Appendix B - Haight Creek

PEAK DISCHARGES FOR SELECTED FREQUENCIES

Report prepared for: autodelin
Time: 10:45 Date: 06/07/2007

Watershed Name: +

PEAK DISCHARGE CALCULATION BY PREDICTION EQUATION

Peak discharges for the ungaged watershed have been determined from a set of hydrologic prediction equations derived using generalized least squares. The models relate peak discharges to physical watershed characteristics such as area and precipitation. The equations take this form:

```
Q(T)=(10.0^C0(T))*(CHR1^C1(T))* . . . (CHRn^Cn(T))
-------------------------------------------------
   Q(T)  =  Peak Discharge for Return Period T
   Cx(T) =  Coefficient x for Return Period T
   CHR1  =  The First Watershed Characteristic
   CHRn  =  The nth Watershed Characteristic
-------------------------------------------------
   Note: * = multiplication, ^ = exponentiation
```

For this ungaged watershed, peak discharges were estimated using prediction equations for this flood region:

COASTAL WATERSHEDS

Prediction Equation for Coastal Watersheds

```
-----------------------------------------------------------------------
Q(T)=(10.0^C0(T))*(X1^C1(T))*(X2^C2(T)*(X3^C3(T))*(X4^C4(T))*(X5^C5(T))
-----------------------------------------------------------------------
    Q(T)    =  Peak Discharge for Return Period T
    Cx(T)   =  Coefficient x for Return Period T
    X1      =  Drainage area                          (square miles)
    X2      =  2-year 24-hour precipitation intensity (inches)
    X3      =  Soil permeability                      (inches/hour)
    X4      =  Mean maximum January temperature       (degrees F)
    X5      =  Soil storage capacity                  (inches)
-----------------------------------------------------------------------
               Note: * = multiplication, ^ = exponentiation
```

Prediction Equation Coefficients

Return Period T	Coefficients C0(T)	C1(T)	C2(T)	C3(T)	C4(T)	C5(T)
2	-1.296E+00	9.489E-01	1.360E+00	-1.576E-01	1.280E+00	-4.421E-01
5	-1.881E+00	9.385E-01	1.272E+00	-2.234E-01	1.738E+00	-5.026E-01
10	-2.095E+00	9.324E-01	1.226E+00	-2.552E-01	1.926E+00	-5.267E-01
20	-2.248E+00	9.273E-01	1.190E+00	-2.812E-01	2.069E+00	-5.438E-01
25	-2.291E+00	9.258E-01	1.179E+00	-2.888E-01	2.109E+00	-5.484E-01
50	-2.410E+00	9.215E-01	1.151E+00	-3.111E-01	2.223E+00	-5.605E-01
100	-2.516E+00	9.176E-01	1.126E+00	-3.319E-01	2.325E+00	-5.701E-01
500	-2.723E+00	9.099E-01	1.078E+00	-3.770E-01	2.527E+00	-5.855E-01

Required Watershed Characteristics

Drainage area	(square miles)	3.760
2-year 24-hour precipitation intensity	(inches)	2.370

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Soil permeability	(inches/hour)	2.680
Mean maximum January temperature	(degrees F)	46.500
Soil storage capacity	(inches)	0.130

WARNING: WATERSHED CHARACTERISTICS ARE OUT OF BOUNDS

One or more of the required watershed characteristics is an extrapolation from the set used to develop the regression equations.

PEAK DISCHARGES HAVE BEEN CALCULATED, BUT SHOULD BE USED WITH CAUTION.

COASTAL WATERSHEDS
Bounds on Required Watershed Characteristics

Drainage area	(square miles)	0.28	to	673.40
2-year 24-hour precipitation intensity	(inches)	2.52	to	5.80
Soil permeability	(inches/hour)	0.72	to	4.76
Mean maximum January temperature	(degrees F)	42.41	to	53.88
Soil storage capacity	(inches)	0.10	to	0.23

PEAK DISCHARGE ESTIMATES BASED ON PREDICTION EQUATIONS

Return Period years	Peak Flow cfs	95% Confidence Lower Limit cfs	Upper Limit cfs
2	165	94.9	287
5	242	143	409
10	295	173	503
20	348	201	605
25	365	209	638
50	418	234	747
100	471	256	869
500	596	302	1180

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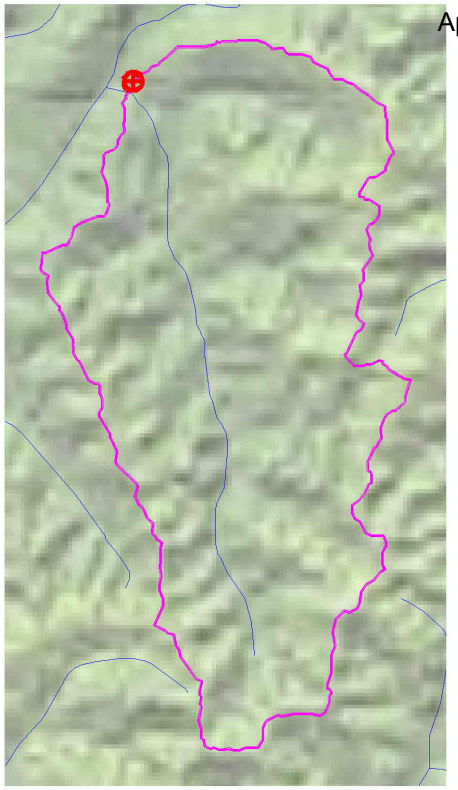
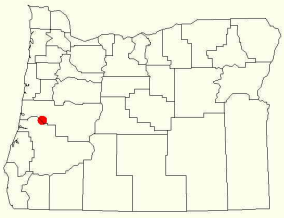


Pour point

Watershed boundary

N



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