BF 01031 Hwy 36 Over Vermilion River
Hydrotechnical Summary

Channel Capacity :

S = 0.00011
B = 20 m, h = 3 m, T_h = 45 m
Use AT equation

At Bank Height : Y = 3 m, V = 0.6 m/s, Q = 60 cms
At Channel Capacity : Y = 4 m, V = 0.8 m/s, Q = 110 cms

Historical Highwater Data :

HW was observed in April 1956 (Y ~ 4m u/s, over approaches), April 1963 (Y ~ 3.5m), and April 1974 (Y ~ 4m u/s). The 1988 design was based on Y ~ 3.5m (Q ~ 120cms).

WSC gauge 05EE001 (DA = 5740 km^2, 1958 – 1970, 1976 - 1983) reports Q ~ 40cms (April 1963, 1979). WSC gauge 05EE007 (DA = 7270 km^2, 1979 – Now) reports Q ~ 50cms (April 1990, May 1997). WSC gauge 05EE003 (DA = 1560 km^2, 1968 – 1986) reports Q ~ 80cms in April 1974. WSC gauge 05EE009 (DA = 1630 km^2, 1987 – Now) reports Q ~ 45cms in April 1997.

Basin Runoff Potential :

Gross DA = 3230 km^2 (beyond range of technique)

Conclusion :

The channel capacity estimate is consistent with historic HW observations. Recommended Parameters :

Y = 4 m, V = 0.8 m/s, Q = 110 cms.
EL 602.0 m (13236-C)