BF 01331 Local Road Over Mosquito Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.001
B = 8 m, h = 2.3 m, T_h = 15 m
Use n = 0.04

At Bank Height : Y = 2.3 m, V = 1.1 m/s, Q = 30 cms
At Channel Capacity : Y = 3.3 m, V = 1.5 m/s, Q = 65 cms

Historical Highwater Data :

HW was noted in spring 1908 (east approach washout), April 1920 (washout, ice run), and January 1986 (Y = 1.7m). A 1960 report notes a HWM with Y = 3.3 – 3.6m). The 2004 design was based on Y = 2.7m and Q = 60cms. HW was noted at BF72551 d/s in April 1948 (Y ~ 3.0m), June 1953 (Y ~ 3.5m), and March 1960 (Y ~ 2.5m).

Gauge 05AC001 (DA = 522 km^2, 1909 – 1919) reports Q ~ 70cms in 1915. Gauge 05AC031 (DA = 838km^2, 1982 – Now) reports Q = 60 cms in March 1996 and Q = 65cms in June 2005 with a stage rise ~ 3.0m. The largest storms in the storm database are about 130mm of rainfall in June 1963, and 120mm in June 1926, 1929, 1932, and 1992.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.85 cms/km^2.
Gross DA = 485 km^2.
Q_p = 410 cms.

Conclusion :

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

Recommended parameters : Y = 3.3 m, V = 1.5 m/s, Q = 65 cms.