BF 78812 Hwy 201 Over Bow River
Hydrotechnical Summary

Channel Capacity:

S = 0.0018
B = 80 m, h = 4 m, T_h = 130 m
Use AT equation

At Bank Height: Y = 4 m, V = 2.5 m/s, Q = 1000 cms
At Channel Capacity: Y = 5 m, V = 2.9 m/s, Q = 1600 cms

Historical Highwater Data:

The 1982 design was based on Y ~ 6m and Q = 2300cms. 2013 HWM (at south bank 1.1 m above P1 pile cap).

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 > 2000cms.

Basin Runoff Potential:

Gross DA = 7670 km^2, runoff potential is not applicable.

Conclusion:

Historic observations govern. Recommended parameters:

Y = 5.5 m, V = 3.0 m/s, Q = 1800 cms
EL 1075.0m (AP164-4)