BF 71069 Local Road Over Heart River
Hydrotechnical Summary

Channel Capacity :

S = 0.001
B = 13 m, h = 4.0 m, T_h = 26 m
Use AT equation

At Bank Height : Y = 4.0 m, V = 1.9 m/s, Q = 140 cms
At Channel Capacity : Y = 5.0 m, V = 2.3 m/s, Q = 230 cms

Historical Highwater Data :

A 1982 report notes a HWM 2.4m below the deck. The 1986 design was based on Y = 4.8m and Q = 133cms.

WSC gauge 07HA003 (DA = 1960km^2, 1963 – Now), reports Q = 168cms in April 1997, with other high runoff events in August 1964, April 1965, and April 1974. The largest gauging was for Q = 139cms with a stage rise of 2.6m. There are no storms in the database that exceed 100mm of rainfall for this area.

Basin Runoff Potential :

d = 50 mm, T_p = 20 hrs, q = 0.7 cms/km^2.
Gross DA = 1650 km^2.
Q_p = 1150 cms.

Conclusion :

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

Recommended parameters : Y = 5.0 m, V = 2.3 m/s, Q = 230 cms.