BF 13073 Highway 22 Over Lobstick River
Hydrotechnical Summary

Channel Capacity:

S = 0.0004
B = 15 m, h = 3.5 m, T_h = 35 m
Use AT equation

At Bank Height : Y = 3.5 m, V = 1.2 m/s, Q = 100 cms
At Channel Capacity : Y = 4.5 m, V = 1.4 m/s, Q = 180 cms

Historical Highwater Data:

HWM was noted as 3.7 m above streambed in 1925 when the bridge washed out. There is no other note of significant highwater until 1986. The HWM was noted as 771.99 m approximately 3 m above streambed.

The bridge is located approximately 40 km downstream of Chip Lake. Chip Lake has had a gauge in operation since 1972. Drainage area of the gauge is estimated at 1200 km^2. There are records for two additional WSC gauges on the Lobstick River, 07BB001 and 07BB003. Gauge 07BB001, near Entwistle, has a total drainage area of approximately 1650 km^2 and operated from 1913 to 1923. It does not have any significant flows on record. Gauge 07BB003 was located on Highway 22 at the bridge site. It has a drainage area of 1550 km2 and operated from 1954 to 1986. The highest events on record for this gauge occurred in 1965, 1974 and 1986 with the largest event recorded in 1965 with an estimated discharge of 96 cms.

The largest storm in the storm database occurred in July 1988 with about 140 mm of rainfall. The second largest storm occurred in June 1996 with about 115 mm of rainfall.

Basin Runoff Potential :

If the influence of Chip Lake is ignored the following discharge results:

d = 60 mm, T_p = 20 hrs, q = 0.85 cms/km^2.
Gross DA = 1604 km^2.
Q_p = 1360 cms.

Incorporating the routing that was done for BF 06973 the following discharge is estimated:

$Q_{total} = Q_{lake} + Q_{river}$
Q_{total} = 60+ 0.85 * 350 = 360 cms

Conclusion :

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

Recommended parameters : Y = 4.5 m, V = 1.4 m/s, Q = 180 cms.