BF 72641 Hwy 40 Over McLeod River
Hydrotechnical Summary

Channel Capacity :

S = 0.009
B = 20 m, h = 1.5 m, T_h = 45 m (LIDAR – compound channel)
Use AT equation

At Bank Height : Y = 1.5 m, V = 2.2 m/s, Q = 110 cms
At Channel Capacity : Y = 2.3 m, V = 3.2 m/s, Q = 260 cms

Historical Highwater Data :

HW was observed in 1969 (Y ~ 1.7m > WL, west grade washed out), and 1980 and 1986 (~ 2.7m < deck, Y ~ 1.8m).

WSC Gauge 07AF013 (DA = 330km^2, 1984 – Now) reports Q ~ 100cms (stage increase ~ 1.6m) in 1989, 1999, and 2005 (max gauging ~ 45cms). Gauge 07AF002 (DA ~ 2550km2, 1954 – Now) reports Q ~ 1250cms in June 1980 and August 1969, and Q ~ 600cms in July 1986 and July 1999. The storm database suggests large rainfall events in Aug. 1969 and June 1980 (~130mm) and July 1986 and 1987 (~100mm).

Basin Runoff Potential :

d ~ 70 – 80mm (Q ~ 1cms/km^2)
DA = 285km^2
Q_p ~ 285cms

Conclusion :

Channel capacity governs and is consistent with historic observations.

Recommended parameters : Y = 2.3m , V = 3.2 m/s, Q = 260 cms.