BF 71684 Local Road Over Sturgeon River
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 18 m, h = 2.5 m, T_h = 30 m
Use AT equation

At Bank Height : Y = 2.5 m, V = 1.1 m/s, Q = 70 cms
At Channel Capacity : Y = 3.5 m, V = 1.5 m/s, Q = 130 cms

Historical Highwater Data :

HW was observed in spring 1956 with the bridge washing out. The replacement structure was designed based on Y = 3.6m.

WSC gauge 05EA005 (DA = 1910km^2, 1968 – Now + some < 1930) reports Q = 140cms in April 1974 (gauged at peak, stage increase of 3.7m), and Q = 100cms in April 1971. Gauge 05EA001 (DA = 3350km^2, 1914 – Now, some years missing) reports Q = 115cms in April 1974 (gauged at peak, stage increase = 2.8m) and Q = 90cms in April 1948. The largest event in the storm database for this area was in June 1953 with rainfall coverage of about 130mm.

Basin Runoff Potential :

d = 45mm, T_p = 20 hrs, q = 0.6 cms/km^2.
Gross DA = 1340 km^2.
Q_p = 800 cms.

Conclusion :

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

Recommended parameters : Y = 3.5 m, V = 1.5 m/s, Q = 130 cms.