BF 70112 Hwy 31 Over Wabamun Ck Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.009
B = 1 m, h = 0.5 m, T_h = 2 m
Use n = 0.055

At Bank Height : Y = 0.5 m, V = 0.8 m/s, Q = 1 cms
At Channel Capacity : Y = 1.0 m, V = 1.5 m/s, Q = 3 cms

Historical Highwater Data :

No significant response was noted in July 1986. Water was over the grade in 1966 due to channel blockage from icing at 2 small culverts d/s. Icing was also reported to the bottom flange of the previous bridge in 1967. The 1966 report estimates Q = 2 – 3cms.

There are no gauges on this stream. Gauges in the area suggest large runoff events in June 1965, April 1974, April 1982, and July 1986. The largest storms in the storm database are 155mm of rainfall in June 1944, 145mm in July 1982, and 115mm in June 1965.

Basin Runoff Potential :

d = 50mm, T_p = 20hrs, q = 0.7 cms/km^2.
Gross DA = 5 km^2.
Q_p = 3 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is close to the basin runoff potential. Icing concerns may govern crossing configuration.

Recommended parameters : Y = 1.0 m, V = 1.5 m/s, Q = 3 cms.