Summary of model setup

Design rainfall parameters
- Return period (yr): 100
- Duration (hr): 12.25
- Timestep (hr): 0.25
- Season: Winter

Loss model parameters
- $C_{max}$ (mm): 298
- $T_p$ (hr): 2.41
- $U_s$ (m^3/s):
- $BL$ (hr): 27.7
- $U_k$ (m^3/s):
- $BF$ (m^3/s):

Routing model parameters
- $\alpha$ factor (m^3/s):
- $U_p$ (m^3/s):

Baseflow model parameters
- $\beta$ factor:
- $U_s$ (m^3/s):

Summary of results

FEH DDF rainfall (mm): 93.3
Peak rainfall (mm): 3.9

Design rainfall (mm): 71.8
Peak flow (m^3/s): 13.9

Graph

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ReFH Model Output:
Revitalised FSR/FEH rainfall runoff method
Spreadsheet application report

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<th>C3</th>
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<th>E1</th>
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</table>

Total (mm) 71.8 36.5 36.5 16.9 53.4

Audit comments

Model run with ReFH dll version 1.4.005

Catchment
Catchment descriptors imported from file
Catchment descriptor file = 'BovertonDS_B4265.csv'
Catchment descriptor file exported from CD ROM version 2
Catchment descriptor file exported on 08-Dec-2023 15:10
BFIHOST value of 0.408 used
URBEXT value of 0.0199 used
PROPWET value of 0.52 used
SAAR value of 1016 used
DPLBAR value of 2.84 used
DPSBAR value of 20 used
BL value of 0.39732 used
D1 value of 0.39732 used
D2 value of 0.32849 used
D3 value of 0.30042 used
E value of 0.28461 used
F value of 2.52066 used

Rainfall
Recommended season is Winter, as URBEXT = 0.125
ReFH design standard Seasonal Correction Factor of 0.80 applied
ReFH design standard Areal Reduction Factor of 0.97 applied

Loss Model
C_ch derived from catchment descriptors
ReFH design standard C_ch used
ReFH design standard α factor used

Routing Model
T_p derived from catchment descriptors
ReFH design standard used for U_p
ReFH design standard used for U_k

Baseflow Model
BL derived from catchment descriptors
BF derived from catchment descriptors
ReFH design standard BF used
Revitalised FSR/FEH rainfall runoff method

Spreadsheet application report

User name: Richard Breakspear
Company name: Entec
Project name: St Athan

Date/time modelled: 01-May-2009 10:36
Version: 1.4

Summary of model setup

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<thead>
<tr>
<th>Design rainfall parameters</th>
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<th>Baseflow model parameters</th>
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<tr>
<td>Winter</td>
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Summary of results

- FEH DDF rainfall (mm): 155.6
- Peak rainfall (mm): 6.4
- Design rainfall (mm): 119.8
- Peak flow (m$^3$/s): 23.9

Graph showing rainfall, net rainfall, total flow, direct runoff, and baseflow over time.
Revitalised FSR/FEH rainfall runoff method

Spreadsheet application report

<table>
<thead>
<tr>
<th>19.25</th>
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Audit comments

Model run with ReFH dll version 1.4.0005

Catchment

Catchment descriptors imported from file
Catchment descriptor file = ‘BovertonDS_B4265.csv’
Catchment descriptor file exported from CD ROM version 2
Catchment descriptor file exported on 08-Dec-2023 15:10
BFDHOST value of 0.408 used
BFDHOST changed from imported value of 0.834 to 0.408
PROPWET value of 0.52 used
SAAR value of 1016 used
DPLBAR value of 2.84 used
DPSBAR value of 20 used
URBEXT value of 0.0199 used
C value of -0.02502 used
D1 value of 0.39732 used
D2 value of 0.32849 used
D3 value of 0.30042 used
E value of 0.28461 used
F value of 2.52066 used

Rainfall

Recommended season is Winter, as URBEXT = 0.125
ReFH design standard Seasonal Correction Factor of 0.80 applied
ReFH design standard Areal Reduction Factor of 0.97 applied

Loss Model

C_{ini} derived from catchment descriptors
ReFH design standard C_{ini} used
ReFH design standard \alpha factor used

Routing Model

T_{p} derived from catchment descriptors
ReFH design standard used for T_{p}
ReFH design standard used for U_{p}

Baseflow Model

B_{L} derived from catchment descriptors
B_{R} derived from catchment descriptors
ReFH design standard B_{F} used
Revitalised FSR/FEH rainfall runoff method

Spreadsheet application report

User name Brear
Company name Nant y Stepsau
Project name 1000 yr flow/volume est.

Date/time modelled 05-May-2009 15:18
Version 1.4

Catchment name Date/time modelled
Nant y Stepsau 05-May-2009 15:18

Catchment northing 169400
Catchment area 1.44

Summary of model setup

Design rainfall parameters Loss model parameters Routing model parameters Baseflow model parameters
Return period (yr) 1000 C_{max} (mm) T_{p} (hr) BL (hr) 25.4
Duration (hr) 6.5 C_{max} (mm) 1.85 BL (hr) 1.09
Timestep (hr) 0.5 z factor 0.7 U_{k} 0.8 BF_{0} (m^3/s) 0.1

Season Winter

Summary of results

FEH DDF rainfall (mm) 135.8 Peak rainfall (mm) 20.3
Design rainfall (mm) 104.2 Peak flow (m^3/s) 4.9

Audit comments

Model run with ReFH dll version 1.4.0005

Catchment

Catchment descriptors imported from file
Catchment descriptor file = NantyStepsau.csv

Catchment descriptor file exported from CD ROM version 2
Catchment descriptor file exported on 13-Jan-2009 17:29

BFIHOST value of 0.408 used
BFIHOST changed from imported value of 0.839 to 0.408

PROPWET value of 0.48 used

SAAR value of 1002 used
DPLBAR value of 1.22 used
DPSBAR value of 13.9 used
URBEXT value of 0.0043 used
C value of -0.02531 used
D1 value of 0.39901 used
D2 value of 0.31927 used
D3 value of 0.29501 used
E value of 0.28531 used
F value of 2.52104 used

Rainfall
Recommended season is Winter, as URBEXT < 0.125
ReFH design standard Seasonal Correction Factor of 0.78 applied
ReFH design standard Areal Reduction Factor of 0.98 applied

Loss Model

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

Routing Model

T_{p} derived from catchment descriptors
ReFH design standard used for U_{p}
ReFH design standard used for U_{k}

Baseflow Model

BL derived from catchment descriptors
ReFH design standard BF_{0} used
Revitalised FSR/FEH rainfall runoff method

Spreadsheet application report

User name: Brear
Catchment name: Nant y Stepsau
Date/time modelled: 05-May-2009 15:29
Company name: Nant y Stepsau
Catchment area: 1.44
Project name: 1000 yr flow/volume est.
Catchment northing: 169400

Summary of model setup

Design rainfall parameters
Return period (yr) 100
Duration (hr) 6.5
Tₚ (hr) 1.85
Cₘₐₓ (mm) 304
C₀ (mm) 137

Loss model parameters
α factor 0.83

Routing model parameters
Uₚ 0.65
Uₑ 0.8

Baseflow model parameters
BL (hr) 25.4
BR 1.09
BF₀ (m³/s) 0.1

Duration (hr) 6.5
Cₗₐₙ (mm) 137
Uₚ 0.65

Summary of results

FEH DDF rainfall (mm): 78.4
Peak rainfall (mm): 11.7
Design rainfall (mm): 60.2
Peak flow (m³/s): 2.8

Results Graph

Series Design Rainfall Net rainfall Direct runoff Baseflow Total flow

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Audit comments

Model run with ReFH dll version 1.4.0005

Catchment
Catchment descriptors imported from file
Catchment descriptor file = 'NantyStepsau.csv'

Catchment descriptor file exported from CD ROM version 2
Catchment descriptor file exported on 13-Jan-2009 17:29

BFIHOST value of 0.408 used
BFIHOST changed from imported value of 0.839 to 0.408

PROPWET value of 0.48 used

SAAR value of 1002 used

DPLBAR value of 1.22 used

DPSBAR value of 13.9 used

URBEXT value of 0.0043 used

C value of -0.02531 used

D1 value of 0.39901 used

D2 value of 0.31927 used

D3 value of 0.29501 used

E value of 0.28531 used

F value of 2.52104 used

Rainfall
Recommended season is Winter, as URBEXT < 0.125
ReFH design standard Seasonal Correction Factor of 0.78 applied
ReFH design standard Areal Reduction Factor of 0.98 applied

Loss Model
Cₘₐₓ derived from catchment descriptors
ReFH design standard Cₘₐₓ used
ReFH design standard α factor used

Routing Model
Tₚ derived from catchment descriptors
ReFH design standard used for Uₚ
ReFH design standard used for Uₑ

Baseflow Model
BL derived from catchment descriptors
ReFH design standard BF₀ used