



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
16 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0016

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID A. COLE  
COMMISSIONER

May 21, 2010  
Subject: **Pownal**  
State Project No: 016741.00  
**Amendment No. 2**

Dear Sir/Ms:

The following question has been received:

**Question:** Can you provide a hydrology report for the Route 9 Pownal project?

**Response:** The Hydrology report has been posted to the web and enclosed as an attachment.

Consider this information prior to submitting your bid on May 26, 2010.

Sincerely,

A handwritten signature in cursive script, appearing to read "Scott Bickford", written in dark ink.

Scott Bickford FOR  
Contracts & Specifications Engineer



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**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 <sup>2</sup>	mi <sup>2</sup>	ac
A	51.62	19.932	12756.2
W	4.61	1.781	1139.8

**P<sub>c</sub>** 409806 4861992  
**County** Cumberland SE  
**pptA** 44.4  
**SG** 0.00

**A (km<sup>2</sup>)** 51.62  
**W (%)** 8.94

**Conf Lvl** 0.67

Enter data in [mi<sup>2</sup>]

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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Ret Pd	Peak Flow Estimate	Lower	Upper
T (yr)	Q <sub>T</sub> (m <sup>3</sup> /s)	Q <sub>T</sub> (ft <sup>3</sup> /s)	
1.1	8.71	307.7	622.5
2	12.63	967.3	1223.3
5	19.55	1567.2	1837.5
10	24.49	2126.4	2842.9
25	30.93		
50	35.85		
100	40.99		
500	53.09		

**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

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