



To: Mayor and City Council

Agenda Item #: IV. J.

From: Laura Adler, Water Resources Coordinator

Action

Discussion

Date: April 22, 2014

Information

Subject: Request Authorization to Submit Draft Amendment to the Comprehensive Water Resources Management Plan for Agency Review

Action Requested:

Request authorization to submit draft Amendment to the Comprehensive Water Resources Management Plan for agency review.

Information / Background:

History

The city has been providing aquatic vegetation removal services to approximately 40 lakes and ponds for many years. Some of the lakes are treated to reduce aquatic vegetation and algae at the city's expense; some are managed more aggressively with the costs assessed to surrounding homeowners. There is no standard service level and no criteria to determine how to prioritize water bodies. There are multiple uses and benefits for water bodies, including recreation, flood control, water quality, and aesthetics. Stakeholders have different desires for the water bodies, and staff has had no clear policy to guide this service. At its August 20 regular meeting Council directed city staff to develop a policy to address management of lakes and ponds, to take form as an amendment to the Comprehensive Water Resources Management Plan (CWRMP). The amendment would create a framework for determining public benefit of waterbodies, setting service levels, prioritizing treatment, and ensuring that public money is efficiently spent for public benefit.

Proposed Amendment

The proposed amendment establishes service levels for aquatic vegetation management of lakes and ponds and prioritizes the management of water bodies based on physical characteristics, use, and resident involvement. The challenge for this amendment was to balance the differing needs and desires for water bodies, which are often in conflict. The amendment also makes the lake management program transparent, and offers ways for residents to raise the priority of individual water bodies and to have more input in the management decisions. It preserves the ability to have the city special assess the cost of management activities for high priority water bodies, but requires a formal lake association to speak for the shoreline owners who will be assessed.

The amendment provides a method to prioritize water bodies to ensure that public money is spent first on higher priority water bodies. Currently, there is a \$30,000 annual budget for aquatic vegetation management. This money allows the city to treat approximately 40 water bodies for algae and submerged vegetation, as needed. The 40 water bodies have been added to the treatment list over the years as

residents submitted complaints about them. Treated water bodies range from Lake Cornelia, a 53-acre lake bordered by private homes and Rosland Park, to 0.3-acre St. John's Pond, surrounded by a small number of private residences with no public access. There are many ponds of all sizes that receive no treatment. The amendment standardizes the services that the city will provide. This allows for better planning and use of the existing budget. The lowest priority ("None" priority) will not be eligible for city-funded aquatic vegetation management, narrowing the number of water bodies the budget must cover. Higher priority water bodies will be eligible for additional services at the city's expense, such as lake studies and special assessments.

Stakeholder Process

Staff conducted a process to gather stakeholder input on the formation of this policy. Stakeholders included shoreline owners, watershed districts, and the Department of Natural Resources (DNR). Staff held a series of three meetings: a meeting to educate stakeholders on the multiple uses of water bodies and their complex ecosystems, a guided discussion to gather stakeholder input on specific issues related to the policy, and a meeting to receive feedback on a draft policy. Approximately 20 stakeholders attended the meetings, and another 80 stakeholders followed the issue via an email distribution list. In addition to the meetings, staff conducted an online survey about lake and pond issues, completed by 49 stakeholders. Stakeholders heavily influenced the amendment, and defined values and criteria that make up the proposed water body prioritization. Following an initial draft of the amendment, staff sent the amendment draft to all stakeholders who were involved in the process, including the distribution list. The feedback was very positive. Many stakeholders would like to see the city do more overall to manage the lakes and ponds, but agree that the amendment fairly prioritizes the dollars currently spent. Stakeholders consistently requested more stormwater pollution prevention education for the entire city as well as additional street sweeping and water quality projects. The stakeholder discussion was lively and positive; residents care deeply for water resources in Edina and are eager to be involved.

Amendment Approval Process

A major amendment to the CWRMP requires, at a minimum, that the Council approve this draft amendment. The draft amendment is then sent to Minnehaha Creek Watershed District and Nine Mile Creek Watershed District for a 60-day review. At the same time, the draft amendment is sent to the Met Council for a 45-day review. If all agencies approve the draft amendment, it comes back to the city for official adoption by the Council. Staff requests the Council approve the draft amendment and direct staff to submit it for agency review.

Attachments:

Lake & Pond Management Policy

Appendix A

Appendix B

Appendix C

Appendix D



Lake & Pond Management Policy

Purpose

This policy establishes the service levels for aquatic vegetation management of lakes and ponds within the city and prioritizes the management of these waterbodies based on their physical characteristics, use, and resident involvement. Policy development included an extensive public process that took place in early 2014.

Background

Edina is a fully urbanized city. There are a large number of water bodies within Edina, including streams, lakes, ponds, and wetlands. The water bodies within Edina are a vital part of the stormwater system. Storm pipes direct water from the land into the water bodies, providing storage to reduce the chances of flooding and settling and filtering pollutants in the water before the water is discharged from the water body. The water generally makes its way downstream (sometimes through multiple other water bodies) into either Nine Mile Creek or Minnehaha Creek.

Compared to undeveloped land, stormwater runoff from urban areas such as Edina contains pollutants and excess nutrients that travel into the lakes and ponds. These pollutants and excess nutrients have an effect on the condition of these lakes and ponds. The excess nutrients allow aquatic vegetation to grow more than it would in an undeveloped area. The fully urbanized nature of Edina also means that many residents live directly adjacent to a lake or pond.

Aquatic vegetation has an important place in the ecosystem of lakes and ponds. It provides food and shelter to fish and wildlife, and uses phosphorus for its growth, isolating it from the water column and leading to greater water clarity. While aquatic vegetation is beneficial to aquatic life and water quality, it can also be a detriment to recreation and aesthetics, especially when excess nutrients cause overgrowth.

Over the years, as excess nutrients caused additional aquatic plant growth, the city provided service to many ponds to reduce the amount of aquatic plants. This included the use of algacides, herbicides, and mechanical removal. In most cases, the city contracted and paid for the treatment. In a few cases, shoreline residents around the water bodies wanted a higher level of service, so the city managed the contracts for them and special assessed the cost back to the shoreline residents each year. As demand for this type of service grows, a policy is needed to guide staff in providing service, while balancing the many uses of the lakes and ponds. This policy establishes a system to prioritize the waterbodies for management, define management service levels, and lay out a process to involve shoreline owners in choosing the level of management.

Stakeholder Engagement

In early 2014, the city engaged stakeholders to determine their uses, values, and desires for Edina's water bodies. The stakeholders included Edina residents, representatives from the watershed districts and Department of Natural Resources (DNR), and city staff. The public process ran from January through March and consisted of a series of three meetings where stakeholders discussed water body benefits and values, prioritization, and service levels. It included a session to educate stakeholders on the multiple functions of water bodies and aquatic plants, prior aquatic vegetation control, and current regulations. The city also maintained a distribution list of over 80 interested stakeholders and conducted a survey that was completed by 49 of those stakeholders. Stakeholders had an opportunity to review the policy and provide feedback. Stakeholder input is referred to throughout the policy due to the high level of engagement during its development.

Benefits and Values

Stakeholders identified the following benefits of lakes and ponds in Edina:

- Aesthetics
- Wildlife
- Water Quality
- Flood control and drainage
- Recreation

Shoreline owners highly value aesthetics and wildlife habitat, and moderately value water quality. Watershed districts more highly value water quality. The DNR, as a regulating body for aquatic plant management of Public Waters, values wildlife habitat, recreation, and water quality. The city's core services include providing flood control, drainage, and water quality services.

The differing values for the water bodies lead to management conflicts. Shoreline owners generally define high-quality aesthetics as a low amount of aquatic plants. However, aquatic plants provide wildlife habitat and take up some of the excess nutrients that lead to water quality impairments. Aquatic plants can also be a barrier to on-lake recreation. These conflicts make it difficult to find a management strategy that addresses all stakeholder values for the lakes and ponds.

Water Body Prioritization

There are over 200 water bodies in Edina, ranging from tiny, quarter-acre ponds to Lake Cornelia, a 53-acre lake. There is water quality data for a few lakes, but not all. Some lakes and ponds have a significant amount of public use, such as parks and trails, and some are entirely surrounded by private property. Shoreline owners vary in their desire to be involved in the management of the lakes and ponds. Stakeholders identified the following criteria to give a higher priority to water bodies:

- Size (large to small)
- Water quality (low to high)
- Aesthetics and nuisance abatement
- Shoreline owner involvement (high to low)
- Public access and use (high to low)

Stakeholders were clear in their feedback that no one criterion should determine the level of management a pond receives. The identified criteria should all have an effect on the prioritization of the water bodies. Using these criteria, this policy provides a point system to prioritize water bodies:

Table 1

Size	Points Awarded	Water Quality	Points Awarded
Large (10+ acres)	4	303(d) Impaired Waters List	4
Medium (5-10 acres)	3	Drains directly to impaired water or a water body which meets water quality goals and is in protection mode	3
Small (2.5-5 acres)	2	Data shows that water body does not meet applicable state or watershed water quality goals	2
Tiny (1-2.5 acres)	1	No data	0

Using Table 1, determine the number of points given to a water body by adding the points awarded for size and points awarded for water quality status. Ponds that are less than one acre will not be eligible for management by the city. Use the total points to find the service level from Table 2.

Table 2

Service Level	Points Required
High	7-8
Medium	5-6
Low	3-4
None	0-2

The service level of the water body may be raised one level based on:

- forming a lake group or association with 50% or more of the shoreline owners participating, or
- providing significant public access and use

Water bodies may only move up one category, even if they have both an association and public access.

For full prioritization criteria, rating system, and examples, see Appendix A.

Service Levels

Defining service levels is complicated by the conflicting values for the water bodies. There are also constraints on aquatic plant management from the DNR. Incorporating stakeholder input, budget, and regulations, the city developed four service levels: High, Medium, Low, and None. The highest priority water bodies will be eligible for the High management level, medium priority water bodies will be eligible for the Medium management level, and so on. Below is a table that summarizes the service levels; complete descriptions and details are included in Appendix B.

Service Level	City-funded activities						Additional Elective Services*		
	Whole lake algae treatment (as permitted/required)	Invasive aquatic plant treatment	Lake study (up to 2 lakes per year)	Aquatic vegetation treatment for public recreation	City staff support (see list)	DNR Permits and Facilitation	Aquatic vegetation management	Alternative methods	DNR permits and facilitation
High	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Medium	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Low	Yes	Yes	No	No	Yes	Yes	No	No	No
None	At City's discretion, lowest priority						No	No	No

Shoreline Owner Involvement

Shoreline owners want a way to be more involved in choosing the level of management for their water body. With multiple property owners on most water bodies, shoreline owners need to have a way to come to an agreement about the type of management they would like, and to communicate that to the city as a group. To do this, residents may form a lake association or lake group. A lake association is a formal organization that has incorporated as a nonprofit organization with the state of Minnesota. A lake association is required in order to special assess any costs to property owners. This ensures that residents are a part of the decision-making process for treatments to the water body that they will be financially responsible. A lake group is less formal, and is not required to incorporate as a nonprofit. Lake associations and lake groups must include greater than 50% of the residents living on a water body.

Additional Management Opportunities

In addition to the aquatic vegetation management described in this plan, there are opportunities for stakeholders to reduce nutrient runoff into the water bodies and improve water quality.

The city currently provides a number of services that affect lakes and ponds through its ongoing programs. There are also areas where there are opportunities to expand or modify city activities that affect lakes and ponds. These include:

- Pollution source controls:
 - Stormwater education
 - Street sweeping
 - Buffers and erosion prevention
- In-lake management activities:
 - Lake and pond aquatic vegetation management
 - Lake and pond in-lake nutrient management
 - Shoreline owner coordination (including in-lake activities and small site pollution controls)
- Structural pollution controls:
 - Storm sewer and system maintenance
 - Implementation of a Living Streets Policy
 - Installation of stormwater treatment structures where appropriate during road reconstruction projects

The watershed districts have many activities that affect lakes and ponds. These include:

- Stormwater education
- Grant funding for the installation of stormwater best management practices (BMPs)
- Water quality testing

There are also many things that private property owners can do to positively impact lakes and ponds. These include:

- Forming a lake group or association
- Educating friends and neighbors about stormwater
- Reducing or eliminating the amount of fertilizer used
- Reducing or eliminating the amount of salt used during the winter
- Participating in the Citizen-Assisted Monitoring Program, collecting water quality data
- Creating a natural shoreline buffer
- Installing raingardens

The city will also consult the water body prioritization in this plan when determining operations plans, CIP projects, and maintenance.

Appendix A: Prioritization Criteria and Rating System

Appendix B: Management Service Levels

Appendix C: Prioritization List

Appendix D: Prioritization Chart

Appendix A: Prioritization Criteria and Rating System

Priority Criteria:

1. Size (large to small)
2. Water quality (low to high)
3. Aesthetics and nuisance abatement
4. Shoreline owner involvement (high to low)
5. Public access and use (high to low)

Rating System:

Table 1

Size	Points Awarded	Water Quality	Points Awarded
Large (10+ acres)	4	303(d) Impaired Waters List	4
Medium (5-10 acres)	3	Drains directly to impaired water or a water body which meets water quality goals and is in protection mode	3
Small (2.5-5 acres)	2	Data shows that water body does not meet applicable state or watershed water quality goals	2
Tiny (1-2.5 acres)	1	No data	0

Using Table 1, determine the number of points given to a water body by adding the points awarded for size and points awarded for water quality status. Ponds that are less than one acre will not be eligible for management by the city. Use the total points to find the service level from Table 2.

Table 2

Service Level	Points Required
High	7-8
Medium	5-6
Low	3-4
None	0-2

The service level of the water body may be raised one level based on:

- forming a lake group or association with 50% or more of the shoreline owners participating, or
- providing significant public access and use

Water bodies may only move up one category, even if they have both association and public access.

Water Quality Standards:

The Minnesota Pollution Control Agency (MPCA) has set lake water quality goals for total phosphorus (TP), chlorophyll-a (Chl-a), and Secchi depth readings. Minnehaha Creek Watershed District (MCWD) strives to meet those goals, or more lake-specific goals set using their water quality model. Nine Mile Creek Watershed District has set water quality goals for each of their four management levels. In cases where a specific lake or pond has not been categorized by the watershed district, the MPCA water quality standard will be used. Secchi disc readings and samples must be collected and analyzed for TP

and Chl-a at least eight times over a season (April through October). Samples collected more frequently than one every two weeks will not be considered one of the required eight. Water quality data that is more than 15 years old will not be used for this ratings system.

Table 3

	MPCA and MCWD (MCWD model goals may vary, site-specific goals will overrule general goals)		Nine Mile Creek Watershed District			
	Shallow (< 15 feet deep, ≥ 80% littoral)	Deep	Level I	Level II	Level III	Level IV
TP (mg/L)	≤ 60	≤ 40	≤ 45	45-75	75-105	> 105
Chl-a (mg/L)	≤ 20	≤ 14	≤ 20	20-40	40-60	> 60
Secchi disc depth (meters)	> 1	> 1.4	≥ 2.0	1.0-2.0	0.6-1.0	< 0.5
TSI*			≤ 50	51-60	61-70	> 71

*TSI = Trophic State Index, determined by levels of TP, Chl-a, and Secchi depth readings.

Examples:

1. A 303(d) Impaired Water, 2.5 acre pond:
 Size = Small, 2 points
 Water quality = 4 points
 Total points = 6
 Initial service level = Medium

Formation of a lake association with more than 50% of shoreline owners participating would raise the service level to High.

2. A 1.5 acre pond, no water quality data:
 Size = Tiny, 1 point
 Water quality = No data, 0 points
 Total points = 1 point
 Initial service level = None

Formation of a lake association with more than 50% of shoreline owners participating would raise the service level to Low.

3. A 6 acre pond, no water quality data
 Size = Medium, 3 points
 Water quality = No data, 0 points
 Initial service level = Low

In this case, if a shoreline owner wanted to collect water quality data, and that data showed that the water body did not meet the goals, the total points would rise to 5 and the service level to Medium. If shoreline owners then established a lake association, the service level would rise to High.

4. A 4 acre pond, no water quality data, with significant public use
 Size = Small, 2 points
 Water quality = No data, 0 points

Total = 2 points
+ Public use (raise one level from None)
Initial service level = Low

Formation of a lake association would not raise the service level for the pond as will be raised due to public use. Collecting data that shows the water body does not meet water quality goals would add 2 points, which would bring the base service level to Low. The public use would then raise it to Medium.

Appendix B: Management Service Levels

Service Level	City-funded activities						Additional Elective Services*		
	Whole lake algae treatment (as permitted/required)	Invasive aquatic plant treatment	Lake study (up to 2 lakes per year)	Aquatic vegetation treatment for public recreation	City staff support (see list)	DNR Permits and Facilitation	Aquatic vegetation management	Alternative methods	DNR permits and facilitation
High	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Medium	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Low	Yes	Yes	No	No	Yes	Yes	No	No	No
None	At City's discretion, lowest priority						No	No	No

Any individual property owner may perform aquatic plant treatment in front of their property.

With 50% shoreline owner agreement, groups can perform whole-pond treatments without city funding or participation.

All DNR and other regulations apply.

City staff support activities:

- Association/group formation
- Education
- Facilitate data collection
- Facilitate group projects
- Technical resource

Alternative methods:

All alternative methods (such as barley straw, floating treatment wetlands, etc.) are elective services. There may be some cost share available from the city.

*Cost of elective services are special assessed to property tax bill. This option requires a lake association as described in the policy.

Appendix C: Prioritization List

The water bodies below have been assessed based on the stated criteria. The list is not comprehensive, and more water bodies may be added. Water bodies may be reclassified using updated information.

Size Categories:

1. Large (10+ acres)
 - Lake Cornelia
 - Mud Lake
 - Lake Edina
 - Mirror Lake
 - Arrowhead Lake
 - Indianhead Lake
 - Highlands Lake

2. Medium (5-10 acres)
 - Otto Pond
 - Melody Lake
 - Lake Pamela
 - Hawkes Lake
 - Harvey Lake
 - Swimming Pool Pond
 - Long Brake Trail Pond
 - Lake Nancy
 - Point of France Pond
 - Creek Valley
 - Unnamed (near Parkwood & Knoll)
 - Unnamed (Schaefer & Harold Woods)

3. Small (2.5-5 acres)
 - Cote Pond
 - Unnamed (near Nine Mile Village Townhomes)
 - Unnamed (south of Cote & Long Brake Tr)
 - Birchcrest Pond
 - South Pond
 - Hyde Park Pond
 - West Garrison Pond
 - Unnamed (south of Mirror Lake)
 - Unnamed (Blake Rd & Knoll Dr)
 - Annaway Pond

4. Tiny (1-2.5 acres)
 - Many
5. Less than 1 acre
 - All others

Water Quality Categories:

1. 303(d) Impaired Waters List
 - Lake Cornelia
 - Lake Edina
2. Drains to an Impaired Water
 - Lake Nancy
 - Lake Pamela
 - Swimming Pool Pond
 - O'Shaunessy Pond
3. Data shows water body does not meet water quality goal
 - Lake Arrowhead
 - Melody Lake (?)
 - Others?
4. No data, or data does not show that the water body does not meet the water quality goal
 - All others

Public Access:

1. Public Access and Use:
 - Lake Cornelia
 - Lake Pamela
 - Mud Lake
 - Highlands Lake
 - Creek Valley Pond
 - Forslin Pond
2. Private
 - All others

Shoreline Owner Involvement:

* no official lake associations or groups have been formed as of 2/24/14; this list informally includes water bodies that stakeholder participants live on and may form groups in the future.

- Lake Pamela
- Cote
- Melody
- Between Danen's Dr and Nob Hill Dr
- Garrison
- Harvey Lake
- Lake Nancy
- Arrowhead Lake
- Lake Cornelia
- Porter Pond
- Birchcrest
- Hyde Park Pond
- Indianhead Lake
- Hawkes Lake
- Otto Pond

**Appendix D:
Prioritization Chart**

The prioritization list is not comprehensive, and more water bodies may be added. Water bodies may be reclassified using updated information.

Water Body	Size				Water Quality				Increased Service Level			
	Tiny 1	Small 2	Medium 3	Large 4	No data 0	Data showing water body does not meet goals 2	Drains directly to a 303(d) Impaired Water 3	303(d) Impaired Waters List 4	Total Points	Public access and use - raise one service level	50% shoreline owner involvement - raise one service level	Service Level
Lake Cornelia				4				4	8	Yes		High
Mud Lake				4					4	Yes		Low
Lake Edina				4				4	8			High
Mirror Lake				4					4			Low
Arrowhead Lake				4		2			6		Yes*	High
Indianhead Lake				4	0				4		Yes*	Medium
Highlands Lake				4					4	Yes		Medium
Otto Pond			3		0				3			Low
Melody Lake			3			2			5		Yes*	High
Lake Pamela			3				3		6	Yes		High
Hawkes Lake			3		0				3			Low
Harvey Lake			3		0				3			Low
Swimming Pool Pond			3				3		6			Medium
Long Brake Trail Pond			3		0				3			Low
Lake Nancy			3				3		6			Medium
Point of France Pond			3		0				3			Low
Creek Valley			3		0				3			Low
Unnamed (near Parkwood & Knoll)			3		0				3			Low
Unnamed (Schaefer & Harold Woods)			3		0				3			Low
Cote Pond		2			0				2			None
Unnamed (near Nine Mile Village Townhomes)		2			0				2			None
Unnamed (south of Cote & Long Brake Tr)		2			0				2			None
Birchcrest Pond		2			0				2			None
South Pond		2			0				2			None

**Appendix D:
Prioritization Chart**

The prioritization list is not comprehensive, and more water bodies may be added. Water bodies may be reclassified using updated information.

Water Body	Size				Water Quality				Increased Service Level			
	Tiny	Small	Medium	Large	No data	Data showing water body does not meet goals	Drains directly to a 303(d) Impaired Water	303(d) Impaired Waters List	Total Points	Public access and use - raise one service level	50% shoreline owner involvement - raise one service level	Service Level
Hyde Park Pond		2			0				2			None
West Garrison Pond		2			0				2			None
Unnamed (south of Mirror Lake)		2			0				2			None
Unnamed (Blake Rd & Knoll Drive)		2			0				2			None
Annaway Pond		2			0				2			None