BF 74358 Hwy 753 Over Pembina River
Hydrotechnical Summary

Channel Capacity :

S = 0.0007
B = 40 m, h = 6.5 m, T_h = 70 m
Use AT equation

At Bank Height : Y = 6.5 m, V = 2.3 m/s, Q = 800 cms
At Channel Capacity : Y = 7.5 m, V = 2.6 m/s, Q = 1100 cms

Historical Highwater Data :

HW was noted in July 1986 with Y ~ 8m (1m below deck and over the north approach).

WSC gauge 07BA001 (1956 – 1993, DA = 2900 km^2) reports Q = 1100cms (gauged at Q = 600cms, stage rise = 6m) in July 1986. Gauge 07BB002 (1914 – 1923, 1955 – Now, DA = 4420 km^2) reports Q = 1250cms (gauged at Q = 850cms, 5m stage rise). Other large events are reported in July 1965, June 1972, June 1980, and July 1982. The storm database notes 150mm (July 1986), 120mm in July 1982, and 105mm in August 1969 and June 1972.

Basin Runoff Potential :

Gross DA = 3030 km^2 (exceeds range of application of runoff depth method)

Conclusion :

Historical Observations govern. Recommended parameters :

Y = 8.0m, V = 2.7 m/s, Q = 1250 cms
EL 49.5m (1424-P), EL 854.0m (AENV)