Tay Valley Township

REPORT

COMMITTEE OF THE WHOLE
January 11th, 2022

Report #PD-2022-04
Noelle Reeve, Planner

UPDATE ON MABERLY PINES SUBDIVISION REVIEW

STAFF RECOMMENDATION

It is recommended:

"THAT, staff continue to work with the Ministry of Environment Conservation and Parks staff and the Rideau Valley Conservation Authority (RVCA) staff to address any potential implications of the Maberly Pines development on the water quality of Little Silver and Rainbow Lakes;

AND THAT, staff work with Little Silver and Rainbow Lakes residents through an Interim Control By-Law freezing development for six months while restrictions be identified to be placed on development and redevelopment of lots on those lakes (similar to the restrictions placed on Farren and Adam Lakes)."

BACKGROUND

In August 2021, Tay Valley Council directed staff to issue a Request for Proposal (RFP) for a hydrogeological review of the Maberly Pines subdivision to determine if there is sufficient water quality and quantity for the lots and that there is sufficient nitrate dilution capacity for septic systems for the lots. BluMetric Environmental Inc. provided a report to the Township that was discussed at the December 7, 2021 Committee of the Whole meeting.

The BluMetric report stated that "the subject property is suitable for development as a residential subdivision at the proposed density, if future development incorporates appropriate alternatives for wastewater treatment at lots that are not suitable for conventional systems".

DISCUSSION

The Rideau Valley Conservation Authority (RVCA) is reviewing the Blumetric study and the Planner expects to have comments this month.

In the meantime, the Little Silver and Rainbow Lake (LSRL) Association had followed up on their concerns that development in the Maberly Pines subdivision could affect their lake. They ran the Ministry of Environment Conservation and Parks (MECP) model for assessing

lake capacity (based on phosphorus nutrient loading comparing pre-development of LSRL and current development of LSRL). Their result indicates LSRL are over capacity for development. Similar to Farren and Adams lakes being determined by the Lake Capacity model to be over development a number of years ago.

The Planner is in discussion with MECP staff Victor Castro and Jon Orpana to confirm the results determined by the Lake Association. Discussions also include what the implications of LSRL being over capacity are for the lakes now and if the subdivision was built out.

Those discussions include considering the options to mitigate development, similar to the Official Plan amendments for Farren and Adam Lakes which increased the size of frontages for severances; required phosphorus removing septic systems if the 30m setback could not be met; increased vegetative buffers along the shore for new development and for redevelopment, etc.

The Planner is also in discussions with the RVCA as they provide the Township with advice on managing development from the lens of cumulative impacts within a watershed as is required by the Provincial Policy Statement.

OPTIONS TO BE CONSIDERED

Option #1 (Recommended) – Staff be directed to continue to work with the Ministry of Environment Conservation and Parks staff and the RVCA staff to address any potential implications of the Maberly Pines development on the water quality of Little Silver and Rainbow Lakes. And that staff be directed work with Little Silver and Rainbow Lakes residents through an Interim Control By-Law freezing development for six months while restrictions be identified to be placed on development and redevelopment of lots on those lakes similar to the restrictions places on Farren and Adam lakes.

Option #2 – Staff only work with the Ministry of Environment Conservation and Parks staff and the RVCA staff to address any potential implications of the Maberly Pines development on the water quality of Little Silver and Rainbow Lakes.

FINANCIAL CONSIDERATIONS

None at this time.

STRATEGIC PLAN LINK

Economic Development: The Maberly Pines subdivision offers potential new economic development.

Environment: Tay Valley continues to be known for its environmental policies and practices. Our residents have access to clean lakes and a healthy, sustainable environment.

CLIMATE CONSIDERATIONS

Extremes of temperatures will affect shallow, manmade lakes like Little Silver and Rainbow more than deeper, coldwater lakes so additional measures to protect their water quality may be required.

CONCLUSIONS

The Planner concludes that further discussions with the Ministry of Environment staff and RVCA staff are required to fulfill the Provincial Policy Statement Section 2.2.1 a) direction to, “protect, improve or restore use the quality and quantity of water by using the watershed as the ecologically meaningful scale for integrated and long-term planning”.

ATTACHMENTS

Attachment A – Lake Capacity Handbook Worksheet for Little Silver and Rainbow lakes
Attachment B – Watershed boundaries for Little Silver and Rainbow lakes

Prepared and Submitted By:

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Noelle Reeve,
Planner

Approved for Submission By:

Amanda Mabo

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Acting Chief Administrative Officer/Clerk

Attachment A – Lake Capacity Handbook Worksheet Little Silver and Rainbow lakes

Lakeshore Capacity Model — Little Silver Lake

Anthropogenic Supply

Shoreline Development Type	Number	Usage (capita years/yr)	
Permanent	17	2.56	
Extended Seasonal	0	1.27	
Seasonal	68	0.69	
Resort	0	1.18	
Trailer Parks	0	0.69	
Youth Camps	0	0.125	kg/capita/yr
Campgrounds/Tent trailers/RV parks	0	0.37	
Vacant Lots of Record	49	1.27	
Retention by soil (Rs) (0-1)	0		

Catchment

Lake Area (Ao)	86.0	ha	
Catchment Area (Ad)	860.0	ha	
Wetland	15.0	%	
Cleared	10.0	%	

Upstream Lakes

Hydrological Flow

Mean annual runoff	0.400	m/yr
Lake outflow discharge (Q)	3784000	m3/yr
Areal water loading rate (qs)	4.40	m/yr
Inflow 1		m3/yr
Inflow 2		m3/yr
Inflow 3		m3/yr

Natural Loading

Atmospheric Load	14.36	kg/yr
Runoff Load	93.48	kg/yr

Upstream Loading

Sedimentation

Is the lake anoxic?	n	
Settling velocity (v)	12.4	m/yr
In lake retention (Rp)	0.74	

Monitoring Data

Years of spring TP data	20	
Average Measured TPso	12.00	µg/L
Measured vs. Predicted TPso	8.7	%
Is the model applicable?	y	
Over or under predicted?	over	

Modeling Results

TPlake	12.38	µg/L
TPout	11.83	µg/L
TPso	13.04	µg/L
TPfuture	15.49	µg/L

Phosphorus Thresholds

TPbk	7.81	µg/L
TPbk+40	10.93	µg/L
TPbk+50	11.71	µg/L
TPbk+60	12.49	µg/L

*if TPbk+40% < TPlake < TPbk+60% cell is orange

*if TPlake > TPbk+60% cell is red

No. of allowable residences to reach capacity:

# Permanent OR	at capacity
# Extended seasonal OR	at capacity
# Seasonal cottages OR	at capacity

Anthropogenic Loading

Current Anthropogenic Load	63.09	kg/yr
Future Anthropogenic Load	106.12	kg/yr

Areal Load Rate

Current Total Areal Loading Rate (L_T)	198.76	mg/m2/yr
Future Total Areal Loading Rate (L_{FT})	248.80	mg/m2/yr

Attachment B– Watershed Boundaries for Little Silver and Rainbow Lakes