BF 70546 Local Road Over Cardinal Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.0002
B = 5 m, h = 1.5 m, T_h = 10 m
Use n = 0.04

At Bank Height : Y = 1.5 m, V = 0.4 m/s, Q = 4 cms
At Channel Capacity : Y = 2.3 m, V = 0.5 m/s, Q = 10 cms

Historical Highwater Data :

HW was noted in 1952 (grade opened up to allow flow back into Cardinal Lake u/s), May 1965 (culverts full, Q ~ 2cms), and 1974 (over the grade, Y ~ 1.8m). A 1999 BIM report notes a HWM with Y = 1m.

There are no WSC gauges on Cardinal Creek. Gauge in the area suggest HW events in May 1974, 1977, 1978, 1979, June 1990, and April 1997. The largest event in the storm database for this area was in August 1982 with rainfall coverage of about 120mm.

Basin Runoff Potential :

d = 40mm, T_p = 20 hrs, q = 0.55 cms/km^2.
Gross DA = 573 km^2.
Q_p = 315 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is within the basin runoff potential.

Recommended parameters : Y = 2.3 m, V = 0.5 m/s, Q = 10 cms.