

Project: 17999

Date: August 19, 2017

To: Luke Dempsey, City of Kelowna

Subject: Ritchie Brook – Proposal to daylight portions of the stream

This memo has been prepared in support of the proposal by the City of Kelowna staff to daylight portions of Ritchie Brook within the Capri-Landmark Plan area.

Before the city expanded east of what is now Gordon Drive, the lands to the east were farmland and in the vicinity of what is now the Landmark area, there was a tributary to Mill Creek known as Ritchie Brook. This small stream originated in what is now the Orchard Park area and flowed west to join Mill Creek west of Burtch Road between Sutherland and Springfield. Today one can still find the last remaining open stream near Burtch Road.

When the lands surrounding the brook were farmlands, the farmers constructed ditches to contain the creek and control it through their farms and it was used as a source of water supply for irrigation as well as a drainage system to convey runoff quickly and efficiently to Mill Creek. It is interesting to note that the Guisachan Water User's Community, that was formed in 1928 and existed until 2011, used Ritchie Brook as one its water sources. As the city expanded to the east in the late 1960s and early 1970s, since the brook was a small stream and appeared to be not much more than a drainage ditch, the engineering approach of the day was to contain the water in the storm drain system underground so that the lands could be "improved" for new development. Out of sight and out of mind and so it is today.

But times are changing. As this area changes from commercial area to a mixed use area the fact that there was once a stream flowing through it has new value. In fact, across North America and around the world water is being recognized as an asset where streams that were treated as an extension of storm sewers, with the emphasis on "sewers", are being cleaned up, with buried sections opened up so that once again they are streams.

Ritchie Brook is primarily fed by groundwater, always has been since it is likely sourced from water in Mission Creek and is situated on the Mission Creek fan. It is apparent, based on the flows observed at Burtch Road, that it is still being supplied by groundwater however it also conveys storm runoff from the area east of Burtch Road to Spall Road, between Highway 97 and Springfield Road. Benefits of a daylighting project include stormwater retention, improved water quality and potential for off-stream storage for Mill Creek. (Based on the impacts from the 2017 flooding on Mill Creek, every opportunity should be taken to manage stormwater flows into the creek.)

It was no surprise that the initial public feedback to the Capri-Landmark Plan indicated strong support for a mixed commercial/residential use AND support for increased public spaces. It appears to me that including improvements to Ritchie Brook could be a central core to the redevelopment process. Water features are a major attraction for the public. If Ritchie Brook could become once again a flowing stream it could be the focal point of the redevelopment.

There are, as one would expect, provisos that come with this idea. The two fundamental factors that have to be addressed at the planning stage are the matter of sufficient sustained flow in stream and good water quality so that it would not simply be an open smelly storm sewer. These two parameters require careful review but are not insurmountable. Although the amount of flow data for the stream is currently limited, there is some data to

use in the flow analysis. The water quality data is currently very limited but that can be improved over the next few years. If additional data on water quality and water quality prove out that there is an adequate flow of sufficient quality, the daylighting project would be feasible.

As stated previously Ritchie Brook is currently part of the city's storm system and offers the opportunity to continue to be part of the natural drainage system in this area however this would require the installation of stormwater treatment systems at the outfalls to the creek as per Schedule 4, Bylaw 7900. Through the application of low impact development planning, the amount of runoff, as the area is redeveloped, could be reduced. Daylighting could also include stormwater retention in the design that would reduce the "flashiness" of the flows in the stream during rainstorms as has been done on Brandt's Creek.

The city has a number of examples where creative and innovative planning has restored or improved streams in the city, e.g. Brandt's Creek. There is also an increasing number of success stories around North America where streams that were once lost have been found again. The City of Vancouver has several successes and several more projects planned to daylight streams in the city.

A useful reference source is the document *Daylighting Streams: Breathing Life into Urban Streams and Communities* by American Rivers. A PDF is available at http://americanrivers.org/wp-content/uploads/2016/05/AmericanRivers_daylighting-streams-report.pdf. This document presents a good summary of the benefits and the challenges when considering daylighting a stream.

In closing, I am impressed with the creative and forward thinking that city staff continues to demonstrate with ideas such as Ritchie Brook. I think that there are significant social, economic and environmental benefits that will be derived from this project and I offer you my support in taking this idea forward.

A handwritten signature in black ink, appearing to read 'D.A. Dobson', with a long horizontal flourish extending to the right.

D.A. Dobson, PEng