BF 07104 Local Road Over Redwater River
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 8 m, h = 2.2 m, T = 15 m
Use n = 0.04

At Bank Height : Y = 2.2 m, V = 0.8 m/s, Q = 20 cms
At Channel Capacity : Y = 3.2 m, V = 1.1 m/s, Q = 45 cms

Historical Highwater Data :

Cross sections from 1912 and 1916 note HWM with Y = 2.1 – 2.4m. Reports from 1952, undated, and 1969 note HWM close to the deck (Y ~ 3.0m). Scour at the abutments was noted in 1979.

WSC Gauge 05EC007 (DA = 469 km^2, 1985 – 1995) reports Q = 27cms in April 1985. Gauge 05EC005 (DA = 1550km^2, 1978 – Now) and 05EC003 (DA = 1490km^2, 1973 – 1978) report Q = 115cms in April 1974 and 65cms in April 1997. The largest storm for this area in the database is July 1953 with about 150mm of rainfall.

Basin Runoff Potential :

d = 40 mm, T_p = 20 hrs, q = 0.55 cms/km^2.
Gross DA = 242 km^2.
Q_p = 133 cms.

Conclusion :

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

Recommended parameters : Y = 3.2 m, V = 1.1 m/s, Q = 45 cms.