FARLAIN LAKE
Community Association

Farlain Lake High Water Level

Town Hall Meeting at Lafontaine Community Centre

July 20, 2019 10:00 a.m. – 11:15 a.m.

SUMMARY NOTES

Panel: Elizabeth Di Chiara, President, Farlain Lake Community Association (FLCA)
Steffen Walma, Deputy Mayor, Township of Tiny and Board Chair, Severn Sound Environmental Association (SSEA)
Tim Leitch, Director of Operations, Township of Tiny
Aisha Chiandet, Water Scientist, SSEA
Tara Harvey, Assistant Hydrogeologist, North Simcoe Region Conservation Authority

Attendees: 98 community members representing 58 community properties
FLCA Board of Directors
Township of Tiny Council members and I staff

1. <u>Opening Remarks – Elizabeth Di Chiara</u>

Following the introduction of the panel, it was noted that also in attendance were members of the Tiny Township Council – Mayor George Cornell and Councillors Cindy Hastings and Gibb Wishart, Paul Cowley, President of the Federation of Tiny Township Shoreline Associations (FoTTSA), and Robert Canning, SSEA Invasive Species Coordinator.

She noted that although the high water level was a serious issue, the spread of the invasive aquatic plant Eurasian Watermilfoil was as important a priority. Volunteers were needed for the harvesting in August and those attending were asked to sign up if they hadn't already done so. She also noted that notes were being taken and after a review by the members of the panel, they would be made available to those attending.

Farlain Lake was classed as a seepage kettle lake with no discharge and any outflow was mainly through groundwater. Historically it was thought that such outflow was at the north end of the lake through to Kettle Lake and finally to Georgian Bay. However it seems that if this is the case, it has somehow been compromised. The water level was high in 2018 and did not recede significantly during the summer, then rose again in the fall to the spring level. As of January 2019 it continued to rise further until the spring level was higher than ever in the memory of the members of the community. Photos of the impact of the resultant flooding were visible in a slide show which depicted flooded boat houses, docks, some foundations and basements, dead and dying vegetation along the shoreline and loss of the beach around the lake and erosion of the shoreline.

It was noted that the water level in the Great Lakes was high and Tim Leitch noted that he had just received information that confirmed that the water level in Georgian Bay was at the highest in recorded history. Historically it has been speculated that the levels in Georgian Bay and Farlain Lake changed in a cycle and it was unknown as to whether the current situation was another cycle or a result of climate change.

The FLCA had been in ongoing discussions with both the Township and the SSEA in regards to what could be done to manage the level of water in the lake. Elizabeth emphasized the importance of a strong collaborative effort in trying to identify a strategy and extended appreciation on behalf of the FLCA to the Township and the SSEA for all their support.

She then introduced Deputy Mayor Walma who briefly outlined the format for the meeting.

2. SSEA Presentation - Aisha Chiandet

Aisha provided an extensive presentation on the lake using PowerPoint presentation (attached). The presentation was intended to provide the members of the community an understanding of the lake water, its behavior, the current water level, what impacts the water level, the hydrological water cycle, the impact of flooding, etc. Highlights included:

- Flooded septic systems could result in increased phosphorus levels of the lake water. Based on water quality data up to 2018, total phosphorus levels had not yet increased. However, this could be because of increased dilution.
- Farlain Lake sits at 209 feet above sea level with a 5 metre bank. We are composed of 60 percent seasonal residents. In our watershed there is a north and south sink that may also flow into the lake, bringing the watershed area up to 14 km^2
- Speculation as to the cause of the high water level in 2019 is an increase in precipitation and long term changes with the snowmelt. Other climate factors may have also increased the water level. There are several years of lower summer temperatures recently, and potentially decreased evaporation of a higher total rain and snowfall which contribute to greater surface runoff. Studies show that the total annual rainfall has increased since 2014 and has been highest in 2019.
- There are also geological factors that affect water level. The lake receives runoff from a moderately large watershed area. Increased precipitation levels have a large effect. The area around the lake is sandy soil so the shallow runoff goes quickly into the lake and then the lower layers of silt and clay slow down the discharge out of the lake.
- Records show that there was increased flow in the one stream feeding the lake in 2015 compared to 2011 data.
- Additional data is needed as there are gaps. We need to measure rainfall and snowfall using rain gauges and snow sticks, and record the data for analysis. We need to determine the groundwater flow level and determine how quickly water is coming into the lake.

Aisha spoke about possible mitigation strategies:

- Any drainage proposals requiring permits from Fisheries and Oceans Canada, Township and the Ministry of Natural Resources and Forestry, and the Ministry of the Environment, Conservation and Parks would be a long and costly process. Under Ministry regulations, any change in water in one area can't affect or have a negative impact on the receiving property's water amount, quality and temperature.
- Property owners should have their septic systems inspected. If wells have been impacted, well water should be tested regularly and boiled before drinking.
- Help prevent further shoreline erosion by implementing a "no wake rule" near shore.

- Permits are required for the installation of barriers such as stone and rock walls – it was noted that the Province has made provision for expediting such permits due to the flooding.
- Shoreline owners should consider replacing structures with more adaptable ones (eg floating docks).

Aisha concluded the presentation by noting that the high water levels were a result of multiple factors and at this point, very significant gaps in data existed. It was recommended that a hydrogeological study be undertaken. Property owners could assist with collecting more data by taking photos and readings of the gauge installed at the south end of the boat launch, and by collected rain and snowfall data.

3. Tim Leitch – Director of Operations for Tiny Township

Tim commented that the Township had been working with FLCA on this and other issues and would continue the relationship. As noted earlier, the Great lakes and Georgian Bay also had high water levels and subsequent flooding so the issue was not unique to Farlain Lake. Tiny Township has 57 km of shoreline property impacted by the water level along Georgian Bay.

Over the winter months this past year, cycles of rain followed by cold and then more snow results in layers of ice preventing dissipation of water into the ground. Winter weather was likely a contributing factor to water levels. Another factor was the impact of development with a significant number of larger homes, paved driveways and manicured lawns instead of the historical smaller cottages and more natural, open, sandy landscapes. This also results in less water absorption.

A "Shoreline Resilience" group had been formed to assess the impact on municipal land. The group was not only including the Georgian Bay shoreline but also Farlain Lake thanks to Tim. Subsequently the Shoreline Resilience did not include inland lakes but Tim had asked that it remain in the minutes in case other situations arose. However although the focus was on the high water levels currently, it was important to remember there had been low levels as well in the not too distant past. It was important to focus on both high and low levels, avoiding over compensating the correction of one side of the issue and adversely impacting the other. That is, taking measures that address the high water levels but then creating another problem with levels that may be too low.

Steffen Walma emphasized that the Township was listening and encouraged those present to contact the Township at council@tiny.ca with any concerns or issues.

4. Open Forum

Prior to opening the floor up to questions, Doug Kirk presented a possible solution that he and Bill Sweenie had considered and had been discussed by the FLCA Board. The solution was essentially to "reset" the historical relationship from Farlain Lake to Kettle (Second) Lake which was based on the assumption that there was a natural connection in the past with seepage from our lake to Kettle Lake and ultimately to Georgian Bay.

It had been speculated that this natural outflow may have been impacted by the installation of the road at the north end as well as the construction of additional cottages particularly at the north end, affecting the shoreline in that area. Had this natural drain been compacted by the road and, combined with climate changes, resulted in the higher water levels?

The proposed solution was to create a culvert 24 inches down that would run under Farlain Lake Rd W and E where they met at the north end, creating drainage through gravity. It would not require any

pumping or electricity. It would run 100 metres north and flow into Kettle Lake where it would then subsequently flow into Georgian Bay. It would be a low cost, self-regulating drain.

Doug noted the potential impact on property values this high water crisis could have as a result of the loss of beach and flooded dwellings. He estimated that at 200 properties with a decrease of $100K in value, a 20 million dollar loss for the Township may result. Doug challenged people to work constructively together and expressed concern that if we allowed this problem to continue and did nothing, at this rate, we would see an increase of 6 to 8 inches of water in the Lake every single year.

Note: This concept had simply been discussed by the FLCA but had not been reviewed by engineers, SSEA, the Township or related Ministries.

Response from Aisha

A culvert resulting in drainage to Kettle Lake could impact the water quality and temperature of that lake, and could even cause it to flood. She noted that there was a minimum of one year to do the environmental studies required by government agencies to allow pumping out of the lake and the impact on Farlain Lake also had to be considered.

It was also noted that setting an artificially constant level may not be the best solution in terms of the impact on wetlands within Farlain Lake and the area north of the road – ie within Awenda Park – as the health of those wetlands depended on natural fluctuations in water levels which could be changed with the drainage from the lake.

Questions and Discussion

Q: *Was it true that somehow Farlain Lake was tied to Georgian Bay and followed the same cycle – that is, when the Bay was high, Farlain Lake was high?*

It was agreed that if the Georgian Bay water table was high and if the Bay level changed, then it made sense that it would impact Farlain Lake. However it was not known by how much.

Q: *Could the underground drainage be plugged somehow?*

Farlain Lake drained through ground water flow. Where it drained historically, or how much was not known. There was no main outflow that could be blocked.

Q: *What was the water level like in Kettle (Second) Lake*?

Aisha noted that readings not taken there as it was located within the provincial park. However she indicated that she would reach out to Park officials. Visually, it didn't appear to be too high. That lake was different to Farlain Lake in that it had a stream for outflow.

However another attendee commented that she had walked around the boardwalk there and the water was up to the supports. At the far side of the lake, the water was flowing over the trail and there were areas of standing water. She felt the water was definitely higher than normal in that lake.

Q: *Could the natural drainage be plugged through vegetation etc. There is a lot of silt at the end of lake. Would dredging that help?*

Dredging would impact the natural habitat and the lake bed. It could also stir up sediment containing phosphorus, leading to algae problems which could be worse than the water level. The silt deposit was not new and the material was not likely impeding the water movement.

Q: *Before the road was built at the north end of the lake, there was thought to be a natural drainage. Had the road stopped the flow? Was an environmental study done prior to the installation of the road?*

Steffen responded that the Township could look into its historical records to see if any study was done.

Q: *Was it correct that the lake was spring fed? When swimming, one noticed that there were pockets of water where the temperatures were different.*

That is correct.

Q: *Where would you create the high water mark?*

Tim responded that it was difficult to say and the Township would need to look into the data.

Q: *Was there an issue with flooded septic systems? Can we identify which units are affected?*

The Township has an ongoing septic inspection program and that was current under way at the Lake for systems older than 10 years. However the program did not monitor septic systems continuously. Any owners who were concerned could contact the Township for an inspection. Steffen also noted that he could check with the contractor who was undertaking the inspections this year to see if any had been compromised.

Aisha noted that the water in the lake was tested annually as the FLCA participated in the Lake Partner program. Elizabeth confirmed that the FLCA was having the water tested shortly and over the summer to ensure there was no issue.

Q: *What about the dead and dying trees around the shoreline. Who was responsible for removing them as they were a safety concern?*

Tim clarified that property owners were responsible for removing trees located on their property. The Township was responsible for removing trees located on Township property based on the health of the treed and any potential safety issues.

5. <u>Closing Comments</u>

Mayor Cornell thanked those attending and emphasized that the Township was listening. He encouraged people that any ideas, questions or comments should be forwarded to the FLCA so that the Township could deal with one body, which would facilitate communication. Council members very much appreciated all the work being done by FLCA.

Elizabeth thanked the panel and guests for attending. She encouraged those with other questions, suggestions or concerns to email the FLCA at the inquiries@farlainlake.ca address and they would be forwarded to the most appropriate person to respond. She also asked that everyone not forget about the Eurasian Watermilfoil and reminded everyone of the need for volunteers to assist with the harvest in August. The FLCA will continue to send out information via the e-lerts and web site.

Responses from Mapping Exercise at Back of Room

Meeting participants were asked to use coded post-it notes to identify what damage they had experienced from the high water levels and affix the note with their address to laminated maps of the lake showing property lines. The exercise provided a "straw poll" of the impact of flooding on those in attendance which included non-FLCA members. Unfortunately not everyone had a chance to participate before the meeting started. The breakdown of the results is attached to this summary.

Although there were some "major" impacts, the majority were loss of beach and loss of vegetation, followed by damage/flooding of boathouses and other structures. One property had a compromised well and another, a flooded septic tank. Details are outlined in the attached.

The following is a list of questions arising from the meeting (in no particular order):

Aisha recommended that a hydrogeological study be undertaken. What would be involved, by who and at what cost?

Should an environmental assessment be done and if so, by who and with what resources?

Have any septic systems around the lake been compromised?

Follow-up Note from Tim: The inspections at Farlain Lake are ongoing through the summer. To date 2 issues have been identified due to high water levels.

We are doing sampling of the lake water to be tested now. If any septic systems have been compromised, how often should the sampling/testing be done?

Follow-up Note from FLCA: Testing was completed and as of the end of July all results were good.

What is the water level at Kettle Lake? (Aisha to check)

What is the feasibility of installing a culvert at the north end of the lake as Doug Kirk proposed given Aisha's comments about the risks? How do you determine at what level the culvert should be installed?

Is there a way of determining if there is currently any seepage, and if so, how much, occurring at all at the north end of the lake?

Is there a way of determining whether the installation of the road at the north end of the lake has had a negative impact on any seepage that is thought to occur? Was an environmental study done before the installation of the road? (Steffen or Tim to check)

If shoreline owners are considered to own property "up to the high water mark" - where is the "high water mark"? How is it determined?

If the above is the case, are the trees that are sitting in water and dead or dying, are they still the responsibility of the shoreline owner or is that a government responsibility at some level?

Would the township be able to assist with providing sandbags? For example if the water level was monitored over the winter and appeared to be rising similar to this year could the Township assist property owners in protecting against flooding?

What guidelines/by-laws are in place to assist people in determining what kind of barrier might be appropriate to help protect their property and possible further erosion? Can we or the Township provide information on contractors that can help with installing barriers?

The Township needs to check out the dead trees at the north end of the lake – what needs to be removed?

For the FLCA – depending on what the "next steps" might be, is there support from the members of the FLCA and members of the community for any definitive action?

Results of High Water Level Degrees of Impact Mapping Exercise

Attendees were asked to choose a coloured coded post-it note that reflected their high water level situation, identify their property address, use key words to describe their impacts, and post the information over the location of their property in the community. Four degrees of impact were provided as guidelines for the exercise. The examples for each degree of impact were subjective and only created for the mapping exercise.

MAJOR – Red
MINOR - Orange
AFFECTED – Yellow
INACCESSABLE – Green

There were twenty three (23) mapping exercise responses. This represents 40% of the approximate 58 property owners who registered. Due to the high number of people attending the Town Hall meeting, a number of attendees did not get an opportunity to participate in the impact mapping exercise.

The majority (39%) of the respondents identified their property as being Affected. They cited the loss of trees and a beach as their impacts.

Twenty six percent (26%) identified their property as having a Minor impact. Most of the respondents identified flooded boathouses as the primary issue.

Twenty two percent (22%) identified their property impact as Inaccessible. The primary impact to properties was a loss of beach sitting area.

Thirteen percent (13%) of respondents cited a Major impact to property. These impacts included a compromised well, a septic tank under water, and water in the basement.

See specific impacts on properties in the following charts.

High Water Level Degrees of Impact Mapping Exercise Summary

Impact Level	Colour Code	Address	General Comments
Major	Red	272 Farlain Lake Rd. E	• **Compromised well** • **Water in basement** • Dock damage • Loss of trees
		40 Andrew Drive	• **Septic tank under water** • Water at front door • No beach • Lost trees
		54 Andrew Drive	• **Water in basement**
Minor	Orange	121 Farlain Lake Road E.	• **Water in boathouse; structure compromised**
		126 Farlain Lake Road E.	• **Water in boathouse.** • Loss of beach
		154 Farlain Lake Road E.	• **Water in boathouse. Structure compromised; boathouse to be demolished.**
		156 Farlain Lake Road E.	• **Water in boathouse.** • Rock wall breaking up. • No beach; eroding shoreline
		108 Andrew Drive	• **Water in basement** • No beach
		9 Timcourt Drive	• **Flooded boathouse**

High Water Level Degrees of Impact Mapping Exercise Summary

Impact Level	Colour Code	Address	General Comments
Affected	Yellow	10 Andrew Drive	• **Retaining wall damage** • Loss of beach
		214 Farlain Lake Road E.	• **Loss of trees** • Loss of beach
		202 Farlain Lake Road E.	• **Dock damage**
		157 Farlain Lake Rod W.	• **Loss of trees** • Property damage
		78 Farlain Lake Road E.	• **Loss of trees** • Loss of beach
		95 & 99 Farlain Lake Road W.	• **Loss of trees** • Loss of beach
		85 Farlain Lake Road W.	• **Loss of trees** • Eroded shoreline
		31 Farlain Lake Road W.	• **Loss of trees** • Loss of beach
		25 Timcourt Drive	• **Loss of trees** • Loss of beach
Inaccessible	Green	31 Andrew Drive	• **Loss of beach sitting area**
		4 Farlain Lake Rd. E.	• **Loss of beach sitting area**
		12 Farlain Lake Rd. E	• **Loss of beach sitting area**
		56-60 Farlain Lake Rd. E.	• **Loss of beach sitting area**
		9 Blue Jay Court	• **Loss of beach sitting area**