BF 07301 Local Road Over Bear River
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 8 m, h = 2.5 m, T_h = 16 m
Use n = 0.035

At Bank Height : Y = 2.5 m, V = 1.0 m/s, Q = 30 cms
At Channel Capacity : Y = 3.5 m, V = 1.4 m/s, Q = 65 cms

Historical Highwater Data :

HW was noted in June 1990 with Y = 2.8m, and in June 1968 with headslope repair required. A 1951 report notes a HWM with Y = 3.0m. A 1987 BIM report notes a HWM with Y = 2.5m.

It is likely that the peak flow at this site is due to runoff from Grande Prairie Ck, with a second lower peak from outflow from Bear Lake. Gauge 07GE003 (DA = 150km^2, 1970 – Now) on Grande Prairie Ck reports a highest Q = 64cms in June 1990. Gauge 07GE004 (DA = 1190 km^2, 1969 – Now) has recorded spot levels on Bear Lake u/s with the highest levels in May 1974 and May 1997. Gauge 07GE005 (DA = 1510km^2, 1983 – 1986) on Bear River near this site reports a highest Q = 20cms. The June 1990 storm covered lower parts of the basin with 140mm and upper parts with about 100mm. Other large events are the June storms of 1964 and 1965.

Basin Runoff Potential :

d = 60mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 1625 km^2.
Q_p = 1350 cms.

Conclusion :

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

Recommended parameters : Y = 3.5 m, V = 1.4 m/s, Q = 65 cms.