achieve those goals. To protect and improve water quality in lakes and wetlands in the watershed and to protect downstream water resources, the E-IGHWMO encourages the member cities, as well as MnDOT and Dakota County, to limit pollutant loading to water resources by requiring and providing infiltration or filtration of runoff greater than the requirements of the NPDES Construction Permit, by preventing erosion and sedimentation, and by undertaking and encouraging voluntary infiltration or filtration BMPs.

Goal Area B. Water Quality

Goal B.1. **Achieve, maintain, or better water quality standards in the lakes in the watershed consistent with intended use and classification and State of Minnesota water quality standards.**

Goal B.2. **Achieve Impaired Waters delisting for Fitz and Holz Lakes by 2024.**

Goal B.3. **Reduce pollutant loading to downstream water resources.**

Goal B.4 **Track water quality trends in the watershed's lakes and disseminate information about current conditions and trends to the public.**

Water Quality Policies :

a. The E-IGHWMO adopts as water quality goals the standards for Class 2b waters in the North Central Hardwood Forest ecoregion as set forth in Minn. Rules 7050.0222.
b. Annual TP and TSS loads discharged from new development shall not exceed pre-development annual TP and TSS loads, and from redevelopment shall be less than loads discharged pre-redevelopment.
c. Member cities shall enact and enforce official controls requiring land disturbing activity to control erosion and sedimentation.
d. Member cities shall during development review encourage reduction of impervious surface and disconnection of impervious surface to reduce nutrient and other pollutant loading to water resources.
e. The E-IGHWMO will promote installation of water quality BMPs such as bioinfiltration and filtration basins and shoreline and wetland native buffers by providing information and educational opportunities for property owners.
f. The E-IGHWMO will collaborate with its partners to monitor water quality in the watershed's lakes and to track current conditions and trends in water quality.

4.3.3 Groundwater

The Board has a limited role in groundwater management activities. Over the past decade the member cities have worked with the Minnesota Department of Health to undertake or complete and adopt wellhead protection plans and to implement policies and official controls to protect drinking water sources, and Dakota County has undertaken a number of actions as detailed in its Groundwater Plan, which is incorporated into the Natural Systems section of the Dakota County Comprehensive Plan (Dakota County 2009). The E-IGHWMO's role is limited to encouraging groundwater recharge through infiltration in accordance with wellhead protection plans, and raising awareness about groundwater and water conservation issues.

Goal Area C. Groundwater

Goal C.1. Protect the quality and quantity of groundwater resources.
Goal C.2. Promote groundwater recharge.

Groundwater Policies:

a. Member cities shall during development review encourage reduction of and disconnection of impervious surface and installation of infiltration Best Management Practices to increase infiltration where such practices are feasible and do not pose a risk to groundwater resources.
b. The E-IGHWMO will promote installation of infiltration BMPs such as rain gardens and native vegetation to reduce runoff from existing impervious surface by providing information and educational opportunities for property owners.
c. The E-IGHWMO supports the policies in the Dakota County Groundwater Plan.
d. The E-IGHWMO will collaborate with its partners to raise awareness of groundwater and water conservation issues within the watershed.

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

Goal Area D. Wetlands

Goal D.1. Protect and/or restore wetlands to improve or maintain their functions and values in accordance with the Minnesota Wetland Conservation Act

Goal D.2. Promote the enhancement or restoration of wetlands in the watershed.

Wetland Policies:

a. Member cities shall maintain an inventory of wetlands, including assessment of functions and values, either as part of a comprehensive wetland management plan or on an as-needed basis.
b. Member cities shall adopt and enforce wetland management standards that specify wetland buffer width, allowable water level bounce, and pre-treatment requirements for stormwater discharges.

4.3.5 Communication and Outreach

A high-priority goal for the E-IGHWMO is 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 effect positive change. 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 periodically review its Communication and Outreach Plan and work together with its partners to update priority messages, strategies, and metrics based on current needs.

Goal Area E. Communication and Outreach

Goal E.1. Increase public involvement and knowledge in management and protection of water resources.

Goal E.2. Provide the public with data and information to protect water resources and to understand the impact of land use decisions on water resources.

Communication and Outreach Policies:

a. Develop and disseminate through a variety of media and delivery practices information about water resources, stormwater management, and other topics developed in an annual Communication and Outreach Plan.
b. Publish an annual report providing an overview of conditions of the waters in the watershed and actions stakeholders can take to protect and improve those waters.
c. Partner with entities such as 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.
d. Engage volunteers such as Master Water Stewards, Naturalists, and Gardeners, youth organizations, faith groups, and service clubs to extend the reach of the Board.

5.0 Implementation Plan

Potential operating programs were reviewed during the planning process and are described in this section. This section includes a cost estimate for operations over the coming ten year period and the estimated member assessments (Table 5.1).

To achieve the goals set forth in this Plan the Board will focus on its education and outreach program and work with its partners to ensure the other goals are being achieved. Table 5.2 describes how those goals and other important water management issues will be addressed by the Board, the member cities, and the partners. Table 5.3 describes how the programs and projects in this Implementation Program address the Problems and Issues identified in the Gaps Analysis and subsequent public review and input. This section concludes by describing how the Board will assess progress towards those goals and how well the member cities are performing their designated roles.

5.1.1 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. Both cities currently operate a permitting program and have local controls in place consistent with the E-IGHWMO policies. Local Water Management Plans are expected to include an overview of the official controls and procedures the member cities have in place to assure that land disturbing activity in the watershed is conducted consistent with E-IGHWMO policies.

5.1.2 2016-2025 Monitoring Program

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

5.1.3 2016-2025 Communication and Outreach Program

Communication and Public Outreach is a core function of the Eagan-Inver Grove Heights Watershed Management Organization. The Board will develop and implement a three-year Communication and Outreach Plan that sets forth more detailed messages, strategies, and metrics for evaluating and measuring change in attitudes and behaviors. The Board will periodically review its Communication and Outreach Plan 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 people in the community in the protection and improvement of lakes, rivers, streams and wetlands through education, increased water awareness and community participation.

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.

1. All property owners (residential and non-residential)
   a. Understand that they live in a watershed and know where their stormwater runoff goes
   b. Understand nutrient and chloride sources and their impacts on lakes, wetlands, and streams
   c. Understand how runoff rates and volumes affect lakes, wetlands and streams
   d. Understand and undertake Best Management Practices (BMPs) on their properties to reduce nutrient and chloride loads and runoff volume
   e. Participate in volunteer activities or events

2. Lakeshore property owners
   a. Know the water quality status of their lake, and the types and magnitude of improvements needed
   b. On shallow lakes, have a general understanding of shallow lakes compared to deep lakes
   c. Understand and take action to reduce the risk of Aquatic Invasive Species (AIS)
   d. Understand and undertake Best Management Practices such as lakeshore buffers and proper application of fertilizer, herbicides, and pesticides

3. Government: elected and appointed officials, staff, and board members
   a. Understand the water resources implications of land use change and the benefits of prevention and the costs of mitigation
   b. Are aware of water management policies and actions of other local, watershed, regional, and state organizations
   c. Understand how to incorporate water resources management actions into development and redevelopment as well as city operations

4. Educators and students
   a. Create opportunities for volunteer monitoring, service projects, and other hands-on learning
   b. Educators are aware of and have access to continuing education centered around water

Implementation Strategies. Each year the Board will review the Communication and Outreach program and establish 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.

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 Master Water Stewards 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 Board'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.
- Develop and 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.
- Provide education opportunities for elected and appointed officials and other decision makers.
- Enhance education opportunities for youth.
- Provide opportunities for bridge-building between stakeholders with sometimes competing ideas and interests.

2016-2018 Actions

In early 2016, the Board will prepare a three year Communications and Outreach program and undertake these and other initial communication and outreach actions:

- Raise the profile of the WMO and increase awareness of the watershed and its resources.
  - Develop and incorporate an E-IGHWMO logo into all communications.
  - Update the website with useful information and links and publicize its address.
  - Explore opportunities to speak at events, meetings, etc. introducing the WMO and explaining what it does.
- Complete a communication and outreach inventory and specific strategies and schedule for ongoing communication and outreach programming.
  - Compile information from member cities, Dakota County, other agencies, nonprofit groups, etc., about their communication and outreach offerings, messages, and delivery mechanisms.
  - Identify gaps for future focus.
  - Identify and build partnerships to avoid duplication, share resources and strengthen messaging.
  - Establish communication and outreach strategies for the following few years.

- Publish two articles in the member city newsletters explaining what a watershed is and what a WMO is and what it does.
- Sponsor a Landscaping for Water Quality workshop through Dakota County SWCD.

5.1.4 Capital Improvement Projects

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 5.1 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.

The City of Eagan has identified a number of potential projects through its Neighborhood Lakes TMDL and Management Plans and its routine inspection and maintenance program. These include:

- *Lake Protection Actions.* These projects are intended to protect existing water quality in lakes by undertaking stormwater pond enhancements such as expansions or retrofits with ~~Minnesota F~~iron-enhanced sand filters to maximize stormwater treatment. This may also include actions such as alum applications ~~treatments~~ on lakes where there is no current nutrient TMDL. Lakes that would be targeted for these actions include: North, Blackhawk, Cliff, Bur Oaks, Thomas, Heine Pond, Hay Lake, Almquist Lake and Bald Lakes. Some proposed projects include:

  - Almquist Lake: Alum application
  - Bald Lake: Ponds JP-20.1, JP-20.2, and JP-20.5 improvements and Alum application
  - Blackhawk Lake: Wetland JP-5 Bypass and Blackhawk Lake Alum application
  - Bur Oaks Lake: Pond GP-1.2 Improvements and Alum application
  - Cliff Lake: Pond AP-42 improvements and Cliff Lake alum application~~treatment~~
  - Heine Pond: Alum application
  - Hay Lake: Alum application
  - North Lake: Pond EP-2.01 Improvements and Alum application
  - Thomas Lake: Ponds BLP-6, BLP-57 Improvements and Alum application

- *Lake TMDLs Load Reduction Projects.* These projects are intended to improve water quality in lakes the MPCA has listed as impaired for not meeting state nutrient concentration standards (see Table 2.11). Such projects are typically pond cleanouts, expansions, and retrofits to increase stormwater treatment and maximize removal efficiency. The category also includes lake internal load reduction actions such as alum treatments. Lakes that would be targeted for these actions include: Fish, Fitz, LeMay, Carlson, and Holz Lakes. Some proposed projects include:

  - Carlson Lake: Wetlands LP-41 and LP-44 Alum applications~~Treatments~~; Pond LP-42 Improvements; Carlson Lake Alum application~~treatment~~
  - Fish Lake: Pond JP-47.2 Sediment Removal; Protection project and Alum application
  - Fitz Lake: Fitz Lake Alum application~~treatment~~; Ponds LP-26.3, LP-26.4, and LP-26.5 Improvements; Wetland LP-27 Improvements and water quality improvement project

- ❖ Holz Lake: Holz Lake Alum application ~~treatment~~
- ❖ LeMay Lake: Ponds DP-4A, DP-4B, DP-26, DP-27 Improvements; Wetland DP-3 Improvements; LeMay Lake water quality improvement projects

More detail on these projects can be found in the ~~Fish Lake TMDL (Bonestroo 2010) and~~ Neighborhood Lakes TMDL (Wenck Associates 2015).

- ▲ *MS4 Maintenance Requirements.* As ~~a~~ regulated MS4 cities, Eagan ~~is~~ and Inver Grove Heights are required to undertake periodic maintenance of ~~its~~ BMPs and conveyances. These are typically pond sediment removal projects. However, the City of Eagan does annually provide financial incentives to private property owners for the installation of BMPs, and that program is included in this category~~, as is periodic replacement of street sweeping and other maintenance equipment~~. General maintenance activities are left to the individual member cities.

~~The City of Eagan has not developed a water resources CIP for the period 2021-2025.~~ Cities ~~do~~ review and revise their CIPs annually, as resources fluctuate, more information is available, or as opportunities arise. As part of its annual budget process, the E-IGHWMO will request updated CIPs from the member cities 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.

5.1.5 Implementation Plan Cost and Funding

The estimated cost of implementing this Plan is set forth in Table 5.1 below. The 2016 and future budgets include a lump sum amount for "Communication and Outreach." Each year during its annual budget process for the coming year, the Board will review its education and outreach programming and develop a more detailed spending plan and areas and messages of focus based on the stakeholder goals and implementation strategies laid out in the Communication and Outreach Program.

The primary source of funding 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.

5.1.6 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.

MS 103B.201, which is reproduced in Section 1.0 of this Plan, sets forth the purpose of water management planning in the Metro area. Table 5.2 below shows both the areas set forth in MS 103B.201 as well as other important water management issues and how those responsibilities are being addressed by this Plan's goals, policies, and programs, and those of the member cities and other partners.

Table 5.1. Eagan-Inver Grove Heights Watershed Management Plan Implementation Plan.

	Goal/Policy	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenses:											
OPERATING EXPENSES											
Work Program											
Regulatory Program (completed by the cities)	A(a), A(b), A(c), B(a), B(b), B(c), B(d), C(a),D(b)	0	0	0	0	0	0	0	0	0	0
Monitoring Program (completed by the cities)	B(d), D(a)	0	0	0	0	0	0	0	0	0	0
Communication and Outreach Program	A(d), B(e), B(f), C(d), E(a), E(b), E(c), E(d)										
Newsletter or Communication		300	300	300	300	300	300	300	300	300	300
Develop/Maintain Web Site		1,600	1,600	1,600	1,650	1,650	1,700	1,700	1,750	1,750	1,800
Communication and Outreach		4,500	4,500	6,000	6,000	7,500	7,500	9,000	9,000	9,500	9,500
Landscaping for Water Quality Workshops		4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500
Landscaping for Water Quality Cost Share		6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Administrative											
Staff services (general)		19,000	19,000	19,500	19,500	20,000	20,000	20,500	20,500	21,000	21,000
Annual report, financial report, and audit		5,000	5,000	5,200	5,200	5,400	5,400	5,600	5,600	5,800	5,800
Engineering consulting services (general)		5,000	5,000	5,000	5,500	5,500	5,500	6,000	6,000	6,000	6,500
Legal consulting services (general)		500	500	500	500	500	500	500	500	500	500
TOTAL OPERATING EXPENSE		**$46,400**	**$46,400**	**$48,600**	**$49,150**	**$51,350**	**$51,400**	**$54,100**	**$54,150**	**$55,350**	**$55,900**
Revenues:											
Member Dues		$38,400	$46,375	$48,575	$49,125	$51,325	51,375	54,075	54,125	55,325	55,875
Eagan		37,317	45,067	47,205	47,740	49,877	49,926	52,550	52,599	53,765	54,299
Inver Grove Heights		1,083	1,308	1,370	1,385	1,448	1,449	1,525	1,526	1,560	1,576
Interest & Dividends		25	25	25	25	25	25	25	25	25	25
(To) from Reserve		7,975	-	-	-	-	-	-	-	-	-
TOTAL OPERATING REVENUE		**$46,400**	**$46,400**	**$48,600**	**$49,150**	**$51,350**	**$51,400**	**$54,100**	**$ 54,150**	**$ 55,350**	**$55,900**
Capital Improvement Program:											
Eagan:											
Lake Protection Actions	A(d), B(a), B(e), E(a), E(c), E(d)	$515,000	$1,210,000	$250,000	$120,000	75,000	$0	$43,000	$122,000	$61,500	$194,000
Lake TMDLs Load Reduction Projects	A(d), B(a), B(e), E(a), E(c), E(d)	-	682,000	1,864,000	2,234,200	3,205,000	208,000	650,000	93,000	16,000	108,000
MS4 Maintenance Requirements	B(a)	407,500	172,500	1,089,500	506,500	242,500	62,500	62,500	62,500	62,500	62,500
TOTAL CAPITAL EXPENSE		**$407,500**	**$2,064,500**	**$3,203,500**	**$2,860,700**	**$3,522,500**	**$270,500**	**$855,500**	**$277,500**	**$140,000**	**$364,500**

Note: Capital projects are funded 100% by the member cities, supplemented by grants or other sources when available.
N/A: The City of Eagan has not developed a CIP for the period 2021-2025.

Effective Date: 12-8-2020

Table 5.2. Water resources management issues, partners and roles.

Management Issue		E-IGHWMO	Cities of Eagan and Inver Grove Heights	Other Agencies
Stormwater Management	Establish uniform policies for: managing surface and groundwater; regulating the discharge of pollutants in stormwater runoff; and regulating stormwater runoff rates and volumes. (MS 103B.201(1), (3), and (4))	• Establish and implement Water Quantity and Water Quality policies A(a), B(a), B(b), and B(c). • Review Local Plans for consistency. • Periodically review goals and policies and modify as necessary.	• Prepare and implement Local Water Management Plan. • Enact official controls. • Review land disturbances and issue permits. • Perform inspections. • Maintain current Stormwater Pollution Prevention Program as required by the Minnesota NPDES Phase II MS4 Stormwater Permit.	• *MPCA:* Standards detailed in the Minnesota NPDES Phase II MS4 Stormwater Permit, the NPDES General Stormwater Permit for Construction Activities, and the NPDES General Industrial Stormwater Permit.
Wetland Management	Protect and preserve wetland functions and values. (MS 103A.202 and MR 8420)	• Establish and implement Wetland policies D(a) and D(b). • Review Local Plans for consistency.	• Enact official controls to regulate land use adjacent to wetlands and to regulate the extent and nature of impacts and mitigation of impacts.	• *BWSR:* Maintain and upgrade tools such as MnRAM to assess wetland functions and values.
	Administer the requirements of the Wetland Conservation Act. (MS 103G and MR 8420)	• Establish and implement Wetland policies D(a) and D(b). • Review Local Plans for consistency.	• Administer the Local Governmental Unit (LGU) duties of the Wetland Conservation Act.	• *BWSR:* Provide oversight of the WCA. • Participate in Technical Evaluation Panels. • Administer a wetland bank. • *DNR:* Manage public water wetlands below the OHW. • *MnDOT:* Administer the LGU duties of the Wetland Conservation Act on its right-of-way.

Management Issue		E-IGHWMO	Cities of Eagan and Inver Grove Heights	Other Agencies
Flood Control	Protect and preserve local natural surface and groundwater storage and retention systems. (MS 103B.201(1) and (2))	• Receive information and provide comments and policy guidance as requested.	• Prepare and implement local water management plans identifying storage areas and policies to protect them.	
	Manage floodplains in accordance with state and federal requirements. (MS 103B.201(1) and (2))	• Establish and implement Water Quantity policy A(e). • Review Local Plans for consistency.	• Enact official controls. • Review land disturbances and issue permits. • Perform inspections.	• *FEMA:* Establish National Flood Insurance Program (NFIP), identify and publish special flood hazards and flood risk zones. • *DNR:* Implement NFIP.
	Identify and correct local flooding problems. (MS 103B.201(1) and (2))	• Receive information and provide comments and policy guidance as requested. • Review Local Plans for consistency.	• Maintain up to date storm drainage system plans and upgrade system network as required. • Maintain drainage system to maintain storage and conveyance capacity.	
Surface Water Quality	Monitor lake water quality. (MS 103B.201(1) and (3))	• Establish and implement Water Quality policy B(d). • Annually receive monitoring data and trend information and disseminate results.	• Monitor lake water quality in accordance with local water management plan and NPDES permit needs and requirements.	• *Met Council:* Administer the Citizen Assisted Lake Monitoring Program (CAMP). Perform Metro-wide lake monitoring.
	Identify and correct water quality problems. (MS 103B.201(1), (2), (3), (4), (5) and (7))	• Establish and implement Water Quality policies B(a), B(b), B(c), B(d) and B(e). • Review Local Plans for consistency.	• Prepare and implement Local Water Management Plan and lake management plans. • Partner with the MPCA to complete TMDLs and WRAPS as necessary.	• *MPCA:* Complete major watershed assessments • Manage impaired waters list. • Work with cooperators to prepare TMDLs and WRAPS

Management Issue		E-IGHWMO	Cities of Eagan and Inver Grove Heights	Other Agencies
Surface Water Quality (cont.)		• Receive information and provide comments and policy guidance as requested. • Develop, annually implement, and periodically update a Communication and Outreach Program, Communication and Outreach polices E(a), E(b), E(c), and E(d).		
	Prevent erosion of soil into surface waters. (MS 103B.201(1), (2), (3), (4), (5) and (7))	• Establish and implement Water Quality policy B(c). • Review Local Plans for consistency.	• Enact and administer an Erosion Control ordinance. • Issue grading and erosion control permits • Perform site inspections.	• *MPCA:* Administer the NPDES General Stormwater Permit for Construction Activities.
Groundwater Management	Protect drinking water quality. (MS 103B.201(1), (2), (3), (4), and (6))	• Establish and implement Groundwater policies C(a), C(c), and C(d). • Review Local Plans for consistency.	• Develop and administer Wellhead Protection Plan. • Develop and implement a Water Supply Plan.	• *EPA:* Safe Drinking Water Act sets standards for pollutants in drinking water supplies and drinking water protection. • *MDH:* Manages SDWA, manages Wellhead Protection program, manages Source Water Assessment program. • *Met Council:* Provides Metro water supply planning.

Management Issue		E-IGHWMO	Cities of Eagan and Inver Grove Heights	Other Agencies
Groundwater Management (cont.)	Protect groundwater quantity. (MS 103B.201(1), (2), (3), (4), and (6))	• Establish and implement Groundwater policies C(a), C(b), C(c), and C(d). • Review Local Plans for consistency.	• Obtain DNR Groundwater Appropriation Permits and operate municipal water wells under permit terms.	• *DNR:* Administer the Water Appropriations Permit program.
	Promote groundwater recharge. (MS103B.201(6))	• Establish and implement Groundwater policies C(a), C(b), C(c), and C(d). • Review Local Plans for consistency.	• Prepare and implement Local Water Management Plan • Enact official controls establishing infiltration requirements. • Review developments and issue permits.	• *MPCA:* Infiltration standards detailed in the Minnesota NPDES Phase II MS4 Stormwater Permit and the NPDES General Stormwater Permit for Construction Activities.
	Protect groundwater quality. (MS 103B.201(1), (2), (3), (4), and (6))	• Establish and implement Groundwater policies C(a), C(c), and C(d). • Review Local Plans for consistency.	• Prepare and implement Local Water Management Plan. • Develop and administer Wellhead Protection Plan.	• *Dakota County:* Maintain and administer a Groundwater Protection Plan. • Manage abandoned well identification and sealing program. • Administer county groundwater model. • Monitor groundwater.
Recreation	Protect and enhance fish and wildlife habitat. (MS 103B.201(7))	• Establish and implement Water Quality policies B(a), B(b), B(c), B(d), and B(e). • Review Local Plans for consistency. • Receive and disseminate information.	• Prepare and implement Local Water Management Plan, • Undertake actions to maintain or improve water quality to support fish and wildlife.	• *DNR:* Conduct periodic fish surveys and prepare and update fish management plans.

Management Issue		E-IGHWMO	Cities of Eagan and Inver Grove Heights	Other Agencies
Recreation (cont.)	Support water-based recreation. (MS 103B.201(7))	• Establish and implement Water Quality policies B(a), B(b), B(c), B(d), B(e)and B(f). • Receive and disseminate information.	• Provide and maintain public access to water resources where feasible. • Partner with the DNR and the county to provide swimming, fishing, boating, and aesthetic enjoyment opportunities. • Maintain or improve water quality. • Partner with the DNR and others to manage invasive aquatic vegetation and other AIS.	• *DNR:* Partner with local communities to install and maintain fishing piers • Stock lakes with fish in accordance with fish management plans and recreation needs. • Manage an Aquatic Invasive Species (AIS) program.

5.1.7 Addressing Identified Problems and Issues

As noted above, this planning process revealed a number of problems and issues to be considered in this Plan. Table 5.3 below repeats the problems and issues set forth in Table 4.1 in Section 4.2 of this Plan, and describes how each were addressed in the Implementation Plan.

Table 5.3. Actions in this Plan addressing the identified problems and issues.

#	Problem or Issue	Actions in Watershed Management Plan
Awareness		
1.1	Lack of a watershed identity.	The Board will create a logo for the organization and use that logo on publications and social media. The Board will brand itself as a provider of information and outreach regarding water resources and as a coordinator of information about water resources actions being taken in the watershed.
1.2	People have other priorities and don't see watershed issues as something to engage in.	The Board will engage groups of citizens to build an ever-expending network of person to person interactions regarding water resources.
1.3	Lack of understanding of what a watershed management organization can do or be of help.	The Board will be the go-to provider of information and outreach regarding water resources and about water resources actions being taken in the watershed.
1.4	Not enough knowledge to even understand if there are problems.	The Board will continue its own self-education program to gain additional insight into problems and opportunities.
Education		
2.1	Need more community involvement.	The Board will engage groups of citizens to build an ever-expending network of personal interactions regarding water resources. The Board will work with the member cities and other parties to identify and implement outreach opportunities.
2.2	Need more info on how the built environment and other actions affect water resources.	The Communication and Outreach program has established stakeholder goals, including this topic. There is a significant volume of information available on this topic, and the Board will in its annual Communication and Outreach Plan identify appropriate topics and delivery mechanisms.
2.3	Need to affect behavioral change.	The Communication and Outreach program has established stakeholder goals. The Board will engage groups of citizens to personally interact with friends and neighbors to effect positive change.
2.4	Lack of information that is understandable and available to the general public.	The Board and its communication and outreach partners will provide advice to the member cities as to information sharing can be personalized and tailored to specific stakeholders.

#	Problem or Issue	Actions in Watershed Management Plan
Other Issues		
3.1	There are impaired lakes in the watershed as well as lakes with good water quality.	The CIP includes a number of projects and programs to reduce pollutant loading to the impaired waters. Local Plans are required to include strategies for addressing load reductions and actions identified in TMDLs and WRAPS. The Communication and Outreach program has established stakeholder goals, many of which relate to actions that can be taken to protect or improve waters. The Board will engage groups of citizens to personally interact with friends and neighbors to effect positive change.
3.2	Need more funding to be truly effective.	The Board will collaborate with other partners to apply for grant and other sources of funding to help stretch the budget so that additional actions can be undertaken.
3.3	Overlap of local water management planning and watershed and other agency planning.	This Plan minimizes duplication by establishing clear responsibilities by stakeholders. The E-IGHWMO will take on an oversight role, establishing goals and policies that will be implemented by member cities in accordance with their approved Local Plans, and by focusing mainly on actions that supplement programming already provided by others.

5.1.8 Board Self-Assessment

A periodic robust and frank self-assessment is necessary to ensure that organizations stay on track to achieve goals. During this Plan period, the Board will annually review progress towards goals. This self-assessment will use a matrix such as Table 5.4 below to systematically review and evaluate progress towards goals. This matrix will also be used to set each year's work plan as well as provide a "heads up" to member cities about future years' needs. To assist in this self-assessment process and to fulfill its role in providing oversight, the Board will request each member city to provide an annual review of water resources activities. First, as shown in Table 5.2, the cities have taken on responsibility for certain management actions. Their annual reports will demonstrate how they are fulfilling those roles and responsibilities. Second, the cities will report the steps they have taken in furtherance of the Watershed Plan's goals. This self-assessment will become part of the Board's Annual Report.

Table 5.4. Conceptual self-assessment matrix.

Goal	Actions Taken this Past Year	Actions Taken to Date	Additional Actions to Achieve Goal	Schedule, Responsible Party(ies), Cost and Funding
Goal 1	*To be completed annually*	*To be completed annually*	*To be completed annually*	*To be completed annually*
Goal 2	*To be completed annually*	*To be completed annually*	*To be completed annually*	*To be completed annually*
…	…	…	…	…

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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, that is, between January 1, 2017 and December 2018.

6.1.1 Local Plan Content

Local water management plans adopted by member cities pursuant to Minnesota Statutes, Section 103B.235 shall be consistent with this Watershed Management Plan. Local plans must comply with Minnesota Statutes, Section 103B.235 and Minnesota Rules 8410 regarding local plan content. At a minimum, local water management plans are required to do the following:

- 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 and policies, and rules 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.

6.1.2 Local Plan Review

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

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

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7.0 Amendments to the Plan

This Watershed Management Plan provides direction for the Eagan-Inver Grove Heights management activities through the year 2025. The Board may initiate amendments to the Plan at any time based on new requirements, policies, programs, or practices.

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 for the period 2016-2020, and general programs, projects and costs for 2021-2025 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.

7.1.1 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.

7.1.2 Form of the Amendment

Unless the entire document is redone, all adopted amendments adopted 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.

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8.0 References

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Appendix A
Joint Powers Agreement

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

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

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

2. **Purpose**. The purpose of this Agreement is to provide an organization to regulate the natural water storage and retention of the Eagan-Inver Grove Heights Watershed, according to Minn. Stat. § 103B.201, to: (1) protect, preserve, and use natural surface and groundwater storage and retention systems; (2) minimize public capital expenditures needed to correct flooding and water quality problems; (3) identify and plan for means to effectively protect and improve surface and groundwater quality; (4) establish more uniform local policies and official controls for surface and groundwater management; (5) prevent erosion of soil into surface water systems; (6) promote groundwater recharge; (7) protect and enhance fish and wildlife habitat and water recreational facilities; and (8) secure the other benefits associated with the proper management of surface and ground water.

3. **Definitions**.

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

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

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

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

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

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

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

5. Advisory Committees.

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

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

6. Board of Managers.

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

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

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

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

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

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

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

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

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

7. Powers and Duties of the WMO.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

8. Finances.

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

Subdivision 2. General Administration. Each member agrees to contribute each year to a general fund to be used for general administration purposes including, but not limited to: salaries, rent, supplies, development of an overall plan, insurance, bonds, and to purchase and maintain devices to measure hydrological and water quality data. The annual contribution by each member shall be based fifty percent (50%) on the assessed valuation of all properties within the watershed and fifty percent (50%) on its proportional area within the watershed.

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

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

10. Duration.

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

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

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

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

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

[Remainder of page left intentionally blank]

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

Approved by the City Council

January 7, 2014.

CITY OF EAGAN

BY: Mike Maguire
Mike Maguire
Its Mayor

AND Christina M Scipioni
Christina M. Scipioni
Its City Clerk

Approved by the City Council

December 9, 2013

CITY OF INVER GROVE HEIGHTS

BY: George Tourville
Its Mayor

AND Melissa A Kennedy
Its City Clerk