BF 06920 Local Road Over Bear River
Hydrotechnical Summary

Channel Capacity :

S = 0.00055
B = 8 m, h = 3.7 m, T_h = 18 m
Use n = 0.045

At Bank Height : Y = 3.5 m, V = 0.9 m/s, Q = 40 cms
At Channel Capacity : Y = 4.5 m, V = 1.1 m/s, Q = 70 cms

Historical Highwater Data :

Jun 15, 1990 – Deck to HW = 0.6m (Y = 4.4m, V = 0.6m/s). Unreferenced BIM HW mark (reported in 1987) shows Y = 4.0m. Headslope repair reported in 1966, 1972, and 1982. Bridges u/s report additional HW observations in 1937, Spring 1963, and June 1968.

Gauge 07GE004 (DA = 1190 km^2, 1969 – Now) has recorded spot levels on Bear Lake just d/s with the highest levels in May 1974 and May 1997. There is no reference to a 1974 event on bridges on this stream, but there is a reference to the 1997 event at some of the bridges further upstream and at gauge 07GE007 (u/s of La Glace Lake, DA = 180 km^2, operating 1985 - 1999) where the highest recorded flow of 36cms was recorded on April 18, 1997. The 1990 event was not large at this gauge, but is the largest recorded at gauge 07GE006 on Colquhoun Creek (DA = 130 km^2, operating 1983 to 1995) with a peak flow of 32cms on June 12, 1990. Colquhoun Creek joins Bear River just u/s of BF06920. The June 1990 storm covered lower parts of the basin with 140mm and upper parts with about 100mm. A slight shift in location would have resulted in much higher input. 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 = 890 km^2.
Q_p = 740cms.

Conclusion :

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

Recommended parameters : Y = 4.5 m, V = 1.1 m/s, Q = 70 cms.