BF 74353 Hwy 1 Over Bow River
Hydrotechnical Summary

Channel Capacity :

S = 0.002
B = 60 m, h = 2.5 m, T_h = 100 m
Use AT equation

At Bank Height : Y = 2.5 m, V = 1.9 m/s, Q = 370 cms
At Channel Capacity : Y = 3.5 m, V = 2.4 m/s, Q = 750 cms

Historical Highwater Data :

HW has been observed in 1924, 1974 (noted 1.8m above normal and rising), and 1986 with flooding in Canmore. The 1970 design was based on Y ~ 3m.

WSC Gauge 05BB001 (DA = 2210km^2, 1909 – Now) reports Q = 400cms in 1923 with many flows in the 300 to 400cms range. WSC Gauge 05BE004 (DA = 5170km^2, 1923 – 1962, 1979 – Now) reports Q = 900cms in 1932 and Q = 700cms in 1923, 1929, and 1933. WSC gauge 05BE006 (DA = 6550km^2, 1933 – 1989) reports Q = 600cms in 1933 and 1948. WSC Gauge 05BH004 (DA ~ 7860km^2, 1911 – Now) reports Q ~ 1500cms (1932), 1300cms (1929) and 1100cms (1915). Historic photos from Calgary show higher events in 1879, 1897, and 1902, with estimates of Q > 2000cms.

Basin Runoff Potential :

Gross DA = 3920 km^2, runoff potential is not applicable

Conclusion :

Historic observations govern. Recommended parameters :

Y = 3.5m, V = 2.4 m/s, Q = 750 cms
EL 1302.5m (1750-P)