BF 75217 Hwy 63 Over Athabasca River
Hydrotechnical Summary

Channel Capacity :

S = 0.0005
B = 350 m, h = 5 m, T_h = 450 m
Use AT equation

At Bank Height : Y = 5 m, V = 1.8 m/s, Q = 3500 cms
At Channel Capacity : Y = 6 m, V = 2.1 m/s, Q = 5000 cms

Historical Highwater Data :

HW associated with an ice jam have been noted in 1875 (Y ~ 15m), 1936 (Y ~ 13m), 1928 (Y ~ 11.5m), 1885 and 1977 (Y ~ 11m). Recent designs for open water have been based on Y ~ 6m and Q ~ 5000cms.

WSC gauge 07DA001 (DA = 133,000km^2, 1957 – Now) minus Clearwater flows (Gauge 07CD001, DA ~ 30,000km^2, 1957 – Now) shows Q ~ 4500cms in 1971 and 1986, and Q ~ 4000cms in 1960 and 1980. WSC gauge 07BE001 (DA ~ 74600km^2, 1913-1931, 1938 – Now) reports Q ~ 5700cms in 1954, Q ~ 5000cms in 1944, Q ~ 4500cms in 1971, 1980, and 1986.

Basin Runoff Potential :

Gross DA = 101,000km^2, exceeds range of application of runoff depth method.

Conclusion :

Historic observations govern. Recommended parameters :

Y = 6m, V = 2.1 m/s, Q = 5000 cms
EL 244.0m (4455-P)