BF 76362 Local Road Over East Prairie River
Hydrotechnical Summary

Channel Capacity :

S = 0.0005
B = 30 m, h = 6.0 m, T_h = 45 m
Use AT equation

At Bank Height : Y = 6.0 m, V = 2.0 m/s, Q = 450 cms
At Channel Capacity : Y = 7.0 m, V = 2.2 m/s, Q = 600 cms

Historical Highwater Data :

HW has been observed in July 1988 (Y = 5.0m), June 1993 (Y = 5.0m), and June 1996 (drift in superstructure, Y = 7.0m based on BF76134 u/s). The 1969 design was based on Y = 5.8m, and the 1992 design (DD1440, not built) was based on Y = 7.0m. The 2002 BIM inspection reports a HW mark with Y = 6.0m.

WSC Gauge 07BF001 (DA = 1460km^2, 1921 – 1930, 1959 – Now) reports Q = 780cms in June 1996 (gauged at Q = 330cms, 3.3m stage rise). The storm database notes 130mm in June 1993, 120mm in June 1996, and 110mm in June 1971 and June 1975.

Basin Runoff Potential :

d = 70 mm, T_p = 20 hrs, q = 1.0 cms/km^2.
Gross DA = 1230 km^2.
Q_p = 1270 cms.

Conclusion :

The channel capacity values are consistent with historic observations, and are within the range of basin runoff supply.

Recommended parameters : Y = 7.0 m, V = 2.2 m/s, Q = 600 cms.