

Revitalised FSR/FEH rainfall runoff method

Spreadsheet application report

User name	Mark Crussell	Catchment name	Barne Brake Creek	Date/time modelled	17-Feb-2011 11:03
Company name	URS/Scott Wilson	Catchment easting	244800	Version	1.3
Project name	D123356 Devonport EfW	Catchment northing	57500		
		Catchment area	0.91		

Summary of model setup

Design rainfall parameters		Loss model parameters		Routing model parameters		Baseflow model parameters	
Return period (yr)	100	C_{max} (mm)	426	T_p (hr)	0.27	BL (hr)	9.5
Duration (hr)	0.6	C_{ini} (mm)	128	U_p	0.65	BR	1.61
Timestep (hr)	0.04	α factor	0.83	U_k	0.8	BF₀ (m³/s)	0.1
Season	Winter						

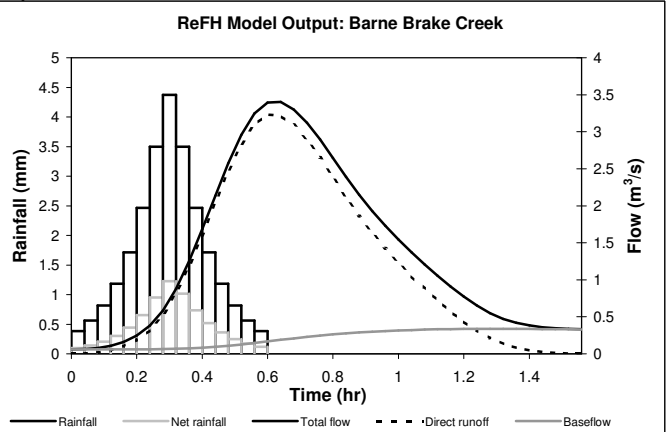
Summary of results

FEH DDF rainfall (mm)	40.7	Peak rainfall (mm)	4.4
Design rainfall (mm)	25.6	Peak flow (m³/s)	3.4

Results

Series	Design Rainfall	Net rainfall	Direct runoff	Baseflow	Total flow
Unit	mm	mm	m ³ /s	m ³ /s	m ³ /s
0.00	0.4	0.1	0.0	0.1	0.1
0.04	0.6	0.1	0.0	0.1	0.1
0.08	0.8	0.2	0.0	0.1	0.1
0.12	1.2	0.3	0.0	0.1	0.1
0.16	1.7	0.4	0.1	0.1	0.2
0.20	2.5	0.7	0.2	0.1	0.2
0.24	3.5	0.9	0.3	0.1	0.4
0.28	4.4	1.2	0.5	0.1	0.6
0.32	3.5	1.0	0.8	0.1	0.9
0.36	2.5	0.7	1.2	0.1	1.3
0.40	1.7	0.5	1.6	0.1	1.7
0.44	1.2	0.4	2.0	0.1	2.1
0.48	0.8	0.3	2.5	0.1	2.6
0.52	0.6	0.2	2.8	0.1	3.0
0.56	0.4	0.1	3.1	0.1	3.2
0.60	0.0	0.0	3.2	0.2	3.4
0.64	0.0	0.0	3.2	0.2	3.4
0.68	0.0	0.0	3.1	0.2	3.3
0.72	0.0	0.0	2.9	0.2	3.1
0.76	0.0	0.0	2.7	0.2	2.9
0.80	0.0	0.0	2.4	0.3	2.6
0.84	0.0	0.0	2.1	0.3	2.4
0.88	0.0	0.0	1.9	0.3	2.1
0.92	0.0	0.0	1.6	0.3	1.9
0.96	0.0	0.0	1.4	0.3	1.7
1.00	0.0	0.0	1.2	0.3	1.5
1.04	0.0	0.0	1.0	0.3	1.4
1.08	0.0	0.0	0.9	0.3	1.2
1.12	0.0	0.0	0.7	0.3	1.1
1.16	0.0	0.0	0.6	0.3	0.9
1.20	0.0	0.0	0.4	0.3	0.8
1.24	0.0	0.0	0.3	0.3	0.7
1.28	0.0	0.0	0.2	0.3	0.5
1.32	0.0	0.0	0.1	0.3	0.5
1.36	0.0	0.0	0.1	0.3	0.4
1.40	0.0	0.0	0.0	0.3	0.4
1.44	0.0	0.0	0.0	0.3	0.4
1.48	0.0	0.0	0.0	0.3	0.3
1.52	0.0	0.0	0.0	0.3	0.3
1.56	0.0	0.0	0.0	0.3	0.3
Total (mm)	25.6	7.2	7.2	1.4	8.6

Graph



Audit comments

Catchment

Error checking data in catchment descriptor file 'U:\Devonport Further Work\FEH CD\CSV\X 44800 57500 Barne Brake Creek.csv'
 No catchment descriptor file stored - catchment descriptors manually entered
 Catchment descriptor file exported from CD ROM version 3
 Catchment descriptor file exported on 29-Nov-2010 15:41
 BFIHOST value of 0.583 used
 PROPWET value of 0.48 used
 SAAR value of 1087 used
 DPLBAR value of 0.98 used
 DPSBAR value of 101.2 used
 URBEXT value of 0.4478 used
 C value of -0.029 used
 D1 value of 0.42243 used
 D2 value of 0.29182 used
 D3 value of 0.37313 used
 E value of 0.29844 used
 F value of 2.48222 used

Rainfall

Recommended season is Summer, as URBEXT => 0.125
 Recommended season overridden by the user
 ReFH design standard Seasonal Correction Factor of 0.66 applied
 ReFH design standard Areal Reduction Factor of 0.95 applied

Loss Model

C_{max} derived from catchment descriptors
 ReFH design standard C_{ini} used
 ReFH design standard α factor used

Routing Model

T_p derived from catchment descriptors
 ReFH design standard used for U_p

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ReFH design standard used for U_k

Baseflow Model

BL derived from catchment descriptors

BR derived from catchment descriptors

ReFH design standard BF_0 used