BF 02143 Hwy 8 Over Elbow River
Hydrotechnical Summary

Channel Capacity :

S = 0.0035
B = 40 m, h = 2.5 m, T_h = 70 m
Use AT equation

At Bank Height : Y = 2.5 m, V = 2.3 m/s, Q = 300 cms
At Channel Capacity : Y = 3.5 m, V = 3.0 m/s, Q = 600 cms

Historical Highwater Data :

HW was observed in 1932 (Y ~ 3m) and 1967 (Y ~ 2.5m), 1990 (Y ~ 2.5m), and 1995 (Y ~ 3m).

WSC Gauge 05BJ001 (DA = 1230km^2, 1908 – Now, d/s of dam built in 1932) reports Q ~ 460cms (June 1923, gauged at Q ~ 410cms, stage rise ~ 3m), Q ~ 440cms (June 1929), and Q ~ 330cms (June 1932). Routing calculations at dam suggest Qin > 600cms (June 1932). WSC Gauge 05BJ010 (DA = 1180km^2, 1979 – Now, 1995 missing) reports Q ~ 160cms (May 1990). WSC Gauge 05BJ005 (DA = 1220km^2, 1934 – 1977, u/s of dam) reports Q ~ 270cms (May 1967). WSC Gauge 05BJ004 (DA = 790km^2, 1935 – Now) reports Q ~ 380cms (June 1995, stage rise = 2.5m, gauged at Q ~ 180cms, stage rise ~ 1.7m), and Q ~ 290cms (May 1967). WSC gauge 05BJ006 (DA = 440km^2, 1967 – Now) reports Q ~ 180cms (June 1995, stage rise ~ 1.8m), Q ~ 160cms (May 1967) and Q ~ 130cms (May 1990).

Basin Runoff Potential :

Gross DA = 1000 km^2 (beyond range of technique)

Conclusion :

The channel capacity estimate is consistent with historic observations. Recommended parameters :

Y = 3.5 m, V = 3.0 m/s, Q = 600 cms.
EL 306.0 m (5296-P)