# BF 78572 Hwy 1 Over South Saskatchewan River
# Hydrotechnical Summary

**Channel Capacity**:

S = 0.00045
B = 180 m, h = 9 m, $T_h$ = 250 m
Use AT equation

At Bank Height: Y = 9 m, V = 2.5 m/s, Q = 4900 cms
At Channel Capacity: Y = 10 m, V = 2.7 m/s, Q = 6000 cms

**Historical Highwater Data:**

HW has been observed/estimated at this site in 1902 (Y ~ 10m, Q ~ 5700 cms), 1908 (Y ~ 9. 5m, Q ~ 5300 cms), 1953 (Y ~ 8.5 m), 1975 (Y ~ 7.5 m), 1995 (Y ~ 10 m) and 2013 (grass and debris lines observed about 2.5 m below girder bottom).

WSC Gauge 05AJ001 (DA ~ 56400 $km^2$, 1911 – Now) reports
Q ~ 5040 cms in 2013
Q ~ 5100 cms in 1995 (stage rise ~ 8 m)
Q ~ 4300 cms in 1953
Q > 3000 cms in 1923, 1929, 1953, 1975, 1995, 2005 and 2013

WSC Gauge 05AK001 (DA ~ 66000 $km^2$, 1966 – 1993) reports
Q ~ 3000 cms in 1975

Major tributaries are Oldman River (Q ~ 5000 cms) and Bow River (Q ~ 2500 cms) but coincident peaks are unlikely due to storm location and timing. The ungauged flood in 1902 is known to be significant in both basins.

**Basin Runoff Potential:**

Gross DA = 56390 $km^2$, runoff potential is not applicable

**Conclusion:**

Historic observations govern. Recommended parameters:

Y = 10.0 m, V = 2.7 m/s, Q = 6000 cms.
HW EL 664.64 (Dwg. 20268-P)



Classification: Protected A