2023 Annual Report of Orono Lake Improvement District (OLID)

The OLID was formed on July 23, 2019

2023 Annual Report Prepared by the Orono Lake Improvement District Board of Directors.

1. **Financial Conditions**

a. All items included in the proposed budget for 2024 were approved by members on August 22, 2023 at the OLID Annual Meeting.

• Goal 1-8: OLID Annual Services and Activities Fee (100% approval)

The Orono Lake Improvement District Board of Directors proposed that the OLID request the City of Elk River to impose a service charge within the OLID in the amount of \$100 per full unit for 2024 OLID Annual Services and Activities. This service charge is to support the services and activities itemized in the proposed budget at a total cost of no more than the \$17,100 budgeted expenses.

The Goals for 2024 include Aquatic Invasive Species (AIS) Control of Curly-leaf Pondweed, Undesirable Aquatic Vegetation and Organisms Public, Waters Control Fisheries Survey, Preservation and/or Stocking, Website Licensing and Maintenance, County Special Assessment Fees, Office Supplies and Organizational Expenses, OLID Board Liability Insurance and developing a Cash Reserve to meet cash flow needs or have as contingency funds (see Appendix 5 for full budget detail). These charges will be collected by Sherburne County during the 2024 taxation period.

• 2023 Budget and Financial Conditions

The OLID financial report for 2023 as of December 7, 2023 showed expenses of \$22,165.65, deposits of \$\$24,222.34, a checking balance of \$\$16,007.17 and savings balance of \$2,921.75. As of December 7, 2023 the OLID has received \$\$17,112.15 (including the 2022 last installment of \$227.50) from Sherburne County in annual property services and activities charges. It is estimated that the OLID will receive the 2023 outstanding balance of 215.37 in January 2024 as the final payment of the tax reconciliation process for a total of \$17,100. In addition, we will be receiving \$413.37 from the City of Elk River as its portion of our Sherburne SWCD Point Intercept survey grant and \$620.06 from Sherburne SWCD (the final 25% of the grant itself).

Aquatic Invasive Species (AIS) management planning and control grants were received from Sherburne SWCD of \$2,480.25 and the MN DNR of \$5,250.00.

2. **Business transacted by the district**

a. The OLID has incurred the following business expenses transacted by the Orono Lake Improvement District as of December 7, 2023.

OLID Liability Insurance coverage	\$932.00
County Special Assessment Fee	\$890.00
Point-Intercept Surveys	\$3,307.00
Lake Vegetation Management Planning	\$832.53
Fisheries Survey Preservation and/or Stocking	\$2050.00
Web Licensing and Maintenance	\$119.96
Office Supplies and Organizational Expenses	\$672.69
	OLID Liability Insurance coverage County Special Assessment Fee Point-Intercept Surveys Lake Vegetation Management Planning Fisheries Survey Preservation and/or Stocking Web Licensing and Maintenance Office Supplies and Organizational Expenses

3. Status of all projects

a. Lake Orono Restoration and Enhancement (LORE)

- In total, dredging removed just over 140,000 cubic yards of material from various locations within both the upper and lower portions of the lake. Shoreline restoration was completed along the point off Simonet Drive and along the west shoreline of Orono Cemetery. The project was completed in April 2021.
- Part of the LORE project included the creation of a sedimentation catch basin. The catch basin is intended to capture non suspended sedimentation. Maintaining the catch basin will require sedimentation removal. Future sedimentation removal may consist of hydraulic or mechanical dredging.

b. The Sedimentation Management Plan

- The plan aims to address the issue of sediment accumulation within the lake. Sedimentation is a natural process where soil, organic matter, and other particles are deposited in bodies of water over time, resulting in reduced water quality and habitat degradation. The plan outlines strategies and actions to mitigate sedimentation and restore the lake's health.
- **c. BioBase Use Strategies** surveys generated using <u>BioBase</u>, which uses sonar to create detailed depth (bathymetry), vegetation and hardness maps of the lake bottom. These surveys provide valuable data on three key aspects: bathymetry, vegetation, and bottom hardness. Here's a brief overview of each component:
 - Bathymetry: Bathymetry refers to the measurement of water depth in a body of water. BioBase uses sonar technology to create detailed bathymetric maps of Lake Orono. These maps show the contours and variations in water depth, providing important information about the lake's topography.
 - Vegetation: The surveys help to identify the distribution and extent of different types of aquatic plants and algae present in the lake. Understanding the vegetation patterns is crucial for assessing the ecological health of the lake and determining any potential impacts on water quality, navigation, or recreational activities.
 - Bottom Hardness: BioBase surveys additionally provide data on the hardness of the lake bottom. By measuring the substrate composition, including sediment types and bottom consistency, the management plan can gain insights into the sedimentation processes occurring in the lake. This information aids in understanding sediment dynamics, deposition areas, and potential erosion concerns.

By integrating the data from these surveys, the Orono Lake Improvement District (OLID) can develop a comprehensive sedimentation management plan. This plan may include strategies for mitigating sedimentation issues, such as implementing erosion control measures, managing vegetation, and conducting periodic dredging activities. The data generated by BioBase surveys helps inform decision-making processes and allows for a more effective and targeted approach to managing sedimentation in Lake Orono.

d. 2023 Sedimentation assessment and monitoring report.

BioBase surveys were conducted in 2022 and in 2023 by the OLID sedimentation assessment and monitoring committee. The surveys conducted in 2022 provided valuable baseline data on sedimentation in the catch basin. Some key findings when comparing the data from the 2022 and 2023 surveys include:

• The rate at which sediment was accumulating in the catch basin was determined based on the data collected in 2022 and 2023.

• Survey indicates a year over year accumulation of sedimentation in the catch basin of 7,744 cubic yards of material.

2022 Catch Basin (depth measurements)		
Water Volume (acre ft)	35.004	
Water Depth Avg (ft)	4.16	
Water Depth Max (ft)	8.33	
Water Depth Min (ft)	0.19	



2023 Catch Basin (depth measurements)

Water Volume (acre ft)	30.204
Water Depth Avg (ft)	3.59
Water Depth Max (ft)	7.61
Water Depth Min (ft)	0.14



• **Potential Sources:** Sediment could be from nearby scouring and/or shoreline erosion identified in red below and from upstream locations within the watershed.

2023 aerial view near catch basin



Further strategies to quantify resedimentation and its remediation will be addressed in the 2021 - 2026 Lake Orono Management Plan. Sediment Management is now an additional subcategory on the OLID website.

e. **OLID Website**: In 2020 the development and release of the <u>https://oronolid.org/</u> website was achieved with considerable savings obtained from the group licensing of its web platform. The go-live date of the website was July 31, 2020. Besides being the official bulletin board for the OLID it provides a document repository, project updates, a member contact form and links to key partner organizations and educational resources.

In 2021 the new category of <u>Lake Management Plan</u> was added to the main menu with <u>Aquatic Invasive Species</u>, <u>Fisheries</u> and <u>Water Quality</u> as subcategories and updated in 2022. Further, in 2022 the purchasing of a Lowrance HDS-7 sonar system and licensing BioBase software to track sediment build-up for future dredging projects and to map aquatic vegetation was added to the Lake Management Plan page. In 2023 additional updates were added to each of those section. The OLID is currently adding Sediment Management and Aquatic Vegetation (both Native and Invasive Species) as additional separate subcategories to its staging website. We plan to make those public on the production website in 2024.

- f. Lake Management Plan:
 - Aquatic Invasive Species (AIS) Prevention and Control
 - 1. Curly-leaf pondweed (CLP): Though it was again colder and there was higher precipitation than usual last spring, CLP started appearing as anticipated below the water surface in abundance in early May 2023.

Formal curly-leaf pondweed delineation was done as part of a complete point-intercept survey on May 20, 2023. Related, as an alternative to Endothall this year the MN DNR recommended using Flumioxazin over Diquat. Though Flumioxazin is less expensive than Endothall it is slightly more expensive than Diquat, but considered to be more friendly to the environment. Flumioxazin is also considered by our service provider Lake Management Inc. (LMI) to be the most effective of the three herbicides in control.

Therefore, the OLID submitted a treatment permit request for 33.8 acres on May 22, 2023 that was reduced the next day to 30.9 acres (see Appendix 15, page 3) using Flumioxazin. The reduction was to stay within the 15% littoral limit for all herbicide treatments, due to the higher level of shoreline permit requests in 2023. The selective treatment of Flumioxazin was applied by our service provider Lake Management Inc. (LMI) on May 25, 2023. Within a week stress and dying back of the CLP was easily discernable and by mid-June the CLP was largely eradicated in the seven public water areas that were treated. In the end result, the treatment was considered to be highly effective by lake property owners and lake users.

In addition, it is our understanding that in 2023 Lake Orono was one of 10 Minnesota lakes to partner with the MN DNR in studying the use and effectiveness of Flumioxazin for CLP treatment. OLID volunteers collected pH level water samples on the May 25, 2023 treatment date as part of the study.

2. Eurasian Watermilfoil (EWM): The status of this recent AIS threat is that after the 8.76 rapid response treatment of EWM on August 5, 2021, it again fortunately was not found in either of the two point-intercept surveys that were conducted in 2022 nor 2023. That was also the case in three point-intercept surveys that were conducted in 2021.

Regarding the Eurasian watermilfoil (EWM) AIS Control Contract that the OLID was awarded in 2021 and requested extended twice to 2022 and 2023, as we anticipated the potential re-emergence of EWM, the OLID was very appreciative that Sherburne SWCD provided that preparedness support. Per previous agreement with re-emergence not occurring since the rapid response, the grant was cancelled and initial payment of \$1,500 was returned to Sherburne SWCD.

3. Zebra Mussels: On Friday, September 11, 2020 after the LORE dredging project drawdown was halfway to completion Zebra Mussels were found. The finding was made by a lake property owner who also happens to be an Aquatic Invasive Species Specialist for Carver County. The individual reported the finding that day to the DNR and Sherburne SWCD. It was reported the following day to the OLID.

Two zebra mussel "hot spots" were found by the Carver County AIS Specialist (and later inspected by Sherburne SWCD) in areas along northern Main Street NW. In addition, single zebra mussels were found on an anchor on the sandbar off the cemetery point by another lake property owner and by SWCD near the public boat landing attached to a native mussel. The DNR received both photos and specimens to verify the infestation.

It was hoped that the freeze associated with the LORE dredging project drawdown would result in freezing all exposed zebra mussels. In 2021 the zebra mussel veliger tests that were collected were all again negative. However, one of the last of the five new eDNA tests from June / August came back with a positive response for zebra mussels.

Further, in 2021 zebra mussel monitoring platforms were doubled from 3 to 6 locations and property owners were encouraged to thoroughly inspect their docks and lifts (see the now annual flyer as Appendices 12). Unfortunately, one new platform zebra mussel finding was reported in 2022 on Main Street NW.

In addition, in 2023 there were continued findings on Main Street NW (both on a monitoring platform and equipment) and a new area discovery was made on a lift and dock on Simonet Drive NW. The 2023 findings were made during the annual inspections that are encouraged of all lake property owners. Notice of zebra mussels is still posted by the DNR at the public boat landing.

The trailering and passage of boats from one body of water to another has significantly contributed to the spread of zebra mussels. Recreational boaters, anglers, and commercial barges all need to take great care to avoid the transfer of zebra mussel "stowaways." Unfortunately, once a colony of zebra mussels is established in a waterbody, it is nearly impossible to prevent them from spreading elsewhere. The best protection is to keep them from entering Orono Lake altogether.

The OLID is working on a number of strategies and educational opportunities in efforts to prohibit the further spread of the zebra mussels (see Appendices 13 for further details).

• Native Plant and Algae Management

Due to a variety of conditions associated with the LORE project and significant drought in 2021 and 2022 Water star-grass and persistent nuisance Filamentous algae were big concerns for property owners and lake users. However, in 2023 the most significant differences from the previous year were the continued re-establishment of various native plants since the refilling of the lake in April 2020 after the LORE project, but decrease in Water star-grass and Filamentous algae. The most notable native plant increase was in Coontail (see Appendices 15, pages 2 through 7 for additional detail). A variety of factors appear to be involved, including very abnormal winter and spring weather condition in 2023. In 2024, the OLID intends to continue May and July point-intercept surveys to monitor aquatic vegetation changes.

In 2022, we also resumed public waters AIS treatments and continued to enhanced them by promoting Lake Management Inc. (LMI) use by private lake property owners and in 2023 participation increased. From 2017 to 2022 over 20+ individual lake property owners (over 30+ in 2023) contracted with Lake Management, Inc. per year for aquatic plant management herbicide treatments in early June and in later July. The goal is to recruit even more participation in 2024.

Further, we continue to communicate to property owners MN DNR regulations regarding private shoreline treatment and CLP hand-pulling via our email lists and website.

• Water Quality Testing and Improvement

An ongoing goal of our lake management plan is to monitor and improve water clarity and quality in both Upper and Lower Lake Orono by further pinpointing harm sources and implementing a reduction plan. The Secchi disk readings, total phosphorus and chlorophyll-a testing has been collected monthly by volunteers and paid for by the City of Elk River since 2003.

In 2019 volunteer bi-weekly collection of dissolved oxygen and water temperature data was completed. Analysis by the Sherburne Soil and Water Conservation District (SWCD) determined that these were not factors causing reduced water clarity in Lower Lake Orono. The recommendation was to consider adding True Color, Total Suspended Solids and/or Zooplankton testing (<u>link to report</u>).

In 2020 additional chemical water sample collection and analysis was conducted. True Color and Total Suspended Solids have been added. The additional \$735 cost of the testing was paid for by the OLID. Potential future Zooplankton testing has been costed, but it is unclear as to if it would yield data that would resolve the clarity discrepancy.

SWCD reported the results and conclusions from the testing to the Lake Orono Water Quality Committee (LOWQC) at its meeting held on January 13, 2020.

In addition, the floating clumps of soil (or kicked-up sediment) with Filamentous algae attached observed in the spring that has been increasing in density and volume of acres on the lake each year was much worse in 2021. This may have been exacerbated by the refilling of the lake in April 2021. That said, it is a new issue that the OLID intends to monitor and make action recommendations as needed and appropriate.

In 2023 monthly Secchi disk readings, total phosphorus and chlorophyll-a testing were done as usual, with results being inconclusive as to the water quality discrepancy cause.

• Leveraging Real-Time Water Quality Data for Sustainable Lake Improvement In recent years, technological advancements have revolutionized the field of environmental monitoring, providing efficient and accurate solutions for continuously assessing key parameters in lakes. Monitoring water bodies is crucial for understanding and managing ecosystems, and various technologies now offer real-time data on essential factors such as water level, temperature, conductivity, dissolved oxygen, turbidity, and nitrogen levels.

The Orono Lake Improvement District (OLID) plays a crucial role in preserving and enhancing the ecological health of lakes. This summary explains how the OLID may harness real-time data to make informed decisions, foster community engagement, and drive long-term water quality enhancement.

Key Benefits of Real-Time Water Quality Data:

- 1. **Timely Decision-Making:** Real-time data allows the OLID to monitor water quality parameters continuously, enabling timely responses to emerging issues such as algal blooms, pollution events, or changes in nutrient levels. This agility is essential for mitigating potential environmental impacts promptly.
- 2. **Data-Driven Planning:** By collecting and analyzing real-time data, the OLID gains a comprehensive understanding of the lake's dynamic ecosystem. This insight facilitates evidence-based planning and targeted interventions, optimizing resource allocation for maximum impact.
- 3. **Early Warning Systems:** Establishing early warning systems based on real-time data empowers the OLID to predict and prevent adverse water quality events. This proactive approach minimizes the impact of potential threats and enhances the overall resilience of the lake ecosystem.

Utilizing Real-Time Data for Decision-Making:

- 1. **Identifying Pollution Sources:** Real-time data aids in pinpointing the sources of pollution, allowing the OLID to collaborate with multiple relevant stakeholders within the county and watershed to implement corrective measures. Whether from agricultural runoff, urban discharges, or other contributors, targeted actions can be taken to reduce pollutants.
- 2. Adaptive Management: Continuous monitoring supports an adaptive management approach, allowing the OLID to adjust strategies based on real-time feedback. This iterative process ensures that the lake improvement initiatives remain effective and responsive to evolving environmental conditions.
- 3. **Community Engagement:** Real-time data can be shared with the community through accessible platforms, fostering awareness and engagement. Informed communities are more likely to participate in conservation efforts, support regulations, and contribute to the overall success of lake improvement projects.

Long-Term Strategies for Water Quality Enhancement:

- 1. **Baseline Assessment:** Real-time data serves as a confirmation data set of the existing data that has been collected for the lake to enhance the foundation for establishing baseline conditions, enabling the OLID to measure the effectiveness of interventions over time. Long-term trends and patterns guide the development of sustainable management practices.
- 2. **Educational Programs:** Leveraging real-time data for educational initiatives enhances public understanding of the lake's ecosystem and the importance of water quality. Informed citizens are more likely to adopt environmentally friendly practices, further contributing to the lake's long-term health.
- 3. **Policy Advocacy:** Real-time data empowers the OLID to advocate for evidencebased policies at local and regional levels. Collaborating with policymakers ensures that regulations align with the latest scientific understanding, supporting the sustainable development of the lake and its surrounding areas.

In conclusion, the integration of real-time water quality data into the decision-making processes of the Lake Improvement District is a transformative step toward achieving sustained water quality improvement. By embracing technology and engaging the community, the OLID can create a dynamic and adaptive framework that safeguards the ecological integrity of the lake for future generations.

• Fisheries Stocking, Preservation and Management

The OLID continued to stock fish for the 2023 season. There was a grand total of 1,850 fish stocked in the springtime for the 2023 season. A variety of species were stocked to help build the fish population that is naturally occurring in Lake Orono. By species there were 1,000 Bluegill, 800 Perch and 50 Adult Crappie stocked into the lake. The goal for the stocking was that they were introduced into the lake prior to spawning for the 2023 season.

The total cost was \$2,050 that was paid for through the OLID. The supplier provided us with many extra fish at a discounted rate bringing the average price per fish down to \$1.10, much lower than competitor's quotes. The OLID plans to continue stocking each year until 2029 when the next schedule survey is performed by the DNR to determine what the fish population is at that time. The DNR had stocked Walleye the previous year but does not have any plans to continue stocking Walleye into Lake Orono at this time.

Catch and release education and awareness efforts continued in 2023. Seven voluntary catch and release signs have been placed on shore in popular fishing areas and the boat launch. The goal of this effort by the OLID is to limit the harvesting of fish while stocking is in progress. While catch and release cannot be mandatory, education and volunteering are an effective approach to improve fisheries.

Further, the OLID also plans to continue the volunteer catch and release program until for the next few years as necessary to support the success of the fish stocking. This is a volunteer program that is promoted through education to the lake users online, through meetings and by signs posted around the lake. The Elk River Parks and Recreation department added a sign this summer to the boat landing.

4. **Other matters of interest for the district**

a. In 2023 the OLID Board had twelve regular monthly meetings. The standard regular meeting date, time and location continues to be the fourth Tuesday of the month, from 5:30 p.m. to 7:00 p.m. at Elk River City Hall (except for the December meeting that is held on the third Tuesday). The OLID Annual Meeting on August 22, 2023 was held this year in the

Emergency Operations Center at the Elk River Fire Department. The OLID very much appreciated the City of Elk River making the facility available for the event as it is an ideal location.

2023 Orono Lake Survey –the OLID conducted a twenty one question survey to receive public opinion regarding Orono Lake. The survey was conducted for a period of one month in the summer of 2023. Topics of the survey included lake usage, water quality, fisheries and OLID involvement. The survey was open to anyone interested in participating and received 215 participants.

The Survey was facilitated by an online service (survey monkey) and was accessible by a website address and/or QR code. Advertising of the survey was conducted by door hangers that were delivered to each lake resident and posted at several public venues.

The survey results were presented at the OLID annual meeting and reported to the Elk River City Council. The survey results will assist the OLID in better understanding the public's opinion regarding the management and usage of Orono Lake. The survey results are included as Appendices 14.

- b. 2023 Elections the OLID conducted its fourth board of directors' election in 2023. The result was that Mike Olson was elected to a three-year term.
- c. The OLID presented an annual activities summary update to the Elk River City Council and requested 2024 budget approval at the council's regular meeting on September 5, 2023 (the presentation is included as Appendices 11).

5. The intentions of the directors for the succeeding year/years

a. 2024 Budget and Goals were provided to the membership at the August 22, 2023 annual meeting for vote and approval (full detail provided in appendices).

Project/Activity	Budget
1. AIS Control Curly-leaf Pondweed	\$8,385
2. Undesirable Aquatic Vegetation and Organisms Public Waters C	Control \$2,000
3. Fisheries Survey, Preservation and/or Stocking	\$2,000
4. Web licensing and maintenance	\$200
5. County Special Assessment Fee	\$890
6. Office Supplies and Organizational Expenses	\$675
7. OLID Board Liability Insurance	\$950
8. Cash Flow needs or contingency (e.g., AIS, suitable grants, other	r) \$2,000
Total cost of goals $1 - 8$	\$17,100*

*OLID property owner annual cost for 2023 of \$100.00 per unit.

- a. Lake Orono Water Quality Committee work continues on a "living" 2021 2026 Lake Orono Management Plan. The Lake Orono Water Quality Committee (LOWQC) is a joint effort with the City of Elk River and the Sherburne County Soil and Water Conservation District (SWCD). The OLID Board intends to request a work session with the Elk River City Council to review the draft plan findings and recommendations in spring 2023.
- b. Continue to work with the LOWQC to evaluate the results of the LORE dredging project and discuss any follow-up actions. Particular focus will be placed on the development of an ongoing sediment management plan, Curly-leaf pondweed, Eurasian Milfoil and Zebra Mussel AIS infestation monitoring and management and the potential to seek funding for undesirable native plant overgrowth and algae control through <u>Minn. Statute 103G.625</u>.

Appendices

- 1. 2023 OLID Notice of Annual Meeting (mailing)
- 2. PLANT-96-1332657-1 (newspaper public notice)
- 3. OLID Annual Meeting Agenda 2023
- 4. OLID Annual Meeting Minutes 8-22-23
- 5. OLID Proposed Projects & Budget 2024
- 6. OLID Service Charge & Voting Criteria
- 7. OLID Board Application 2022
- 8. OLID Absentee Ballot for Director Election 2023
- 9. 2023 Director Election & Proposed Budget Ballot
- 10. OLID Resolution 23-01.pdf (requesting the City of Elk River approve the 2023 OLID Service Charge)
- 11. OLID City Council Meeting presentation September 5, 2023
- 12. Sherburne County Water Equipment Cleaning Handout
- 13. MAISRC Living with Zebra Mussels Handout
- 14. Orono Lake Survey Results 08-24-23
- 15. 2023 Lake Orono AIS Grant Project Summaries



Orono Lake Improvement District NOTICE OF ANNUAL MEETING Tuesday, August 22, 2023, 6:30 PM Emergency Operations Center Elk River Fire Department

Notice is hereby given that the annual meeting of the Orono Lake Improvement District (OLID), a Lake Improvement District established by Order of the Elk River City Council, pursuant to Minn. Statute 103B.501 et seq., will be held at **6:30 PM on Tuesday, August 22, 2023 at the Elk Fire Department, 13073 Orono Parkway, Elk River, MN 55330** (see location map reverse side). All Lake Orono property owners as OLID members are invited to attend. <u>Registration to vote starts at 6:00 PM</u>.

The meeting agenda will include:

- Review the purpose of the Orono Lake Improvement District
- Provide a Treasurer's Report and status reports on 2023 projects
- Review and discuss the proposed 2024 projects and budget
- Approve the proposed 2024 Orono Lake Improvement District budget; approve projects having a cost to the district in excess of \$5000
- Election of one director
- Take up and consider any other business as may come before the OLID

The annual meeting is also an opportunity to meet other lake property owners, get updates on tracking sediment build-up for future dredging projects, water quality, fish stocking, aquatic invasive species, undesirable native plant overgrowth and algae management efforts.

All meeting materials will be posted as soon as they are available on our website: <u>https://oronolid.org/</u>, (e.g. agenda, minutes, financial and other reports, proposed 2024 projects, budget and <u>an absentee ballot for the director election that must be received at the OLID address below by August 21, 2023</u>). Nominations may be made from the floor at the annual meeting. All nominees made from the floor at the annual meeting must be present and nominees must state their interest/qualifications. Although desirable to have balanced representation from all four sections of Lake Orono, the OLID bylaws approved on August 27, 2020 do not require it. There are no "slots" to fill for each lake section.

Those eligible to vote on the proposed budget and director election are Lake Orono riparian or deeded access property owners whose name appears on the latest Sherburne County tax statement.

Terms of Directors are as follows:

Current term	Current Director	Status of Term [following this annual meeting]	
3-year term	Chris Bickman	(Term Limit) To be filled by member election on 8/22/23	
3-year term	Tom Binsfeld	1 year remaining	No election until 2024
3-year term	Ed Bury	2 years remaining	No election until 2025
3-year term	Patrick Plant	1 year remaining	No election until 2024
3-year term	Chris Rock	2 years remaining	No election until 2025

All five board members must be property owners within the OLID, and a majority [three] must reside within the district.

If you have questions regarding the Orono Lake Improvement District or the annual meeting please contact Patrick Plant, 763-441-6339, <u>oronolid@gmail.com</u>.



The City of Elk River Campus is located at: 13073 Orono Parkway Elk River, MN 55330 (across the street from the Elk River Library) The Emergency Operations Center is located on the west side of the complex. Please enter the building at the location noted by the star on the map.

Healthy Lakes Checklist magnet enclosed

This magnet is provided to you by the Sherburne County Coalition of Lakes Association (SC COLA), of which the OLID is a member and the Sherburne County Soil and Water Conservation District (SC SWCD).

It is a helpful tool for current and new lake property owners during each of Minnesota's four seasons to become a lake steward for your property, lakes and adjoining waterways.

Your actions not only help our lake but those downstream. Most lakes have a ratio of watershed to lake of 3:1, but Lake Orono's ratio is 1291:1. Therefore all upstream and watershed improvements that reduce water quality impairments and soil erosion also benefit Lake Orono.

Thank you for doing your part to help Minnesota's waters!











-Public Notice Ad Proof-

This is the proof of your ad scheduled to run on the dates indicated below. Please proof read carefully. If changes are needed, please contact us prior to deadline at Cambridge (763) 691-6000 or email at publicnotice@apgecm.com



Not Actual Size

ORONO LAKE IMPROVEMENT DISTRICT (OLID) NOTICE OF ANNUAL MEETING

The Orono Lake Improvement District (OLID) will hold its annual meeting at 6:30 p.m. on Tuesday, August 22, 2023 at the Elk River Fire Department, 13073 Orono Parkway, Elk River, MN 55330. All Lake Orono property owners as OLID members are invited to attend. The meeting agenda will include the discussion and approval of proposed 2024 projects and budget, election of one director and any other business that may come before the OLID.

> Published in the Star News August 5, 2023 1332657

		Publications:
Date:	08/02/23	Star News
Account #: Customer: DISTRICT	493268 Orono lake improvement	
Address:	PO BOX 851 ELK RIVER	
Telephone: Fax:	(763) 441-6339	
Ad ID: Copy LIn	1332657 e: Aug 22 Annual Meeting (OLID)	
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2023 Annual Meeting

Tuesday, August 22, 2023 6:30 p.m. Emergency Operations Center Elk River Fire Department

AGENDA

1. Call to Order - Pledge of Allegiance

- Adoption of Agenda
- Introduction of Board of Directors, New Lake Residents and Review Mission
- Treasurer's Report

2. Old Business Updates

- Report on 2023 OLID Projects
 - o 2023 Lake Orono Survey Results
 - o Tracking sediment build-up for future dredging projects
 - Secured grants from MN DNR (\$10,500/2-yr) and Sherburne SWCD (\$2,480.25/1-yr)
 - o Status of CLP treatment variance application and private shoreline treatments
 - o 2023 CLP Delineation/May, Treatment Map, May and July Point Intercept Survey Results
 - Status of Water star-grass control permit and future plans
 - Fish stocking and voluntary catch and release

3. New Business

- Volunteer and Other Opportunities
 - o Committees: Communications, Fisheries, Sedimentation, Aquatic Vegetation and Water Quality
 - \circ $\;$ Treat half your shoreline (per DNR rules) by up to 150' lakeward
- Review Proposed OLID Projects and Budget for 2024 (full lake plan draft budget available)
- Director Election
- Ballot Review, Voting and Reporting Results

4. Adjourn

Next Annual Meeting Tuesday, August 27, 2024 – 6:30 p.m. at Elk River Fire Department

OLID Regular Board Meetings are held the 4th Tuesday of month at Elk River City Hall MAKE SURE TO SIGN IN AT REGISTRATION TO RECEIVE YOUR VOTER BALLOT (STARTS 6 PM) ONLY PROPERTY OWNERS WHO MEET THE OLID VOTER ELIGIBILITY ARE ALLOWED TO VOTE



1. Opening & Considering Agenda. Motion to call the meeting to Order and approve the agenda as distributed was made by C. Rock and Seconded by C. Bickman at 18:36 PM. - Approved unanimously.

2. Board Members in Attendance

- Patrick Plant
- Chris Rock
- Chris Bickman
- Tom Binsfeld (absent)
- Ed Bury (absent)
- 3. Introduction of the Board of Directors, New Lake Residents and Review Mission
 - The OLID Board Members introduced themselves and in following all the property owners in attendance introduced themselves. The one new lake resident attending this year was Michael Parkter (Main St NW).
 - The mission of the Orono Lake Improvement District (OLID) is to protect, preserve and enhance Lake Orono. The OLID partners with the City of Elk River, the Sherburne County Soil and Water Conservation District (SWCD) and regional or state entities to implement a comprehensive program to alleviate current ecological stressors and recreational impairment on Lake Orono, brought about by aquatic invasive species, native plant overgrowth, algae proliferation, excess nutrients and sedimentation. Additional goals are to improve water quality, fisheries and habitat.
- 4. Treasurer's Report
 - Report of financials was provided by C. Bickman at the time of the meeting and the 2023 spreadsheet was provided as a handout (attachment at end of minutes).
 - Participants asked a few questions about differences in how the MN DNR and Sherburne SWCD grant work and comparing their pros and cons. Questions were also asked about the predictability of receiving additional grants in the future. The MN DNR grant program is a lottery and Sherburne SWCD grant is merit based. The OLID intends to apply to both programs again this year for Point-Intercept Surveys in May and July, Curly-leaf pondweed (CLP) delineation and Curly-leaf pondweed (CLP) treatment.
 - Motion to approve the Treasurer's report was made by C. Rock and seconded by P. Plant Approved unanimously.

5. Old Business Updates

- Report on 2023 (Fiscal) OLID Projects
 - 2023 Lake Orono Survey Results Jessa Brixius from the OLID Communication Committee reported that all survey results will be posted on the OLID website and emphasized the importance of these two findings:







Q19 Do you own lake property on Lake Orono?



- The OLID Board and all in attendance thanked Jessa for her fantastic work in leading this effort.
- Tracking sediment build-up for future dredging projects
 - Chris Rock provided an update on the OLID The Sedimentation Management Plan.
 - The plan aims to address the issue of sediment accumulation within the lake.
 Sedimentation is a natural process where soil, organic matter, and other particles are deposited in bodies of water over time, resulting in reduced water quality and



habitat degradation. The plan outlines strategies and actions to mitigate sedimentation and restore the lake's health.

- 1. Sediment Assessment
- 2. Source Identification
- 3. Best Management Practices (BMP)s
- 4. Shoreline Stabilization
- 5. Education and Outreach
- 6. Monitoring and Adaptive Management
- 7. Collaboration and Partnerships

The sedimentation management plan developed by the Orono Lake Improvement District for Lake Orono utilizes surveys generated using BioBase, which uses sonar to create detailed depth (bathymetry), vegetation and hardness maps of the lake bottom. Here's a brief overview of each component:

1. Bathymetry: Bathymetry refers to the measurement of water depth in a body of water. These maps show the contours and variations in water depth, providing important information about the lake's topography.





Vegetation: The surveys help identify the distribution and extent of different types of aquatic plants and algae present in the lake. Understanding the vegetation patterns is crucial for assessing the ecological health of the lake and determining any potential impacts on water quality, navigation, or recreational activities.



Bottom Hardness: By measuring the substrate composition, including sediment types and bottom consistency, the management plan can gain insights into the sedimentation processes occurring in the lake. This information aids in understanding sediment dynamics, deposition areas, and potential erosion concerns.





Surveys were conducted in 2022 and in 2023 by the sedimentation assessment and monitoring committee. The surveys conducted in 2022 provided valuable baseline data on sedimentation in the catch basin. Some key findings include:

- 1. Sediment Accumulation Rate: The rate at which sediment was accumulating in the catch basin was determined based on the data collected in 2022 and 2023.
 - a) Survey indicates a year over year accumulation of sedimentation in the catch basin of 7,744 cubic yards of material.



2023



2022



2. **Potential Sources:** Sediment could be from nearby scouring and or shoreline erosion identified in red below and in addition from upstream locations within the 388,576-acre watershed.

2023 arial view near catch basin



- Secured grants from MN DNR (\$10,500/2-yr) and Sherburne SWCD (\$2,480.25/1-yr)
 - We will apply for both again, but it was stressed that neither are guaranteed (particularly the MN DNR grant that is a lottery system).
- Status of CLP treatment variance application and private shoreline treatments
 - The implementation process for the variance is now clear to the OLID and it has received tentative approval. Based on this information the OLID will likely not currently implement such variance at the expense of individual lake shore property treatments. (Individual lakeshore treatment by property owners areas no more than 50 shoreline feet or half their lake frontage whichever is less, by 50 feet lakeward plus if needed, a 15 foot channel to open water.)
 - The OLID continued helping organize and encouraging private shoreline treatments (either contracting with LMI or DIY) with property owners seeing great success (30+ treated in 2023).
- 2023 CLP Delineation/May, Treatment Map, May and July Point Intercept Survey Results
 - Results of the Point Intercept Survey showed continued concerns with Curly-leaf pondweed (CLP). Of the approx.54 acres of CLP found, 33.8 of the



densest areas were requested to be treated and the MN DNR reduced the total to 30.9 to stay withing the 15% limit of all herbicide treatments. proposed to be treated and a continued expansion of Water star -grass in both acreage and density.

- Treatment was completed on May 25, 2023 by LMI within the timeframe allowed by MN DNR. It was both very successful and provided cost savings.
- A new herbicide (Flumioxazin) was used this year in at study partnership of 10 lakes with the MN DNR.
- 2023 LMI Public Waters and Private Shoreline Treatments led to more effective control of CLP and native plant overgrowth.
- Eurasian Watermilfoil (EWM) continues to not be found in the PI Surveys.
- Status of Water star-grass control permit and future plans
 - Maps and charts comparting Water star-grass density in 2023 compeered to 2022 and its progression over the last 5 years were displayed. The OLID Board was happy to report the levels this year were dramatically lower (due to a variety of factors).
- Fish stocking and voluntary catch and release
 - Chris Bickman reported that there was a grand total of 1,850 fish stocked in the springtime for the 2023 season. A variety of species were stocked to help build the fish population that is naturally occurring in Lake Orono. By species there were 1,000 Bluegill, 800 Perch and 50 Adult Crappie stocked into the lake. The goal for the stocking was that they were introduced into the lake prior to spawning for the 2023 season. The total cost was \$2,050 that was paid for through the OLID. The supplier provided us with many extra fish at a discounted rate bringing the average price per fish down to \$1.10, much lower than competitor's quotes. The OLID plans to continue stocking each year until 2029 when the next schedule survey is performed by the DNR to determine what the fish population is at that time. The DNR had stocked Walleye the previous year but does not have any plans to continue stocking Walleye into Lake Orono at this time.
 - In addition, the OLID also plans to continue the volunteer catch and release program until for the next few years as necessary to support the success of the fish stocking. This is a volunteer program that is promoted through education to the lake users online, through meetings and by signs posted around the lake. The Elk River Parks and Recreation department added a sign this summer to the boat landing.

6. New Business.

- Volunteer and Other Opportunities (the following areas were discussed).
 - Committees: Communications, Fisheries, Sedimentation, Aquatic Vegetation and Water Quality
 - Convening a small work group(s) on "challenges" will be a topic at the September 26, 2023. OLID board meeting. Property owners who have currently volunteered to assist are Tim Antilla, Bill Bond and Jordan Philip (all residing on Island View Dr NW).
 - Treat half your shoreline (per DNR rules) by up to 150' lakeward



- Review Proposed OLID Projects and Budget for 2024 (full lake plan <u>draft budget</u> <u>available</u>)
 - (No increase in service charge unit amount from 2023)
 - AIS Control Curly-leaf Pondweed (CLP) = \$8,385
 - Undesirable Aquatic Vegetation and Organisms Public Waters Control = \$2,000
 - Fisheries Survey, Preservation and/or Stocking = \$2,000
 - Web Licensing and Maintenance = \$200
 - County Special Assessment Fee = \$890
 - Office Supplies and Organizational Expenses = \$675
 - OLID Board Liability Insurance = \$950
 - Cash Flow needs or contingency (AIS, grants, undesirable natives, other) = \$2,000
- Director Election
 - Rules for conducting the election were discussed.
 - Mike Olson stated the following regarding his interested in serving on the Orono Lake Improvement District Board and qualifications.
 - As a resident on the lake for the past 9 years I have seen a great deal in water quality for better and for worse, I would like to do my part to keep to moving in the right direction.
 - I have raised 2 daughters living on the lake, my oldest has started college studying wildlife ecology, and her choice for that career is directly related from living on the lake.
 - I have a technical degree and have worked for the Minnesota Automobile Dealers Association for nearly 20 years
 - I currently serve on the youth curling board for Four Seasons Curling Club, and on the board for Girls Who Curl. I have been a curling coach for 6 years and coach of a women's U21 National bronze medal team.
 - There were no additional nominees from the floor.
- Ballot Review, Voting and Reporting Results
 - Mike Olson was elected to a three-year term.
 - Budget Passed by a vote of 27:0 (100% approval)
 - The OLD Board unanimously approved the resolution requested that a \$100 per unit service charge be imposed in 2024.

7. <u>Adjourn</u>

- Next Annual Meeting Tuesday August 27, 2024 @ 6:30 PM at Elk River Fire Department.
- Upcoming Regular Meeting Dates: 9/26, 10/24, 11/28, <u>12/19</u>, 1/23, 2/27, 3/26, 4/23*
 *OLID Regular Meetings are held the 4th Tuesday in the Upper town Conference Room.

Motion to adjourn made by C. Rock at 20:04 pm.

Orono Lake Improvement District (OLID) Proposed Budget 2024

	Project/Activity	Description: OLID Annual Services and Activities Fee	Budget
1	AIS Control Curly-leaf Pondweed (CLP)	Continue surveying and treatment where needed of this invasive species until CLP seed banks are eliminated. For 2024 the estimated acres requested to be treated is 32 to fit within the MN DNR maximum allowable without a variance (15% of the littoral area). Herbicide, mechanical and/or hand removal will all be considered. If MN DNR or Sherburne AIS Grant funds remain available and are approved, costs to OLID could be reduced or funds carried over for use the following year. Also, a Sherburne SWCD AIS grant will be applied for to cover required independent contractor CLP delineation costs.	\$8,385
2	Undesirable Aquatic Vegetation and Organisms Public Waters Control	MN DNR staff have stated that Water star grass, and the distribution and density of any submerged aquatic plant, can vary significantly from season to season (particularly in a reservoir system like Lake Orono). Set-aside funds are needed to be prepared to act. Also, work with the City of Elk River to secure existing funds or seek additional funds through <u>Minn. Statute 103G.625</u> for the control of CLP, harmful or undesirable aquatic vegetation and organisms in public waters.	\$2,000
3	Fisheries Survey, Preservation and/or Stocking	Continue to work with the DNR to determine fish stocking needs and the most appropriate species to select to stock as available and deemed appropriate. Also, assist with current awareness campaign for the need to continue encouraging catch and release.	\$2,000
4	Web Licensing and Maintenance	OLID membership communication, official document repository, director nomination forms, absentee election ballots, etc.	\$200
5	County Special Assessment Fee	Fee for Cities, Townships and LIDS to certify special assessment on the Sherburne County tax system (\$5.00/parcel/year).	\$890
6	Office Supplies and Organizational Expenses	Annual meeting notice mailing, location rental or refundable deposit, building staff supervision, P.O. Box, membership dues or other meeting-related or general supplies.	\$675
7	OLID Board Liability Insurance	Secure standard Liability Insurance for the OLID Board of Directors.	\$950
8	Cash Flow needs or contingency (e.g., AIS, suitable grants, undesirable natives, other)	Build and maintain a cash reserve equal to half of the annual budget to assist with cash flow shortages due to inherent timelines associated with the tax settlement and payment schedule. Also, be positioned to act on grant opportunities when available and be prepared to fund mitigation if additional AIS infections occur through expansion of existing threats, new AIS (e.g., Starry stonewort) or undesirable native plant overgrowth and algae.	\$2,000
		Total cost of goals 1 – 8	\$17,100*
	*OLID property	owner annual cost for 2024 of \$100.00 per unit.	



Orono Lake Improvement District CRITERIA FOR LID SERVICE CHARGE AND VOTING ELIGIBILTY AND PROCEDURES

Criteria for OLID Service Charge

- Service charge is based on PID (parcel identification) numbers.
- Property must be riparian (waterfront property) or deeded access.
- OLID boundaries must be in accordance with the criteria of Minn. R. 6115.0970, subp. 5, Minn. R. 6115.0920, subp. 5. and Minn. R. 6115.0960, subp. 3. as determined by the MN DNR. The ruling on OLID boundaries was provided in the findings of the DNR's advisory report to the City of Elk River dated May 23, 2019.
- Single residences/households with property less than 10 acres will be charged 1 unit. Attached same-owner parcels that form the residence will not be charged.
- Lake access property that is owned by the City of Elk River, Orono Cemetery and the Central Minnesota Boy Scout Council are <u>not</u> part of the OLID and will not be charged.
- All service charges to property are proposed by the OLID directors, voted on by members then sent to the City of Elk River for review, approval and final transfer to Sherburne County.
- The Elk River City Council has final approval for all property charges.

197 OLID parcels for unit service charge broken down:

- 145 residential or non-homestead households @ 1 unit each
- 27 HOA limited lake and dock access properties @ .5 unit each
- 3 HOA owned properties @ 1 unit each
- 1 residential property more than 10 acres @ 2 units
- 1 apartment rental property with seven apartments @ 3.5 units
- 1 commercial property @ 4 units

Total 171 units to charge

OLID Voting Eligibility and Procedures

- Property owner must own Lake Orono riparian property or have deeded access and be listed in the County tax system as property owner.
- Up to two tax system listed property owners are eligible to vote unless the property is owned under a trust, common ownership, HOA or other legal entity which is eligible to one vote.
- At the OLID Annual Meeting each eligible property owner must sign in to receive their anonymous, but uniquely numbered budget approval and election ballot.



Orono Lake Improvement District BOARD MEMBER APPLICATION

APPLICANT INFORMATION

Name:	Email:
Address:	Phone:
Employer:	Year-round Lake Resident: 🗌 Yes 🗌 No

Statement of Interest: Please state briefly why you are interested in serving on the Orono Lake Improvement District Board.

Relevant Experience: Please describe your educational, professional, civic, or community participation, which may be relevant in serving on this board/commission.

Signed:_____

_ Date:_____

Applications must be received at the official address of the OLID (below) <u>by Tuesday, August 1,</u> <u>2023</u> to be included on the published ballot, or may be made from the floor at the Annual Meeting. All nominees made from the floor at the Annual Meeting must be present.

Mail to: Orono Lake Improvement District • P.O. Box 851 • Elk River, MN 55330



Orono Lake Improvement District 2023 ABSENTEE BALLOT FOR DIRECTOR ELECTION

INSTRUCTIONS TO VOTERS To vote, completely fill in the oval(s) next to your choice(s) like this:

2023 DIRECTOR ELECTION (Vote for one candidates)

Three-Year Term: O Write In Name:		
Three-Year Term:		
Absentee ballots must be received at the official address received by August 21, 2023, one business day prior to Absentee ballots received after that date will be void.	as of the OLID (below) to be the annual meeting.	
Name:		
Address:		
Signature:	Date:	
Mail to:		

Orono Lake Improvement District P.O. Box 851 Elk River, MN 55330



Orono Lake Improvement District 2023 BALLOT August 22, 2023

INSTRUCTIONS TO VOTERS

To vote, completely fill in the oval(s) next to your choice(s) like this:

To vote for a question, fill in the oval next to the word "YES" for that question. To vote against a question, fill in the oval next to the word "NO" for that question.

> 2023 DIRECTOR ELECTION (Vote for one candidate)

Three-Year Term: Okike Olson

Three-Year Term: O Write In Name:

OLID BALLOT BUDGET GOALS 1-8 2024 OLID ANNUAL SERVICES AND ACTIVITIES CHARGE REQUEST

The Orono Lake Improvement District board of directors has also proposed that the OLID request the City of Elk River to impose a service charge within the OLID in the amount of \$100.00 per full unit for 2024 OLID Annual Services and Activities. This service charge is to support the services and activities itemized in the proposed budget at a total cost of no more than the \$17,100 budgeted expenses.

◯ YES

NO

Shall the OLID request the City of Elk River to impose the service charge proposed by the OLID board of directors?



Orono Lake Improvement District CRITERIA FOR LID SERVICE CHARGE AND VOTING ELIGIBILTY AND PROCEDURES

Criteria for OLID Service Charge

- Service charge is based on PID (parcel identification) numbers.
- Property must be riparian (waterfront property) or deeded access.
- OLID boundaries must be in accordance with the criteria of Minn. R. 6115.0970, subp. 5, Minn. R. 6115.0920, subp. 5. and Minn. R. 6115.0960, subp. 3. as determined by the MN DNR. The ruling on OLID boundaries was provided in the findings of the DNR's advisory report to the City of Elk River dated May 23, 2019.
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Total 171 units to charge

OLID Voting Eligibility and Procedures

- Property owner must own Lake Orono riparian property or have deeded access and be listed in the County tax system as property owner.
- Up to two tax system listed property owners are eligible to vote unless the property is owned under a trust, common ownership, HOA or other legal entity which is eligible to one vote.
- At the OLID Annual Meeting each eligible property owner must sign in to receive their anonymous, but uniquely numbered budget approval and election ballot.

RESOLUTION 23 - 01

RESOLUTION CERTIFYING 2024 OLID ANNUAL SERVICES AND ACTIVITIES CHARGE REQUEST

WHEREAS, pursuant to proper notice duly given as required by law, the Orono Lake Improvement District (OLID) has met and certified the assessment roll for the 2024 OLID services and activities charge;

NOW THEREFORE, be it resolved by the Board of Directors of the Orono Lake Improvement District, that the City of Elk River is requested, pursuant to Minnesota Statutes, Section 103B.555, to impose a service charge on all eligible parcels as per the 2024 OLID Service Charge List attached as Exhibit A in the per full unit amount of \$100.00 for OLID services and activities provided in 2024;

BE IT FURTHER RESOLVED that the Orono Lake Improvement District Board of Directors requests that the City of Elk River authorize the Sherburne County Auditor/Treasurer's Office to place the service charge in the total amount of \$17,100 on the 2024 Sherburne County Tax rolls, as shown on Exhibit A.

Said Exhibit A is attached and shall be called the 2024 OLID Service Charge List.

Adopted by the OLID Board of Directors August 22, 2023.

ATTEST: Orono Lake Improvement District

Thomas Binsfeld, Secretary

Orono Lake Improvement District (OLID) 2023 Projects Recap and 2024 Budget Proposal



"Lakes cannot manage themselves."

Elk River City Council

September 05, 2023

Local Partners:





Lake Orono Water Quality Committee

2023 Recap: Lake Orono Survey Results



Home Lake Management Plan Documents & Map Other links

Contact

•

OLID Board Meeting 4th Tuesday – September 26, 5:30 p.m. Uppertown Conference Room Elk River City Hall, 13065 Orono Pkwy

Agendas and meeting materials are posted as soon as they are available.

2023 OLID Annual Meeting materials and Annual Reports link.

Mission

The mission of the Orono Lake Improvement District (OLID) is to protect, preserve and enhance Lake Orono. The OLID partners with the City of Elk River, the Sherburne County Soil and Water Conservation District (SWCD) and regional or state entities to implement a comprehensive program to alleviate current ecological stressors and recreational impairment on Lake Orono, brought about by aquatic invasive species, native plant overgrowth, algae proliferation, excess nutrients and sedimentation. Additional goals are to improve water quality, fisheries and habitat.

Benefits

Property owners and all Elk River residents who use Lake Orono will enjoy a cleaner, clearer and safer-to-navigate lake that provides better recreational opportunities and improved wildlife habitat.

A managed lake will maintain and improve property values as well as add to residents' enjoyment. The OLID is also an added way to be eligible for public grants.

LAKE ORONO SURVEY

The OLID needs your help! Please click here to go to the survey.

(Approx. 5-7 min.)



Treatment of Curly-leaf Pondweed in public waters spring 2023

Click here for more information



2023 Recap: Lake Orono Survey Results

Q1 Please select the activity(ies) you enjoy participating in on Lake Orono. (Check all that apply.)



Answered: 219 Skipped: 1

2023 Recap: Project updates are on www.oronolid.org



Lake Management Plan

The Lake Management Plan was first developed in 2004 through the Central Minnesota Initiative Foundation's Healthy Lakes program in conjunction with the Lake Orono Improvement Association, the City of Elk River and the Sherburne Soil and Water Conservation District.

It was updated periodically with minor adjustments. There was a major revision in 2017, and it is a living document which will be updated approximately every 5 years. In 2019 the Orono Lake Improvement District (OLID), a new local government unit partner, was formed by the City Council at the request of the lake association. The Lake Orono Improvement Association dissolved in 2020, however lake residents continue to hold informal social events. 2021 – 2026 plan development is underway.

Five main areas of concerns listed in the Plans are:

- Sedimentation management
- Proliferation of curly-leaf pondweed
- Prevention of additional aquatic invasive species (AIS)

Download

- Impairment of water quality
- Native plant overgrowth and algae

2021-2026 Lake Management Plan (draft 2023 budget)



Lake vegetation management

In order to address the concerns of Curly-leaf pondweed (CLP) and native plant overgrowth and algae, we must first prove that a problem exists. This is done with a Point-Intercept Survey, whereby the quantity of the aquatic plants, both invasive and native, are counted in "rake fulls" at 75-meter increments across the entire lake. If needed a consultant also will do a "meander survey," which counts the plants in a designated area as the 75 meters is sometimes too far apart.

2019 – Contract with external consultant(s) expertise to assist in additional surveys, other data collections, effectively analyzing and addressing invasive plants (AIS), native plant overgrowth and algae proliferation and/or meet MN DNR requirements for an AIS permit variance. 2019 Budget: \$4,245 – Remaining: \$1,231

2020 – Initial meeting with consultant and Sherburne SWCD. Aquatic Vegetation Management is one element of the 2021-2026 Lake Management Plan.

2021 – Paid for an added June point-intercept survey to document the late emergence of Curly-leaf pondweed.

2022 – Purchased Lowrance HDS-7 sonar system and licensed BioBase software to track sediment build-up for future dredging projects and to map aquatic vegetation. BioBase is free for local government use, which saves the OLID \$2,799 annually (May 24, 2022 <u>maps and data link</u>).

2023 - Purchased second sonar system.





VEGETATION ANALYSIS REPORT

Report Time Stamp: 2023 August 21 - 04:13 (UTC) ... REPORT LINK

Orono Lake, Sherburne Minnesota

Bathymetric Contour Map



Vegetation Biovolume Heat Map

2023 Recap: Depth of Catch Basin (2022 vs. 2023)



2023 Recap: Curly-leaf Pondweed Treatment Areas


2023 Recap: Water Stargrass (July 19, 2022)



2023 Recap: Water Stargrass (July 21, 2023)



OLID Proposed Budget 2024 – Projects 1 to 8

	Project/Activity Description: OLID Annual Services and Activities Fee		Budget	
1	AIS Control Curly- leaf Pondweed (CLP)	Continue surveying and treatment where needed of this invasive species until CLP seed banks are eliminated. For 2024 the estimated acres requested to be treated is 32 to fit within the MN DNR maximum allowable without a variance (15% of the littoral area). Herbicide, mechanical and/or hand removal will all be considered. If MN DNR or Sherburne AIS Grant funds remain available and are approved, costs to OLID could be reduced or funds carried over for use the following year. Also, a Sherburne SWCD AIS grant will be applied for to cover required independent contractor CLP delineation costs.	\$8,385	
2 Undesirable Aquatic Vegetation and Organisms Public Waters Control MN DNR staff have stated that Water star grass, and the distribution and density of any submerged aquatic plant, can vary significantly from season to season (particularly in a reservoir system like Lake Orono). Set-aside funds are needed to be prepared to act. Also, work with the City of Elk River to secure existing funds or seek additional funds through <u>Minn. Statute 103G.625</u> for the control of CLP, harmful or undesirable aquatic vegetation and organisms in public waters.		\$2,000		
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5	5County Special Assessment FeeFee for Cities, Townships and LIDS to certify special assessment on the Sherburne County tax system (\$5.00/parcel/year).		\$890	
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7	Liability Insurance	Secure standard Liability Insurance for the OLID Board of Directors.	\$950	
8	 Cash Flow needs or contingency (e.g., AIS, suitable grants, undesirable natives, other) Build and maintain a cash reserve equal to half of the annual budget to assist with cash flow shortages due to inherent timelines associated with the tax settlement and payment schedule. Also, be positioned to act on grant opportunities when available and be prepared to fund mitigation if additional AIS infections occur through expansion of existing threats, new AIS (e.g., Starry stonewort) or undesirable native plant overgrowth and algae. 		\$2,000	
	Total cost of goals 1 – 8			
	*OLID property owner annual cost for 2024 of \$100.00 per unit.			

Note: A carryover of funds from year-to-year may be allowed to accommodate cash flow.

Orono Lake Improvement District

OLID Criteria for Annual Service Charge

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Total 171 units to charge

Annual Services Charge Request – 100% approval

RESOLUTION 23 - 01

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Said Exhibit A is attached and shall be called the 2024 OLID Service Charge List.

Adopted by the OLID Board of Directors August 22, 2023.

ATTEST: Orono Lake Improvement District

Thomas Binsfeld, Secretary

Patrick Plant, Chair

Question & Answer

Protect Our Lakes!

How to Clean Docks, Lifts, Swim Rafts, and Other Associated Equipment

View a video of these procedures here: <u>https://www.youtube.com/watch?v=-vabkGxzT9U</u>

<u>Clean and Rinse these pieces of your</u> <u>equipment:</u>

Walking surfaces



Minnesota law requires a dry time of at least 21 days for any used docks, lifts, swim rafts, or other associated equipment before moving and installing the equipment to a different body of water.





CLEAN

Thoroughly inspect all surfaces of your dock, boat lift, swim rafts, and other associated equipment. This includes any railings, posts, wheels, buoys, support bars, ladders, and steps. All of this equipment has been sitting in the water for a long period of time, which provides an opportunity for Aquatic Invasive Species (AIS) to attach themselves. Remove and dispose of any aquatic plants, small animals (e.g. snails, mussels, eggs), mud, and other debris. If you find an invasive plant or animal you think is new to your lake: take a picture, keep a sample, and report it to the Minnesota Department of Natural Resources immediately.

RINSE

All of your equipment should be rinsed off. Pressure washers work great for getting off any AIS that maybe stuck or attached onto your equipment that are not easily removed by hand or a cleaning tool. If possible, rinse your equipment off with hot water (at least 120°F). Hot water will be able to kill off any AIS that is present that you may not be able to see with the naked eye.

DRY

If you buy or sell a dock, lift, swim raft, or other associated equipment, it must dry for at least 21 days before moving to a different body of water.

PLAN AHEAD

Cleaning, rinsing, and drying your docks, lifts, rafts, and other associated equipment will take time. If you need help with any of these tasks, there are some cleaning tools available for purchase through different vendors. Or if you are physically unable to clean, drain, or dry your equipment, ask a family member, friend, neighbor, or hire a permitted Lake Service Provider. It is important to take all of these steps to help prevent and limit the spread of AIS!

Questions? Call the Sherburne SWCD at 763-220-3434 ext 103 or email <u>dcibulka@sherburneswcd.org</u> or call DNR Information Center (651) 296-6157 or email <u>info.dnr@state.mn.us</u>



Got zebra mussels? Now what?

An overview of what to expect and what you can (and can't) do about zebra mussels in your lake.

Ecosystem impacts

Zebra mussels are rapidly-reproducing filter feeders. Established populations siphon huge volumes of lake water every day and remove a significant amount of plankton from it, shunting nutrients from the water column to the bottom of lakes. This can have large scale impacts to water quality and lake food webs that include:

- Increased water clarity-this may seem like a good thing at first, but this generally means less food for small fish and other aquatic organisms and more light penetration in the water column.
- More light—which generally leads to more vigorous aquatic plant growth across a wider area of the lake. Both native and invasive plant species respond positively to this, but if invasive plants such as curlyleaf pondweed or Eurasian watermilfoil are already present, they will typically outcompete native species, potentially leading to nuisance growth levels.
- Increased risk of harmful algal blooms—During filter feeding, mussels reject toxic cyanobacteria while consuming non-toxic plankton, increasing a lake's overall proportion of blue-green algae. Blooms of filamentous algae (Cladophora spp.) may also increase in severity because this species benefits from more light in the water column, increased nutrients at the lake bottom, and more attachment substrate on zebra mussel shells.

Zebra mussels and lake enjoyment

Swimming

- The sharp shells of zebra mussels can cut bare feet. Most lakeshore residents adapt to zebra mussels in their swimming areas by wearing water shoes and scraping encrusted mussels off of swim ladders with a putty knife or similar tool.
- Accumulations of empty zebra mussel shells on swimming beaches can also become a nuisance. A rake and shovel can be used to scrape zebra mussels into a pile and, if necessary, the sand can be conserved and shells filtered out using a mesh screen.
- There are several Minnesota companies that remove zebra mussels for homeowners. Depending on the situation, a team of divers uses a hot water pressure hose or manual removal methods to remove zebra mussels from riprap, piers, and larger rocks in the swimming area. Depending on the severity of the infestation, these services are typically needed 2-3 times per season.

Fishing

- Because increased water clarity directly impacts plant growth, abundance, and species composition, habitat conditions for fish survival, growth, and reproduction are impacted. This also changes predator prey interactions in fish, favoring some species over others. It is generally believed that these conditions favor species like northern pike, muskellunge, and bass, while disfavoring species like walleye that require darker, colder water.
- Research has shown that first year walleye in zebra mussel infested lakes grow more slowly and are 12-14% smaller at the end of their first summer than walleye in uninfested lakes. Slower growth during the first year is associated with higher mortality due to increased predation, lower energy reserves to help them survive through the winter, and delayed access to a wider range of prey.



zebra mussels



Keys to identification

- Stripes are generally in zigzag pattern
- Pattern is variable; some may lack striping altogether and can be solid tan or brown
- Have a flat edge and won't topple over when set on it
- Shells form straight line when closed
- Range from 1/5 of an inch to 2 inches

Boats, docks, and lifts

- Zebra mussels can damage boats and engine systems if they are left in the water for prolonged periods. Storing boats on a lift prevents mussel establishment on or in motors, but it is important that the engine is trimmed or the boat is raised high enough to ensure that the lower unit stays out of the water between uses.
- If docks and lifts are removed from the water at the end of each boating season, zebra mussels are rarely able to reach densities that would pose a nuisance because attached mussels eventually die and fall off over the fall and winter. Remember that under Minnesota state law, if you must move a dock, lift or other water equipment to a different waterbody, all organisms must be removed whether they are dead or alive. Furthermore, the equipment must be out of the water for at least 21 days before it can be placed in another lake or river.

Irrigation systems

• Zebra mussels can clog intake screens and restrict flow inside the pipes of lake water irrigation systems. This may necessitate filtration system upgrades or result in higher maintenance expenses.

Reasons to maintain vigilance and optimism

A new invasion of zebra mussels could make it seem like the battle against AIS is lost at your lake. In truth, the opposite is the case: this is the time to double down on outreach and future prevention efforts. Why? Every effort should be taken to ensure that your lake does not become the source population for the next new infestation of zebra mussels. Two, there is growing awareness about the effects of multiple introduced species within a water body. Zebra mussel populations in Minnesota lakes tend to become severe and then stabilize at more tolerable levels, but if additional AIS such as spiny water flea or starry stonewort are present, impacts could be far more severe than any of these species on their own.

Who should you call?

- If you're looking for a zebra mussel removal company or a dock installer, find an operator who is a MNDNR-certified Lake Service Provider. The MNDNR maintains a searchable, location-specific database of certified providers on its website.
- Some zebra mussel mitigation activities require permits from the MNDNR. Before undertaking any projects, contact your local MNDNR AIS Specialist.
- The Minnesota Aquatic Invasive Species Research Center is working toward solutions for all aspects of the zebra mussel problem, from reducing the risk of spread to improving population management methods to finding eradication tools. Visit the MAISRC website or contact Center staff for more information.

Minnesota Aquatic Invasive Species Research Center

The Minnesota Aquatic Invasive Species Research Center (MAISRC) is a nationally acclaimed research facility based at the University of Minnesota that focuses specifically on aquatic invasive species threatening the beloved waters of Minnesota. We work to develop an in-depth understanding of the biology and ecology of AIS—and the complex systems in which they live—to find vulnerabilities and weaknesses in their life cycles that can be targeted for control. We work with partners across the University, state, and country to maximize our impact and use the most technologically advanced and cost-effective methods available. You can learn more about our research on our website: www.MAISRC.umn.edu



Zebra mussels will attach to virtually any solid structure, including plants, rocks, native mussels, or man-made structures suck as docks, pipes, and boats.



Juvenile zebra mussels and larvae can survive in water contained in bait buckets, livewells, ballast tanks, and motors. Always be sure to drain all water when leaving the lake and never pass up an opportunity for a hot water decontamination to prevent their spread.

Clean, drain, dispose information: MNDNR.gov/ais

Q1 Please select the activity(ies) you enjoy participating in on Lake Orono. (Check all that apply.)



ANSWER CHOICES	RESPONSES	
I do not participate in activities on Lake Orono.	11.42%	25
Motorized Sports (snowmobiling, water skiing/surfing, wakeboarding, boating, jet skiing)	57.08%	125
Fishing and Non-motorized Sports (swimming, paddle boarding, canoeing, kayaking)	71.69%	157
Winter activities (snowmobiling, ice fishing, snowshoeing)	36.07%	79
Beach/Park activities (picnicking, swimming, use of dog park, use of beach, fishing pier)	55.71%	122
		-

Total Respondents: 219

Q2 Where do you receive information with regards to Lake Orono? (Check all that apply.)



ANSWER CHOICES		RESPONSES	
I do not seek this information.	7.34%	16	
Government agencies (OLID, City of Elk River, DNR, SWCD, MN Extension, etc.)	60.09%	131	
Social Media/Internet	63.76%	139	
Newspaper	25.69%	56	
Friends/Community Members	50.46%	110	
Total Respondents: 218			

Q3 How important is the scenic environment on Lake Orono?



ANSWER CHOICES	RESPONSES	
A great deal	63.26%	136
A lot	20.00%	43
A moderate amount	12.56%	27
A little	2.79%	6
None at all	1.40%	3
TOTAL		215



ANSWER CHOICES	RESPONSES
A great deal	31.16% 6
A lot	21.86% 4
A moderate amount	20.47% 4
A little	15.35% 33
None at all	11.16% 2
TOTAL	21

Q4 How important is the fishing quality on Lake Orono?

Q5 How important is the healthy water/clarity of the water in Lake Orono?



ANSWER CHOICES	RESPONSES	
A great deal	79.07%	170
A lot	13.49%	29
A moderate amount	6.05%	13
A little	1.40%	3
None at all	0.00%	0
TOTAL		215

Q6 How concerned are you with the water quality on Lake Orono?



ANSWER CHOICES	RESPONSES	
A great deal	49.06%	104
A lot	22.17%	47
A moderate amount	19.81%	42
A little	6.60%	14
None at all	2.36%	5
TOTAL		212



ANSWER CHOICES	RESPONSES	
A great deal	38.68%	82
A lot	14.62%	31
A moderate amount	23.58%	50
A little	11.79%	25
None at all	11.32%	24
TOTAL	:	212

Q7 How concerned are you with the water depth on Lake Orono?

Answered: 212 Skipped: 8 A great deal A lot A moderate amount A little None at all 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

RESPONSES	
26.89%	57
18.87%	40
30.19%	64
19.34%	41
4.72%	10
2	212
	RESPONSES 26.89% 18.87% 30.19% 19.34% 4.72%

Q8 To what extent of a problem is the lake pollution on Lake Orono?

Q9 To what extent of a problem is the algae growth on Lake Orono?



ANSWER CHOICES	RESPONSES
A great deal	38.68% 8
A lot	25.47% 5
A moderate amount	23.11% 4
A little	11.79% 2
None at all	0.94%
TOTAL	21

Q10 To what extent of a problem is the aquatic plant growth on Lake Orono?



ANSWER CHOICES	RESPONSES	
A great deal	49.53%	105
A lot	16.51%	35
A moderate amount	25.47%	54
A little	5.66%	12
None at all	2.83%	6
TOTAL		212

Q11 To what extent of a problem is the sedimentation, (lake is filling in) on Lake Orono?



ANSWER CHOICES	RESPONSES
A great deal	40.09% 85
A lot	21.70% 46
A moderate amount	19.34% 41
A little	14.15% 30
None at all	4.72% 10
TOTAL	212

Q12 To what extent of a problem is the lakeshore erosion on Lake Orono?



ANSWER CHOICES	RESPONSES	
A great deal	10.90% 2	3
A lot	16.59%	5
A moderate amount	35.55% 7	5
A little	27.01% 5	7
None at all	9.95% 2	1
TOTAL	21	.1

Q13 Upstream land management has an impact on the condition of Lake Orono.



ANSWER CHOICES	RESPONSES
Strongly agree	57.89% 121
Agree	27.27% 57
Neither agree nor disagree	13.40% 28
Disagree	0.48% 1
Strongly disagree	0.96% 2
TOTAL	209



Q14 What I do affects the water quality of Lake Orono.

ANSWER CHOICES	RESPONSES	
Strongly agree	39.71%	83
Agree	34.93%	73
Neither agree nor disagree	18.66%	39
Disagree	3.83%	8
Strongly disagree	2.87%	6
TOTAL		209

Q15 Pollution that gets into Lake Orono slowly builds up over time.



ANSWER CHOICES	RESPONSES	
Strongly agree	38.28%	80
Agree	44.50%	93
Neither agree nor disagree	11.96%	25
Disagree	4.78%	10
Strongly disagree	0.48%	1
TOTAL	2	09

Q16 The water quality of Lake Orono will likely improve in the future.



ANSWER CHOICES	RESPONSES
Strongly agree	2.39%
Agree	17.70% 3
Neither agree nor disagree	43.06% 9
Disagree	25.36% 5.
Strongly disagree	11.48% 2.
TOTAL	20

Q17 Government Agencies are responsible for the quality of Lake Orono.



ANSWER CHOICES	RESPONSES	
Strongly agree	19.14%	40
Agree	43.54%	91
Neither agree nor disagree	29.19%	61
Disagree	6.70%	14
Strongly disagree	1.44%	3
TOTAL	2	.09

Q18 The overall condition of Lake Orono is a shared responsibility.



ANSWER CHOICES	RESPONSES	
Strongly agree	49.76%	104
Agree	37.80%	79
Neither agree nor disagree	9.09%	19
Disagree	1.44%	3
Strongly disagree	1.91%	4
TOTAL	2	209

Q19 Do you own lake property on Lake Orono?



ANSWER CHOICES	RESPONSES
Yes	63.41% 130
No	36.59% 75
TOTAL	205

Q20 Please rank the following methods, 1-4 (1 = first preference, 4 = last preference) you prefer to hear information/upcoming events regarding Lake Orono.



	1	2	3	4	TOTAL	SCORE
Facebook	42.72% 88	21.84% 45	14.56% 30	20.87% 43	206	2.86
Website	11.65% 24	31.07% 64	36.41% 75	20.87% 43	206	2.33
Email	36.89% 76	30.58% 63	26.70% 55	5.83% 12	206	2.99
Mailing via USPS	8.74% 18	16.50% 34	22.33% 46	52.43% 108	206	1.82

Q21 Are you interested in being involved in the sustainability and improvement of Lake Orono? If so, please enter your email address and someone will be in touch with you.

Answered: 38 Skipped: 182

November 22, 2023

Mr. Daniel Cibulka Senior Water Resource Specialist Sherburne Soil & Water Conservation District 425 Jackson Ave NW Elk River, MN 55330

RE: 2023 Lake Orono AIS Grants for AIS Treatment, CLP Delineation and PI Surveys Summary

Dear Mr. Cibulka,

I am following up on the grant requirement to submit a single report summarizing project expenses, activities and the results of activities. This report is intended to augment the MPARS permit system application, associated communications, maps, data and analysis spreadsheets, photos, contracts and invoices that you have previously received or that are now included with this summary (as an enclosure, hyperlink or email attachment).

As you know, the primary herbicide treatment goals the last seven years were to: 1) continue to validate that a selective control approach of Curly-leaf pondweed (CLP) or rapid response treatment of Eurasian watermilfoil (EWM) would be successful in Lake Orono, 2) protect existing treatment investments, 3) prevent further spread of CLP or EWM and 4) serve as rationale and a strategy in our lake management plan for proposed future AIS control in additional public and private waters.

Regarding the Eurasian watermilfoil (EWM) AIS Control Contract that the OLID was awarded in 2021 and requested extended twice to 2022 and 2023, as we anticipated the potential re-emergence of EWM, the OLID was very appreciative that Sherburne SWCD provided that preparedness support. Per previous agreement with re-emergence not occurring since the rapid response, the grant was cancelled and initial payment of \$1,500 was returned to Sherburne SWCD.

In addition, formal point-intercept surveys were conducted of Lake Orono on May 20, 2023 and July 21, 2023 by Endangered Resource Services (ERS), LLC at the same 150 survey points that were established in 2017 and where data was collected the previous six years. Since 2017 the Lake Orono Improvement Association (LOIA), Orono Lake Improvement District (OLID) and City of Elk River have sponsored grants for two aquatic plant point-intercept surveys to occur during the early spring and late summer. The intent of these studies was to: 1) identify the extent of continued Curly-leaf pondweed growth, 2) use additional Curly-leaf pondweed survey points and GIS to delineate proposed treatment areas for permitting, 3) determine if Eurasian watermilfoil (EWM) is still present after our August 5, 2020 rapid response treatment and 4) document both the early and late season (peak growth) abundance and species richness of native aquatic plant species.

Starting in May 2022, per standard MN DNR protocol for delineation surveys scattered points around the perimeter of the CLP beds were added to quantify the areas. ERS then uses GIS to create area shapefiles of these areas for our final CLP treatment permit request. The cost proposal from ERS for services this year was included on pages 11 and 12 of our 2023 grant application. It contained a modest increase in office, employee and mileage expenses of \$67 when compared to the previous year. The cost of CLP specific delineation and shape file creation was \$250. The final invoice from ERS was also included as an email attachment when submitting this report.

Regarding the CLP treatment itself, as an alternative to Endothall the MN DNR recommended using Flumioxazin over Diquat. Though Flumioxazin is less expensive than Endothall it is slightly more expensive than Diquat, but considered to be more friendly to the environment. Flumioxazin is also considered by our service provider Lake Management Inc. (LMI) to be the most effective of the three herbicides in control. Further, in 2023 Lake Orono was one of 10 Minnesota lakes to partner with the MN DNR in studying the use and effectiveness of Flumioxazin for CLP treatment. OLID volunteers collected pH level water samples on the May 25, 2023 treatment date as part of the study. In the end result, the treatment was considered to be highly effective by lake property owners and lake users.

As the files are very large, this is a hyperlink to all <u>2023 Lake Orono Point-Intercept Survey</u> data files, maps and photos. Further, included from the hyperlink documents as enclosures are: the CLP Delineation for MPARS permitting on May 20, 2023; CLP rake fullness results and differences for all species from: May 2019 through May 2023, May and July 2023, and July 2019 through July 2023; and a rake fullness mapping of Water star-grass from the surveys conducted on July 19, 2022 and July 21, 2023.

The most significant differences from last year were the continued re-establishment of various native plants since the refilling of the lake in April 2020 after the LORE project, but decrease in Water star-grass and Filamentous algae. The most notable native plant increase was in Coontail (see 2022 and 2023 Point-Intercept Survey points comparison table below).

	May 21, 2022	May 22, 2023
Water star-grass (Heteranthera dubia)	67 points	28 points
Coontail (Ceratophyllum demersum)	24 points	41 points
	July 19, 2022	July 21, 2023
Water star-grass (Heteranthera dubia)	93 points	35 points
Filamentous algae	39 points	9 points

We would like to thank Sherburne SWCD and the County for this assistance. If we did not have the grant funds, these AIS treatment preparedness and delineation capabilities, point-intercept surveys, species mapping and annual macrophyte comparison analysis results would not have been possible.

Sincerely,

Patrick Plant, Aquatic Vegetation Committee Chair Orono Lake Improvement District Lake Orono Water Quality Committee














