

## District of Barriere

# REPORT TO COUNCIL

<b>Date:</b> January 23, 2023	<b>File:</b> 530.20/Rpts
<b>To:</b> Council	<b>From:</b> C. Matthews, Public Works Manager
<b>Re: Leonie Lake Dam – Update</b>	

**Background:** On February 28, 2022, CAO updated Council on the situation with the 10-year Dam safety review and potential dam decommissioning study.

**Discussion:** On behalf of the District of Barriere, TRUE Consulting met with the Province in January of 2022 during which we learned more about the dam breach process as it relates to the Provincial regulatory authority. During this meeting it was also learned that the District is 2/3 owner of a second dam located at Genier Lake. This dam is rated as a High Consequence classification structure; similar to the Leonie Lake dam. The District of Barriere is exploring the possible removal of its dam at Leonie Lake and possibly Genier Lake. The District has asked TRUE to assist with the next steps associated with this process. The District's reason for removal of Leonie Lake Dam is liability associated with the High Consequence classification and the associated operation and maintenance costs.

The scope of work associated with the removal of the Leonie Lake Dam remains under review. The reason for this uncertainty is because it is not clear which items from the Province's dam decommissioning guidelines will be applicable. The scope of the work required can only be determined once additional investigation and assessment is completed.

The process associated with dam removal is complex. A flow chart associated with the process is included in the Guidelines and is attached to this report.

As shown in Figure 1 of the Guidelines, there are multiple steps associated with removal of a dam structure. Once the dam has been removed, a request for abandonment of the associated water license can be made.

Once the District has determined whether it will decommission Leonie Lake Dam (and possibly Genier Lake Dam), written notice shall be provided to the Dam Safety Officer indicating the District's intentions. The next step will be to develop a plan for removal of the structure(s).

It was agreed that TRUE would proceed with the following two tasks such that the scope of the dam removal plan can be more clearly understood.

- 1. Bathymetric survey of the lake to determine how much volume would be released as part of the dam removal process and how much water would remain as a natural lake.*
- 2. A sediment investigation, which can be undertaken during the bathymetric survey, to determine if sediment control will be a significant factor in the removal plan.*

Once these tasks are completed, the District can use this information to determine the scope and cost of a removal plan. The District can also use this information to undertake a dam failure Consequence Classification review in the event that dam removal is determined to be cost prohibitive. The objective of the dam Consequence Classification review would be to reduce the consequence rating and thereby reduce the associated operation, maintenance and ultimately the dam safety review obligations.

To date, TRUE has been working to understand the flood inundation zone associated with a possible breach of the Leonie Lake dam. Presently, the dam is classified as High Consequence. This classification requires that the District undertake a formal Dam Safety Review every 10 years, which costs upwards of \$80K.

TRUE's preliminary findings indicate that Leonie Lake dam may be able to be changed to a Significant Consequence from a High Consequence. Unfortunately, this change in classification is not 100% certain because there is one house that would be located within the flood inundation zone in the event of a dam breach. The risk associated with that property is low because it is located within a backwater zone where the water velocities will be very low. While the risk at that one house is low, it may be enough for the Province to insist on maintaining the existing classification. However, since a formal dam breach assessment has not been completed in the past (to our knowledge) the Province may see the results as sufficient to support reducing the Consequence Rating from High to Significant. Bottom line, it is uncertain whether the Province will support adjustment to the Consequence Rating.

As a next step TRUE is suggesting that the District consider submitting an application under the next intake of the Community Preparedness Fund to complete a dam decommissioning study. They feel that the dam decommissioning study would allow the District to more accurately understand what would be involved in decommissioning the dam and what the associated decommissioning costs might be.

Meanwhile, TRUE recommends that the District present the preliminary dam breach inundation findings to the Province to formally initiate the dialogue on changing the Consequence Rating of the structure. Technically the District would be in non-compliance as the Dam Safety Review is required, however the Province may allow the District to advance next steps related to decommissioning while in non-compliance given that the District continues to make progress in this regard.

TRUE has reached out to EMBC and has confirmed that a dam decommissioning study would be eligible for consideration under the forthcoming grant program and that the actual physical decommissioning itself is also eligible for funding under this program. The study needs to be completed first, and this program could eventually fund up to \$2.0M for decommissioning of the Leonie Dam.

TRUE could prepare an application on the District's behalf. The grant submission deadline is February 24, 2023, and the program is for 100% funding. A council resolution is required to support this application.

**Summary:** Once this initial work is completed a better understanding of the scope of work can be included in the Dam removal plan and associated costs can be determined and communicated out. In addition, the District of Barriere can consider providing the Dam Safety

Officer with additional formal written notice of its intention to remove Leonie Lake (and possibly Genier Lake) Dam. Once the notice has been issued, the District may gain a better understanding of the public response, thereby informing the community engagement aspect of the work program moving forward.

**Recommendation: *WHEREAS the District is to present the preliminary Leonie Lake dam breach inundation findings to the Province in order to formally initiate the dialogue on changing the Consequence Rating of the structure;***

***THEREFORE, the District resolves to submit an application for the February 24, 2023 intake of the Community Preparedness Fund for 100% funding, with the scope of the application to complete the study associated with Leonie Lake dam decommissioning.***

Prepared by: Chris Matthews, Public Works Manager  
Reviewed by: Bob Payette, CAO

