BF 07870 Hwy 24 Over Bow River
Hydrotechnical Summary

Channel Capacity :

S = 0.0015
B = 100 m, h = 4.5 m, T_h = 150 m
Use AT equation

At Bank Height : Y = 4.5 m, V = 2.5 m/s, Q = 1400 cms
At Channel Capacity : Y = 5.5 m, V = 3.0 m/s, Q = 2100 cms

Historical Highwater Data :

HW has been observed in 1902 (Y ~ 6.5m), 1929 (Y ~ 6m), 1932 (Y ~ 4m), 1942 (Y ~ 5m), and 1967 (3m below bottom chord). The 1975 design was based on Y ~ 6.5m and Q = 3400cms.

WSC Gauge 05BM002 (DA = 15665km^2, 1956 – Now) reports Q ~ 2000cms (2005), 1700cms (1995), and 1200cms (1963, 1967, and 1969). WSC Gauge 05BH004 (DA ~ 7870km^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. Gauge 05BJ001 on the Elbow River (DA = 1240km^2, 1908 – Now) reports Q ~ 450cms in 1923 and 1929. Gauge 05BL024 on the Highwood River (DA = 3950km^2, 1970 – Now) reports Q ~ 1300cms (2005) and 1100cms (1995).

Basin Runoff Potential :

Gross DA = 15130 km^2, runoff potential is not applicable

Conclusion :

Historic observations govern. Recommended parameters :

Y = 6.5 m, V = 3.4 m/s, Q = 3000 cms
EL 906.5m (7163-P)