

Southwest Calgary Ring Road

Construction Advisory

August 18, 2017

Elbow River Bridges - Update for Discovery Ridge

Concerns have been raised with the design of the bridge through the Elbow River Valley by some residents of Discovery Ridge. These concerns are largely related to the potential for flooding should another 2013-level flood take place. Alberta Transportation wants to reassure the community that ***in no case does the community of Discovery Ridge receive a back-water flooding effect due to the currently proposed bridge design.***

Risk of Flooding

The Elbow River bridge was redesigned in 2014, increasing the length of the bridge to 157 metres. This redesign provided a wider and higher waterway opening than the upstream Elbow River bridge along Highway 8 and the existing Weaselhead Road Bridge. Both of these bridges withstood the 2013 flood. This design can accommodate significant flooding events such as the 2013 flood. It complies with all relevant federal and provincial legislation.

During a flood, the backwater effect has been calculated, and can be viewed in the table below and in the attached figure to see the effect in relation to Discovery Ridge community.

Flood Event Flow Volume	Description of Event	Distance Between Backwater and Discovery Ridge
954 cubic metres/second	1-in-100-year flood event	1.6 km
1240 cubic metres/second	2013 flood rate	1.4 km
3500 cubic metres/second	Maximum theoretical flood rate	0.6 km

The above findings for the hydraulic capacity of the Elbow River Valley segment of the Southwest Calgary Ring Road have been verified by three independent professional engineering firms at three different times. More information is available on KGL's website – www.swcrrproject.com.

The Kohn-Crippen Berger report was commissioned by the City of Calgary and has satisfied the City's concerns that this bridge and associated infrastructure will not create a risk to any of Calgary's communities. A City-prepared fact sheet has been attached, and can be viewed online at <http://www.calgary.ca/Transportation/TI/Pages/Road-projects/Southwest-ring-road.aspx>.

Stormwater ponds on both ends of the bridge are designed with outlet controls to improve water quality and to function in a flood event of a similar magnitude to the 2013 Elbow River flood. These ponds are designed to provide flood storage volume previously provided by the impacted wetlands.

A Longer Bridge

Alberta Transportation has received requests to build a longer bridge, extending above and across the Elbow River Valley. This option was not selected for this project for a number of reasons:

- Safety of the travelling public would be at risk, as the longer a bridge is, the more prone it is to icing.
- A longer bridge impacts deck drainage and could result in safety issues during rain or snow events.
- Drainage of the longer bridge would be compromised, risking water quality as a result of salts and other sediments directly entering the river.
- A single-span bridge would cost hundreds of millions of dollars more to build, and the traffic requirements of this section of road would require that at least three such bridges would be built.