BF 71081 Hwy 40 Over Waiparous Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.009
B = 12 m, h = 1.8 m, T_h = 22 m
Use AT equation

At Bank Height : Y = 1.8 m, V = 2.7 m/s, Q = 80 cms
At Channel Capacity : Y = 2.7 m, V = 3.7 m/s, Q = 180 cms

Historical Highwater Data :

HW was noted in June 1990 with Y = 1.0m and scour at the south headslope. A HWM was reported in 1991 at 1.75m above a gravel bar u/s (Y = 2.7m), and another in 2000 (Y = 1.1m). A 1973 report notes a HWM about 1.2 – 1.5m above low water and the bridge was designed for Q = 200cms and Y = 2.1m. A 1970 report noted a HWM with Y = 2.1m and a 1975 report noted a HWM with Y = 1.4m.

WSC Gauge 05BG006 (DA = 334km^2, 1966 – Now) is located d/s and reports HW events in June 1990 (Q = 150cms, Y = 1.8m from rating curve), May 1967 (Q = 110cms), and June 1995 (Q = 93cms). The largest gauged flow is Q = 68cms in June 1970 (Y = 1.2m, T = 25m, A = 25m^2). WSC gauge 05BG009 (DA = 230km^2, 1977 – 1984) reports a highest flow of Q = 48cms in July 1983. The largest storms in the database for this area are June 1928 with 115mm of rainfall, and June 1970 with 105mm.

Basin Runoff Potential :

d = 75 mm, T_p = 20 hrs, q = 1.05 cms/km^2
Gross DA = 211 km^2.
Q_p = 220 cms.

Conclusion :

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

Recommended parameters : Y = 2.7 m, V = 3.7 m/s, Q = 180 cms.