BF 75186 Hwy 33 Over Pembina River
Hydrotechnical Summary

Channel Capacity :

S = 0.0003
B = 70 m, h = 6.5 m, T_h = 110 m
Use AT equation

At Bank Height : Y = 6.5 m, V = 1.7 m/s, Q = 1000 cms
At Channel Capacity : Y = 7.5 m, V = 1.9 m/s, Q = 1300 cms

Historical Highwater Data :

HW was observed in 1965 (Y ~ 6.5m), April 1974 (Y ~ 8m), and July 1986 (Y ~ 7.5m, flow measurement estimate ~ 1400cms).

WSC Gauge 07BB002 (1914 – 1923, 1955 – Now, DA = 4420 km^2) reports Q = 1250cms in 1986 (gauged at Q = 850cms, 5m stage rise). WSC gauge 07BC002 (1957 – Now, DA = 13100 km^2) reports Q ~ 1000cms in April 1974 and July 1986, with a stage rise of ~ 7m.

Basin Runoff Potential :

Gross DA = 7375 km^2 (exceeds range of application of runoff depth method)

Conclusion :

Historical observations govern. Recommended parameters :

Y = 8.0 m, V = 2.0 m/s, Q = 1500 cms
EL 611.0 m (2655-P), EL 641.5m geodetic