BF 81802 Hwy 2 Over Bow River
Hydrotechnical Summary

Channel Capacity:

S = 0.0018
B = 110 m, h = 4 m, T_h = 140 m
Use AT equation

At Bank Height: Y = 4.0 m, V = 2.6 m/s, Q = 1300 cms
At Channel Capacity: Y = 5.0 m, V = 3.1 m/s, Q = 2000 cms

Historical Highwater Data:

The 2000 design was based on Y ~ 6 m and Q = 3100 cms. 2013 HWM (4.1 m below bottom of girder))

WSC Gauge 05BH004 (DA = 7870 km^2, 1911 – Now)
1915, reported Q ~ 1130 cms
1923, reported Q ~ 840 cms
1929, reported Q ~ 1320 cms, stage rise ~ 3.5 m and mean depth ~ 4 m
1932, reported Q ~ 1520 cms
2013, reported Q ~ 1840 cms

WSC Gauge 05BJ001 (DA ~ 1240 km^2, 1908 – Now)
1915, reported Q ~ 240 cms
1923, reported Q ~ 330 cms
1929, reported Q ~ 380 cms
1932, reported Q ~ 310 cms
2013, reported Q ~ 700 cms

Historic photos from Calgary show higher events in 1879, 1897, and 1902, with estimates of Q > 2000 cms.

Basin Runoff Potential:

Gross DA = 10750 km^2, runoff potential is not applicable.

Conclusion:

Historic observations govern. Recommended parameters:

Y = 6 m, V = 3.5 m/s, Q = 2700 cms
EL 988.0m (18558-P)