



Title: Long Lake Creek Partnership Update

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Purpose:

To provide an update on recent activity with the Long Lake Creek Subwatershed Partnership.

Background:

The Cities of Long Lake, Medina, and Orono; Long Lake Waters Association (LLWA); and Minnehaha Creek Watershed District (MCWD or District) have agreed to work together towards a common goal of improving water quality within the Long Lake Creek Subwatershed. This effort will help the cities meet state load reduction requirements for the five impaired lakes in the system and ensure that area lakes are swimmable and fishable.

To support this effort, the District has led a subwatershed assessment to provide a strong scientific understanding of the system, identify cost-effective projects and strategies, and develop a clear and actionable roadmap to implement them. This roadmap will include the data, methodology, and findings from the assessment; prioritized projects, costs, and benefits; and the recommended action steps, roles, timeline, and funding strategy for implementation.

At the May 28, 2020 Board meeting, staff provided an overview of the findings of the subwatershed assessment and a high-level framework for the implementation roadmap which were subsequently discussed with each of the partners in July. On August 27, 2020, staff provided the Board with an update on the key take-aways from the partner meetings, and received Board authorization to apply for grant funding for the Wolsfeld Woods Ravine Stabilization Project, which is one of the projects that was identified as a near-term priority through the assessment.

Summary:

Based on feedback received from the partners during the July meetings, and as discussed with the Board in August, staff developed the attached Implementation Roadmap Preview and presented it to each of the three City Councils to provide an introduction to the findings, recommendations, and near-term priorities that came out of the subwatershed assessment. This allowed staff to (1) start building council understanding and gauge their support, and (2) start to advance the projects that have been prioritized, while staff continues to develop the full roadmap into early 2021.

The District's approach in the subwatershed is already yielding results. The District was successful in securing \$232,157 (80 percent of the project cost) for the Wolsfeld Woods Ravine Stabilization Project in Medina through the Board of Water and Soil Resources' Watershed-Based Implementation Funding Program. At their October 20, 2020 meeting, the Medina City Council took action to direct City staff to implement the project and include the necessary match funds in their CIP for implementation in 2021-2022.

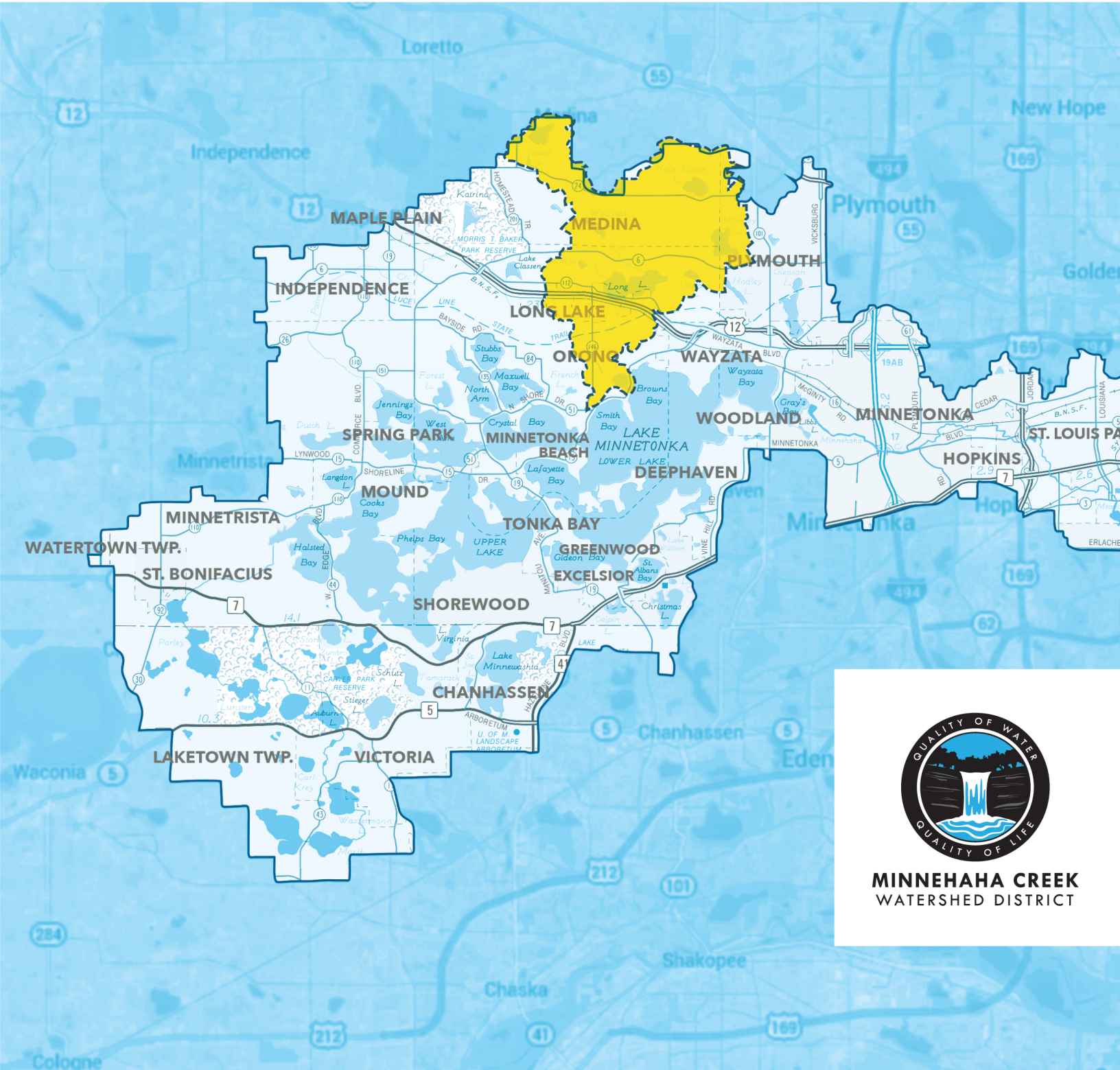
Staff will now take the feedback from the City Councils and continue working with the partners to build out the rest of the roadmap, including the supporting data, more detailed project descriptions, and a more detailed and refined implementation strategy (roles, funding, timing, action steps).

Supporting documents (list attachments):

Long Lake Creek Subwatershed Implementation Roadmap Preview

LONG LAKE CREEK SUBWATERSHED PARTNERSHIP IMPLEMENTATION ROADMAP

PREVIEW



**MINNEHAHA CREEK
WATERSHED DISTRICT**

Summary

This Implementation Roadmap Preview highlights the key findings and near-term project priorities that will be included in the Long Lake Creek Subwatershed Implementation Roadmap, set to be completed in early 2021. The roadmap is a result of a collaborative planning process to identify feasible and cost-effective projects that create healthier and more vibrant communities within the Long Lake Creek Subwatershed.

Purpose

The Cities of Long Lake, Medina, and Orono; Long Lake Waters Association (LLWA); and Minnehaha Creek Watershed District (MCWD or District) have agreed to work together towards a common goal of improving water quality within the Long Lake Creek Subwatershed. The partners aim to restore the five impaired lakes in the system to meet state water quality standards, providing fishable and swimmable lakes that underpin the quality of life in their surrounding communities.

To support this effort, the District has led the development of a science-driven “implementation roadmap” that identifies the highest-impact and most feasible projects to achieve this vision. By working together to develop and follow a shared implementation plan, the partners will be able to leverage each other’s resources and have greater success at securing grant funding to support the work.

This Implementation Roadmap Preview has been developed as an interim deliverable to provide an overview of the findings and recommendations for the city councils. The full roadmap will be finalized in early 2021 and will include three main components:

1. data, methodology, and findings from the subwatershed assessment
2. prioritized projects, costs, and benefits
3. recommended action steps, roles, timeline, and funding strategy for implementation

Background

Five lakes within the Long Lake Creek Subwatershed are impaired for excess nutrients including Holy Name, School, Wolsfeld, Long, and Tanager (see Figure 1). In 2014, the MN Pollution Control Agency (MPCA) completed the [Upper Minnehaha Creek Watershed Total Maximum Daily Load \(TMDL\) Study](#) which sets pollutant reduction goals needed to meet water quality standards so that each lake is suitable for recreational use and can support aquatic life. The TMDL assigned load reduction requirements to the Cities of Medina, Orono, and Long Lake that must be met as part of the cities’ Municipal Separate Stormsewer System (MS4) permits.

In 2016, the three cities adopted resolutions to work together to pursue grant funding and implement projects to improve water quality and address TMDL requirements ([Attachment A](#)). The cities recognized that taking a coordinated and collaborative approach could increase their chances of success. In parallel, the Long Lake Waters Association (LLWA), a non-profit entity composed of residents throughout the Long Lake Creek Subwatershed, formed to protect and enhance water quality within the subwatershed.

Between 2016 and 2018, the cities and LLWA began to engage the District in efforts to manage carp in Long Lake as a strategy to improve water quality. As a regional unit of government spanning the three cities, the District assumed the role of convener to help coordinate and guide the efforts of the partnership. The group agreed that a holistic and data-driven approach was needed in order to identify and pursue the most cost-effective projects to improve water quality.

In 2018, with the support of the partners, the District obtained a \$112,000 Accelerated Implementation Grant from the Board of Soil and Water Resources (BWSR). Through this grant, the District has been serving as the technical and planning lead to conduct a subwatershed assessment, identify cost-effective projects and strategies to improve water quality, and develop a clear and actionable roadmap to guide implementation. Since 2018, the District, cities, and LLWA have routinely met to share information and align goals, plans, and expectations for how the partners will work together to advance water quality improvement projects.

Roadmap Development

To develop the implementation roadmap, the District has followed a 4-step approach:

- **Understand resource needs** – Complete a natural resource assessment to understand issues and drivers of poor water quality throughout the subwatershed
- **Understand land use plans** - Incorporate land use plans to identify opportunities to implement water quality improvement projects
- **Integrate and prioritize** – Integrate land use and natural resource understanding to evaluate and prioritize project opportunities
- **Develop implementation plan** – Develop an implementation plan that provides clarity on roles, action steps, timelines, and funding strategy

The following sections summarize the work completed and findings under each of these four steps. Note that this assessment focused on the upper portion of the subwatershed (everything draining to Long Lake). In 2011, MCWD completed a study for the lower portion of the subwatershed (everything downstream of Long Lake) which took a similar approach to diagnose drivers of poor water quality and identify and prioritize project opportunities. The findings from that study have been incorporated into the implementation section.

Understanding Resource Needs

The first step in solving a water quality issue is understanding the underlying drivers of the problem. To diagnose the drivers of the impairments in the Long Lake Creek system, the MCWD conducted a natural resource assessment that involved intensive water quality monitoring, analysis of in-lake conditions, ecological health assessments, and watershed modeling.

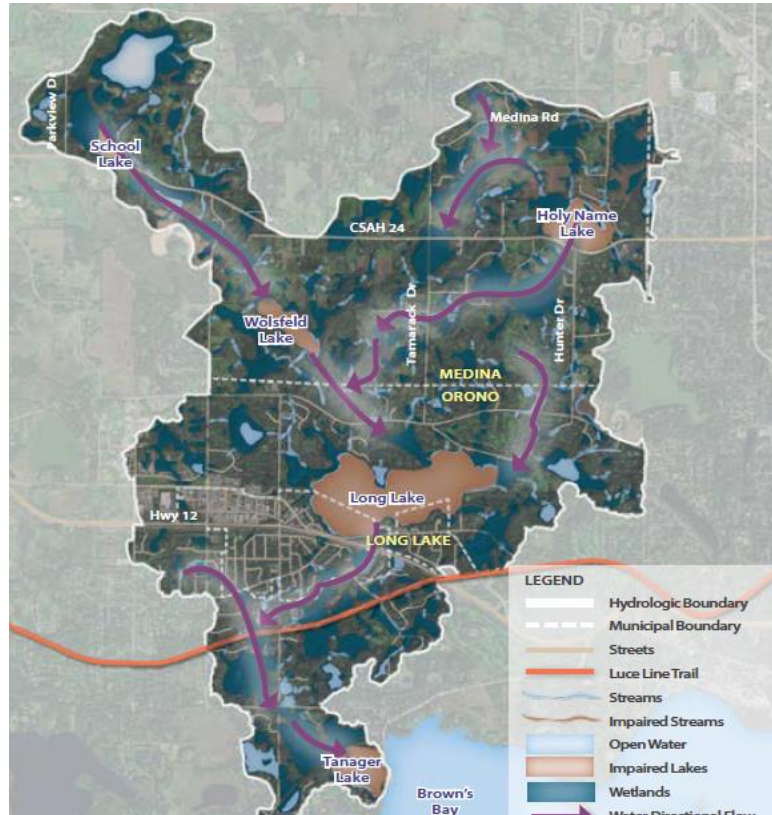


Figure 1

As part of the assessment, the subwatershed was broken into smaller management units based on how water flows through the system and the unique landscape conditions and land uses present in each unit. Below is a summary of the primary drivers of poor water quality for each management unit, with the corresponding numbers shown in Figure 2:

1. Degraded wetlands, stream erosion, and agricultural runoff are the primary watershed sources of phosphorus to School Lake and Wolsfeld Lake in Medina
2. Agricultural runoff and degraded wetlands in Medina contribute phosphorus to Holy Name Lake and Long Lake
3. Urban runoff in downtown Long Lake/Orono delivers the largest phosphorus load to Long Lake
4. Degraded wetlands and golf course runoff in Orono contribute excess phosphorus to Long Lake
5. Altered wetlands and streams in Orono/Long Lake are the primary drivers of phosphorus loading to Tanager Lake
6. Internal loading — the process in which phosphorus that has settled to the lake bottom is released back into the water — is a significant source of phosphorus for all of the impaired lakes
7. Common carp densities are high in Long Lake and Wolsfeld Lake; however, this is unlikely to be a significant driver of poor water quality in these deep lakes

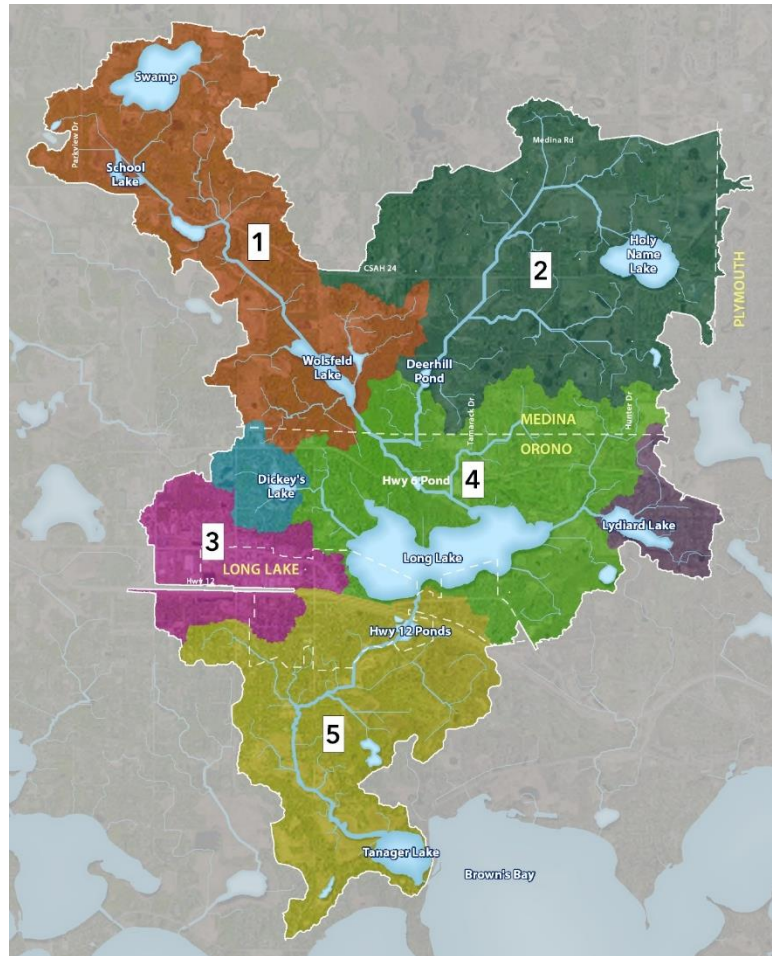


Figure 2

Based on this understanding of the drivers, the following were identified as key management strategies to improve water quality:

- **Stormwater Management** – Add new, or enhance existing, stormwater management practices to treat polluted stormwater before it enters lakes
- **Stream and Wetland Restoration** – Restore degraded wetlands and streams to improve water quality, reduce flooding, and improve habitat
- **Land Use-Specific Practices** – Implement best practices for specific land uses like agriculture and golf courses to reduce phosphorus loading from these properties
- **Internal Load Management** – Reduce internal loading through practices like alum treatment, shallow lake drawdown, and rough fish management

Understanding Land Use Plans

Water quality improvements are often most cost-effective when integrated into other land use changes such as redevelopment, road reconstruction, or park improvements. To identify opportunities to integrate projects that address major drivers of water quality into these land use changes, MCWD held work sessions with each partner to share the findings of the natural resource assessment and discuss local knowledge and land use plans. This included review and discussion of the following:

- City capital improvement plans
- Anticipated development/redevelopment activity
- Priorities and problem areas
- Existing stormwater treatment
- Landowner relationships

This dialogue was a key step in the process that allowed MCWD to translate the management strategies into specific, tangible project opportunities.

Integration and Prioritization

Based on input from the three cities, a total of 47 potential projects or strategies were identified, and a preliminary engineering analysis was conducted to develop load reduction and cost estimates to help prioritize the opportunities. In addition, 7 projects that were identified as high priority in the [2011 feasibility study](#) for the lower portion of the subwatershed were incorporated, for a total of 54 project opportunities.

Of the 54 projects evaluated, 37 are recommended for advancement based on their high cost-effectiveness and feasibility to implement. The full list of evaluated projects, and maps showing the project locations, are included as [Attachment B](#).

If completed in total, these projects would achieve 95-100 percent of the reductions required by the state for Wolsfeld Lake, Long Lake, and Tanager Lake. The estimated percent progress toward the state requirements for School Lake and Holy Name Lake are 57 percent and 20 percent, respectively; however, additional projects are currently being evaluated for these areas, so these numbers are expected to increase for the final roadmap.

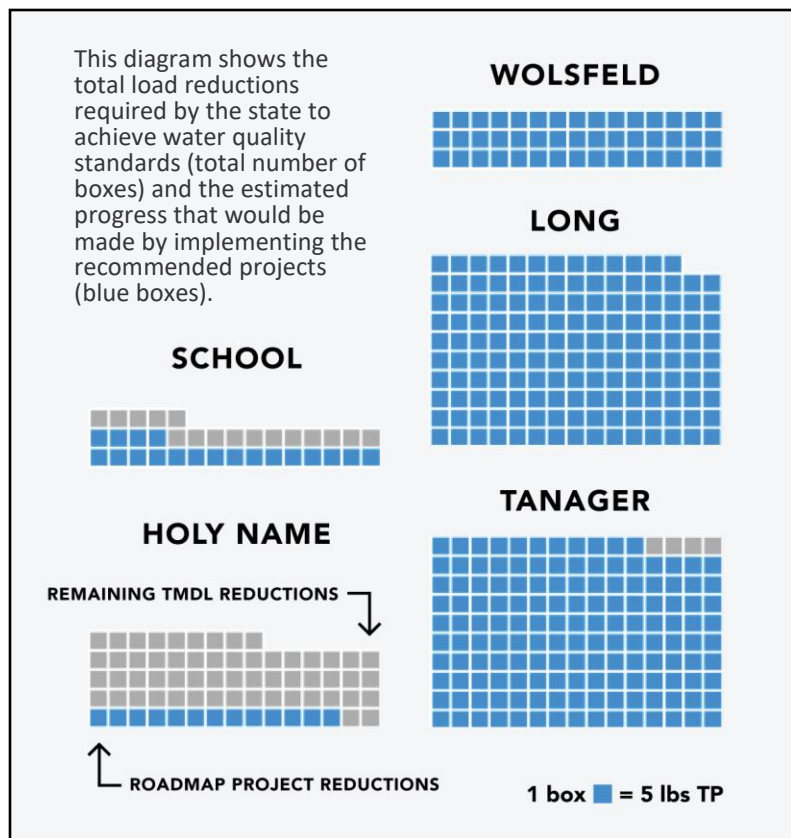


Figure 3

The table below provides a breakdown of the state-required load reductions for each city compared to the total estimated load reductions and construction costs for the 37 recommended projects.

Location	Total Load Reductions Required by TMDL (lbs TP/yr)	Total Load Reductions from Recommended Projects (lbs TP/yr)	Construction Cost
City of Long Lake	172	119	\$4,058,000
City of Medina	237	108	\$1,587,000
City of Orono	187	145	\$1,876,000
Internal Loading	625	702	\$2,446,000
Total	1221	1074	\$9,967,000

Implementation Planning

The cities have requested that the District provide recommendations for project priorities, funding strategy, and implementation timeline. The proposed projects and actions are not a mandate but simply recommendations intended to help the cities make progress toward their water quality goals. The following is a basic framework for implementation based on the discussions of the partnership to date. Additional detail on the implementation approach, actions steps, and funding strategy for the recommended projects will be incorporated into the final roadmap.

Roles

The following is a general characterization of roles for implementing the roadmap. Specific roles for the design, construction, maintenance, and funding of each project will be determined on a case-by-case basis and memorialized through cooperative agreements.

Cities

As the regulated parties with assigned load reductions through the state TMDL, the cities are assumed to be the primary implementers for projects on the landscape. As such, the pace and scale of implementation will be largely driven by the cities. It is expected that the cities will continue to actively participate in the partnership to identify and evaluate new project opportunities, coordinate implementation efforts, and provide support for grant applications.

District

The District proposes to serve the following roles:

- Develop and maintain the implementation roadmap and funding strategy
- Continue to convene the partnership to coordinate implementation efforts and grant applications, track progress, and identify new project opportunities
- Provide technical, planning, and financial support to cities for implementation of projects on the landscape
- Lead the development and implementation of internal load management projects

LLWA

The LLWA's primary role is to support the implementation efforts of the partnership by continuing to build awareness and support in the community. This may involve relaying information, helping to convene residents, and advising the cities and District on engagement efforts.

Funding

Based on discussions with the cities, it is assumed that implementation will be primarily grant dependent. The District will develop and maintain the grant strategy with the goal of leveraging the maximum amount of external funding. This will involve evaluating the recommended projects (estimated benefits, costs, readiness to implement) against the potential grant sources (eligibility requirements, review criteria, available funds, timelines) to find the best matches.

The table below provides a summary of potential grant and loan programs, availability, and match requirements. Most grants require a match, and it is recommended that the cities begin to dedicate funds or otherwise develop a strategy for contributing to grant match.

Agency/Grant Program	Typical Projects Funded	Typical Availability	Typical Application Deadlines	Match Required
BWSR Accelerated Implementation Grant	Pre-project identification, planning and design work to accelerate implementation of projects that improve or protect water quality	Annual, variable funds (~\$20M)	Late Summer- Early Fall	Yes: 25% cash or in-kind
BWSR Projects and Practices Grant (P&P)	Projects and practices that will protect or restore water quality in lakes, rivers or streams	Annual, variable funds (~\$12M)	Late Summer	Yes: 25% cash or in-kind
BWSR Watershed-Based Implementation Funding (WBIF)	Water quality improvement projects prioritized in collaboration with other LGUs in the West Mississippi Metro Basin	Biennial, variable funds (~\$875K)	Late Summer- Early Fall	Yes: 25% cash or in-kind
MPCA Section 319 Small Watershed Focus (SWF)	Small-scale watershed planning and comprehensive implementation that targets total maximum daily load (TMDL) plans	Annual, variable funds (~\$2.8M)	Early Fall (2021 is last cycle)	Yes: 40% cash or in-kind
MPCA Point Source Implementation Grants (PSIG)	Stormwater projects that contribute towards meeting wasteload reductions prescribed under a total maximum daily load (TMDL) plan	Annual, variable (max. grant award of \$7M)	Summer	Yes: 20% match
MPCA Clean Water Partnership Loans	Low-interest loans for nonpoint-source best management practices that target the restoration and protection of a water resources	Annual, variable funds (max. loan award of \$3M)	Accepted on a rolling basis	N/A
MPCA/EPA Clean Water Revolving Fund (SRF)	Low-interest loans for stormwater projects ranked on the Project Priority List	Annual, variable	Spring	N/A
Hennepin County Natural Resources Opportunity Grant	Implementation of projects that improve water quality or preserve, establish or restore natural areas	Annual, variable funds (max. grant award of \$100K)	Open year-round	No match required
Hennepin County AGBMP Loan Program	Low-interest loans to make improvements or implement practices that will reduce or prevent nonpoint source pollution	Annual, variable funds (~\$14M)	N/A	N/A
MN DNR Conservation Partners Grant Program	Restoration or enhancement of prairies, wetlands, forests, or habitat for fish, game or wildlife	Annual, variable funds (grants range from \$5K- \$400K)	Fall	Yes: 10% non-state funds
MET Council Stormwater Grant Program	Practices to treat and manage stormwater for redevelopment projects or retrofit fully developed areas with new stormwater management practices	Variable availability	Fall to Winter	Yes: 25% match

Timeline

The project list in [Attachment B](#) categorizes projects into short, mid, and long-range priorities, with the exception of a few projects that are dependent on development/redevelopment activity. These categorizations are based on the following:

- Prioritization of the most cost-effective projects
- Consideration of project feasibility, complexity, land ownership, dependency on other projects/development
- Watershed management best practice of reducing upstream/external nutrient loads before managing internal loads for greater longevity and cost-effectiveness
- Assumption that implementation is primarily grant-dependent and cities will need time to allocate funds to cover grant matches

Short-Range Implementation Priorities

Below is a summary of recommended implementation activities for the next 5 years. This includes implementation of short-range (1-5 year) priorities, as well as development of some mid-range (5-10 year) priorities. These recommendations are intended to help the cities pursue the projects that are most cost-effective and will be strong candidates for grant funding. It is anticipated that the implementation plan will be updated every few years, in coordination with the partnership, to account for new information and add detail for the next few years.

Activity	Project Name	Lead Agency	Est. Load Reduction (lb TP/yr)	Est. Construction Cost	Preliminary Grant Strategy (see grant table above)
Project Implementation	Wolsfeld Woods Ravine Stabilization	Medina	46.0	\$290,196	2020 BWSR WBIF
	Holbrook Park Regional Stormwater Management	Long Lake	51.3	\$1,309,646	2021 MPCA SWF, 2021 BWSR P&P, 2021/22 Hennepin Opportunity, 2021/22 MPCA PSIG
	Orono Golf Course Wetland Restorations	Orono	11.2	\$206,900	2021 MPCA SWF, 2022 BWSR WBIF
Project Investigation/Development	Co Rd 6 Regional Stormwater Pond Retrofit	MCWD	17.2	\$183,900	TBD
	Wolsfeld Agricultural BMPs	Medina	36.7	\$331,175	TBD
	Public Works Regional Stormwater Management	Long Lake	30.4	\$1,232,814	TBD
	Spring Hill Golf Club Reuse	Orono	26.1	\$279,625	TBD
	Swamp Lake Internal Load Management	MCWD	TBD	TBD	TBD
Project Identification/Screening	Screening of development/redevelopment activity for opportunities	All	TBD	TBD	TBD

Attachment A:
2016 City Partnership Resolutions

REQUEST FOR COUNCIL ACTION

DATE: April 25, 2016

ITEM NO: 6

Department Approval:	Administrator Reviewed:	Agenda Section:
Name Adam Edwards		Public Works Director/
Title Public Works Director/City Engineer		Parks Director Report

Item Description: Long Lake Creek Subwatershed Partnership

Exhibits.

1. Draft Resolution
2. Long Lake Creek Subwatershed Partnership Summary
3. Map of the Tanager Lake/Long Lake Subwatershed

1. **Purpose.** The purpose of this Council action is to gain approval to adopt a resolution to partner with other governmental agencies to pursue and show support in the pursuit of water quality improvement grant funding in the Long Lake Creek Subwatershed.

2. **Background.** A Total Maximum Daily Load (TMDL) was established for Long Lake Creek and Tanager Lake. This TMDL was established as a result of a study of the Upper Minnehaha Creek Watershed, which Long Lake Creek ultimately discharges to. Impaired waterbodies located in the subwatershed include: Tanager Lake (Orono), Long Lake (Long Lake/Orono), Dickey Lake (Medina), Holy Name Lake (Medina), Wolsfeld Lake (Medina), and School Lake (Medina). The TMDL includes a nutrient load reduction allocation that Cities are required to show progress toward meeting. The Minnesota Pollution Control Agency (MPCA) has set a load reduction goal of 125lbs/yr. The City of Medina, City of Long Lake, Hennepin County, and MnDOT have also been assigned nutrient load reduction goals. Long Lake, Medina, and Minnehaha Creek Watershed District have all expressed interest in partnering to improve water quality in the subwatershed.

3. **Proposal.** The requirement and focus on Long Lake Creek/Tanager Lake provides an opportunity to partner to apply for grants and collaboratively complete larger regional projects to meet these goals. Potential funding sources include the: MPCA, Hennepin County, Minnehaha Creek Watershed District, and the Minnesota Board of Water and Soil Resources. Through a partnership the associated organizations should be able to leverage grant funds to complete cost effective projects to reduce the TMDL in the subwatershed.

4. **Process.** The attached resolution, if adopted, could be included in all grant applications for projects proposing to improve water quality in the subwatershed and would authorize city staff to coordinate with partnering cities and the watershed district in pursuing grants. If a grant application is selected for an improvement project a separate resolution will be provided to each participating organization to enter into an agreement with the lead agency on the proposed project.

5. **Recommendation.** Staff recommends approval of the attached resolution.

COUNCIL ACTION REQUESTED

Consider a motion to adopt the attached resolution to partner with other intergovernmental agencies in seeking grants and to improve water quality in the Long Lake Creek Subwatershed.



CITY OF ORONO
RESOLUTION OF THE CITY COUNCIL

NO. 6610

A RESOLUTION TO PARTNER WITH OTHER INTERGOVERNMENTAL AGENCIES TO PURSUE AND SHOW SUPPORT IN THE PURSUIT OF GRANTS TO IMPROVE WATER QUALITY IN THE LONG LAKE CREEK SUBWATERSHED

WHEREAS, The Minnesota Pollution Control Agency (MPCA) completed the Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study in March 2014; and

WHEREAS, The Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study addresses nutrient impairments and nutrient budgets in the distinct hydraulic basin referred as the "Upper Watershed" of the Minnehaha Creek including; and

WHEREAS, The Tanager Lake Subwatershed, also known as the Long Lake Creek Subwatershed, is located in the Upper Minnehaha Creek Watershed and includes Long Lake Creek and 6 impaired lakes within the City of Long Lake, City of Medina, and City of Orono; and

WHEREAS, Total Maximum Daily Load (TMDL) allocations have been established for City of Long Lake, City of Medina, City of Orono, Hennepin County, and the Minnesota Department of Transportation (MnDOT); and

WHEREAS, The City of Orono is required to show progress towards meeting the established TMDL allocation; and

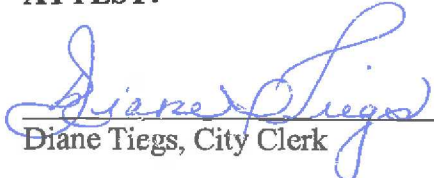
WHEREAS, Grants are available to support municipality and partnership projects to improve surface water quality in the State of Minnesota; and

WHEREAS, Partnering with other intergovernmental agencies in pursuing these grants for the Long Lake Subwatershed may result in a more organized and effective effort to improve water quality in the Long Lake Subwatershed.

NOW THEREFORE BE IT RESOLVED, by the City Council of the City of Orono, Minnesota that the City Council does hereby partner with other intergovernmental agencies to pursue and show support in the pursuit of grants to improve water quality in the Long Lake Subwatershed.

Adopted by the City Council of the City of Orono, Minnesota at a regular meeting held April 25, 2016.

ATTEST:


Diane Tieg, City Clerk


Lili Tod McMillan, Mayor



Long Lake Creek Subwatershed Partnership

The goal of the Long Lake Creek Subwatershed Restoration Partnership Project is to restore the quality of surface water resources that contribute to the Long Lake Creek subwatershed located within the Upper Minnehaha Creek Watershed. Water quality improvements will be accomplished through a coalition of partners implementing specific BMPs identified in the Upper Minnehaha Creek TMDL and other water quality studies and data.

Project Partners:

Minnehaha Creek Watershed District / City of Long Lake / City of Orono / City of Medina / Hennepin County/ MnDOT

Affected Waterbodies:

Tanager Lake / Long Lake / Dickeys Lake Holy Name Lake / Wolfsted Lake / School Lake

Funding Sources:

MPCA:

- Surface Water Assessment Grant
- Section 319 Funds
- Point Source Implementation Grants

Hennepin County/MCWD

BWSR:

- Projects and Practices
- Accelerated Implementation Program

Loads/Load Reductions:

	Load Reduction (lbs)					Total P Load Reduction (lbs)
	Holy Name	Long Lake	School	Wolfsted	Tanager	
Hennepin County	0	36	0	0	5	41
Long Lake	0	135	0	0	37	172
Orono	0	125	0	3	59	187
Medina	26	103	32	76	0	237
MnDOT	0	12	0	0	6	18

Potential Projects:

Much of the initial assessment work and data analysis has been completed to understand the problem. Implementation is the next phase. An adaptive management approach should be used during implementation which involves implementing the project, completing data collection, and using the data to inform future management.

➤ Regional Infiltration

Implementation of opportunities to increase infiltration, including but not limited to construction of infiltration basins and devices, wetland restoration, reforestation, revegetation.

➤ Wetland/Stream Restoration

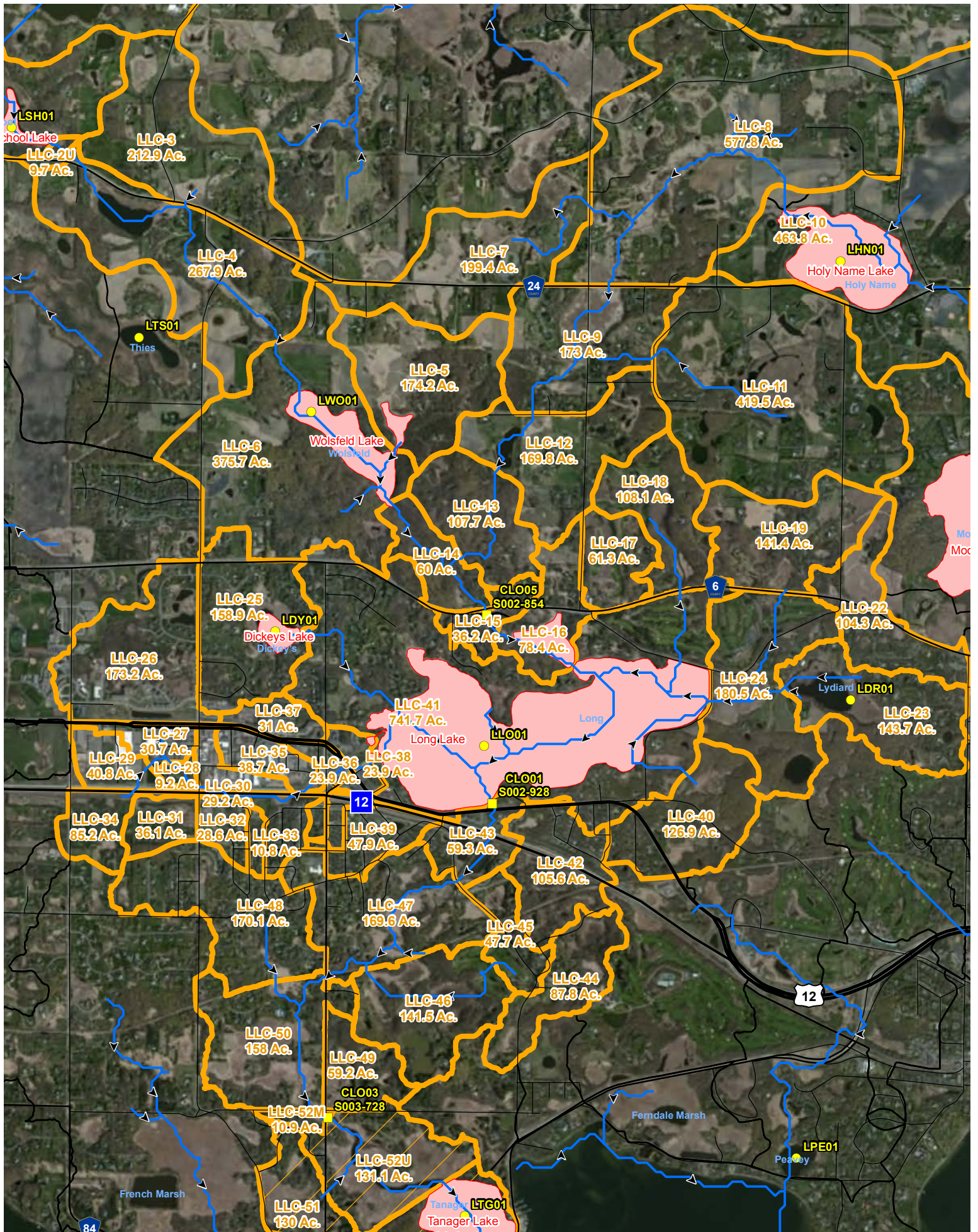
Restoration of drained or degraded wetlands, along with the restoration of streambanks, management of native vegetation, and in-stream habitat improvement.

➤ Carp Management Project

Rough fish are identified as a potential source of unknown impact in almost all lakes. Study could look at quantifying population, tracking, removing, and developing an Integrated Pest Management (IPM) Plan for the entire upper watershed.

Next Steps:

- Identify how many projects have been implemented so far.
- Track reductions
- Build implementation and priority list of projects based on cost effectiveness
- Complete BBR and PPL applications.





**City Council
Resolution No. 2016-09**

A RESOLUTION TO PARTNER WITH OTHER INTERGOVERNMENTAL AGENCIES TO PURSUE AND SHOW SUPPORT IN THE PURSUIT OF GRANTS TO IMPROVE WATER QUALITY IN THE LONG LAKE CREEK SUBWATERSHED

WHEREAS, the Minnesota Pollution Control Agency (MPCA) completed the Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study in March 2014; and

WHEREAS, the Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study addresses nutrient impairments and nutrient budgets in the distinct hydraulic basin referred as the "Upper Watershed" of the Minnehaha Creek including; and

WHEREAS, the Tanager Lake Subwatershed, also known as the Long Lake Creek Subwatershed, is located in the Upper Minnehaha Creek Watershed and includes Long Lake Creek and 6 impaired lakes within the City of Long Lake, City of Medina, and City of Orono; and

WHEREAS, Total Maximum Daily Load (TMDL) allocations have been established for City of Long Lake, City of Medina, City of Orono, Hennepin County, and the Minnesota Department of Transportation (MnDOT); and

WHEREAS, the City of Long Lake is required to show progress towards meeting the established TMDL allocation by the year 2018; and

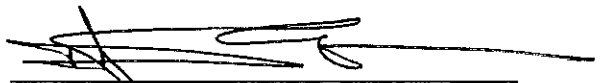
WHEREAS, grants are available to support municipality and partnership projects to improve surface water quality in the State of Minnesota; and

WHEREAS, partnering with other intergovernmental agencies in pursuing these grants for the Long Lake Subwatershed may result in a more organized and effective effort to improve water quality in the Long Lake Subwatershed.

NOW THEREFORE BE IT RESOLVED, by the City Council of the City of Long Lake, Minnesota, that the City Council does hereby partner with other intergovernmental agencies to pursue and show support in the pursuit of grants to improve water quality in the Long Lake Subwatershed.

Adopted by the City Council of the City of Long Lake this 5th day of April 2016.

BY:



Donny Chillstrom, Mayor

ATTEST:



Jeanette Moeller, City Clerk

Member Anderson introduced the following resolution and moved its adoption:

CITY OF MEDINA

RESOLUTION NO. 2016-27

A RESOLUTION TO PARTNER WITH OTHER INTERGOVERNMENTAL AGENCIES TO PURSUE AND SHOW SUPPORT IN THE PURSUIT OF GRANTS TO IMPROVE WATER QUALITY IN THE LONG LAKE CREEK SUBWATERSHED

WHEREAS, The Minnesota Pollution Control Agency (MPCA) completed the Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study in March 2014; and

WHEREAS, The Upper Minnehaha Creek Watershed Nutrient and Bacterial TMDL Study addresses nutrient impairments and nutrient budgets in the distinct hydraulic basin referred as the “Upper Watershed” of the Minnehaha Creek including; and

WHEREAS, The Tanager Lake Subwatershed, also known as the Long Lake Creek Subwatershed, is located in the Upper Minnehaha Creek Watershed and includes Long Lake Creek and 6 impaired lakes within the City of Long Lake, City of Medina, and City of Orono; and

WHEREAS, Total Maximum Daily Load (TMDL) allocations have been established for City of Long Lake, City of Medina, City of Orono, Hennepin County, and the Minnesota Department of Transportation (MnDOT); and


WHEREAS, The City of Medina is required to show progress towards meeting the established TMDL allocation by the year 2018; and

WHEREAS, Grants are available to support municipality and partnership projects to improve surface water quality in the State of Minnesota; and

WHEREAS, Partnering with other intergovernmental agencies in pursuing these grants for the Long Lake Subwatershed may result in a more organized and effective effort to improve water quality in the Long Lake Subwatershed; and

NOW THEREFORE BE IT RESOLVED, by the City Council of Medina, Minnesota that the City Council does hereby partner with other intergovernmental agencies to show support in the pursuit of grants to improve water quality in the Long Lake Subwatershed. Furthermore, City Council directs staff to work with the City Engineer to submit a Biennial Budget Request (BBR) to the MN Board of Water and Soil Resources (BWSR) for the fiscal year 2018-2019. This submission is the first effort of the partnership to obtain funding for a prospective project; The cost to facilitate this request is a not to exceed amount of \$1,500.

Dated: April 5, 2016.



Jeff Pederson, Acting Mayor

Attest:



Jodi M. Gallup, City Clerk

The motion for the adoption of the foregoing resolution was duly seconded by member Martin and upon vote being taken thereon, the following voted in favor thereof:

Anderson, Cousineau, Martin, Pederson

And the following voted against same: **(Absent: Mitchell)**

None

Whereupon said resolution was declared duly passed and adopted.

Attachment B:
List and Maps of Evaluated Projects

Location	Prioritization (Recommendation)	Prioritization (Timeline)	Project ID	Project Name	Receiving Impaired Waterbody	Project/Strategy Description	Net TP Improvement (lb/yr)	Construction Cost	Lifecycle Cost	Normalized Lifecycle Cost (\$/lb TP/30-yr)
Long Lake	Not Recommended		LL01	Grand Avenue	Long Lake	Regional stormwater treatment: Re-plumb storm sewer to bypass Long Lake	4.4	\$190,200	\$190,200	\$1,435
Long Lake	Recommended	Short Range Priority	LL03	Holbrook Park	Long Lake	Regional stormwater treatment: Subsurface infiltration	51.3	\$1,309,646	\$1,346,746	\$875
Long Lake	Not Recommended		LL04-A	Industrial Blvd Pond - A	Long Lake	Regional stormwater treatment: Wetland restoration and re-plumb stormsewer	3.1	\$206,238	\$355,939	\$3,827
Long Lake	Not Recommended		LL04-B	Industrial Blvd Pond - B	Long Lake	Regional stormwater treatment: Re-plumb stormsewer	2.2	\$77,613	\$77,613	\$1,176
Long Lake	Recommended	Long Range Priority	LL04-C	Industrial Blvd Pond - C	Long Lake	Regional stormwater treatment: Re-route Daniels St stormsewer when road is reconstructed	17.7	\$621,502	\$621,502	\$1,170
Long Lake	Recommended	Mid Range Priority	LL05	LL Public Works	Long Lake	Regional stormwater treatment: Subsurface infiltration	30.4	\$1,232,814	\$1,269,914	\$1,394
Long Lake	Not Recommended		LL07-3a	VA Property with western area	Long Lake	Regional stormwater treatment: Maximize treatment by bringing off-site runoff into the site	15.0	\$1,563,160	\$1,606,227	\$3,569
Long Lake	Not Recommended		LL07-3b	VA Property	Long Lake	Regional stormwater treatment: Scenario 3a plus treatment by reconstructing City Hall parking lot	18.0	\$1,769,400	\$1,812,467	\$3,356
Long Lake	Not Recommended		LL11	Nelson Park South Pond Retrofit	Long Lake	Stormwater pond retrofit/expansion: Irrigate city park	1.6	\$147,900	\$247,267	\$5,151
Long Lake	Recommended	Mid Range Priority	LL12	Nelson Park North Pond Retrofit	Long Lake	Stormwater pond enhancements: Subsurface spent lime filter	10.8	\$524,483	\$562,087	\$1,729
Long Lake	Alternative	Development-dependent	LL13-A	fitHAUS Property - A	Long Lake	Regional stormwater treatment: Subsurface storage & MTD	7.0	\$554,065	\$591,165	\$2,805
Long Lake	Recommended	Development-dependent	LL13-B	fitHAUS Property - B	Long Lake	Regional stormwater treatment: Subsurface infiltration	8.5	\$369,065	\$406,165	\$1,597




Location	Priortization (Recommendation)	Prioritization (Timeline)	Project ID	Project Name	Receiving Impaired Waterbody	Project/Strategy Description	Net TP Improvement (lb/yr)	Construction Cost	Lifecycle Cost	Normalized Lifecycle Cost (\$/lb TP/30-yr)
Medina	Recommended	Mid Range Priority	MD01	Swamp-School Corridor Improvements	School Lake	Streambank stabilization: Channel stabilization (1/2 of 1,600' length, both sides)	7.2	\$446,000	\$446,000	\$2,065
Medina	Recommended	Mid Range Priority	MD02	Willow Dr Wetland	Wolsfeld Lake	Wetland restoration: Water quality, flood storage, and habitat enhancement		TBD	TBD	TBD
Medina	Not Recommended		MD03-A	Wolsfeld Ag BMPs - A	Wolsfeld Lake	Ag BMPs: A. Grassed waterway	0.3	\$25,668	\$38,251	\$5,093
Medina	Recommended	Mid Range Priority	MD03-B	Wolsfeld Ag BMPs - B	Wolsfeld Lake	Ag BMPs: Wetland restoration	12.7	\$289,500	\$439,201	\$1,154
Medina	Recommended	Mid Range Priority	MD03-C	Wolsfeld Ag BMPs - C	Wolsfeld Lake	Ag BMPs: Alternative tile intakes	11.7	\$3,500	\$6,017	\$17
Medina	Recommended	Mid Range Priority	MD03-D	Wolsfeld Ag BMPs - D	Wolsfeld Lake	Ag BMPs: Buffer	12.3	\$38,175	\$45,725	\$124
Medina	Recommended	Long Range Priority	MD04	NW Wolsfeld Ravine	Wolsfeld Lake	Ravine stabilization: 650 ft, both sides	5.9	\$362,500	\$362,500	\$2,066
Medina	Recommended	Short Range Priority	MD05	Wolsfeld Woods Ravine	Wolsfeld Lake	Ravine stabilization: Stabilize ravine in Wolsfeld Woods	46	\$ 290,196	\$ 312,896	\$227
Medina	Recommended	Development-dependent	MD06 and MD07	Ag Land NW of Holy Name	Long Lake	Land use policy: Conservation density incentives when parcels develop		N/A	N/A	N/A
Medina	Recommended	Development-dependent	MD08	Ag Land NE of Holy Name	Holy Name	Wetland restoration and policy: Explore wetland banking when property develops		N/A	N/A	N/A
Medina	Not Recommended		MD10	Tamarack Road Wetland	Long Lake	Wetland Restoration: Tamarack Road flooding	N/A	N/A	N/A	N/A
Medina	Alternative	Long Range Priority	MD11	Deerhill Pond Retrofit - A	Long Lake	Stormwater pond enhancements: Subsurface spent lime filter	10.3	\$563,546	\$601,149	\$1,938
Medina	Recommended	Long Range Priority	MD12	Deerhill Pond Retrofit - B	Long Lake	Stormwater pond enhancements: Deerhill Pond Reuse	11.8	\$157,400	\$256,767	\$725
Medina	Not Recommended		MD13	Deerhill Pond Retrofit - C	Long Lake	Stormwater pond enhancements: Diversion filter	N/A	N/A	N/A	N/A

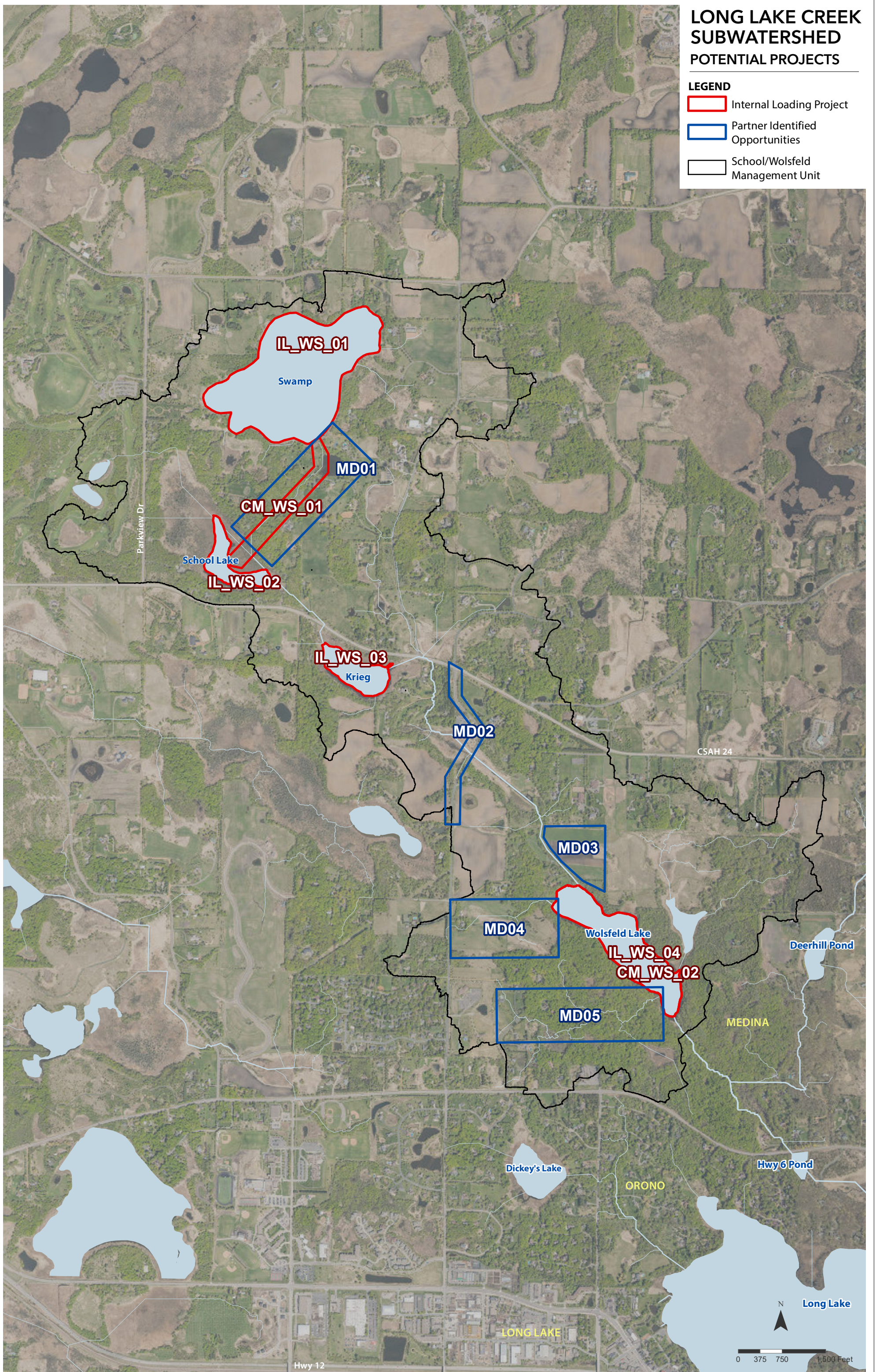
Location	Priortization (Recommendation)	Prioritization (Timeline)	Project ID	Project Name	Receiving Impaired Waterbody	Project/Strategy Description	Net TP Improvement (lb/yr)	Construction Cost	Lifecycle Cost	Normalized Lifecycle Cost (\$/lb TP/30-yr)
Orono	Recommended	Long Range Priority	OR01	Orono Woods Pond Retrofit	Long Lake	Stormwater pond enhancements: Subsurface spent lime filter	7.4	\$586,571	\$624,174	\$2,814
Orono	Not Recommended		OR03	CR 6 Pond Expansion	Long Lake	Stormwater pond enhancements: Pond expansion	N/A	N/A	N/A	N/A
Orono	Recommended	Mid Range Priority	OR03-A	CR 6 Pond Retrofit - A	Long Lake	Stormwater pond enhancements: A. Iron-enhanced sand filter bench	17.2	\$183,900	\$220,350	\$427
Orono	Alternative	Long Range Priority	OR03-B	CR 6 Pond Retrofit - B	Long Lake	Stormwater pond enhancements: B. Alum injection system	199.5	\$952,500	\$2,286,341	\$382
Orono	Not Recommended		OR03-C	CR 6 Pond Retrofit - C	Long Lake	Stormwater pond enhancements: C. Stormwater reuse system	2.3	\$121,400	\$220,767	\$3,200
Orono	Recommended	Mid Range Priority	OR04-A	Spring Hill Golf Club Reuse - A	Long Lake	Stormwater reuse: Reuse from wetland for golf course irrigation		TBD	TBD	TBD
Orono	Recommended	Long Range Priority	OR04	Wetland Restoration Area	Long Lake	Wetland restoration: Water quality and habitat improvements		TBD	TBD	TBD
Orono	Recommended	Mid Range Priority	OR05	Spring Hill Golf Club Reuse - B	Long Lake	Stormwater pond enhancements: Pond reuse	9.8	\$157,125	\$256,492	\$872
Orono	Recommended	Mid Range Priority	OR06	Spring Hill Golf Club Reuse - C	Long Lake	Stormwater pond enhancements: Pond reuse	16.3	\$122,500	\$221,867	\$453
Orono	Alternative	Long Range Priority	OR07	Spring Hill Rd Filter	Long Lake	Stormwater pond enhancements: Iron-Enhanced Sand Filter	14.3	\$727,163	\$764,767	\$1,778
Orono	Not Recommended		OR10	6th Ave N Culvert Repair	Long Lake	Stormwater enhancements: Address upstream flooding and load from golf course	N/A	N/A	N/A	N/A
Orono	Recommended	Mid Range Priority	OR2011_01	Brown Rd Outfall Stabilization	Tanager Lake	2011 Feasibility Study: Stabilization of Brown Rd Outfall Sites (Sta 7650-7675)	11.6	\$ 49,731	TBD	TBD
Orono	Recommended	Long Range Priority	OR2011_02	Reach 2 Stream Restoration	Tanager Lake	2011 Feasibility Study: Stream remeander around Smith Dump Site	30.1	\$ 396,100	TBD	TBD
Orono	Recommended	Short Range Priority	OR2011_03	Orono Golf Course Wetland Restorations	Tanager Lake	2011 Feasibility Study: Enhancement of wetlands D-117-23-02-013 and D-117-23-02-039	11.2	\$ 206,900	TBD	TBD
Orono	Recommended	Mid Range Priority	OR2011_04	YMCA Wetland Restoration	Tanager Lake	2011 Feasibility Study: Restoration of wetland D-117-23-03-016	4.9	\$ 34,500	TBD	TBD
Orono	Recommended	Long Range Priority	L/OR2011_0	Long Lake Creek Wetland Restoration	Tanager Lake	2011 Feasibility Study: Restoration of wetland D-117-23-03-044A	36.8	\$ 138,500	TBD	TBD

Location	Priortization (Recommendation)	Prioritization (Timeline)	Project ID	Project Name	Receiving Impaired Waterbody	Project/Strategy Description	Net TP Improvement (lb/yr)	Construction Cost	Lifecycle Cost	Normalized Lifecycle Cost (\$/lb TP/30-yr)
In-Lake	Recommended	Long Range Priority	CM_DIR_01	Long Lake Carp Management	Long Lake	Internal load management: Carp removal	TBD	\$400,000	\$400,000	TBD
In-Lake	Recommended	Long Range Priority	CM_DIR_02_B	Long Lake Structural Carp Barrier	Long Lake	Internal load management: Structural carp barrier	TBD	\$100,000	\$100,000	TBD
In-Lake	Alternative	Long Range Priority	CM_DIR_02_A	Long Lake Electric Carp Barrier	Long Lake	Internal load management: Electric carp barrier	TBD	TBD	\$250,000	TBD
In-Lake	Recommended	Long Range Priority	IL_DIR-01	Long Lake Alum Treatment	Long Lake	Internal load management: Alum treatment	295	\$825,000	\$825,000	\$30
In-Lake	Recommended	Long Range Priority	IL_HND_01	Holy Name Alum Treatment	Holy Name	Internal load management: Alum treatment	69.6	\$72,000	\$72,000	\$34
In-Lake	Recommended	Mid Range Priority	CM_WS_01	School Fish Barrier	School Lake	Internal load management: Fish barrier	TBD	\$50,000	\$50,000	TBD
In-Lake	Recommended	Long Range Priority	CM_WS_02	Wolsfeld Carp Removal	Wolsfeld Lake	Internal load management: Carp removal	TBD	\$200,000	\$200,000	TBD
In-Lake	Recommended	Mid Range Priority	IL_WS_01	Swamp Drawdown	School Lake	Internal load management: Drawdown of waterbody	TBD	\$300,000	\$300,000	TBD
In-Lake	Recommended	Mid Range Priority	IL_WS_02	School Alum Treatment	School Lake	Internal load management: Alum treatment	92.7	\$183,000	\$183,000	\$66
In-Lake	Recommended	Mid Range Priority	IL_WS_03	Krieg Alum Treatment	Wolsfeld Lake	Internal load management: Alum treatment	TBD	TBD	TBD	TBD
In-Lake	Recommended	Long Range Priority	IL_WS_04	Wolsfeld Alum Treatment	Wolsfeld Lake	Internal load management: Alum treatment	80	\$279,000	\$279,000	\$55
In-Lake	Recommended	Long Range Priority	OR2011_05	Tanager Alum Treatment	Tanager Lake	2011 Feasibility Study: Tanager Lake alum treatment	164.7	\$ 37,400	\$ 37,400	TBD

LONG LAKE CREEK SUBWATERSHED POTENTIAL PROJECTS




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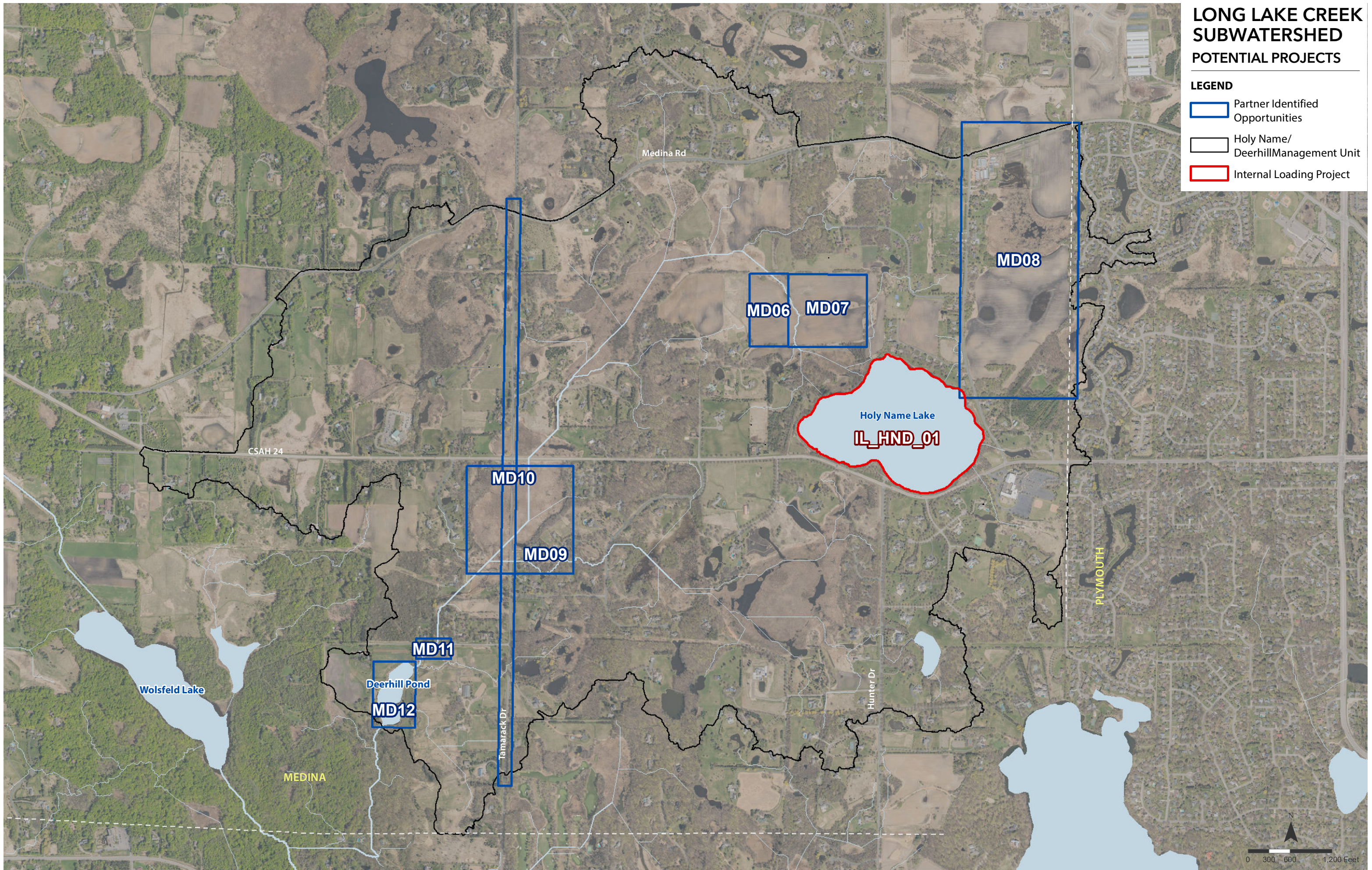
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-  Partner Identified Opportunities
-  School/Wolsfeld Management Unit



LONG LAKE CREEK SUBWATERSHED POTENTIAL PROJECTS



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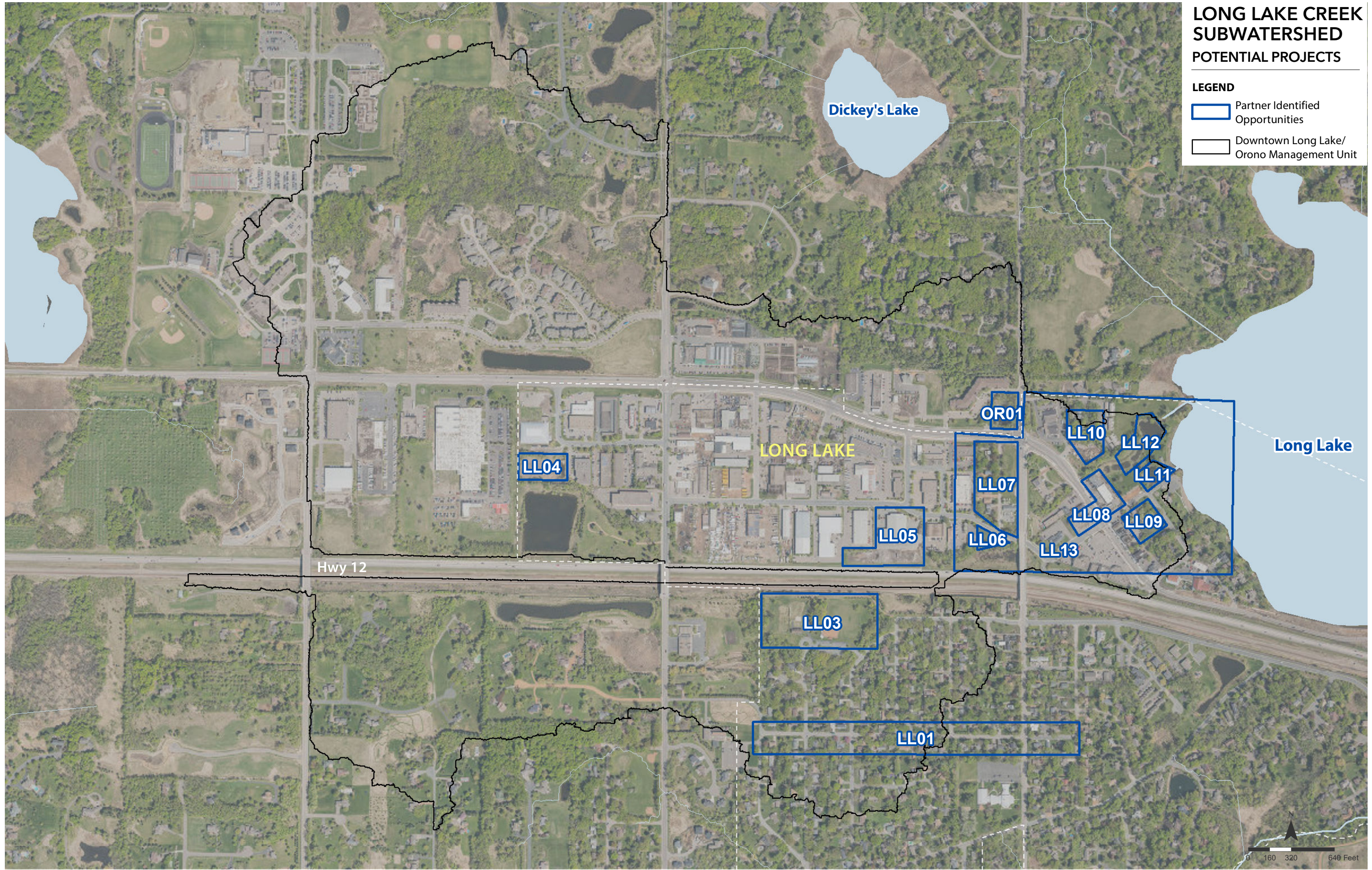
-  Partner Identified Opportunities
-  Holy Name/Deerhill Management Unit
-  Internal Loading Project



LONG LAKE CREEK SUBWATERSHED POTENTIAL PROJECTS

LEGEND

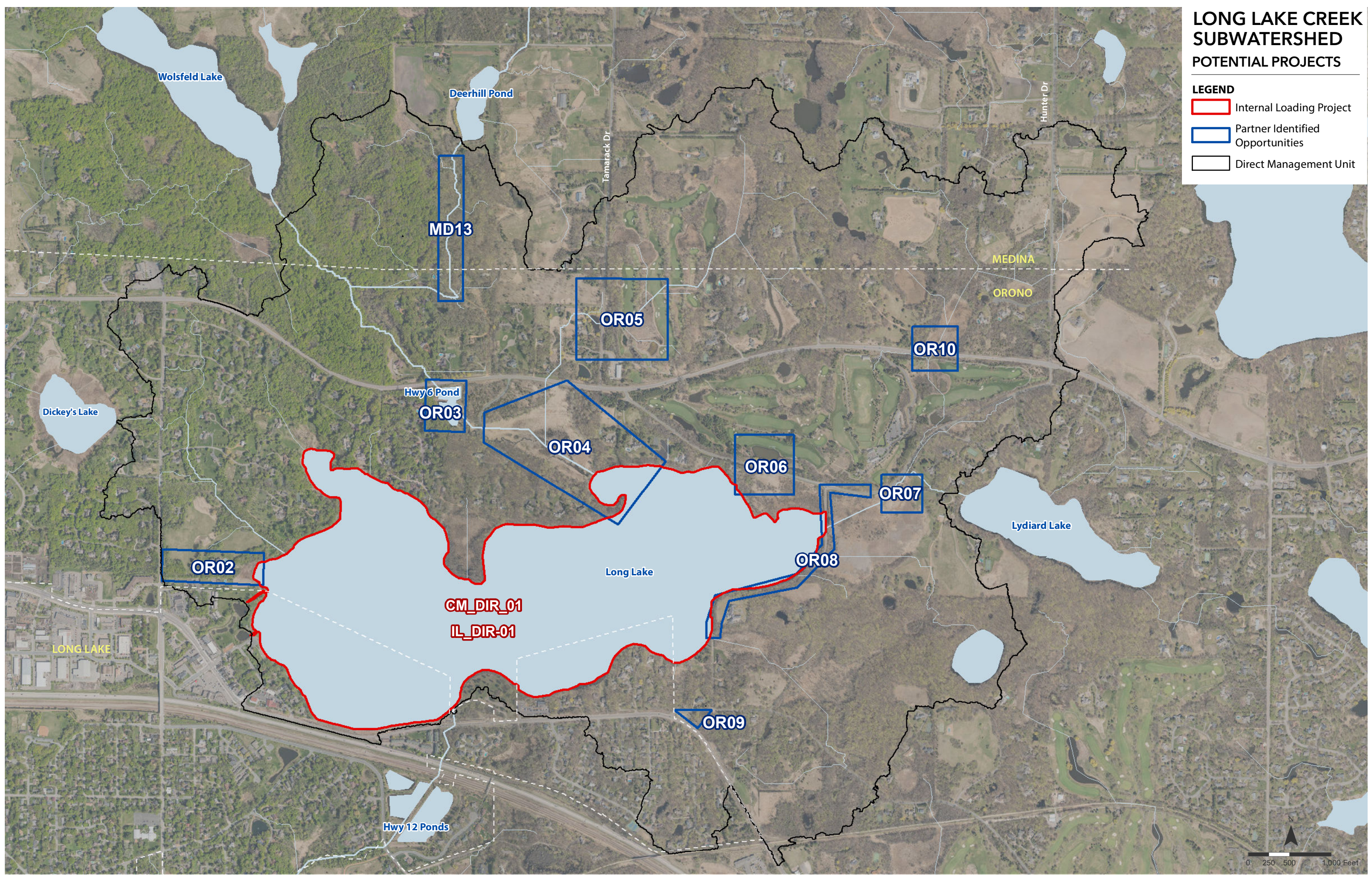
-  Partner Identified Opportunities
-  Downtown Long Lake/Orono Management Unit



LONG LAKE CREEK SUBWATERSHED POTENTIAL PROJECTS




LEGEND

- Internal Loading Project
- Partner Identified Opportunities
- Direct Management Unit



LONG LAKE CREEK SUBWATERSHED POTENTIAL PROJECTS

LEGEND

-  Internal Loading Project
-  Partner Identified Opportunities
-  Long Lake Creek Management Unit

