

Project Name: Pownal
 Stream Name: East Branch Royal River
 Bridge Name: Pownal Center Bridge
 Route No. 9
 Analysis by: AWMann

PIN: 16741.00
 Town: Pownal
 Bridge No. 5646
 USGS Quad:
 Date: 9/15/2009

Peak Flow Calculations by USGS Regression Equations (Hodgkins, 1999)

Enter data in blue cells only!

| | km ² | mi ² | ac |
|----------------------|-----------------|-----------------|---------|
| A | 51.62 | 19.932 | 12756.2 |
| W | 4.61 | 1.781 | 1139.8 |
| P _c | 409806 | 4861992 | |
| County | Cumberland SE | | |
| pptA | 44.4 | | |
| SG | 0.00 | | |
| A (km ²) | 51.62 | | |
| W (%) | 8.94 | | |

Enter data in [mi²]

Watershed Area
 Wetlands area (by NWI)

watershed centroid (E, N; UTM 19N; meters)
 choose county from drop-down menu
 mean annual precipitation (inches; by look-up)
 sand & gravel aquifer as decimal fraction of watershed A

Worksheet prepared by:

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Conf Lvl 0.67

| Ret Pd T (yr) | Peak Flow Estimate | | |
|------------------|--------------------|------------------------------------|--------|
| | Lower | Q _T (m ³ /s) | Upper |
| 1.1 | | 8.71 | |
| 2 | 12.63 | 17.63 | 24.61 |
| 5 | 19.55 | 27.39 | 38.38 |
| 10 | 24.49 | 34.65 | 49.02 |
| 25 | 30.93 | 44.38 | 63.69 |
| 50 | 35.85 | 52.04 | 75.54 |
| 100 | 40.99 | 60.22 | 88.47 |
| 500 | 53.09 | 80.51 | 122.10 |

| Q _T (ft ³ /s) |
|-------------------------------------|
| 307.7 |
| 622.5 |
| 967.3 |
| 1223.3 |
| 1567.2 |
| 1837.5 |
| 2126.4 |
| 2842.9 |

Reference:

Hodgkins, G., 1999.
 Estimating the magnitude of peak flows for streams
 in Maine for selected recurrence intervals
Water-Resources Investigations Report 99-4008
 US Geological Survey, Augusta, Maine

$$Q_T = b \times A^a \times 10^{-ww}$$