BF 09267 Local Road Over West Arrowwood Creek
Hydrotechnical Summary

Channel Capacity :

S = 0.0013
B = 10 m, h = 3.0 m, T_h = 16 m
Use AT equation

At Bank Height : Y = 3.0 m, V = 1.8 m/s, Q = 70 cms
At Channel Capacity : Y = 4.0 m, V = 2.2 m/s, Q = 120 cms

Historical Highwater Data :

HW was noted in April 1948 (wingwall washout, ice, Y ~ 3.5m), May 1951 (approach washout), June 1952 (Y ~ 4.0 – 4.5m, approach washout), and March 1985 (ice jam just d/s, water to top of u/s bevel). Reports from 1973 and 1979 note HWM with Y ~ 4.5m. The 1983 structure was designed for Q = 112cms.

WSC gauge 05BM014 (DA = 775km^2, 1967 – Now) reports Q = 90cms in March 1997 (gauged at Q = 74cms, stage increase = 2.6m), with Q = 82cms in April 1971 and Q = 72cms in March 1967. No storms have been recorded over this basin with rainfall exceeding 100mm.

Basin Runoff Potential :

d = 35mm, T_p = 40hrs, q = 0.25 cms/km^2.
Gross DA = 650 km^2.
Q_p = 160 cms.

Conclusion :

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

Recommended parameters : Y = 4.0 m, V = 2.2 m/s, Q = 120 cms.