# BF 76179N Hwy 2A Over Red Deer River
# Hydrotechnical Summary

**Channel Capacity** :

S = 0.0011
B = 90 m, h = 5 m, $T_h$ = 140 m
Use AT equation

At Bank Height : Y = 5 m, V = 2.4 m/s, Q = 1400 cms
At Channel Capacity : Y = 6 m, V = 2.7 m/s, Q = 2000 cms

**Historical Highwater Data :**

HW was observed in 1976 (IJ, no flooding). The 1981 design drawing was based on Y ~ 5.5m (open water, est. 1915), and Y ~ 7 m for ice jam.

WSC Gauge 05CC002 (DA = 11,600km$^2$, 1913 – Now) reports Q ~ 1900cms in June 1915 (gauged at Q ~ 1600cms, stage increase ~ 5m), and Q ~ 1500cms in August 1954 and June 2005 (~20% attenuation from Dickson Dam). Gauge 05CD004 (DA = 15,100km$^2$, 1944 – 1958) reports Q ~ 1500cms in August 1954.

**Basin Runoff Potential :**

DA = 11560km$^2$, beyond range of basin runoff potential technique.

**Conclusion :**

Historic observations govern. Recommended parameters :

Y = 6.0 m, V = 2.7 m/s, Q = 2000 cms.
HW EL 854.0 m (Dwg. AP149-3)