BF 76856 Local Road Over Mackay River
Hydrotechnical Summary

Channel Capacity :

S = 0.001
B = 40 m, h = 4 m, T_h = 70 m
Use AT equation

At Bank Height : Y = 4 m, V = 1.9 m/s, Q = 400 cms
At Channel Capacity : Y = 5 m, V = 2.3 m/s, Q = 650 cms

Historical Highwater Data :

The 1966 design was based on Y ~ 5m (noted backwater from ice jams on the Athabasca River) and high ice to Y ~ 5.5 - 6m. An April 1971 ice jam is reported to Y ~ 3.5m. A 1976 report notes a HWM with Y ~ 2m.

WSC Gauge 07DB001 (DA = 5570km^2, 1973 – Now) reports Q= 370cms in May 1985, Q = 350cms in April 1997, Q = 310cms in June 1973 (gauged at Q = 295cms, 3.5m stage rise), and Q = 280cms in April 1974.

Basin Runoff Potential :

Gross DA = 5413 km^2, exceeds range of runoff depth method application.

Conclusion :

Channel capacity estimate is consistent with historic observations. Recommended parameters :

Y = 5 m, V = 2.3 m/s, Q = 650 cms.
EL 265.5 m (17983-P)