BF 70100 Local Road Over North Saskatchewan River Tributary Hydrotechnical Summary

Channel Capacity :

S = 0.004
B = 3 m, h = 1.6 m, T_h = 6 m
Use n = 0.05

At Bank Height : Y = 1.6 m, V = 1.2 m/s, Q = 8 cms
At Channel Capacity : Y = 2.4 m, V = 1.9 m/s, Q = 22 cms

Historical Highwater Data :

HW was noted in 1978 (sideslope failure, Q = 17cms), July 1986 (over grade, sideslope failure, d/s scour hole), and July 1990 (1.6m pipe washed out), and July 2001 (0.3m above the crown of the 1.6m pipe, noted in BIM). A 2005 assessment estimates Q = 30cms and Y = 2.6m.

There are no WSC gauges on this stream. Gauges in the area suggest HW events in July 1982, 1986, 1990 and 2001. The largest events in the storm database are July 1982 (150mm), and June 1944, June 1965, and August 1989 (110mm).

Basin Runoff Potential :

d = 60mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 57 km^2.
Q_p = 47 cms.

Conclusion :

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

Recommended parameters : Y = 2.4 m, V = 1.9 m/s, Q = 22 cms.