01/12/05

BF 73638 Highway 6 Over Kettles Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.009
B = 2 m, h = 1.5 m, T_h = 8 m
Use n = 0.055

At Bank Height : Y = 1.5 m, V = 1.6 m/s, Q = 12 cms
At Channel Capacity : Y = 2.3 m, V = 2.4 m/s, Q = 35 cms

Historical Highwater Data :

HW was observed in June 1975 (Y ~ 3.0m, drift?), June 1995 (water on road, Y ~ 4m). The 1959 design was based on Y ~ 4' (2.6m), Q~750 cfs (21cms).

Nearby WSC gauge 05AA004 (DA = 158km^2, 1910 - present) on Pincher Creek reports large events in June 1975 (Q ~ 82cms), June 1995 (Q ~ 80cms), and June 2005 (Q ~ 65cms). The largest rainfalls in the storm database for this basin are about 130mm in June 1995, 130mm in June 2002, 115mm in May 1942, 115mm in May 1951, and 110mm in June 1975.

Basin Runoff Potential :

d = 100mm, T_p = 20hrs, q = 1.4 cms/km^2.
Gross DA = 35 km^2.
Q_p = 50 cms.

Conclusion :

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

Recommended parameters : Y = 2.3 m, V = 2.4 m/s, Q = 35 cms.