

Memorandum

To: Lower Mississippi River Watershed Management Organization Board of Managers
From: Greg Williams and Joe Barten
Subject: Summary of issue identification activities to inform priority issues and resources - LMRWMO Watershed Management Plan update
Date: September 2, 2021
Project: 23191436.00

1.0 Background

The Lower Mississippi River Watershed Management Organization (LMRWMO) Managers are in the process of updating the LMRWMO Watershed Management Plan (Plan). Identifying priority issues and resources to be addressed by the Plan is an important step as it focuses subsequent Plan development efforts and, ultimately, Plan implementation actions on the issues and resources of greatest concern.

2.0 Identification of Priority Issues

The LMRWMO planned and carried out several activities seeking to gain stakeholder input on priority issues and concerns. These activities include:

- Soliciting responses to the Plan update notification from Plan review authorities
- Gaps analysis of the 2011 Plan
- Presentations from Dakota County, Metropolitan Council, and MPCA
- Technical Advisory Committee (TAC) meeting
- Online survey
- Plan initiation (public kickoff) meeting

Much of this information was summarized and presented at the public kickoff meeting and is also summarized in this memorandum.

2.1 Results of Issue Identification Activities

2.1.1 Responses to the Plan Update Notification

The following state and local government entities provided responses to the Plan update notification letter:

- City of St. Paul
- City of Sunfish Lake
- Dakota County Environment Resources Department

- Dakota County Soil and Water Conservation District (Dakota SWCD)
- Metropolitan Council Environmental Services
- Minnesota Board of Water and Soil Resources (BWSR)
- Minnesota Pollution Control Agency (MPCA)

The responses to Plan notification identified several focus areas related to natural resources as well as topics related to LMRWMO operations (i.e., how the Plan is implemented). Resource issues identified include:

- Focus on restoration of impaired waterbodies and those close to impairment, including:
 - Mississippi River
 - Interstate Valley Creek
 - Lake Augusta
 - Sunfish Lake
 - Thompson Lake
- Protection of high-quality resources like Rogers Lake
- Chloride reduction
- Habitat and natural area protection near Pickerel Lake
- Updating outdated hydrologic modeling (e.g., Sunfish Lake)
- Aquatic invasive species prevention
- Management of subsurface sewage treatment systems (SSTS)
- Practices and outreach to promote groundwater protection and sustainability
- Drainage/erosion issues near County Road 43 and Trunk Highway 13
- Continued management of intercommunity flow issues

Additional focus areas more closely related to “how” the Plan is implemented include:

- Emphasis of prioritized, targeted, and measurable methodology for goals and actions
- Evaluation of LMRWMO progress through implementation
- Communicating water quality data to the public
- Focus on operation and maintenance of stormwater infrastructure
- Collaboration with partners regarding grants, education, monitoring, and technical assistance

2.1.2 Gaps Analysis of the 2011 Plan

Barr Engineering Co. (Barr) reviewed the 3rd generation LMRWMO Plan (2011 Plan) to identify potential gaps, conflicts, and/or inconsistencies between the 2011 Plan and current data, regulatory and guidance documents, studies, and water resource management practice. The gaps analysis also considered input received in response to the 2021 Plan update notification. The gaps analysis results are presented in detail

the August 5, 2020 memorandum to the Board of Managers entitled *LMRWMO 2021 Plan Update – Review of Existing Plans and Identification of Gaps*.

Themes and issues noted in the gaps are listed below:

- Additional/updated water quality impairments
- Prioritization of water resources for monitoring and action
- Data gaps regarding outfalls to the Mississippi River
- Chloride loading
- Precipitation trends and climate change
- Invasive species management
- Roles for LMRWMO in groundwater management
- Opportunities for increased public engagement (e.g., citizen advisory committee)
- Need for measurable goals and assessment of implementation progress

2.1.3 State Agency and Partner Presentations

In Fall and Winter 2020, staff from Dakota County SWCD, Dakota County, and Barr presented on Plan-related topics including,

- Alternate Capital Improvement Project (CIP) funding options
- Water monitoring of LMRWMO waterbodies
- Addressing groundwater concerns in the LMRWMO
- Hydrology and modeling of landlocked basins
- LMRWMO/member city regulatory roles

These presentations provided additional information and discussion regarding potential priority issues identified in the responses to the Plan update notification letter (see Section 2.1.1) and gaps analysis (see Section 2.1.2).

2.1.4 Technical Advisory Committee (TAC) Meeting

The Plan update Technical Advisory Committee (TAC) – comprised of staff of the LMRWMO member cities, Dakota County, Dakota SWCD, Metropolitan Council, and State plan review agencies – met on June 3, 2021 to discuss issues to be addressed in the Plan update. Discussion at the TAC meeting largely reiterated the issue topics and resources noted in the responses to the Plan update notification and those identified by the gaps analysis.

Issues specifically noted and discussed by the TAC include:

- Valley Creek as a priority stream

- Lake August and Thompson Lake as water quality improvement priorities
- Consideration for focusing on high-recreational value lakes (e.g., Thompson, Seidls)
- Chloride is high priority for Dakota County, Metropolitan Council, and MPCA
- Groundwater quality related to manganese (with limited options to address)
- Groundwater use and overall sustainability
- Management and water quality impact of aquatic invasive species
- Focus in upland areas that drain to priority waterbodies
- Data gaps regarding outfalls to the Mississippi River
- Maintaining a priority on education and engagement
- High water levels, flooding of some landlocked areas

2.1.5 Online Survey Results

The LMRWMO hosted an online survey which was completed by 72 participants as of May 27, 2021. Survey participants skewed towards residents of Mendota Heights and West St. Paul but represent all LMRWMO member cities. The survey asked participants to identify their city of residence and answer the following questions:

- How do you interact with the water resources (lakes, streams, wetlands, Mississippi River) in your community?
- How does the health of water resources in your community affect you, your friends, or your community?
- Are there water resources in your community you would like to see improved? If so, how?

Nearly seventy survey respondents provided open ended responses identifying specific as well as general issues related to water and natural resources in the LMRWMO. Issues commonly cited in the survey include:

- Water quality issues including aesthetics, algae, and water clarity concerns (57% of responses)
- Desire for improved recreational access/usability
- Need for more green infrastructure
- Need for continued/more resident education
- Degraded wildlife habitat
- Need for more/wider vegetated buffers around waterbodies
- Less salt use

Specific resources cited in survey responses for restoration and/or protection efforts include:

- Lake Augusta
- Pickerel Lake

- Mississippi River
- Stormwater ponds
- Lily Pond
- Lemay Lake
- Thompson Lake
- Valley Creek
- Rogers Lake
- Mud Lake
- Mississippi River bluff areas

2.1.6 Public Kickoff Meeting

The LMRWMO Board of Managers virtually hosted a public kickoff meeting consistent with Minnesota Rules 8410.0045 on June 9, 2021. The LMRWMO Administrator and Barr staff presented Information on prior engagement and issue identification activities at the public meeting. The public kickoff meeting included a discussion period for attendees to provide input. Attendee comments focused primarily on water quality issues, specifically related to Lake Augusta. No previously unidentified issues were noted in the public meeting discussion.

2.2 Recommendations for Issue Prioritization

The LMRWMO Board of Managers holds the final authority to establish priority issues and resources for the 2022-2031 LMRWMO Plan. The stakeholder engagement activities summarized in this and prior memoranda are intended to inform those decisions. Based on the information gathered to date and the past and present operations of the LMRWMO, we recommend the Board of Managers consider the following issue and prioritization scheme as a basis for discussion:

Highest Priority Issues:

- Water Quality, including
 - Stormwater runoff quality
 - In-lake and in-stream water quality and impaired waters
 - Lake Augusta
 - Mississippi River outfalls
 - Chloride management
- Ecological Health, including:
 - Upland area protections
 - Invasive species management
 - Vegetated buffers
- Education and Engagement
- Partner collaboration

Lower priority issues:

- Flooding and water levels
- Groundwater management
- Regulatory issues

Classification of issue areas as higher and lower priority is intended to provide a qualitative distinction to aid in the identification and prioritization of Plan implementation actions. We anticipate that the focus of the LMRWMO's capacity and funding will be to address higher priority issues. However, this classification does not prevent the LMRWMO Board of Managers from taking action to address lower priority issues, as needed, over the life of the Plan.

3.0 Priority Waterbodies

As part of developing the 2022 Watershed Management Plan (Plan), we recommend that the Lower Mississippi River Watershed Management Organization (LMRWMO) Board of Managers prioritize water resources within its jurisdiction. Prioritization of resources within the LMRWMO's jurisdiction will allow the Board of Managers to focus resources during implementation and delineate roles and responsibilities between the LMRWMO, member cities, and other partners.

3.1 Prioritization Factors

Many criteria may be considered in prioritizing water resources, including objective and subjective criteria. Potential prioritization criteria were presented in the August 6, 2021 memo to the Board of Managers and Discussed at the August 11, 2021 LMRWMO meeting. Based on that discussion, the draft prioritization methods described in this memo consider the following factors.

- Impairment status (i.e., listed as impaired by MPCA, omitting mercury impairments)
- Water quality (i.e., identified as "nearly impaired" or "barely impaired" by MPCA)
- Intercommunity location
- Intercommunity drainage area
- Public access
- Enrollment in Fishing in the Neighborhood (FiN) program managed by MDNR
- Classification as a deep lake
- Ecosystem functions (including classification as a "natural development" lake by MDNR and/or subjectively scored)

Table 1 summarizes the characteristics of 29 public waters within the LMRWMO with respect to the criteria listed above. Factors discussed on August 11, 2021 but ultimately omitted from the draft prioritization methodology include waterbody surface area and MPCA/MDNR classification as wetland or lake.

3.2 Draft Prioritization Methods and Results

Level 1 and Level 2 waterbodies

Barr Engineering Co. (Barr) and the LMRWMO Administrator recommend a two-tiered prioritization system (e.g., Level 1 and Level 2). A multi-level prioritization system allows the LMRWMO to focus efforts to the highest priorities while still taking action to address other resources and issues. For example, the

LMRWMO may monitor Level 1 (i.e., higher priority) waterbodies annually and monitor Level 2 waterbodies at an interval (or delegate monitoring to member cities). Implementation funding may also be concentrated in watersheds draining to Level 1 resources due to their greater significance (note: the details of such a breakdown would be determined later in Plan development).

Draft Prioritization

This section describes three draft prioritization options (Options A, B, and C) presented for discussion and consideration at the September 9, 2021 LMRWMO meeting. The prioritization options apply the same criteria for Level 1 waterbodies, and differ in the criteria applied to determine Level 2 waterbodies

The prioritizations options presented herein adhere to the criteria applied with minimal adjustment. *Note that any resource prioritization applied by the Board of Managers does not need to adhere strictly to a quantitative method (e.g., a formula). However, we recommend that the Board of Managers start with a "formula" and adjust individual waterbodies as needed – the reasoning for deviations from a method or formula will be noted within the Watershed Management Plan.*

The priority levels are described as follows and are presented against the applicable criteria in Table 2

Level 1:

Level 1 waterbodies include any waterbody listed as impaired or nearly impaired by the MPCA (omitting mercury impairments). They also include any waterbodies that are identified for protection. These include (currently):

- Mississippi River
- Interstate Valley Creek
- Sunfish Lake – *(note: no public access)*
- Lake Augusta – *(note: no public access)*
- Hornbeam Lake – *(note: no public access)*
- Thompson Lake
- Rogers Lake – *(added to Level 1 based on protection emphasis by MPCA)*
- Seidls Lake – *(added to Level 1 based on degrading water quality trend, highly developed watershed, and public access)*

Level 2:

Level 2 waterbodies include additional waterbodies that meet at least two of the criteria listed for Option A, Option B, and Option C.

Criteria	<u>Option A:</u>	<u>Option B:</u>	<u>Option C:</u>
	Meets 2 or more of:	Meets 2 or more of:	Meets 2 or more of:

Criteria	<ul style="list-style-type: none"> • Intercommunity drainage • Public access • Ecosystem value • Deep lake • FiN participation 	<ul style="list-style-type: none"> • Intercommunity drainage • Public access • Ecosystem value • Deep lake 	<ul style="list-style-type: none"> • Intercommunity drainage • Public access • Ecosystem value
Level 2 Water bodies	<ul style="list-style-type: none"> • Ivy Falls Creek • Pickerel Lake • Copperfield Pond • Ohmans Lake (Marcott) • Lemay Lake • Simley Lake 	<ul style="list-style-type: none"> • Ivy Falls Creek • Pickerel Lake • Copperfield Pond • Ohmans Lake (Marcott) 	<ul style="list-style-type: none"> • Ivy Falls Creek • Pickerel Lake • Copperfield Pond

Level 3 priority waterbodies include all public waters not identified as Level 1 or Level 2 priority.

3.3 Waterbody Priority Recommendation

Prioritization options A, B, C include six Level 1 priority waterbodies and eight, five, and four Level 2 priority waterbodies respectively. Water quality/impairment status was considered as the single factor for Level 1 classification based on prior discussion with the Board of Managers that did not highlight any other “deal-breaker” or “gate-keeper” criteria. Similarly, this methodology does not assume a hierarchy of characteristics for Level 2 waterbodies (e.g., meet ANY two criteria). Other prioritization options were considered that included meeting only one of the potential criteria presented in this memo – however, such scenarios increased the number of priority waterbodies to about 20.

Application of standardized criteria without consideration for unique, resource-specific characteristics may result in the omission of significant resources from either the Level 1 or Level 2 classification. We recommend that the Board of Managers consider one of these options as a starting point, and elevate/demote waterbodies as needed.

Requested Manager Action:

Review and discuss the proposed issue prioritization (see Section 2.2) and approve the issue prioritization, as revised (if necessary).

Select an initial waterbody prioritization methodology as a starting point and revise the list of priority waterbodies as needed while providing justification for those revisions.

At the September 8, 2021 LMRWMO meeting, the Board of Managers took the following actions:

- Approved the draft issue priorities (noting that Ecological Health may move to lower priority)
- Approved Option A for waterbody priorities with the following revisions:
 - o Level 1 waters without public access (Augusta, Sunfish, Hornbeam) moved to Level 1B
 - o Elevated Interstate Valley Creek to Level 1
 - o Elevate Rosenberger Lake to Level 2

Table 1 - LMRWMO Waterbody Characteristics

Waterbody Name	DNR Public Water ID	Area (Acres)	Waterbody Location ¹	Intercommunity Waterbody	Intercommunity Drainage Area	Identified in Resident Survey	In DNR FIN Program	DNR Water Classification	MPCA Waterbody Type	DNR Shoreline Class ²	Ecosystem Value ³ (inc. ND shoreline)	Public Access	MPCA Impairment(s) & Year Listed	MPCA "Nearly" or "Barely" impaired	WQ Trend (clarity) from MPCA	Total Phosphorus (ug/L from MPCA)
Mississippi River	--	--	LD, STP, SSP, IGH	Yes	Yes	Yes		Stream	Stream		Yes	Public	Multiple			
Interstate Valley Creek	--	--	MH	Yes	Yes	Yes		Stream	Stream		Yes	N/A	Bacteria			
Sunfish Lake	19-0050	45.1	SFL	No	No			Lake	Deep Lake	RD		Private - no access		Barely		36
Lake Augusta	19-0081	33.0	MH	No	No	Yes		Lake	Deep Lake	RD		Private - no access	2010 - Nutrients/Eutrophication			136
Hornbean Lake	19-0047	22.0	SFL/IGH	Yes	Yes			Lake	Shallow Lake	RD		Private - no access		Nearly		52
Thompson Lake	19-0048	7.4	WSP	No	No	Yes	Yes	Wetland	Shallow Lake	ND		Public	2014 - Nutrients/Eutrophication; Chloride			71
Rogers Lake	19-0080	106.6	MH	No	No	Yes	Yes	Lake	Shallow Lake	RD		Public		MPCA Protection Priority	Improving	29
Seidl's Lake	19-0095	6.5	SSP, IGH	Yes	Yes			Wetland	Shallow Lake			Public			Degrading	72
Ivy Falls Creek	--	--	MH	Yes	Yes			Stream	Stream		Yes	N/A				
Pickereel Lake	19-0079	107.5	LD, STP	Yes	Yes	Yes		Lake	Shallow Lake	ND	Yes	Public	2010 - Mercury in fish tissue			72
Copperfield Ponds	19-0103	18.3	MH	No	Yes			Lake	Lake (deep or shallow)			Public				
Ohmans Lake (Marcott Lakes)	19-0042	22.4	IGH	No	No			Lake	Deep Lake	ND		Private - no access				23
Lemay Lake	19-0082	25.0	MH	No	No	Yes	Yes	Lake	Shallow Lake	ND		Private - no access			Improving	39
Simley Lake	19-0037	10.6	IGH	No	No		Yes	Lake	Shallow Lake	RD		Public				43
Schmitt Lake	19-0052	61.3	IGH	Yes	Yes			Lake	Shallow Lake	GD		Private - no access				??
Dickman Lake	19-0046	23.7	IGH	Yes	Yes			Lake	Shallow Lake	RD		Private - no access				??
Rosenberger Lake (Marcott Lakes)	19-0041	19.9	IGH	No	No			Lake	Deep Lake	RD		Private - no access				29

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McGroarty Pond	19-0035	16.5	IGH	No	No			Lake	Lake (deep or shallow)	RD		Public - no access				
Horseshoe Lake	19-0051	14.3	SFL/IGH	No	Yes			Lake	Shallow Lake	RD		Private - no access			Improving	27
Bohrer Pond	19-0034	14.0	SSP/IGH	Yes	Yes			Lake	Lake (deep or shallow)			Public - no access				
Unnamed (SW of McGroarty Pond)	19-0241	13.0	IGH	No	No			Wetland	(Wetland or shallow lake)			Private - no access				
Unnamed (part of Marcott Lakes)	19-0039	12.0	IGH	No	No			Wetland	(Wetland or shallow lake)	ND		Private - no access				
Unnamed	19-0105	10.0	MH	No	No			Wetland	(Wetland or shallow lake)			Public - no access				
Unnamed (Pagel Pond)	19-0227	6.5	MH	No	No			Wetland	Shallow Lake			Private - no access				
Lily Lake	19-0084	6.2	WSP	No	No	Yes		Wetland	(Wetland or shallow lake)			Private - no access				
Marthaler	19-0091	4.6	WSP	No	No		Yes	Lake	(Wetland or shallow lake)			Public - no access				
Mud Lake	19-0085	4.0	WSP	No	No	Yes		Wetland	(Wetland or shallow lake)			Public - no access				
Anderson Pond	19-0094	3.0	SSP	No	No			Wetland	(Wetland or shallow lake)			Public - no access				
LeVander Pond	19-0088	3.0	SSP	No	No			Wetland	(Wetland or shallow lake)			Private - no access				
Friendly Marsh	19-0102	8.2	MH	No	No			Wetland	(Wetland or shallow lake)			Public - no access				

Notes:

(1) Waterbody Location Code: IGH = Inver Grove Heights, LD = Lilydate, MH = Mendota Heights, SFL = Sunfish Lake, SP = St. Paul, SSP = South St. Paul, WSP = West St. Paul

(2) Shoreline classificaiton code = GD = general development, ND = natural development, RD = recreational development

(3) Ecosystem value includes streams and lakes with "natural development" shoreline classification

Table 2 - LMRWMO Waterbody Criteria (1 = meets criterion, 0 = does not meet criterion)

Waterbody Name	DNR Public Water ID	Intercommunity Drainage Area	In DNR Fin Program	DNR Lake or Stream	MPCA Lake	Public Access	MPCA Impairment	MPCA Nearly/Barely Impaired (or Protect)	MPCA Deep Lake	Ecosystem Value	Priority Level Option A	Priority Level Option B	Priority Level Option C
Mississippi River	--	1	0	1	1	1	1	0	0	1	Level 1	Level 1	Level 1
Interstate Valley Creek	--	1	0	1	1	0	1	0	0	1	Level 1	Level 1	Level 1
Sunfish Lake	19-0050	0	0	1	1	0	0	1	1	0	Level 1	Level 1	Level 1
Lake Augusta	19-0081	0	0	1	1	0	1	0	1	0	Level 1	Level 1	Level 1
Hornbean Lake	19-0047	1	0	1	1	0	0	1	0	0	Level 1	Level 1	Level 1
Thompson Lake	19-0048	0	1	0	1	1	1	0	0	1	Level 1	Level 1	Level 1
Rogers Lake	19-0080	0	1	1	1	1	0	1	0	0	Level 1	Level 1	Level 1
Seidl's Lake	19-0095	1	0	0	1	1	0	1	0	0	Level 1	Level 1	Level 1
Ivy Falls Creek	--	1	0	1	1	0	0	0	0	1	Level 2	Level 2	Level 2
Pickerel Lake	19-0079	1	0	1	1	1	0	0	0	1	Level 2	Level 2	Level 2
Copperfield Ponds	19-0103	1	0	1	1	1	0	0	0	0	Level 2	Level 2	Level 2
Ohmans Lake (Marcott Lakes)	19-0042	0	0	1	1	0	0	0	1	1	Level 2	Level 2	Level 3
Lemay Lake	19-0082	0	1	1	1	0	0	0	0	1	Level 2	Level 3	Level 3
Simley Lake	19-0037	0	1	1	1	1	0	0	0	0	Level 2	Level 3	Level 3
Schmitt Lake	19-0052	1	0	1	1	0	0	0	0	0	Level 3	Level 3	Level 3
Dickman Lake	19-0046	1	0	1	1	0	0	0	0	0	Level 3	Level 3	Level 3

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Waterbody Name	DNR Public Water ID	Intercommunity Drainage Area	In DNR Fin Program	DNR Lake or Stream	MPCA Lake	Public Access	MPCA Impairment	MPCA Nearly/Barely Impaired (or Protect)	MPCA Deep Lake	Ecosystem Value	Priority Level Option A	Priority Level Option B	Priority Level Option C
Rosenberger Lake (Marcott Lakes)	19-0041	0	0	1	1	0	0	0	1	0	Level 3	Level 3	Level 3
McGroarty Pond	19-0035	0	0	1	1	0	0	0	0	0	Level 3	Level 3	Level 3
Horseshoe Lake	19-0051	1	0	1	1	0	0	0	0	0	Level 3	Level 3	Level 3
Bohrer Pond	19-0034	1	0	1	1	0	0	0	0	0	Level 3	Level 3	Level 3
Unnamed (SW of McGroarty Pond)	19-0241	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
Unnamed (part of Marcott Lakes)	19-0039	0	0	0	0	0	0	0	0	1	Level 3	Level 3	Level 3
Unnamed	19-0105	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
Unnamed (Pagel Pond)	19-0227	0	0	0	1	0	0	0	0	0	Level 3	Level 3	Level 3
Lily Lake	19-0084	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
Marthaler	19-0091	0	1	1	0	0	0	0	0	0	Level 3	Level 3	Level 3
Mud Lake	19-0085	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
Anderson Pond	19-0094	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
LeVander Pond	19-0088	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3
Friendly Marsh	19-0102	0	0	0	0	0	0	0	0	0	Level 3	Level 3	Level 3

Notes:

Level 1 Waterbodies = impaired or listed as nearly impaired by the MPCA

Level 2 Waterbodies = meet 2 of up to 5 criteria as follows:

Option A = intercommunity drainage area, public access, ecosystem value, deep lake, FiN participations

Option B = intercommunity drainage area, public access, ecosystem value, deep lake

Option C = intercommunity drainage area, public access, ecosystem value