# BF 78880 Hwy 2 Over Bow River
# Hydrotechnical Summary

**Channel Capacity**:

S = 0.0018
B = 90 m, h = 4 m, $T_h$ = 130 m
Use AT equation

At Bank Height: Y = 4 m, V = 2.5 m/s, Q = 1100 cms
At Channel Capacity: Y = 5 m, V = 3.0 m/s, Q = 1700 cms

**Historical Highwater Data:**

Estimated HWM of 1026.4 m in 2013 based on the post flood bridge inspection on July 7, 2013 and as-built drawings. Based on as built drawing 19259-C, the 1977 design flood EL = 1030.0 m and design Q = 3455 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

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 = 9920 $km^2$, runoff potential is not applicable

**Conclusion:**

Historic observations govern. Recommended parameters:

Y = 5.5 m, V = 3.2 m/s, Q = 2000 cms
Design flood EL = 1030.0 m (19259-C)