BF 06973 Local Road Over Lobstick River
Hydrotechnical Summary

Channel Capacity :

S = 0.0001 (too flat for profile tool, based on hydraulic response)
B = 20 m, h = 2.0 m, T_h = 35 m
Use AT equation

At Bank Height : Y = 2.0 m, V = 0.5 m/s, Q = 25 cms
At Channel Capacity : Y = 3.0 m, V = 0.7 m/s, Q = 60 cms

Historical Highwater Data :

HW was measured in 1986 at 1.5m below deck (Y = 2.7m). There is a note that a resident believes the water was higher in 1944 and 1953. A 1955 report notes a HWM 1.5m below the bridge at that time (Y = 2.1m).

Lobstick River is gauged further downstream (gauge 05BB003 and 05BB001) and Chip Lake (~2.7km u/s) is gauged at 05BB008. The Chip Lake gauge has been in operation since 1972, although not continuous. The highest levels on record are in July 1986 (1.6m rise, d = 80mm total runoff), May 1974, and June 1980. The flows at the downstream gauges corresponding to the peak lake levels are in the 20 to 40cms range. Higher flows have been recorded downstream, but these are due largely to runoff from the area downstream of the lake. The storm database indicates that the largest storm in this area was in June 1944 with about 150mm over the basin. The next largest storms were July 1986 and June 1965 with about 130mm, and August 1989 with about 110mm.

Basin Runoff Potential :

Chip Lake DA = 1200 km^2, d/s DA = 10 km^2. Chip Lake surface area = 75km^2. Assuming the 1944 event to be about 20mm more than 1986, the lake level would rise another 0.3m. Extrapolating the outlet rating curve results in Q_{out} = 60cms.

Conclusion :

Chip Lake dominates the runoff response at this site. Design conditions are based on extrapolation of observed 1986 conditions to assumed 1944 conditions.

Recommended parameters : Y = 3.0 m, V = 0.7 m/s, Q = 60 cms.