BF 76364 Hwy 3 Over Crowsnest River
Hydrotechnical Summary

Channel Capacity :

S = 0.004
B = 30 m, h = 2 m, T_h = 50 m
Use AT equation

At Bank Height : Y = 2 m, V = 2.1 m/s, Q = 170 cms
At Channel Capacity : Y = 3 m, V = 2.9 m/s, Q = 350 cms

Historical Highwater Data :

HW was observed in June 1964 (Y ~ 1.8m), February 1986 (Ice Jam), and June 1995 (Y ~ 2.5 – 3m). The 1966 design was based on Y ~ 2.7m (Q ~ 230cms), based on the 1923 event.

WSC Gauge 05AA002 (DA ~ 680km^2, 1908 – 1931) reports Q ~ 175cms in June 1923. WSC Gauge 05AA008 (DA ~ 400km^2, 1910 – 1920, 1949 – Now) reports Q ~ 135cms in June 1995 (gauged at Q ~ 60cms), and Q ~ 70cms in June 1953 and 1965.

Basin Runoff Potential :

d = 80-100 mm, T_p = 20 hrs, q = 1.25 cms/km^2.
Gross DA = 685 km^2.
Q_p = 850 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations. Recommended parameters :

Y = 3.0 m, V = 2.9 m/s, Q = 350 cms.
EL 1137.0 m (4401-P)