BF 13843 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 :

HW was noted in April 1943 (bridge washed out), spring 1956 (south approach fill partially washed out), April 1958 (over grade to north), and April 1971 (over grade). Reports from 1952, 1955, and 1970 note HWM close to the deck (Y ~ 2.5m).

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 = 224 km^2.
Q_p = 123 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.