BF 76480 Hwy 511 Over Belly River
Hydrotechnical Summary

Channel Capacity :

S = 0.0015
B = 60 m, h = 4.0 m, T_h = 80 m
Use AT equation

At Bank Height : Y = 4.0 m, V = 2.3 m/s, Q = 650 cms
At Channel Capacity : Y = 5.0 m, V = 2.8 m/s, Q = 1000 cms

Historical Highwater Data :

HW has been noted at this site in June 1975 (Y = 4.5m), 1986 (high ice, Y = 3.6m), and June 1995 (over grade to the south, Y = 5.1m). The 1967 design was based on Y = 4.8m.

WSC gauge 05AD002 (DA = 1210km^2, 1911 – 1984) is located u/s on Belly River and reports events in June 1975 (Q = 400cms), June 1964 (Q = 330cms), June 1953 (Q = 300cms), and June 1951 (Q = 270cms). Gauge 05AD008 (DA = 1730, 1916 – 1966) and 05AD028 (DA = 1630km^2, 1967 – Now) are located on Waterton River just u/s of the confluence and report HW events in June 1937 (Q = 500cms), June 1942 (Q = 590cms), June 1953 (Q = 430cms), June 1964 (Q = 480cms), June 1975 (Q = 760cms), and June 1995 (Q = 1090cms). The largest gauged flow is Q = 620cms in 1975, with the 1995 event being a sharp stage rise that was not gauged.

Basin Runoff Potential :

Area covers 150, 100, 40, and 35mm ranges.
Gross DA = 3300 km^2.

Conclusion :

Historic observations govern. Recommended parameters :

Y = 5.0 m, V = 2.8 m/s, Q = 1000 cms
EL 931.5 m (4622-P)