BF 08840 Local Road Over Paddle River
Hydrotechnical Summary

Channel Capacity :

S = 0.0012
B = 14 m, h = 3.8 m, T_h = 28 m
Use AT equation

At Bank Height : Y = 3.8 m, V = 1.9 m/s, Q = 150 cms
At Channel Capacity : Y = 4.8 m, V = 2.3 m/s, Q = 250 cms

Historical Highwater Data :

HW was observed in August 1989 (0.2m below deck u/s, 0.6m below deck d/s, Y = 4.5 – 5m, over approaches, headslope erosion). A 1958 report notes a HWM over the north approach (Y ~ 3 – 3.5m).

Gauge 07BB011 (DA = 260km^2, 1973 – Now) was damaged during the 1989 event, but the published peak Q (225cms) suggests Y ~ 6m at peak. Q ~ 70cms is reported in July 1986 and July 1990. Gauge 07BB004 (DA = 625km^2, 1963 – Now) suggests HW in June 1965 with Q ~ 150cms. Dam routing calculations suggest that the peak inflow to the dam in August 1989 (DA ~ 620km^2, just u/s, built in 1984) was about Q = 250cms and the outflow was Q = 45cms. The largest storms in the storm database are about 155mm June 1944, 135mm in June 1965 and August 1989, and 100mm in July 1990.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.85 cms/km^2.
Gross DA = 540 km^2.
Q_p = 460 cms.

Conclusion :

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

Recommended parameters : Y = 4.8 m, V = 2.3 m/s, Q = 250 cms.