Lower Mississippi River Watershed Management Organization

2017 Aluminum Sulfate Treatments for Sunfish Lake and Lake Augusta

Joe Barten

LMRWMO Administrator &

Dakota County SWCD Senior Resource Conservationist

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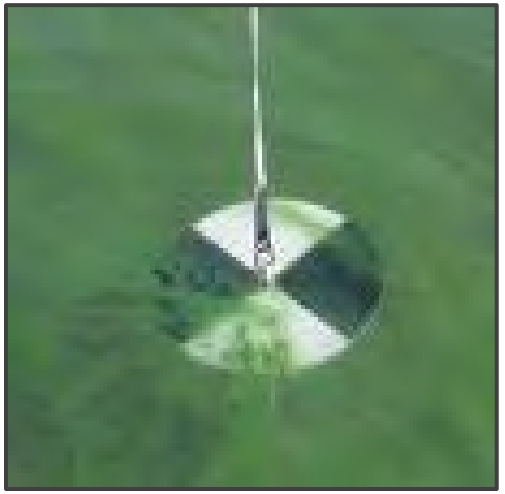
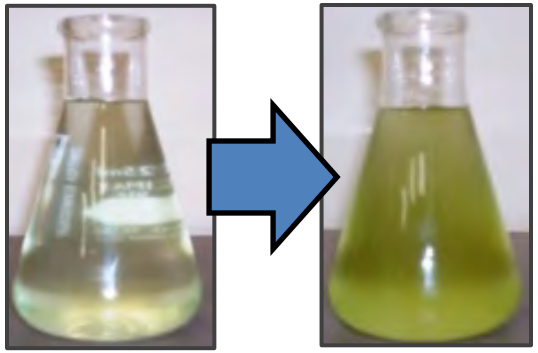
ALUMINUM TREATMENTS

- Phosphorus feeds algae and causes algal blooms
- Algae decreases water clarity
- Algal decay depletes dissolved oxygen near the lake bottom





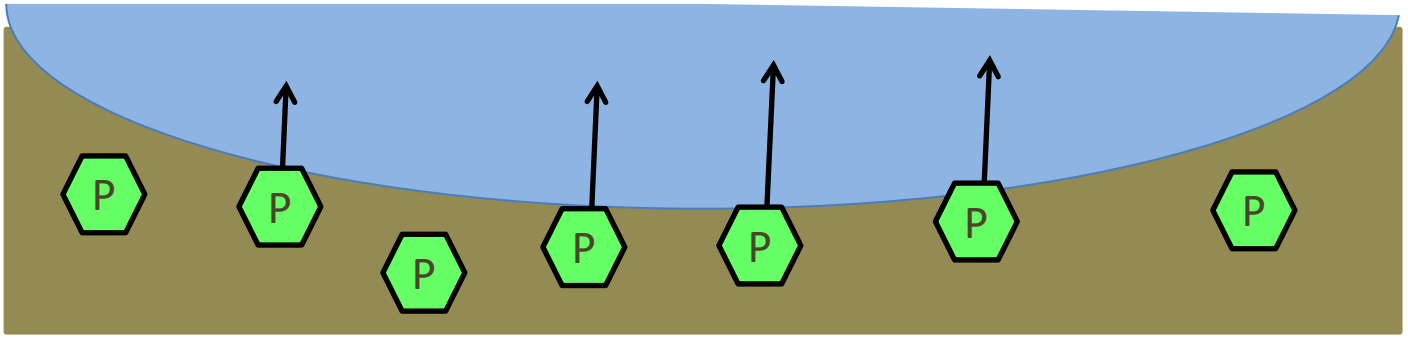
WHERE DOES THE PHOSPHORUS COME FROM?

External Sources

- Storm water runoff from hard (impervious) surfaces
- Leaves & grass clippings
- Fertilizers
- Pet/animal waste
- Soil erosion
- Septic systems

Internal Sources

- Phosphorus can be stored in lake bottom sediments and released when oxygen levels are low



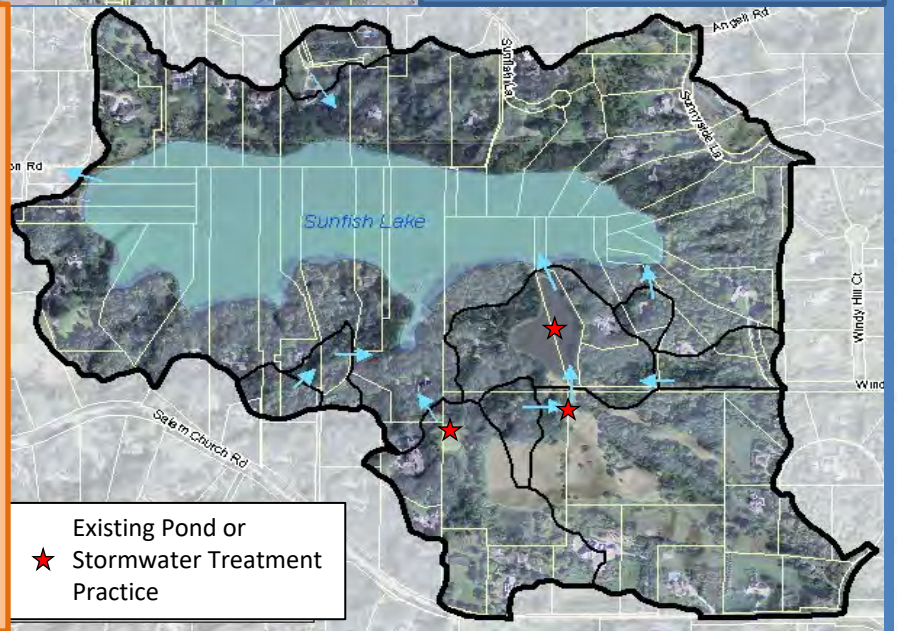
Sunfish Lake and Lake Augusta Alum Treatments

Lake Augusta

- City of Mendota Heights
- 44 acre lake
- 420-acre watershed
- Deep lake: max 33 feet
- Land-locked
- 87% of TP load from internal sources (sediment)
- Alum treatment will reduce internal phosphorus loading by 80% or more
- After alum treatment, expected to meet state water quality standards

Sunfish Lake

- City of Sunfish Lake
- 47 acre lake
- 235-acre watershed
- Deep Lake: max 32 feet
- High level outlet
- 90% of TP load from internal sources (sediment)
- Alum treatment will reduce internal phosphorus loading by 80% or more
- After alum treatment, expected to meet standards



Preliminary Budget Estimate

Task	Budget Estimate
Lake Augusta	
- Alum dosing plan and permitting	$10,000
- Bid documents, admin., and oversight	$15,000
- Alum application	$75,000
- Grant Administration and Stakeholder Participation	$10,000
Lake Augusta Project Cost	***$110,000***
CWF Grant Request Amount (approx.)	$88,000
25% Local Match (approx.)**	$22,000
Sunfish Lake	
- Alum dosing plan and permitting	$10,000
- Bid documents, admin., and oversight	$15,000
- Alum application	$85,000
- Rain barrel program	$10,000
- Shoreline buffer survey program	$5,000
- Grant Administration and Stakeholder Participation	$10,000
Sunfish Lake Project Cost	***$135,000***
CWF Grant Request Amount (approx.)	$108,000
25% Local Match (approx.)**	$27,000
Total Project Cost	***$245,000***
CWF Grant Request Amount (approx.)	$196,000
25% Local Match (approx.)**	$49,000

** Local match includes funds from cities and/or homeowners associations

LMRWMO – SUNFISH LAKE ALUM TREATMENT

Sunfish Lake barge launch through private property

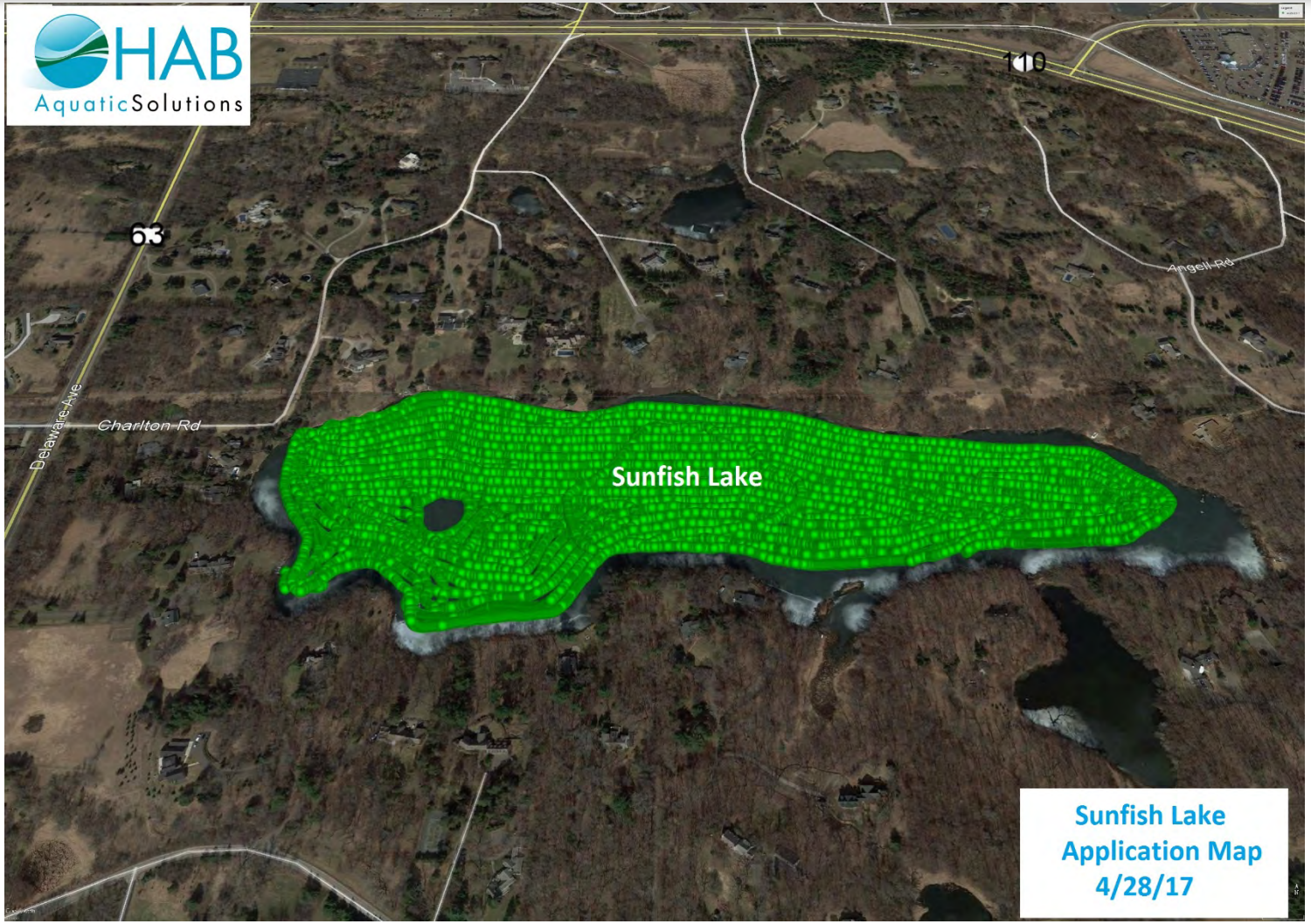
LMRWMO – SUNFISH LAKE ALUM TREATMENT

Sunfish Lake aluminum sulfate flocculant post-application

LMRWMO – SUNFISH LAKE ALUM TREATMENT

Sunfish Lake stakeholder meeting

LMRWMO – SUNFISH LAKE ALUM TREATMENT



Sunfish Lake alum application coverage map by contractor

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LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta aluminum sulfate application in progress

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LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta barge refilling at staging area

LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta barge access via Resurrection Cemetery

LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta contractor staging area during application

LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta aluminum sulfate flocculant post-treatment

LMRWMO – LAKE AUGUSTA ALUM TREATMENT

Lake Augusta alum application coverage map by contractor

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LMRWMO – LAKE AUGUSTA ALUM TREATMENT

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EDUCATION AND OUTREACH

FRIENDS OF THE MISSISSIPPI RIVER

Working to protect the Mississippi River and its watershed in the Twin Cities area.

101 East Fifth Street
Suite 2000
Saint Paul, MN 55101

651-222-2193
www.fmr.org
info@fmr.org

RAIN BARRELS FOR SUNFISH LAKE RESIDENTS--REDUCED COST!

Algae blooms, including those on Sunfish Lake, require solutions that address all pollutant inputs in lakes and streams. Rain barrels provide an opportunity to capture water and keep runoff from lawns and gardens from entering the lake. Runoff contributes up to 6% of the nutrient input in Sunfish Lake, and the in-lake treatments are more effective with less runoff from an outside source like runoff.

Join Friends of the Mississippi River on June 1st at St. Anne's Church from 6:30-7:30pm* to learn how to install and maintain a rain barrel, plus other lawn/garden practices to reduce runoff to nearby lakes and streams. Each barrel comes with a diverter kit allowing you to keep your downspout in tact. Your local watershed will cover at least 50% of the cost of the barrel!

Choose your own rain barrel style and color at reduced costs; up to $50-$100 saved based upon your choice!

Pick up your barrel on June 24th between 9am-1pm at a St. Anne's Church in Sunfish Lake.

For more information or to sign-up, please contact FMR Stewardship Program Manager Adam Flett at 651-222-2193x16 or aflett@fmr.org.

***If you are unable to join June 1st**, you can still choose a barrel by contacting Adam before then!

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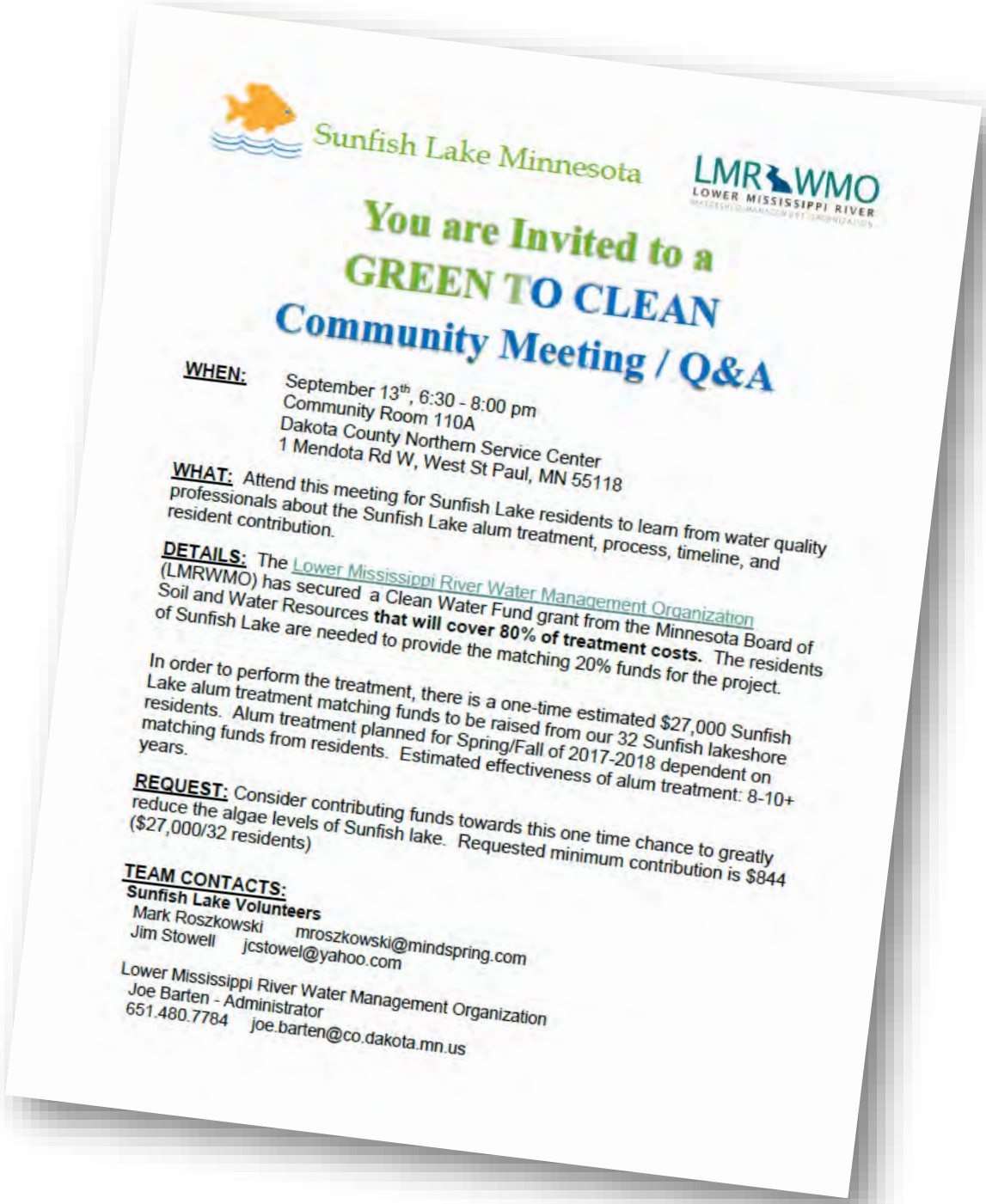

Sunfish Lake Minnesota

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You are Invited to a GREEN TO CLEAN Community Meeting / Q&A

WHEN: September 13th, 6:30 - 8:00 pm
Community Room 110A
Dakota County Northern Service Center
1 Mendota Rd W, West St Paul, MN 55118

WHAT: Attend this meeting for Sunfish Lake residents to learn from water quality professionals about the Sunfish Lake alum treatment, process, timeline, and resident contribution.

DETAILS: The Lower Mississippi River Water Management Organization (LMRWMO) has secured a Clean Water Fund grant from the Minnesota Board of Soil and Water Resources **that will cover 80% of treatment costs.** The residents of Sunfish Lake are needed to provide the matching 20% funds for the project.

In order to perform the treatment, there is a one-time estimated $27,000 Sunfish Lake alum treatment matching funds to be raised from our 32 Sunfish lakeshore residents. Alum treatment planned for Spring/Fall of 2017-2018 dependent on matching funds from residents. Estimated effectiveness of alum treatment: 8-10+ years.

REQUEST: Consider contributing funds towards this one time chance to greatly reduce the algae levels of Sunfish lake. Requested minimum contribution is $844 ($27,000/32 residents)

TEAM CONTACTS:

Sunfish Lake Volunteers
Mark Roszkowski mroszkowski@mindspring.com
Jim Stowell jcstowel@yahoo.com

Lower Mississippi River Water Management Organization
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651.480.7784 joe.barten@co.dakota.mn.us