BF 06653 Local Road Over Vermilion River
Hydrotechnical Summary

Channel Capacity :

S = 0.0005
B = 8 m, h = 3.5 m, T_h = 20 m
Use n = 0.04

At Bank Height : Y = 3.5 m, V = 1.0 m/s, Q = 45 cms
At Channel Capacity : Y = 4.5 m, V = 1.2 m/s, Q = 85 cms

Historical Highwater Data :

HW has been reported at this site in spring of 1943 (damage to approach and deck), and 1956 (photo of water over deck, Y = 4.6m, no apparent headloss). HW was noted at BF00229 u/s in 1948 (hospital flooded), 1963 (water 7' below deck), and 1974 (1 – 1.5m below curb, Y = 5.0m).

WSC gauge 05EE003 (1968 – 1986, DA = 1560 km^2) reports Q = 77cms in April 1974 (actual gauging and stage info not available) and gauge 05EE009 (1987 – Now, DA = 1630 km^2) reports Q = 43cms in April 1997 (gauged at Q = 38cms, stage increase = 2.8m). The largest storms in the database for this basin are about 100mm in June 1965 and June 1973.

Basin Runoff Potential :

d = 35mm, T_p = 40hrs, q = 0.25 cms/km^2.
Gross DA = 1592 km^2.
Q_p = 400cms.

Conclusion :

The channel capacity estimate is consistent with historic information and within the basin runoff potential.

Recommended Parameters : Y = 4.5 m, V = 1.2 m/s, Q = 85 cms.