Improving water quality

By Paul Downer  
Managing Editor

Anyone driving along Highway 55 likely noticed a large excavation project a few miles east of Annandale in the past couple of months. Now that it is finished, area watershed officials and Cedar Lake property owners are hoping to see an improvement in the lake’s water quality.

The Clearwater River Watershed District has been working toward that end since 2006, but the latest addition of a limestone rock filter to the creek connecting Cedar and Swartout lakes is a significant step in reducing the amount of phosphorus in Cedar Lake.

Increasing phosphorous loads caused large algae blooms that alarmed lake residents in 2002, and incremental steps have been taken toward addressing the problem since then. The new filter — working together with a second filter planned near Swartout Lake that should be constructed later this year — is expected to remove 1,280 pounds of phosphorous from the sub-watershed each year. That would cut the current flow of about 2,000 pounds of phosphorous per year by more than half.

"The limestone is the key of this project," said Cole Loewen of the CRWD. "Limestone creates a really strong chemical bond with phosphorous when they come in contact. This berm backs water up about a foot, and then it forces the water to trickle through the filter. When it trickles through the phosphorous in the water binds to the rock and stays put; the water moves on."

Spring construction

Workers from Northern Lines Contracting descended on a parcel of land crossed by the creek just west of Illsley Avenue NW in March to construct the filter. The watershed district purchased about 3.8 acres of common-interest land held by six owners for some of the project area, while some of the project area remained in the common-interest territory.

Workers started by digging a new channel that captures most of the creek’s flow, then built the limestone berm, or filter, across the length of the new channel. A swale was added to the nearby hillside to capture water flowing overland to the creek and deposit it where that water could also be filtered, and a drain tile already in place on the hillside was re-routed to allow filtration as well.

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While the rock filter looks like a dam, Loewen said it is con-
structed in such a way that there won’t be issues with water rising
too much upstream. If the water in front of the filter rises by one
foot the extra water will flow into an outlet channel.
“ This is only designed to handle
to low to medium flow,” said Loewen. “You get a high-flow event, it will go back into the old
channel. If you get a really high-flow event it will overflow this fil-
ter and the whole area will inundate, but of course that would be
a major flood.”
The filter is designed to treat normal creek flow and rain
events of up to 1.25 inches.
“The key here is we are not backing up water upstream, which is important for upstream property owners,” said Loewen.
“They want to maintain their drainage and they don’t want water flooding out of their roads or cul-
eners. So it was designed that way so no one upstream is impacted by this project in terms of back-
ching up water.”
Loewen said the overall response from the Cedar Lake Conser-
vation Club and property owners to the project has been positive, “but some concern remains upstream about possible flooding.”
“ The elevations say it’s physically not possible — it’s higher up there than what this will back up,” said Loewen.
Bill Arends, president of the Cedar Lake Conservation Club,
said the project is a step in the right direction.
“All lakes are concerned with phosphorus,” he said. “We have been doing things since 2006 to mitigate what we have, but there’s no silver bullet that cleans up everything. So this is a long-
term project, but we are pleased with it.”
Cost-effective solution
Though the second filter proj-
ect has not yet begun, the esti-
mate for the total cost of the projects is $554,200.
Half of that amount will be
covered by a $277,900 grant through the Minnesota Board of
Water and Soil Resources.
“This is one of the cheaper projects the district has done in terms of phosphorus removal,” said Loewen, explaining that over the 30-year life of the project the cost-per-pound of phosphorus removed from the water is roughly $14.
By way of comparison, a stormwater treatment project undertaken by the watershed district in Kimball has a cost of $26
per pound, and those undertakings by other agencies in more urban areas can be up to 10 times more
expensive.
“ The filter near Highway 55 is expected to reduce 400 pounds of phosphorus per year, and the second filter near
Swanton — because there is more phosphorus in that system in that area — is expected to remove
1000 pounds per year.
Protracted effort
Construction of the filters is the latest in a series of projects done
d over the past decade to reduce phosphorus in the Cedar
Lake sub-watershed.
As mentioned above, Cedar Lake residents were concerned about algae blooms in 2002 and intensi-
ﬁve monitoring of the lake to determine the sources of excess phosphorus began. In 2003. That effort revealed the primary contributors as three nutrient-
impaired shallow lakes: Swanton, Albion and Henshaw — and additional wetlands.
The goal has been to reduce the amount of phosphorus in
Cedar Lake to 20 micrograms per liter. In 2003 and 2006 Cedar actually exceeded the state standard for impaired waters:
40 micrograms per liter, with the peak level being 58 micrograms per liter.
Initial improvement efforts included the installation of fish
barriers to prevent carp run (carp stir up sediments containing phosphorous on the bottoms of lakes and other water bodies), harvesting of carp to reduce numbers and construction of a treatment basin. Those measures helped, but there was still room for improvement.
“ That was done worked, but it didn’t get us to our goal of 20 micrograms,” said Loewen.
The outcome
Now the first filter is complete, monitoring will take place
directly below the limestone to measure the amount of phosphorus removed by that specific project.
“ Trends are tricky. Within three years you might have something, but it will probably be more like five before we can be comfortable,” said Loewen.
“ There are so many factors. You could have a very heavy rain year or just a lot of concentrations coming through, and you
have to balance those over time.”
That said, the watershed dis-
Tract is confident that the filters will work as planned.
“If we didn’t think it would work we wouldn’t have built it.”” said Loewen. “ We try to be very conser-
ervative using taxpayer dol-
lars.”
Other lakes
While efforts to improve Cedar are ongoing, Loewen said
other Annandale lakes in the
watershed, including Pleasant and Clearwater, are doing well
in terms of phosphorus levels.
“ Clearwater is doing really great. The district did a lot of work back in the ‘80s that dropped that lake from 100-150 micrograms per liter to where it’s meeting the state standard every year, under 40, which is wonder-
ful,” he said. “ We don’t want it to ever get back there though, so we need to keep doing work in the upper portion to control the amount of phosphorus coming in.”
That upper area includes the chain of Augusta, Caroline, Marie, Louisa and ultimately Lazy Lake near Kimball, which takes in a large amount of phosphorus due to agricultural activity in the
west.
“ In terms of lakes we have concerns about, we know that upper watershed is exporting phosphorus. We want to con-
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roll that load as much as possible so it doesn’t cause prob-
blems in Clearwater,” said Loewen. “Louisa, Marie, Caro-
line and Augusta are all listed as impaired for phosphorus on the state list. We’re trying to get them delisted.”
Pleasant Lake is doing very
well, according to Loewen, and this year’s city of Annandale proj-
ct to reconstruct Cherry Avenue and nearby streets, as well as
improve storm water infrastructure, should help.
“ That lake’s in a pretty good state,” said Loewen.

ANNUAL MEETING NOTICE
Clearwater Lake Property Owners
SATURDAY, JUNE 6th at CAMP FRIENDSHIP (Sun Porch)
8 a.m. Coffee/Rolls — 9 a.m. Meeting

Clearwater Lake Property Owners are encouraged to attend this important ANNUAL C.L.P.O.
Association meeting. Be a part of the future changes to the C.L.P.O. Comittee. Come and share your ideas, thoughts on how to grow our membership and continue to protect our lake. If you are currently NOT a member of the C.L.P.O. Association, you may join by contacting Kathy
Irvin (Membership) at (763) 248-0750 or email KathyIrvin@irvin.ax.net. You may also join the
meeting of the C.L.P.O. Associations June 6th Annual Meeting.

Partial Agenda
C.L.P.O. ASSOCIATION Annual Meeting
You may request a complete agenda of the meetings Current State of the C.L.P.O. by requesting a
copy from the Acting President Steve Irvin via email irvin@hotmail.com, or calling
320-248-1559.

1) VOTE ON UPDATED BY-LAWS
During Ben Becanci’s last Board meeting, it was asked by the board members that the present
BY-LAWS be reviewed. As the BY-LAWS have been updated in many years it was felt that
they needed to be reviewed and updated. The revised BY-LAWS require approval by the
C.L.P.O. members at the JUNE 6th Annual Meeting being held at CAMP FRIENDSHIP’s Sun Porch.
If you would like a copy of the BY-LAWS to REVIEW prior to the June 8th meeting, please email
Steve Irvin (acting President) at irvin@hotmail.com, or call 320-248-1559 providing your with your
name, email address or home address and one will be sent to you. Please be sure to read and come to
the Annual Board meeting to vote on a yes or no on the BY-LAWS.

2) ELECTION OF BOARD MEMBERS
Election will be held at the June 6th Annual meeting. Nominations must be submitted 10 days prior
to the meeting. Send all nominations to: Joy Carter (Secretary) via email
JoyCarter@vervias.net or mail nominations to C.L.P.O. PO BOX 476, and Annandale, MN
55302. You must be an active member of the C.L.P.O. Association to submit nominations.

Please try to attend this annual meeting; this is a critical time for the future of our association. We need
your ideas and thoughts to grow and protect our lake. Become an active part of this association.