

Item 7b.**Sunfish Lake Engineer's Report for February 5, 2019**

By: Jeff Sandberg, PE
City Engineer

Date: January 22, 2019

1. Engineering Activities Undertaken in the Month of January.

The following Engineer's Report reflects the Engineering activities undertaken this past month.

A. Open House for Charlton Road Project. Staff mailed a notice for an Open House to affected properties for the Charlton Road Improvement Project scheduled for Wednesday, February 13th at 7 pm at the Heartland Credit Union Community Room (See Attached).

B. Charlton Road Project Advertisement-For-Bid. Staff published Advertisements for Bid in the appropriate publications for 2 separate publication dates.

C. Wetland Conservation Act 2018 Annual Report. As administrator of the Wetland Conservation Act (WCA) for Sunfish lake, the city is required to submit a report to the Board of Water and Soil Resources (BWSR) summarizing the wetland review work completed in the city each year. The report is due by February 1st of each year. WSB, as LGU representative for the City's Wetland Conservation Act Program, put together the report and submitted it to BWSR for their approval.

2. Building and Site Reviews in the Month of January.

Staff met with an applicant for a pre-application meeting for a new home at 357 Salem Church Rd. It is anticipated a formal application will be forthcoming.

3. Public Works Activities Undertaken in the Month of January.

No Public Works activities were undertaken in the month of January.

4. Anticipated Engineering/Public Works Activities for the Month of February.

A. Bid Opening. The City Engineer will open the bids for the Charlton Road Improvement Project on February 26th, 2019.

B. Snow Plowing/ Roadway Maintenance. The City contractor will evaluate roadways for condition and need of salting and sanding throughout the month, especially after precipitation and/or cold weather, and perform snow clearing and salting/ sanding as required. The email to report roadway concerns is sunfishlakesnow@gmail.com.

C. MCES 2019 CAMP Program. I received the yearly notice from the MPCA regarding participation in the 2019 CAMP program. Last year, the City Council approved monitoring of three lakes at 1 time per month each (previously, the frequency had been twice per month per lake which resulted in a higher fee). I have confirmed that the past volunteers for sampling are willing to do the same this year. At the March meeting, I would like to request a motion from the City Council to approve the City's involvement in the 2019 CAMP program.

On a related note, I have attached for your information a page out of the Met Council's report of 2017 water quality results that were just released for Sunfish Lake. It should be noted that we saw a dramatic improvement in the water quality of Sunfish Lake (it went from a rating of "C" to a rating of "A" in one year). This can be attributed to the alum treatment that was applied in 2016 through funding from the Lake Association and the Watershed District. I have also included the lake summary sheets from the City's Comprehensive Stormwater Management Plan that includes the data from Sunfish Lake, Hornbeam Lake, and Horseshoe Lake. These informational sheets may be beneficial to add to the city's website (See two Attachments).

Lastly, the Met Council report recognized volunteers throughout the state that have participated in the CAMP program for several years. The report recognized Scott Spaeth for 4 years of service (Hornbeam Lake); James Stowell for 8 years of service (Sunfish Lake); and Jim Naves for 11 years of service (Horseshoe Lake). I'd like to recognize and thank these volunteers for their past and continued service.

D. Street Sweeping Quotes. We will request quotes for the annual spring street sweeping which I will bring to the March City Council meeting for consideration.

No other Engineering/Public Works activities are anticipated for February.

The above constitutes the Engineering Report for the City of Sunfish Lake for February 5, 2019.

Respectfully submitted,

WSB & Associates, Inc.

A handwritten signature in black ink, appearing to read "Jeffry S. Sandberg".

Jeffry S. Sandberg, PE
City Engineer

ITEM 7b. 1A ATTACHMENT



CITY OF SUNFISH LAKE Charlton Road Project and Sunfish Lake Outlet Improvements

Notice of Open House

**WEDNESDAY, February 13, 2019
7:00 P.M. – 8:00 P.M.**

**HEARTLAND CREDIT UNION COMMUNITY ROOM
5500 South Robert Trail
Inver Grove Heights, MN 55077**

After many years of study and discussion, the Sunfish Lake City Council accepted the Charlton Road Project and Sunfish Lake Outlet Improvements feasibility study and ordered the project at their May 2018 meeting. The plans are complete and the project is out for bidding. Construction will begin in the Spring of 2019 and be completed in late-Summer 2019.

The purpose of the meeting is to update the residents on the project scope and schedule, and to answer questions you may have. While we will work with the contractor to minimize disruption and inconvenience to residents to the extent possible, there will be unavoidable inconveniences and disruptions that we want you to be aware of and can discuss at the meeting.

The project will also include improvements to the outlet from Sunfish Lake to address recent high maintenance activities but also improve the outlet function to better regulate the lake levels and improve the drawdown efficiencies. By improving the outlet, the lake levels will be managed more effectively with minimal maintenance and increased dependability.

The proposed project schedule is as follows:

Approve Plans and Specifications and Authorize Ad for Bids.....	January 8 CC meeting
Open House.....	February 13, 2019
Receive Bids.....	February 26, 2019
Award Contract	March 5, 2019
Begin Construction	June 2019
Complete Construction	August 2019
Assessment Hearing	September 2019

We invite you to attend the meeting at the date and time outlined above. If you are unavailable to make the meeting, please feel free to contact Jeff Sandberg, City Engineer, at 651-286-8474 with any questions or concerns you may have.

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP												
CLA												
Secchi					C	C	C					C
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP												
CLA												
Secchi												
Lake Grade												

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP			C	C	C	B	C	B	C	B	B	C
CLA			C	C	C	B	C	B	B	C	C	C
Secchi			D	C	C	B	B	A	B	C	C	B
Lake Grade			C	C	C	B	C	B	B	C	C	C

Year	2016	2017
TP	C	A
CLA	C	A
Secchi	C	A
Lake Grade	C	A

Source: Metropolitan Council, EPA STORET, and/or MPCA EQUIS database(s)

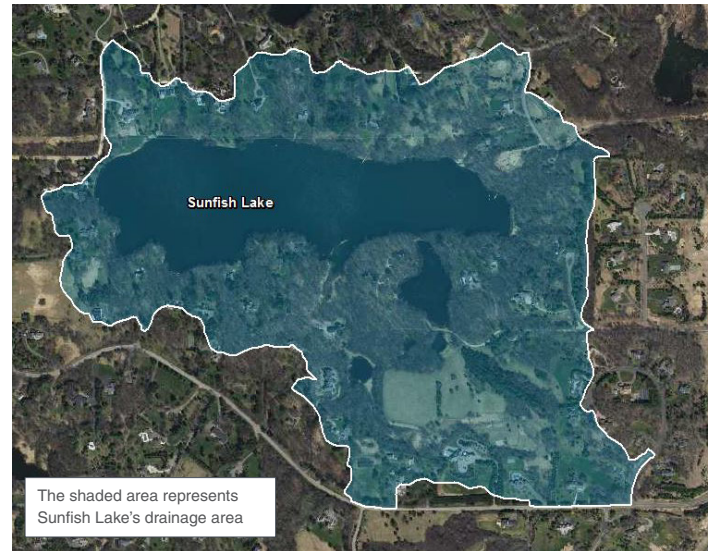
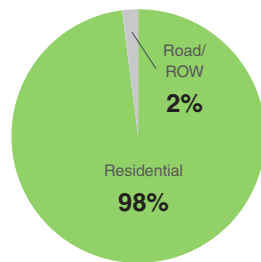
Sunfish Lake

Sunfish Lake is in the central portion of the City of Sunfish Lake, within the Lower Mississippi River Watershed Management Organization (LMRWMO). The land surrounding the lake is residential. Residents can access the lake for boating and fishing from their properties, however no public access is available.

Sunfish Lake Stats

Size: 45.1 acres
Max depth: 32 feet
Watershed size: 232 acres
Major watershed: Mississippi River - Twin Cities
MPCA lake classification: Deep
Impairment listing: Aquatic Recreation
Trophic status: Eutrophic

Sunfish Lake Watershed Land Use



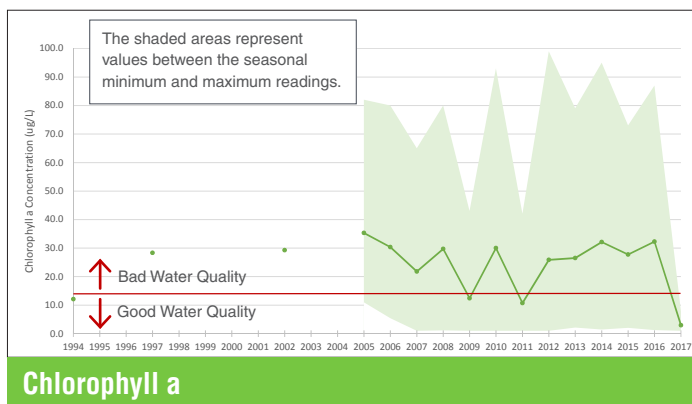
Sunfish Lake Water Quality

The City of Sunfish Lake participates in the Minnesota Pollution Control Agency's (MPCA's) Citizen Assisted Lake Monitoring Program for water quality monitoring of Sunfish Lake. Since monitoring began in 1994, Sunfish Lake has not consistently met the MPCA standards for water quality as measured by Total Phosphorus and Chlorophyll a. Beginning in 2006, Secchi disk depth has been monitored as an additional measure of water quality. Since that time, Sunfish Lake has consistently met the MPCA standard for Secchi depth, except in 2006.

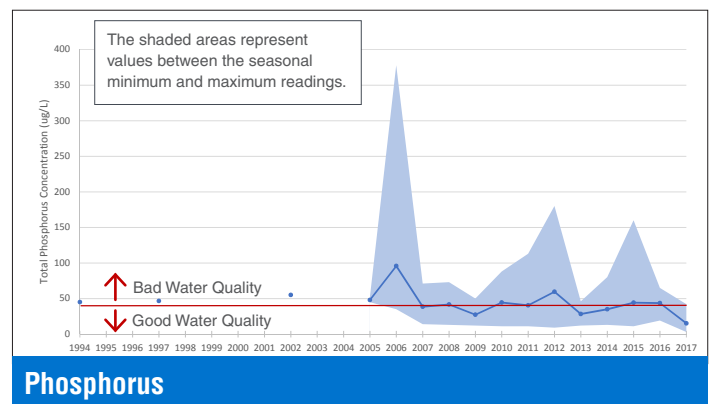
Summary Table

	MPCA Standard	min	max	avg
Chlorophyll a (ug/L)	14	10	99	24
Total Phosphorus (ug/L)	40	3.0	378	44
Secchi depth (m)	1.4	0.4	6.0	2.2

Water Quality Charts



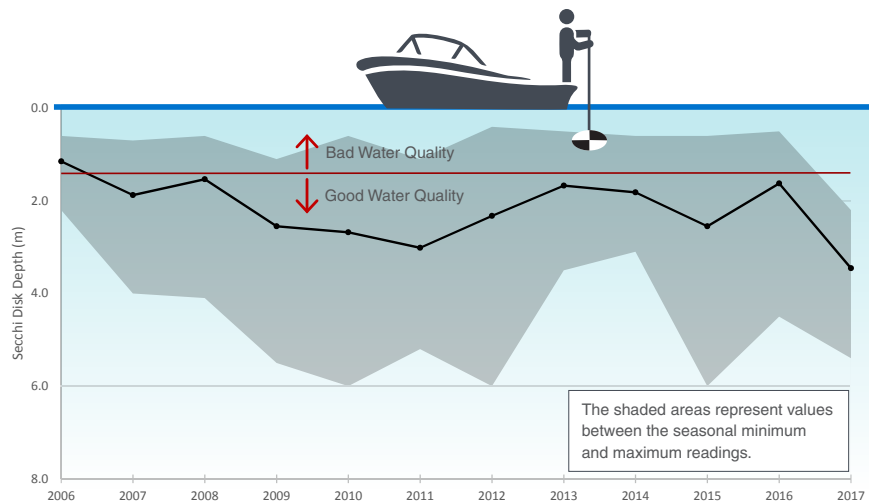
Chlorophyll a is the pigment that gives plants their green color. High levels of Chlorophyll a indicate excessive algae resulting in disproportionate nutrient levels in the lake. Low Chlorophyll a levels indicate good water quality.



Phosphorus is a nutrient that plants require for growth. High phosphorus levels can lead to algae blooms, turning lake water green and soupy. Low phosphorus levels indicate good water quality.

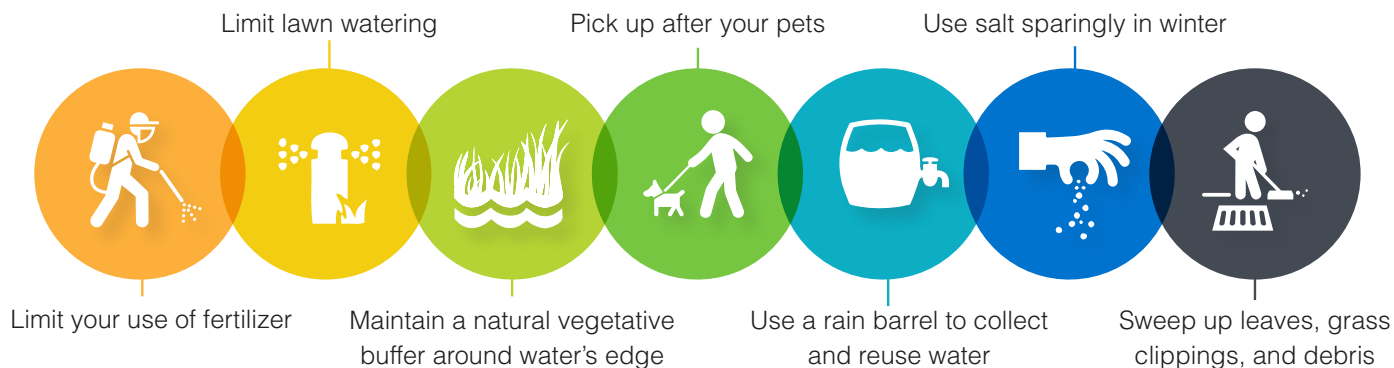
Secchi Disk

A secchi disk is used to measure water clarity. The black and white disk is lowered into the water until it is no longer visible. High secchi disk depths indicate good water quality.



What can you do to keep Sunfish Lake clean?

Rainwater runoff is the leading cause of poor water quality and is the water that flows from paved or hard surfaces into the storm sewer or directly into the lake. There are several ways to limit runoff and to keep it clean:



Upcoming Projects

Water Quality Monitoring - The City of Sunfish Lake will continue to implement the water quality monitoring program for Sunfish Lake in partnership with the MPCA.

Additional Information

LMRWMO Watershed Management Plan

This plan outlines the ways that LMRWMO will enact their vision to manage “water resources and related ecosystems...to sustain their long-term health and integrity.”

http://www.dakotaswcd.org/watersheds/lowermisswmo/pdfs/2011%20Lower_Mississippi_River_WMO_adopted_plan_2015amend.pdf

DNR Lake Finder

The DNR provides a variety of data about MN lakes.

www.dnr.state.mn.us/lakefind/lake.html?id=19004700

Contact

Jeff Sandberg | City Engineer | City of Sunfish Lake | 651-286-8474 | jsandberg@wsbeng.com



Hornbeam Lake

Hornbeam Lake is an intercommunity waterbody on the southwest edge of the City of Sunfish Lake along the border with Inver Grove Heights, in the Lower Mississippi River Watershed Management Organization (LMRWMO). The land immediately surrounding the lake is residential. Residents can access the lake for boating and fishing from their properties, however no public access is available.

Hornbeam Lake Stats

Size: 22.1 acres

Watershed size: 199 acres

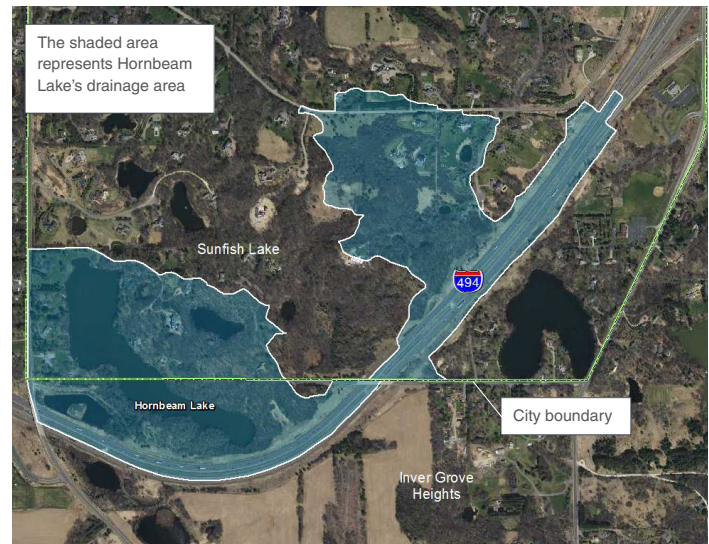
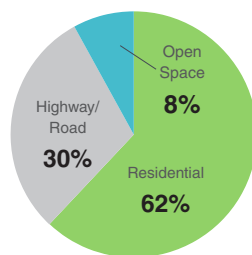
Major watershed: Mississippi River - Twin Cities

MPCA lake classification: Shallow

Impairment listing: None

Trophic status: Eutrophic

Hornbeam Lake Watershed Land Use



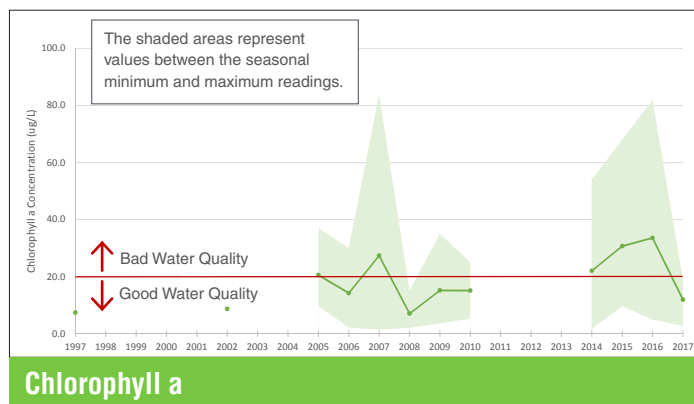
Hornbeam Lake Water Quality

The City of Sunfish Lake participates in the Minnesota Pollution Control Agency's (MPCA's) Citizen Assisted Lake Monitoring Program for water quality monitoring of Hornbeam Lake. Between 1997 (when water quality monitoring began) and 2010, Hornbeam Lake met the MPCA's standards for water quality as measured by Total Phosphorus, Chlorophyll a, and Secchi depth with a few exceptions. However, between 2014 and 2017, Hornbeam Lake has not met MPCA standards with as much consistency.

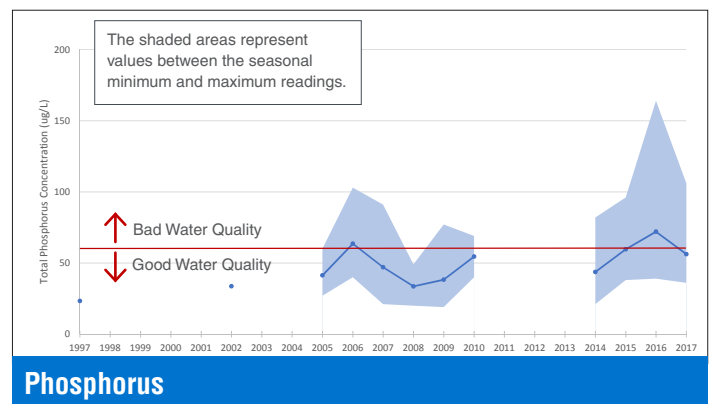
Summary Table

	MPCA Standard	min	max	avg
Chlorophyll a (ug/L)	20	1.4	84	18
Total Phosphorus (ug/L)	60	19	164	48
Secchi depth (m)	1.0	0.1	10	2.7

Water Quality Charts



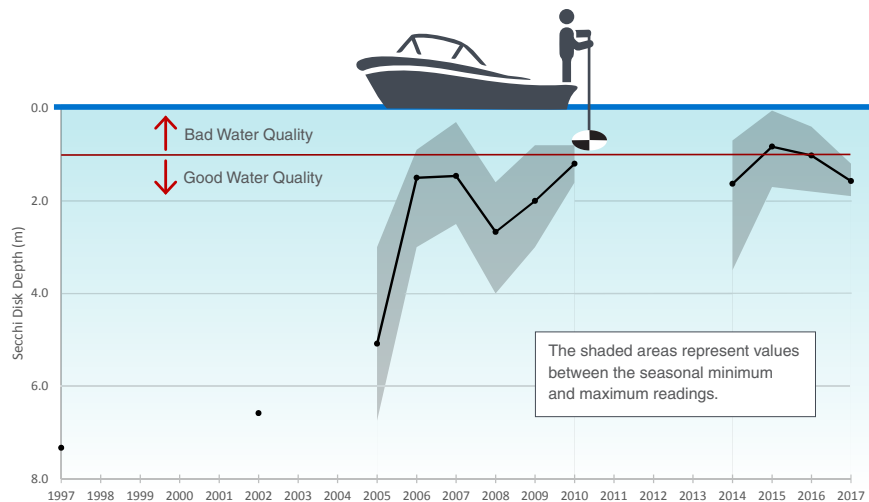
Chlorophyll a is the pigment that gives plants their green color. High levels of Chlorophyll a indicate excessive algae resulting in disproportionate nutrient levels in the lake. Low Chlorophyll a levels indicate good water quality.



Phosphorus is a nutrient that plants require for growth. High phosphorus levels can lead to algae blooms, turning lake water green and soupy. Low phosphorus levels indicate good water quality.

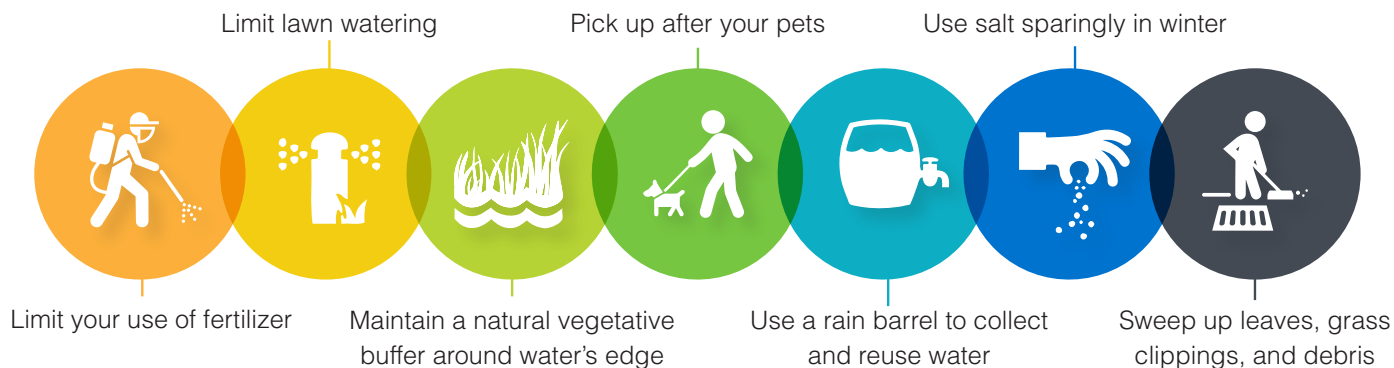
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What can you do to keep Hornbeam Lake clean?

Rainwater runoff is the leading cause of poor water quality and is the water that flows from paved or hard surfaces into the storm sewer or directly into the lake. There are several ways to limit runoff and to keep it clean:



Upcoming Projects

Water Quality Monitoring - The City of Sunfish Lake will continue to implement the water quality monitoring program for Hornbeam in partnership with the MPCA.

Additional Information

LMRWMO Watershed Management Plan

This plan outlines the ways that LMRWMO will enact their vision to manage “water resources and related ecosystems...to sustain their long-term health and integrity.”

http://www.dakotaswcd.org/watersheds/lowermisswmo/pdfs/2011%20Lower_Mississippi_River_WMO_adopted_plan_2015amend.pdf

DNR Lake Finder

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Contact

Jeff Sandberg | City Engineer | City of Sunfish Lake | 651-286-8474 | jsandberg@wsbeng.com



Horseshoe Lake

Horseshoe Lake is in the southeast corner of the City of Sunfish Lake along the border with Inver Grove Heights, in the Lower Mississippi River Watershed Management Organization (LMRWMO). The land immediately surrounding the lake is residential. Residents can access the lake for boating and fishing from their properties, however no public access is available.

Horseshoe Lake Stats

Size: 15.3 acres

Watershed size: 63 acres

Major watershed: Mississippi River – Lake Pepin

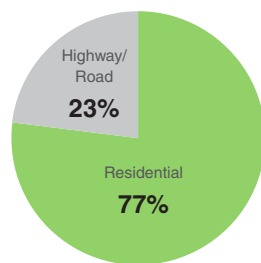
MPCA lake classification:

Shallow

Impairment listing: None

Trophic status: Mesotrophic

Horseshoe Lake Watershed Land Use



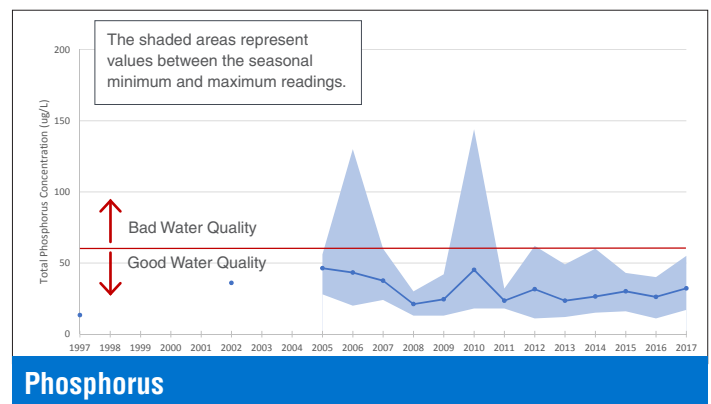
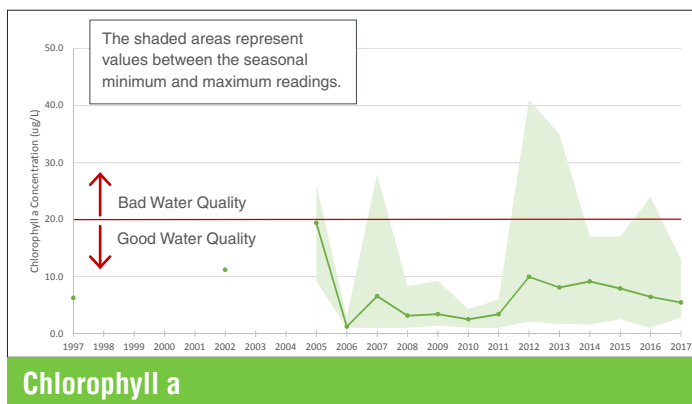
Horseshoe Lake Water Quality

The City of Sunfish Lake participates in the Minnesota Pollution Control Agency's (MPCA's) Citizen Assisted Lake Monitoring Program for water quality monitoring of Horseshoe Lake. Since monitoring began in 1997, the average annual water quality readings for Horseshoe Lake have consistently met MPCA standards as measured by Total Phosphorus, Chlorophyll a, and Secchi depth.

Summary Table

	MPCA Standard	min	max	avg
Chlorophyll a (ug/L)	20	1.0	41	6.9
Total Phosphorus (ug/L)	60	10	144	31
Secchi depth (m)	1.0	1.0	10	3.0

Water Quality Charts

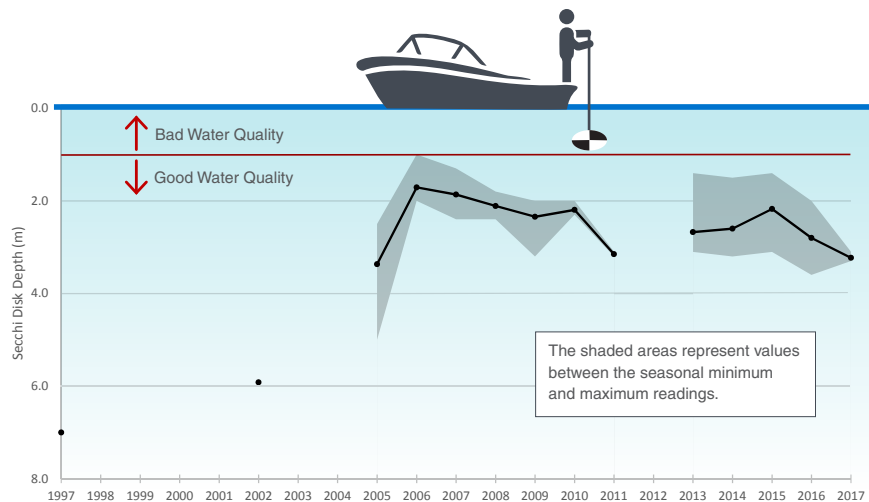


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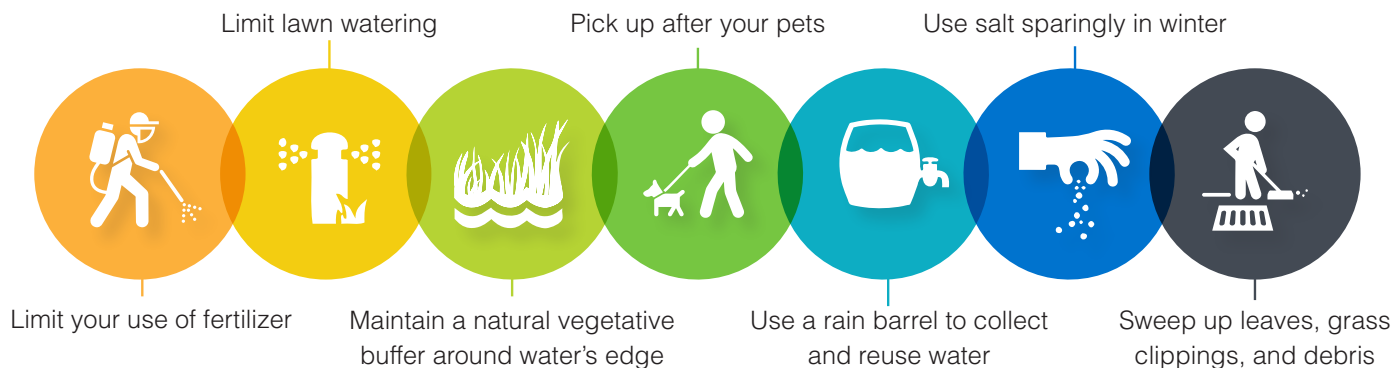
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What can you do to keep Horseshoe Lake clean?

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Upcoming Projects

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Additional Information

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