# BF 02027 Hwy 23 Over West Arrowwood Creek
# Hydrotechnical Summary

**Channel Capacity** :

S = 0.0012
B = 9 m, h = 2.5 m, $T_h$ = 15 m
Use n = 0.04

At Bank Height : Y = 2.5 m, V = 1.3 m/s, Q = 40 cms
At Channel Capacity : Y = 3.5 m, V = 1.7 m/s, Q = 80 cms

**Historical Highwater Data :**

HW was noted in 1928 (bridge washed out), and 1948 (Y = 3.3m, abutment washout, 1.2m scour). Rock was added in 1953 to prevent scour. A 1959 design was based on Y = 3.3m and Q = 50 – 70cms, and a 1997 design was based on Y = 3.8m and Q = 85cms.

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 = 375 km$^2$.
$Q_p$ = 95 cms.

**Conclusion :**

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

Recommended parameters : Y = 3.5 m, V = 1.7 m/s, Q = 80 cms.