

Project Synopsis

In the past years, property owners living adjacent to Reay Creek have raised concerns about bank erosion in the section of Reay Creek known as the Reay Creek Pond. The pond was formed by an earthen dam located approximately 220 metres downstream of Canora Road. The bank erosion has resulted in uprooted trees and loss of property.

The Victoria Airport Authority (VAA) retained Kerr Wood Leidal Associated Ltd. (KWL) to perform a preliminary investigation of the erosion in Reay Creek downstream of the airport property and to use hydraulic modelling to assess whether there have been changes in runoff from the airport land as a result of recent land development. The assessment and findings from the study are summarized as follows:

- The erosion assessment conducted based on a site visit carried out by KWL and meetings with local residents indicates that the bank erosion in Reay Creek Pond appears to be caused predominately by slumping or oozing of saturated bank soils into Reay Creek. It does not appear to be caused by bank scour during high flows and major storm events.
- A series of land developments have occurred on the airport land since VAA took over the airport's operation in 1997, but a wetland/detention pond and several bioswales/rain gardens were built by VAA to reduce the peak flow rate and to protect water quality.
- Hydraulic modelling performed on the airport's drainage system indicates that development changes on the airport land since 1997 have had minimal impacts on flood levels in Reay Creek Pond. Therefore, the airport development is not considered to have contributed to the increased erosion in Reay Creek Pond.
- The recorded rainfall data over the past 30 year was reviewed. No increases in total rainfall or rainfall intensity were found in recent years. Therefore, bank erosion in Reay Creek Pond is not related to changes in rainfall.
- The recent bank erosion could potentially be caused by the dam constructed in 1998, which may have raised water levels in Reay Creek Pond. It could also be a result of the growth of willow trees to a critical size that can no longer be supported by the saturated soils.



The conclusions from this review indicate that the airport development since 1997 is unlikely to have contributed to the current bank erosion issue in the Reay Creek Pond area. It has, however, slightly increased the peak flows and runoff volumes to Reay Creek. Future planned development could further increase the flows from the airport. In addition, ongoing development in the Town of Sidney and North Saanich could also have impacts on storm discharges into Reay Creek downstream of Reay Creek Pond. An integrated approach to stormwater management and erosion control in Reay Creek is recommended. This would address concerns throughout the Reay Creek watershed in an integrated manner with input from all jurisdictions and stakeholders.

For more detail findings of KWL's assessment, please check the two attached technical memorandums.