BF 76609 Hwy 22 Over Bow River
Hydrotechnical Summary

Channel Capacity:

S = 0.0018
B = 70 m, h = 5 m, T_h = 140 m
Use AT equation

At Bank Height: Y = 5 m, V = 2.7 m/s, Q = 1400 cms
At Channel Capacity: Y = 6 m, V = 3.2 m/s, Q = 2100 cms

Historical Highwater Data:

HW has been noted in 1995 and high ice observed in 1991. The 1975 design was based on Y ~ 6m at Q = 2100cms, with 1958 high ice ~ 0.5m higher. 2013 HWM (2.3 m between NW slope protection and girder underside).

WSC Gauge 05BH005 (DA ~ 7410 km^2, 2006 – Now)
2013, reported Q ~ 1650 cms

WSC Gauge 05BH008 (DA ~ 7770 km^2, 1983 – Now)
2013, reported Q ~ 1710 cms

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

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

Basin Runoff Potential:

Gross DA = 7270 km^2, runoff potential is not applicable

Conclusion:

Historic observations govern. Recommended parameters:

Y = 5.5 m, V = 2.9 m/s, Q = 1700 cms
EL 1123.5m (5100-P)