BF 74367 Hwy 22 Over North Saskatchewan River Tributary Hydrotechnical Summary

Channel Capacity :

S = 0.0025
B = 2 m, h = 1.6 m, T_h = 5 m
Use n = 0.05

At Bank Height : Y = 1.6 m, V = 0.9 m/s, Q = 5 cms
At Channel Capacity : Y = 2.4 m, V = 1.4 m/s, Q = 15 cms

Historical Highwater Data :

HW was noted in July 1978 (over grade, Q = 20cms), and July 1986 (inlet submerged). A d/s scour hole was repaired in 1991, and a 1999 BIM report notes a HWM with Y = 2.0m. A 1954 report estimated Q = 14cms, and a 2001 assessment was based on Y = 2.8m and Q = 22cms.

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 = 40 km^2.
Q_p = 33 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 = 1.4 m/s, Q = 15 cms.