BF 77538 Local Road Over Lesser Slave Lake Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.0003
B = 3 m, h = 1.0 m, T_h = 5 m
Use n = 0.045

At Bank Height : Y = 1.0 m, V = 0.3 m/s, Q = 1 cms
At Channel Capacity : Y = 1.5 m, V = 0.4 m/s, Q = 3 cms

Historical Highwater Data :

A 1971 report notes a HWM with Y = 1.5m (over grade at small culvert crossing) and estimates Q = 5cms. A 2000 BIM report notes a HWM with Y = 2.3m (includes water ponded at small depression at bridge).

WSC gauges on Lesser Slave Lake and Lesser Slave River indicate that years of highest levels and flows are 1935, 1936, 1965, 1977, 1979, 1996, and 1997. Lake levels range from about 575.6m to 578.2m. Between June and July 1971, there was a relatively sharp rise of over 1.1m in lake levels (peak at 577.8m). The largest storms in the database are 115mm in June 1993 and 95mm in July 1979 and June 1983.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 16 km^2.
Q_p = 13 cms.

Conclusion :

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

Recommended parameters : Y = 1.5 m, V = 0.4 m/s, Q = 3 cms.