

## 2017 Survey of Otter Lake and Upper Otter Creek Residents

### *YOUR OPINION IS NEEDED!!*

Subject: The Township of Rideau Lakes Municipal Services Committee is considering calls for the replacement of the culvert under Otter Lake Road that services Otter Creek. As the only outlet from Otter Lake, the design and performance of this culvert may have a role in the use and enjoyment of Otter Lake and Otter Creek and of the overall ecology of the system as identified in the Otter Lake Sustainable Lake Plan. Any action to change the existing culvert design must first receive approval from the Rideau Valley Conservation Authority and this would be preceded by an engineering study to determine the upstream and downstream effects of the change. To this end waterfront residents are being asked their opinion of potential changes.

Preamble: The existing culvert was installed about 1960 replacing a bridge located eastward along the road and this replacement changed the course of the creek slightly. Although there are no known design notes of the original bridge, it is presumed that the bridge was wider and deeper than the replacement culvert with no significant restrictions to the natural flow of the creek.

Hydrologists from the RVCA have determined that the existing culvert performs within normal parameters for a culvert of this design assuming no obstructions from beaver activity or other objects. They have further documented that as the water level increases there is a 'head-loss' effect which essentially means that the culvert and roadbed hold water back when it is at a high level usually experienced in the spring. At full capacity the estimated head-loss is 25 cm or about 10 inches. In real terms, this would have the effect of extending the duration of high water during the spring freshet for a period of several days as the water is released more slowly than it would otherwise do if there was no head loss effect. During more normal water levels, such as that usually seen from late spring through the fall, the head loss is negligible and has no significant effect on water flow through the culvert.

Identified in the Sustainable Lake Plan, Otter Creek is a valuable fish habitat and spawning area, it is a navigable waterway under common law, and is used for recreation by Otter Lake residents. It is home to many plant and animal species in and near the waterway. It is further identified that beaver activity in some key locations in the upper reaches of the creek may at times increase water levels in the lake and creek side properties especially in the spring. The Township of Rideau Lakes contracts with a licenced trapper to legally remove beavers if they are found in the culvert and also at a right-of-way downstream which is governed by the municipality. In addition to the municipal actions there are some landowners adjacent to the creek and on the lake which financially support legal trapping downstream from the culvert in two key locations. This is done to minimize flooding of land and shorelines along the creek and lake. The legal trapping season is restricted under Ontario law to the period from October 28 to April 15 and all trapping activities are managed by the Rideau Valley Conservation Authority.

Given that the existing culvert is almost 60 years old the expectation is that it may be replaced in the near future and the question will arise whether it should be replaced with a unit having the same flow characteristics as the existing one or with one that is either larger or smaller. The 2006 and 2015 OLLA surveys indicate that residents are highly interested in shoreline preservation, moderately concerned

about the fluctuation in water levels, but not very interested in managing water levels to a specific level through the use of a weir or dam. Previous surveys did not ask questions related to a change in culvert size or design, thus the reason for this request.

Otter Lake and surrounding residents provide significant tax revenue for the municipality and your lake association believes that taxpayers should have a voice in this decision. Your participation in this survey is welcomed!

Based on this information please answer the following questions about how the municipality should proceed on the subject of a culvert replacement:

Question 1:

Please identify which option best describes your opinion:

Assuming ecological and environmental factors are considered and monitored, the Township of Rideau Lakes and their partner agency the Rideau Valley Conservation Authority, should design and implement a new culvert or bridge that meets ecological and environmental needs and is:

- a) Larger than the existing culvert thereby reducing the risk of spring flooding but otherwise having a negligible effect on water flow **54%**
- b) The same size as the existing culvert which is known to restrict flow to an extent in the spring but otherwise has a negligible effect on water flow **45%**
- c) Smaller than the existing design thereby further restricting flow and increasing spring flood risk and possibly prolonging high water levels **1%**

Question 2:

Maintenance of the upper reaches of Otter Creek can involve the removal of objects and nuisance beavers for the purpose of reducing the risk of flooding of land and shorelines of Otter Creek and Otter Lake. The following option best describes my position:

- a) No trapping should be allowed in Otter Creek **14%**
- b) Limited legal trapping managed by the RVCA should be conducted in key positions of Otter Creek to reduce spring flood risk **75%**
- c) Unlimited legal trapping should be encouraged in Otter Creek **10%**

Question 3: With respect to the maintenance activities as described in question #2, who should pay for these activities? It should be noted that the Township of Rideau Lakes pays the RVCA an annual stipend out of its tax base, of about \$60,000 however none of these funds are allocated to beaver management and thus all costs associated with beaver management, which in recent years has been between zero and \$810 per year, are allocated to the municipality and land owners depending on the location.

- a) I am content with the existing division of costs between the municipality and private land owners **35%**
- b) The municipality should pay for all costs related to the reduction of spring flood risk **23%**
- c) The Rideau Valley Conservation Authority should pay for all costs related to the reduction of spring flood risk **31%**
- d) No public or private money should be spent on creek maintenance or beaver management **10%**