BF 00439 Local Road Over Blindman River
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 18 m, h = 5.0 m, T_h = 40 m
Use AT equation

At Bank Height : Y = 5.0 m, V = 1.7 m/s, Q = 250 cms
At Channel Capacity : Y = 6.0 m, V = 2.0 m/s, Q = 370 cms

Historical Highwater Data :

HW was observed at this site in April 1974 (ice and drift lodged against bridge, HW to 0.1m below deck, Y = 5.5m), July 1986 (HW to subdeck, Y = 5.5m), and July 1990 (HWM 1.7m above wheelguard, Y ~ 7.5m, likely based on drift caught on truss members). Ice damage was also noted at this site in 1920 and 1943.

WSC gauge 05CC008 (DA = 352km^2, 1965 – Now) reports Q = 330cms in July 1990, with other large events in July of 1981, 1982, and 1986 (190 – 230cms). The rating curve shows a stage rise of just under 5m for the July 1990 event, with Q based on extrapolation (highest gauged event Q = 114cms, Y = 2.5m) and may be in the 260 – 300cms range. Gauge 05CC001 (DA = 1790km^2, 1916 – 1922, 1962 - Now) reports Q = 395cms in July 1990. The largest storm in the database for this area is July 1990 with 120mm of rainfall (centred over upper basin), followed by July 1982 and 1986 with about 110mm.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 1410 km^2.
Q_p = 1170 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations (except for 1990, likely drift influenced HWM) and is within the basin runoff potential.

Recommended parameters : Y = 6.0 m, V = 2.0 m/s, Q = 370 cms.