BF 13994 Local Road Over North Saskatchewan River Tributary Hydrotechnical Summary

Channel Capacity :

S = 0.005
B = 4 m, h = 1.5 m, T_h = 7 m
Use n = 0.045

At Bank Height : Y = 1.5 m, V = 1.6 m/s, Q = 13 cms
At Channel Capacity : Y = 2.3 m, V = 2.3 m/s, Q = 30 cms

Historical Highwater Data :

HW was noted in May 1954 (abutment washout, poor alignment resulting from unfinished channel work). A 1957 report notes a HWM with Y = 2.7 – 3m. A 1962 report notes a HWM with Y = 3.6m. A drift jam was noted in 1966. A 1975 report notes a HWM with Y = 2.4m and estimates Q = 13 – 15cms. A 1977 survey notes a HWM with Y = 1.5m. A 1978 report estimates Q = 13cms. A 2002 photo shows ponding to Y = 1.5m.

There are no WSC gauges on this stream. Gauges in the area suggest runoff events in April 1974, July 1982, July 1986, and July 1990. The storm database indicates 165mm of rainfall for this area in June 1944, with about 145mm in July 1982, and 125mm in July 1990.

Basin Runoff Potential :

d = 50mm, T_p = 20hrs, q = 0.7 cms/km^2.
Gross DA = 45km^2.
Q_p = 31 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is close to the basin runoff potential. Higher levels may result from BW.

Recommended parameters : Y = 2.3 m, V = 2.3 m/s, Q = 30 cms