BF 02391 Local Road Over Pigeon Lake Creek
Hydrotechnical Summary

Channel Capacity :

S = 0.0004
B = 6 m, h = 2 m, T_h = 12 m
Use n = 0.04

At Bank Height : Y = 2.0 m, V = 0.6 m/s, Q = 10 cms
At Channel Capacity : Y = 3.0 m, V = 0.9 m/s, Q = 25 cms

Historical Highwater Data :

HW was noted in 1982 to about 0.9m below the deck (Y = 1.7m, Q = 11cms). A 1965 report notes a HWM over the grade (Y ~ 2.0m, Q = 12 – 15cms).

WSC gauge 05FA019 (DA = 377km^2, 1979 – 1995) reports Q = 51cms in July 1990 (highest gauging unknown, rating curve suggests stage increase of 2.5m), and Q = 10 – 12cms in April 1981, 1982, and 1985. The largest storms in the storm database for this area are 125mm in July 1982 and July 1990, and 115mm in June 1944.

Basin Runoff Potential :

d = 50 mm, T_p = 20 hrs, q = 0.7 cms/km^2.
Gross DA = 342 km^2.
Q_p = 240 cms.

Conclusion :

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

Recommended parameters : Y = 3.0 m, V = 0.9 m/s, Q = 25 cms.