

MEMORANDUM

TO: RPBCWD Board of Managers
FROM: Joshua Maxwell – Water Resources Coordinator
DATE: March 6th, 2024
RE: 2024 RPBCWD Lake Vegetation Management

As part of the RPBCWD 10-Year Management Plan, the District manages aquatic invasive vegetation to improve water quality and the overall ecological health of lakes. The district will continue to conduct comprehensive vegetation monitoring and analysis to guide management activities. Management activities will follow all product specifications and will be consistent with the state of Minnesota Department of Natural Resources-approved Lake Vegetation Management Plans and guidance from aquatic vegetation experts. Below is a list of proposed herbicide treatments for the district for 2024. The species to be treated include curly leaf pondweed (CLP) and Eurasian watermilfoil (EWM). The proposed treatments were accepted by and/or discussed with MNDNR aquatic invasive species Specialist April Londo, University of Minnesota Professor/Researcher Ray Newman, Certified Lake Manager Freshwater Scientific Services, and herbicide applicators. District staff sent out a request for quotes for the treatment of District lakes to nine herbicide applicators and heard back from six, of which five provided quotes. Only PLM Lake and Land Management Corporation, Lake Improvement Consulting, and TIGRIS were authorized by the Procellacor manufacturer to apply this herbicide.

Lake	Delineation	Herbicide	# of Areas	Total Acres	Avg Depth	Rate	Gal or PDU/ac	Total Gal/PDU	PLM	LIC	MWA	Lake Resto	TIGRIS	
Mitchell	CLP	Flumioxazin	2 @ 6.5	13	7.5	125ppb	0.63281	8.22656						
Susan	CLP	Flumioxazin	2 @ 4.3	8.6	6	150ppb	0.87075	7.48845						
Red Rock	CLP	Flumioxazin	1	13	8.3	125ppb	0.70031	9.10406						
Riley	CLP	Diquat	--	20	--	2	2	40						
Staring	CLP	Flumioxazin	2 @ 10	20	4	125ppb	0.3375	6.75						
Duck	EWM	Procellacor	1	7	4	3.25	13	91						
Lotus	EWM	Fluridone	whole	245	10.2	2-4ppb		12.4						
									Fluridone Product	Sonar AS	Sonar AS	Alligare	Alligare	Sonar AS
									TOTAL (CLP Treatments)	\$ 15,427.81	\$ 21,000.00	\$ 20,350.00	\$ 15,903.63	\$ 16,838.00
									TOTAL (All)	\$ 57,687.79	\$ 81,900.00			\$ 63,087.46
									MNDNR AIS GRANTS	\$ 13,450.00	\$ 13,451.00			\$ 13,454.00
									2024 PROJECTED EXPENSE	\$ 44,237.79	\$ 68,449.00			\$ 49,633.46

The extent of the proposed 2024 treatments will be adjusted, as necessary, after spring delineations of vegetation growth. Treatment area size was mostly overestimated to give flexibility for each treatment and total treatment acreage as well as cost will likely be reduced. Quotes gathered were based on 2023 treatment areas and point intercept surveys. PLM Lake and Land Management Corporation submitted the lowest quote for all combined treatments in 2024. While PLM did not submit the lowest quote for the Lotus fluridone alone, its \$35,000 quote is only \$4,695.20 higher which is associated with the higher cost of Sonar AS. Sonar AS was used

on Staring Lake in 2022 which resulted in EWM Frequency of Occurrence of 0% in a 2023-point intercept survey. Its utilization on Lotus Lake would give us a deep lake example of its treatment effectiveness within RPBCWD. Lake Improvement declined to provide a quote for Sonar AS when asked after the deadline closed. PLM also has many years of experience applying herbicides across the Midwest and specifically in RPBCWD. PLM’s successful track record applying fluridone specifically is robust which was taken into consideration. Additionally, there is convenience and efficiency of having one firm complete all RPBCWD’s 2024 aquatic vegetation management treatments.

Staff recommends to the Board of Managers to have PLM Lake and Land Management Corporation carry out all herbicide treatments (Mitchell, Susan, Red Rock, Riley, Staring – curly-leaf pondweed; Duck and Lotus – Eurasian watermilfoil) for 2024.

BACKGROUND

Eurasian watermilfoil (EWM) and Curly-leaf pondweed (CLP) are non-native species that can rapidly expand within lakes if not kept in check. Both plants can form dense mats at the water’s surface inhibiting water recreation. They can also overtake habitat and outcompete native aquatic plants, potentially lowering diversity while providing unsuitable shelter, food, and nesting habitat for native animals. CLP also has midsummer die-offs which can litter the shoreline with dead plants and increase nutrients levels within the lake. Both species are spread primarily through the movement of watercraft and water-related equipment. The district has been consistently treating both plant species across many of the lakes. **Table 1** highlights sections within the RPBCWD’s 10 Year Management Plan that address aquatic vegetation management.

Table 1 – RPBCWD 10 Year Management Plan – Vegetation Management

Chapter 9	Section	Page Number
9.1 Watershed Management	9.1.1.2 Vegetation	9-10
9.5 Data Collection & Analysis	9.5.2.2 Lake Veg & Fisheries	9-30
9.5 Data Collection & Analysis	9.5.4 Plant Restoration	9-32
9.10 Lake Vegetation Management Plan		9-39

- DIQUAT TREATMENT** - The herbicide Diquat is one of the most commonly applied herbicides for the treatment of CLP in Minnesota and has consistently been used within the RPBCWD. When targeting dense invasive species areas, it also has a low potential impact on native species, and it is often less expensive. Based on historical vegetation monitoring data and/or 2023 visual observations, the following diquat treatments were recommended for CLP: Lake Riley - 20 acres is near the 15% littoral acreage treatment limit for herbicide treatments. Diquat has been used on Riley the past number of years and has been effective at keeping CLP under control.

- PROCELLACOR** - PLM has shifted to using Procellacor for Eurasian watermilfoil which is an auxin mimic like 2,4-D and Triclopyr. Procellacor has a very unique entry point in the plant which requires significantly less exposure time and reduces exposure to native plants. The results have been very successful on other lakes outside the district, and the rates have been refined to achieve multi-year control like the 2,4-D and Triclopyr. On Duck Lake, the EWM frequency of occurrence was 34% based on the 2023 PI survey (Figure 1). This density deems treatment to reduce to prevent EWM from increasing and reducing native plants. The small allowable treatment area (<15% of littoral areas) of 7 acres, the low average depth, and the grouped plant location in the east bay (likely treatment area) makes Procellacor a good option.
- FLUMIOXAZIN** – In 2022, PLM began a trial using Flumioxazin for control of Curly Leaf Pondweed in conjunction with Mankato State University. In 2023, the district partnered with the MNDNR and UMN to look at success of the herbicide and the effect on native taxa using a concentrated PI survey pre and post treatment. The herbicide had a relatively short residence time and was effective at reducing CLP abundance. Lake Susan had an 86% and Mitchell Lake had a 99% reduction in CLP. Natives in the respective lakes had a 21% reduction and near zero reduction. Previously, this herbicide was used more in Wisconsin. It has a selectivity profile similar to Endothall but appears to be more selective on valuable plants such as large leaf pondweed, clasping leaf pondweed and other pondweed species at our proposed rates. It is significantly more affordable than Endothall treatments and is like in cost to Diquat. We have had issues with Diquat controlling CLP in soft sediment lakes such as Susan, Mitchell and Red Rock, so switching to Flumioxazin is recommended. Lower concentrations 125-150ppb vs the max concentration rate of 200ppb will be used to ensure the lakes are not over-treated. These lower doses were what was used in 2023 with good results.
- FLURIDONE** - Whole-lake, low-dose applications of fluridone herbicide have been used to control infestations of EWM. Studies in mesotrophic lakes have documented extended reductions in EWM with limited effects on native macrophytes and water quality with the use of fluridone. This has been documented on a number of lakes in the state of Minnesota as well as in North America. Fluridone was used in 2022 on Staring Lake which reduced EWM to 0% frequency of occurrence. Although the use of fluridone in MN is increasing, it is still considered experimental by the MN Department of Natural Resources (MNDNR). The treatment would include a first initial treatment, followed by

Eurasian Watermilfoil

Density (1-4)

x In vicinity

• 1

• 2

• 3

• 4

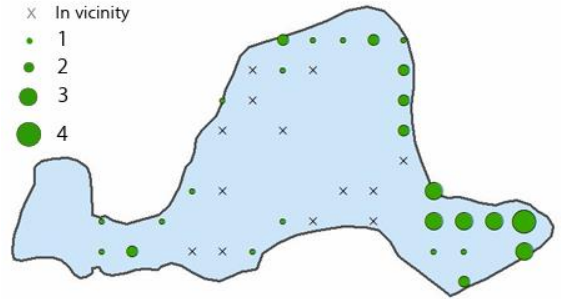


Figure 1: 2023 Duck Lake Point Intercept Eurasian Watermilfoil Density Map

monitoring of herbicide levels. Once concentrations are reduced, additional second and third bump applications will occur. For all subsequent bump treatments, the district would only be charged for the amount of chemical needed in order to increase concentrations back to the desired concentration. A fluridone treatment in Lotus Lake would potentially:

- a) Reduce the abundance EWM (primary), CLP (secondary), and likely Coontail (which is a potentially nuisance native plant species).
- b) Allow for the potential expansion of the abundance and distribution of native plants.
- c) Potentially reduce the frequency of treatment needed to control EWM.
- d) Be the second of its kind within the district (Staring first) and provide support to use in other District lakes if successful.
- e) Expand upon the knowledge base of this type of treatment and its impacts on native and nonnative aquatic plants.

Lotus Lake Eurasian Watermilfoil

During the past late summer PI surveys, EWM has been increasing within Lotus Lake. In 2022, the frequency of occurrence was 21% and it was the most abundant found in the lake. In 2023, the spring delineation survey yielded a narrow band of extremely dense EWM that essentially rimmed the entire lake. With this type of expansion, native species have a difficult time establishing.

The contact herbicide diquat has been used the past three years in an attempt to control EWM, but the population continues to expand. In 2023, Procellacor was planned to be used however due to the extensive population and the growth in dense narrow bands, it was deemed cost prohibitive and would likely be less successful because concentrations would dissipate out of the stands. Because of this, using a whole lake Fluridone would essentially reset the EWM in the lake and allow native plants to expand. This in conjunction with the alum treatment set from the fall of 2024, should increase native plant diversity and density with increased water clarity.

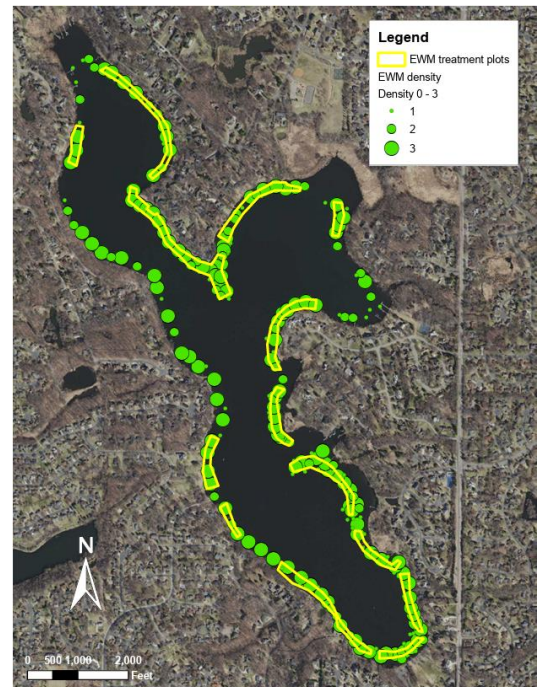


Figure 2: 2023 Lotus Lake Spring Delineation Eurasian Watermilfoil Density Map

Riley Purgatory Bluff Creek Watershed District		
Goals and Strategies Addressed by this Project		
	PROJECT NAME:	2024 RPBCWD Lake Vegetation Management
3.2.2	DATA COLLECTION	
3.2.2.1	<i>Goals</i>	
	DC 1	Collect data and use the best available science to recommend and support management decisions.
3.2.2.2	<i>Strategies</i>	
	DC S2	The District will develop and implement a Monitoring Plan. Collected data may include, but is not limited to: water chemistry, fisheries, macroinvertebrates, water levels, vegetation, planktons, shoreline and streambank inventories, flow data, and climatic data
	DC S3	The District maintains the flexibility to modify its monitoring and data collection programs as necessary to capture the most relevant information. The District will periodically review and update its Monitoring Plan to address emerging contaminants of concern, improved analytical methods, or other developing issues.
	DC S5	The District will monitor District-managed resources for the presence of aquatic invasive species.
	DC S7	The District will analyze data to help inform management decisions.
	DC S8	The District will coordinate its monitoring efforts with other entities to promote efficiency, increase data availability, and to identify and fill data gaps.
3.2.4	PLANNING	
3.2.4.1	<i>Goals</i>	
	Plan 1	Plan and conduct the District’s implementation program to most effectively accomplish its vision with consideration for all stakeholders and resources.
3.2.4.2	<i>Strategies</i>	
	Plan S1	The District will use an adaptive management approach to protect, manage, and restore District- managed resources (see Section 9.1).
	Plan S6	The District will implement projects that address a District-managed resource. The District will prioritize planned projects based on methodology included in Section 4.0 of this Plan, which is based on the following factors: <ul style="list-style-type: none"> • Targeting • District goals • Sustainability • Volume management • Shoreline/streambank restoration and stabilization • Watershed benefits • Partnership opportunities • Public education and access • Habitat restoration
	Plan S7	The District will seek to incorporate ecological, economic, and social benefits into its projects as opportunities allow.
	Plan S9	The District will seek to partner with cities, state agencies, and other entities to implement projects and programs to meet District goals.
3.2.6	WATER RESOURCES	
	WATER QUALITY	
3.2.6.1	<i>Goals</i>	
	WQual 1	Protect, manage, and restore water quality of District lakes and creeks to maintain designated uses.
	WQual 3	Preserve and enhance habitat important to fish, waterfowl, and other wildlife.
3.2.6.2	<i>Strategies</i>	
	HABITAT	
	WQual S8	The District will consider opportunities to incorporate habitat protection, restoration, or improvement elements in District water quality, flood control, and other projects.
	WQual S9	The District will partner with other entities to minimize the spread and reduce the adverse ecological impacts of aquatic invasive species.
	WQual S10	The District will manage non-native aquatic invasive macrophytes to improve water quality and/or habitat in accordance with an approved lake vegetation management plan or as part of a rapid response control project.

RESOLUTION NO. 24-023
Riley-Purgatory-Bluff Creek Watershed District
Board of Managers

Authorizing execution of contract with PLM for 2024 lake-vegetation management

Manager _____ offered the following resolution and moved its adoption, seconded by
Manager _____:

WHEREAS Riley-Purgatory-Bluff Creek Watershed District's 2018 10-Year Watershed Management Plan identifies and allocates funding for implementation of lake-vegetation management as watershed-wide project (Table 9-1);

WHEREAS Lotus Lake, Riley Lake, Staring Lake, and Lake Susan are listed by the Minnesota Pollution Control Agency as impaired for aquatic recreation because of excessive nutrients, and RPBCWD has assessed proliferation of invasive aquatic macrophyte species (Eurasian water milfoil, curly-leaf pondweed) and monitored water quality in Red Rock Lake, Duck Lake, Mitchell Lake, Lotus Lake, Riley Lake, Staring Lake, and Lake Susan (altogether, the Lakes) and implemented both carp-reduction and vegetation-management strategies in an effort to improve water quality since 2011;

WHEREAS RPBCWD's assessment and analysis of lake water quality and aquatic vegetation community indicate that additional aquatic plant management efforts are warranted to control aquatic invasive macrophyte species growth and thereby reduce the degradation of water quality and promote a diverse native macrophyte community;

WHEREAS RPBCWD has secured or will secure both the right to access each of the Lakes and the necessary approvals from the state Department of Natural Resources for purposes of application of herbicides for aquatic vegetation management; and

WHEREAS to contribute to implementation of the aquatic vegetation management and water-quality goals for the Lakes in the plan, staff solicited quotes for spring 2024 herbicide treatments of the Lakes (the Project), and three quotes were received, though only two included the required Procellacor and Fluridone treatments. PLM Lake and Land Management Corporation submitted the lowest quote for all treatments and has the requisite experience to conduct the herbicide treatments. RPBCWD staff recommended having PLM conduct all 2024 herbicide treatments.

NOW THEREFORE BE IT RESOLVED that the RPBCWD Board of Managers authorizes the administrator, with advice of counsel, to enter the attached contract, in substantial form, with PLM Lake and Land Management for herbicide treatment of Staring Lake, Duck Lake, Mitchell Lake, Lotus Lake, Riley Lake, Red Rock Lake and Lake Susan at a total cost not to exceed **\$57,688**, as finalized with such nonsubstantive changes as are necessary to implement the intent of the managers and the Project; and

BE IT FURTHER RESOLVED that the managers authorize the administrator to approval change orders for the Project, not to exceed, in aggregate, 10 percent of the contract cost.

The question was on the adoption of the resolution and there were ____ yeas and ____ nays as follows:

	<u>Yea</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
CRAFTON				
DUEVEL				
KOCH				
PEDERSEN				
ZIEGLER				

Upon vote, the president declared the resolution _____ on this 6th day of March, 2024.

* * * * *

I, Thomas Duevel, secretary of the Riley-Purgatory-Bluff Creek Watershed District, hereby certifies that I have compared the above resolution with the original thereof as the same appears of record and on file with RPBCWD and find the same to be a true and correct transcription thereof, and further that the resolution is in full force and effect on this date, and Resolution 24-023 has not been modified, amended or rescinded since its adoption.

IN TESTIMONY WHEREOF, I set my hand this ____ day of _____, 2024.

Thomas Duevel, Secretary

**Exhibit A
Agreement**

DRAFT

**Agreement between
Riley-Purgatory-Bluff Creek Watershed District
PLM Lake and Land Management**

2024 Herbicide Treatment of Mitchell Lake, Lotus Lake, Duck Lake, Red Rock Lake, Lake Riley, Staring Lake, and Lake Susan, Hennepin County and Carver County, Minnesota

This agreement is entered into by the Riley-Purgatory-Bluff Creek Watershed District, a public body with powers set forth at Minnesota Statutes chapters 103B and 103D (RPBCWD), and PLM Lake and Land Management Corp., a private Michigan corporation (Contractor). In consideration of the terms and conditions set forth herein, including mutual consideration, the sufficiency of which is hereby acknowledged, RPBCWD and Contractor agree as follows:

1. Scope of Work

The scope of work includes the following:

- A. Mobilize and demobilize labor, equipment, and materials.

Furnish, deliver, store, and apply herbicide to the Mitchell Lake, Red Rock Lake, , Lake Riley, Staring Lake, and Lake Susan (the Lakes) to reduce prevalence of curly-leaf pondweed in Mitchell, Staring, Susan, Riley and Red Rock lakes and to reduce the prevalence of Eurasian watermilfoil in Lotus Lake and Duck Lake.

Lotus Lake - Fluridone AS will be applied as a whole-lake, low-dose application. The initial dose must be applied between April 1 and May 1, 2024, to achieve 4 parts per billion concentrations within the lake. The second dose must occur between May 1 and June 1, 2024. A third dose must occur between June 1 and July 15, 2024. Each of the second and third doses must be applied to achieve a concentration of 2 ppb. Lake-wide concentrations of Fluridone for each dose must be monitored by the applicator to indicate timing of and need for subsequent doses based upon concentration levels in the lake.

The herbicide to be applied, sequence of application and area expected to be treated are specified in Exhibit A, attached to and incorporated into this agreement as a term hereof. Expected treatment areas were determined based on past aquatic vegetation delineations and point intercept surveys; actual final treatment areas will be determined and directed by RPBCWD based on vegetation delineation surveys completed in spring 2024. Herbicide must be applied at weather, temperature and flow conditions as specified by the manufacturer and in Exhibit A.

- B. Furnish, install, and remove all appropriate signage and buoys (if used) in a timely manner.
- C. Restore all land areas directly or indirectly disturbed by the Work.

- D. Provide GIS coordinates and/or map of treatment areas to jmaxwell@rpbcwd.org following application of the herbicide.

All work must be undertaken in accordance with Figures 1-7, attached to this agreement and incorporated herein as a term hereof, showing the lake-access and lake surface area, and the Technical Specifications in Exhibit A. Figures 1 through 7 are incorporated herein as terms of this agreement, and Figures 1 through 7, along with the specifications in paragraphs 1.A through 1.D above and Exhibit A altogether constitute "the Work," as that term is used herein. The Contract Documents consist of the following:

Change orders;

Notice to proceed;

This agreement;

Contractor's completed quote attached hereto and incorporated herein as Exhibit B;

Figures 1 through 7 and the Technical Specifications attached hereto as Exhibit A.

In the event of conflict between terms in contract documents, priority will be given to the documents in the order above. A term used in a specific contract document will have the meaning given by a specific definition of the term in that document. If there is not a specific definition, the term will be governed by a specific definition in the agreement first specifically defining such term, in the order of precedence stated above.

Contractor will furnish all materials, machinery, equipment, tools, labor and expertise as needed to complete the Work. RPBCWD, at its discretion, in writing may at any time suspend work or amend the contract documents to delete any task or portion thereof. Authorized work by Contractor on a task deleted or modified by RPBCWD will be compensated in accordance with the terms of this agreement generally and sections 6 and 7 specifically.

2. Independent Contractor

Contractor is an independent contractor. Contractor will select the means, method and manner of performing the Work. Nothing herein constitutes Contractor as the agent, representative or employee of RPBCWD in any respect. Personnel performing the Work on behalf of Contractor or a subcontractor will not be considered employees of RPBCWD and will not be entitled to any compensation, rights or benefits of any kind from RPBCWD.

3. Subcontract and Assignment

Contractor will not assign, subcontract or transfer any obligation or interest in this agreement or any of the Work without the written consent of RPBCWD and pursuant to

any conditions included in that consent. RPBCWD consent to the subcontracting does not relieve Contractor of its responsibility to perform the Work or any part thereof, nor in any respect its warranty, insurance, indemnification, duty to defend or agreement to hold harmless with respect to the Work. Contractor is responsible to RPBCWD for any subcontractor's conformance to sections 9, 10, 11, 12 and 13 of this agreement in the same manner as those sections bind Contractor.

4. Duty of Care; Delay

Contractor will perform the Work in a proper, workmanlike and good quality manner, with due professional care. Contractor warrants the work for one year from the date of completion.

Contractor will not be entitled to an adjustment in contract price or contract time for delays within the control of Contractor. Delays beyond the control of Contractor will include, but not be limited to, acts or neglect by RPBCWD, acts or neglect of utility owners or other contractors performing other work, fires, floods, epidemics, abnormal weather conditions or acts of God.

5. Indemnification

Contractor will defend, indemnify and hold harmless RPBCWD, its officers, board members, employees and agents from any and all actions, costs, damages and liabilities of any nature arising from: (a) Contractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty; or (b) a subcontractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty owed by Contractor to RPBCWD. For any claim subject to indemnification under this paragraph by an employee of Contractor or a subcontractor, the indemnification obligation is not limited by a limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or a subcontractor under workers' compensation acts, disability acts or other employee benefit acts.

RPBCWD will indemnify, defend and hold harmless Contractor, its officers, employees and agents, from any and all actions, costs, damages and liabilities of any nature to the degree they are the result of any action or inaction by RPBCWD that is the basis for RPBCWD's liability in law or equity.

6. Compensation

RPBCWD will compensate the Contractor on a progress payments basis for completed work and reimburse direct costs in accordance with the agreement, Figure 1-7 and Exhibits A and B. RPBCWD will pay Contractor for completion of the Work an amount in current funds equal to the sum of the amounts determined pursuant to the Contract Documents generally, and Exhibit B. Estimated quantities are not guaranteed, and

determinations of actual quantities and selection of alternates will be made by the RPBCWD administrator, and such determinations will be used to compute the final contract price.

Invoices will be submitted no more frequently than monthly. RPBCWD will pay for undisputed work within 45 days of receipt of invoice.

Contractor warrants that it has examined the Work to the extent necessary to agree to the price of the Work and accepts any increased cost due to site conditions that were foreseeable.

In accordance with Minnesota Statutes section 471.425, subdivision 4a, Contractor will pay any subcontractor within 10 days of Contractor's receipt of payment from RPBCWD for undisputed services provided by the subcontractor. Contractor will pay interest of 1½ percent per month or any part of a month to a subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For an unpaid balance of less than \$100, Contractor will pay the actual penalty due to the subcontractor.

Contractor will maintain all records pertaining to fees or costs incurred in connection with the Work for six years from the date of completion of the Work. Any authorized RPBCWD representative or representative of the Minnesota State Auditor will have access to and the right to examine, audit or copy any such records during normal business hours.

RPBCWD will not make final payment until Contractor has provided proof of compliance with state income tax withholding requirements pursuant to Minnesota Statutes section 270C.66.

7. **Termination; Continuation of Obligations**

This agreement is effective upon execution of both parties and will remain so until August 15, 2024, unless earlier terminated as set forth herein. RPBCWD may suspend or terminate this agreement with or without cause, by a written termination notice stating specifically what prior authorized or additional Work it requires Contractor to complete. If the agreement is suspended or terminated for convenience, Contractor will be compensated for all authorized work performed, including reasonable costs for actions directed by RPBCWD to stabilize the site of the Work. If suspension or termination is for cause, Contractor will stabilize the site before vacating, without extra compensation. Contractor will be given a reasonable opportunity to cure before termination for cause.

It is understood and agreed that insurance obligations; warranties and obligations to defend, indemnify and hold harmless; and document-retention requirements survive the completion of the Work and the term of this agreement.

8. **Waiver**

RPBCWD's failure to insist on Contractor's strict performance of any obligation, condition or provision of this agreement, or to exercise any option, remedy or right herein, will not waive its rights in the future to do so. The waiver of either party on one or more occasion of any provision or obligation of this agreement will not be construed as a waiver of any subsequent breach of the same provision or obligation, and the consent or approval by either party to or of any act by the other requiring consent or approval will not render unnecessary such party's consent or approval to any subsequent similar act by the other.

Notwithstanding any other term herein, the agreement creates no rights in any third party, and RPBCWD waives no tort defense, immunity or liability limit with respect to contractor or any third party.

9. **Insurance**

At all times during the term of this agreement, Contractor will have and keep in force the following insurance coverage:

- A. General liability: \$1.5 million each occurrence and aggregate, covering contractual liability on an occurrence basis and including standard marine services liability coverage.
- B. Automobile liability: combined single limit each occurrence coverage for bodily injury and property damage covering all vehicles on an occurrence basis, \$1.5 million.
- C. Workers' compensation: in accordance with legal requirements applicable to Contractor.

Contractor will not commence work until it has filed with RPBCWD a certificate of insurance clearly evidencing the required coverage and naming RPBCWD, as an additional insured with primary coverage for general liability on a noncontributory basis, along with a copy of the additional-insured endorsement. The certificate will name RPBCWD as a holder and will state that RPBCWD will receive written notice before cancellation, nonrenewal or a change in the limit of any described policy under the same terms as Contractor. The policy must afford coverage for bodily injury and damage to property of others arising out of the perils of boating accidents and chemical spills.

10. **Compliance with Laws; Site Control**

Contractor will comply with the laws and requirements of all federal, state, local and other governmental units in connection with performing the Work. Contractor will identify and procure all licenses, permits and other rights and approvals required for the Work, except that RPBCWD has obtained a permit for the Work from the Minnesota Department of

Natural Resources, and RPBCWD has obtained authorization from the property owner and/or the Department of Natural Resources, for access for each of the Lakes via the area for each delineated in Figures 1-7, to use the access area for purposes of the Work. Contractor will comply with all local requirements and the terms of this agreement as to traffic, staging, site ingress and egress, work hours and site maintenance.

Contractor is responsible for site conditions relating to worker and public safety, cleanliness and environmental protection and in all other respects.

In its performance of the Work, Contractor will ensure that no person is excluded from full employment rights or participation in or the benefits of any program, service or activity on the ground of race, color, creed, religion, age, sex, disability, marital status, sexual orientation, public assistance status or national origin; and no person who is protected by applicable federal or state laws, rules or regulations against discrimination otherwise will be subjected to discrimination.

11. Records

All documents and information obtained or generated by Contractor or a subcontractor in performing the Work, including hard and electronic copy, software, and in any other forms in which the materials are contained, documented or memorialized, are the property of RPBCWD.

RPBCWD may immediately inspect, copy or take possession of any such materials on written request to Contractor. Contractor may maintain a copy of any such materials at its expense.

Any document or information supplied to Contractor by RPBCWD or deriving from RPBCWD is given and accepted without representation or warranty including but not limited to a warranty of fitness, merchantability, accuracy, or completeness. Absent RPBCWD written approval, Contractor will not use any such document or information other than for performance of the Work. Contractor will not disclose to any third party proprietary material so denominated by RPBCWD.

12. Data Practices; Confidentiality

If Contractor receives a request for data pursuant to the Data Practices Act, Minnesota Statutes chapter 13 (DPA), that may encompass data (as that term is defined in the DPA) Contractor possesses or has created as a result of this contract, it will inform RPBCWD immediately and transmit a copy of the request. If the request is addressed to RPBCWD, Contractor will not provide any information or documents, but will direct the inquiry to RPBCWD. If the request is addressed to Contractor, Contractor will be responsible to determine whether it is legally required to respond to the request and otherwise what its legal obligations are, but will notify and consult with RPBCWD and its legal counsel

before replying. Nothing in the preceding sentence supersedes Contractor's obligations under this agreement with respect to protection of RPBCWD data, property rights in data or confidentiality. Nothing in this section constitutes a determination that Contractor is performing a governmental function within the meaning of Minnesota Statutes section 13.05, subdivision 11, or otherwise expands the applicability of the DPA beyond its scope under governing law.

Contractor agrees that it will not disclose and will hold in confidence any and all proprietary materials owned or possessed by RPBCWD and so denominated by RPBCWD. Contractor will not use any such materials for any purpose other than performance of the Work without RPBCWD written consent. This restriction does not apply to materials already possessed by Contractor or that Contractor received on a non-confidential basis from RPBCWD or another party.

13. RPBCWD Property

All property furnished to or for the use of Contractor or a subcontractor by RPBCWD and not fully used in the performance of the Work, including but not limited to equipment, supplies, materials and data, both hard copy and electronic, will remain the property of RPBCWD and returned to RPBCWD at the conclusion of the performance of the Work, or sooner if requested by RPBCWD. Contractor further agrees that any proprietary materials are the exclusive property of RPBCWD and will assert no right, title or interest in the materials. Contractor will not disseminate, transfer or dispose of any proprietary materials to any other person or entity unless specifically authorized in writing by RPBCWD. Any property including but not limited to materials supplied to Contractor by RPBCWD or deriving from RPBCWD is supplied to and accepted by Contractor as without representation or warranty including but not limited to a warranty of fitness, merchantability, accuracy or completeness. However, Contractor's warranty under section 4, above, does not extend to materials provided to Contractor by RPBCWD or any portion of the Work that is inaccurate or incomplete as the result of Contractor's reliance on those materials.

14. Notices

Any written communication to RPBCWD required under this agreement will be directed to Joshua Maxwell, Riley-Purgatory-Bluff Creek Watershed District, 18681 Lake Drive East, Chanhassen, MN 55317; jmaxwell@rpbcwd.org.

Written communication to Contractor will be addressed to:

PLM Lake and Land Management Corp.
1511 Maras Street
Shakopee, MN 55379
(651)383-1150 Ext: 3000

15. Choice of Law, Venue and Jurisdiction

This agreement will be construed under and governed by the laws of the State of Minnesota. Venue and jurisdiction for any legal proceedings arising from this agreement, or its breach, or the Work, must be in the appropriate state or federal court with competent jurisdiction in Hennepin County, Minnesota.

16. Whole Contract

The entire agreement between the two parties is contained herein and this agreement supersedes all oral contracts and negotiations relating to the subject matter hereof. RPBCWD may amend this agreement by means of a proper work change order clearly denominated as such. Any other amendment must be signed by both parties.

IN WITNESS WHEREOF, intending to be legally bound, the parties hereto execute and deliver this agreement.

PLM Lake and Land Management Inc.

_____ Date: _____

By _____

Its _____

Approved as to form & execution

RPBCWD Counsel

Riley-Purgatory-Bluff Creek Watershed District

_____ Date: _____

Terry Jeffery
Administrator

DRAFT

Figures 1 – 7

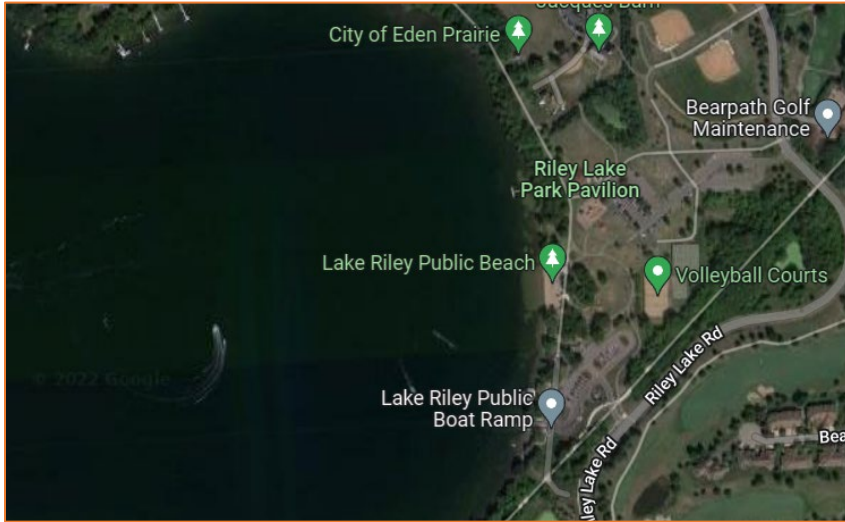


Figure 1 – Lake Riley Public Boat Launch, Eden Prairie, MN

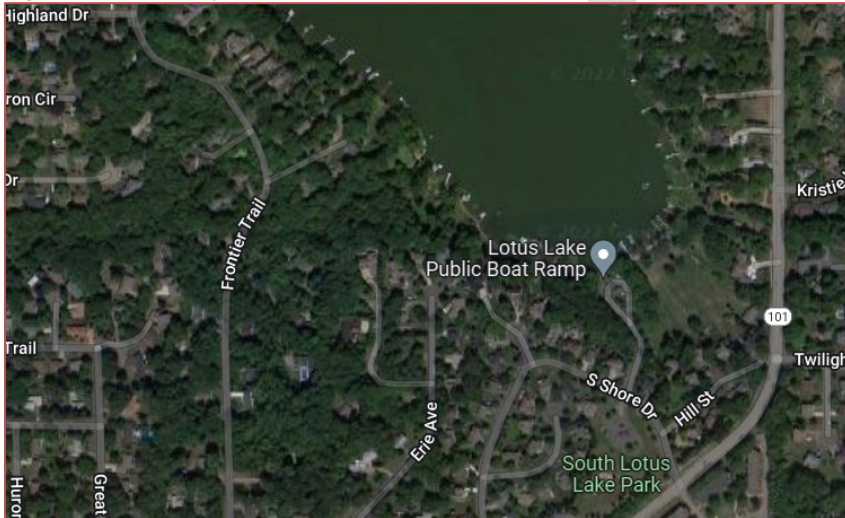


Figure 2 – Lotus Lake Public Boat Launch, Chanhassen, MN

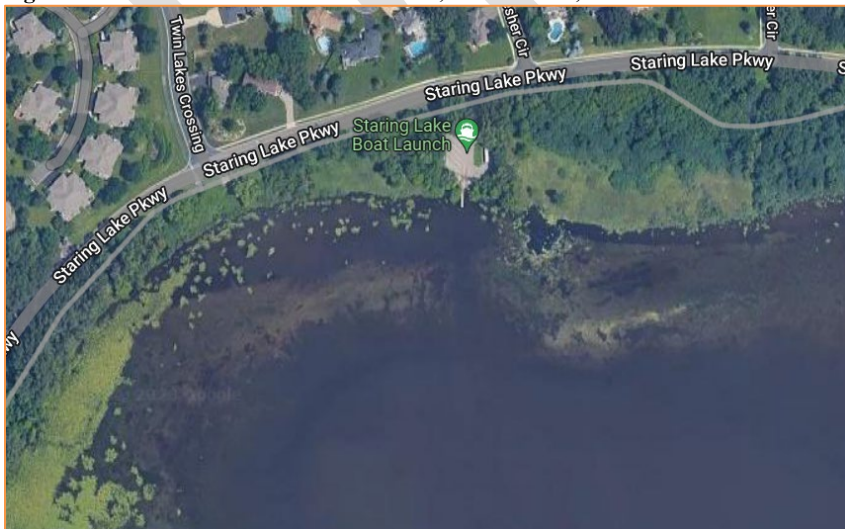


Figure 3 – Staring Lake Public Boat Launch, Eden Prairie, MN

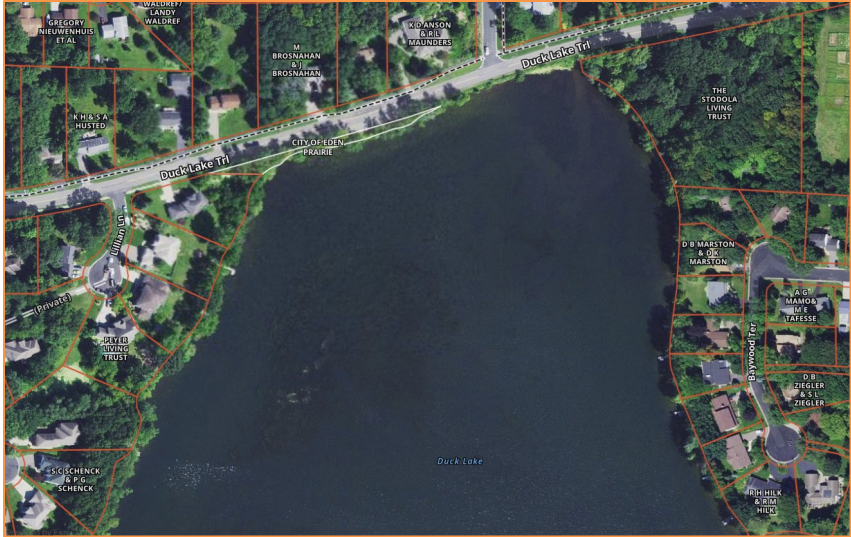


Figure 4 – Duck Lake Launch Site, Eden Prairie, MN



Figure 5 – Lake Susan Public Boat Launch, Chanhassen, MN



Figure 6 – Mitchell Lake Public Boat Launch, Eden Prairie, MN

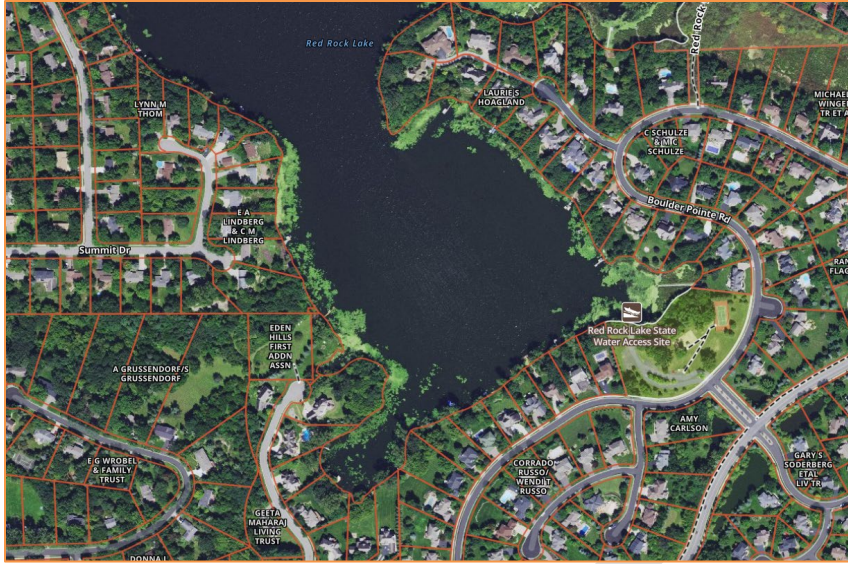


Figure 7 – Red Rock Lake Public Boat Launch, Eden Prairie, MN

Exhibit A Technical Specifications

Lake	Delineation	Herbicide	# of Areas	Total Acres	Avg Depth	Rate	Gal or PDU/ac	Total Gal/PDU	Application Temp Range
Mitchell	CLP	Flumioxazin	2 @ 6.5	13	7.5	125ppb	0.6328	8.22656	Equal to or >50 F
Susan	CLP	Flumioxazin	2 @ 4.3	8.6	6	150ppb	0.8708	7.48845	Equal to or >50 F
Red Rock	CLP	Flumioxazin	1	13	8.3	125ppb	0.7003	9.10406	Equal to or >50 F
Riley	CLP	Diquat	--	20	--	2	2	40	Equal to or less than 60 F
Staring	CLP	Flumioxazin	2 @ 10	20	4	125ppb	0.3375	6.75	Equal to or >50 F
Duck	EWM	Procellacor	1	7	4	3.25	13	91	Greater than 65F June-July 15th
Lotus	EWM	Fluridone	whole	245	10.2	2-4ppb		12.4	Treatment details below

*PDU - Prescription Dose Units - 0.0052 lb active ingredient or 3.17 fl oz of product

*F - Fahrenheit

*ac - Acre

*gal - gallons

*ppb - parts per billion

Lake Volume & Fluridone Dosing Analysis

Freshwater Scientific Services, LLC
JA Johnson



15771 Creekside Lane
Osseo, MN 55369
jajohn@freshwatersci.com
(651) 336-8896

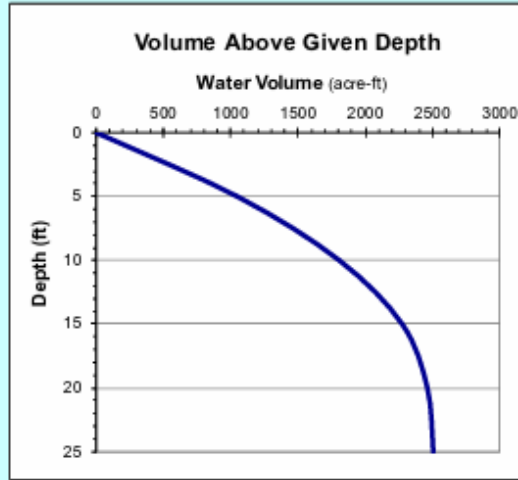
Lake: Lotus
County: Carver
Date: 6/30/23

Lake Depth/Volume Analysis

Stratum (ft)	Volume (ac-ft)*
0-5	1050
5-10	757
10-15	468
15-20	187
20-25	44
25-26	1

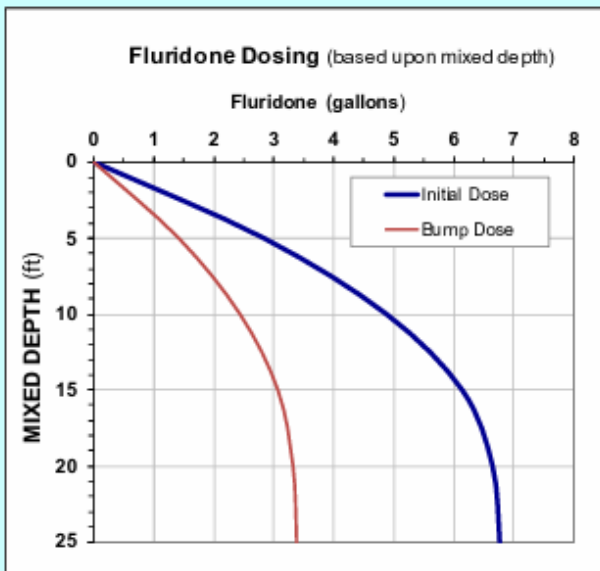
Lake Volume (ac-ft) 2507
Area (ac) 245
Mean Depth (ft) 10.2

* Stratum volumes estimated using DNR depth contours and formula for partial cone volume



Fluridone Dose/Cost Estimate

Mixed Depth (ft)	Fluridone Herbicide Estimated Dose (gallons)				Estimated Cost			
	Initial Dose	Bump 1	Bump 2	TOTAL(gal)	Initial Dose	Bump 1	Bump 2	Total
10	4.9	2.4	2.4	9.7	\$ 12,740	\$ 6,240	\$ 6,240	\$ 25,220
11	5.1	2.6	2.6	10.3	\$ 13,260	\$ 6,760	\$ 6,760	\$ 26,780
12	5.4	2.7	2.7	10.8	\$ 14,040	\$ 7,020	\$ 7,020	\$ 28,080
13	5.7	2.9	2.9	11.5	\$ 14,820	\$ 7,540	\$ 7,540	\$ 29,900
14	6.0	3.0	3.0	12.0	\$ 15,600	\$ 7,800	\$ 7,800	\$ 31,200
15	6.2	3.1	3.1	12.4	\$ 16,120	\$ 8,060	\$ 8,060	\$ 32,240



Fluridone Treatment Process

Fluridone requires 60-90 days of contact time at 2-4 ppb to kill milfoil. This requires true whole-lake dosing and careful tracking of the concentration over time. Furthermore, the dosing must be based upon accurate estimates of the mixed lake volume to achieve the desired concentration (2-4 ppb).

Initial Dose: Mixed volume of lake is dosed to achieve ~4 ppb

Sampling: Collect water samples to track concentration of fluridone

Bump Dose 1: When the concentration starts to dip toward 2 ppb, add a bump dose to get it back up to ~4 ppb

Bump Dose 2: When the concentration starts to dip toward 2 ppb, add a bump dose to get it back up to ~4 ppb

Note: The cost estimates provided are NOT a price quote. I am not an applicator, and the price of herbicide changes. These cost values are approximate - you will need to contact an applicator to get final cost for such treatments. The estimated cost is only for the herbicide treatment. Additional monitoring will be required (PI survey and water samples ~\$4000)

**Exhibit B
Contractor's Completed Quote Form**

not-public data

Lake	Delineation	Herbicide	# of Areas	Total Acres	Avg Depth	Rate	Gal or PDU/ac	Total Gal/PDU	Quote
Mitchell	CLP	Flumioxazin	2 @ 6.5	13	7.5	125ppb	0.632813	8.23	
Susan	CLP	Flumioxazin	2 @ 4.3	8.6	6	150ppb	0.87075	7.49	
Red Rock	CLP	Flumioxazin	1	13	8.3	125ppb	0.700313	9.10	
Riley	CLP	Diquat	--	20	--	2	2	40	
Staring	CLP	Flumioxazin	2 @ 10	20	4	125ppb	0.3375	6.75	
Duck	EWM	Procellacor	1	7	4	3.25	13	91	
Lotus	EWM	Fluridone	whole	245	10.2	2-4ppb		12.4	



Patrick Selter
 Vice President, Midwest Operations
 1511 Maras Street
 Shakopee, MN 55379
 (651)383-1150 Ext:3000

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