



**Drainage Calculations
&
Simulation Results
For**

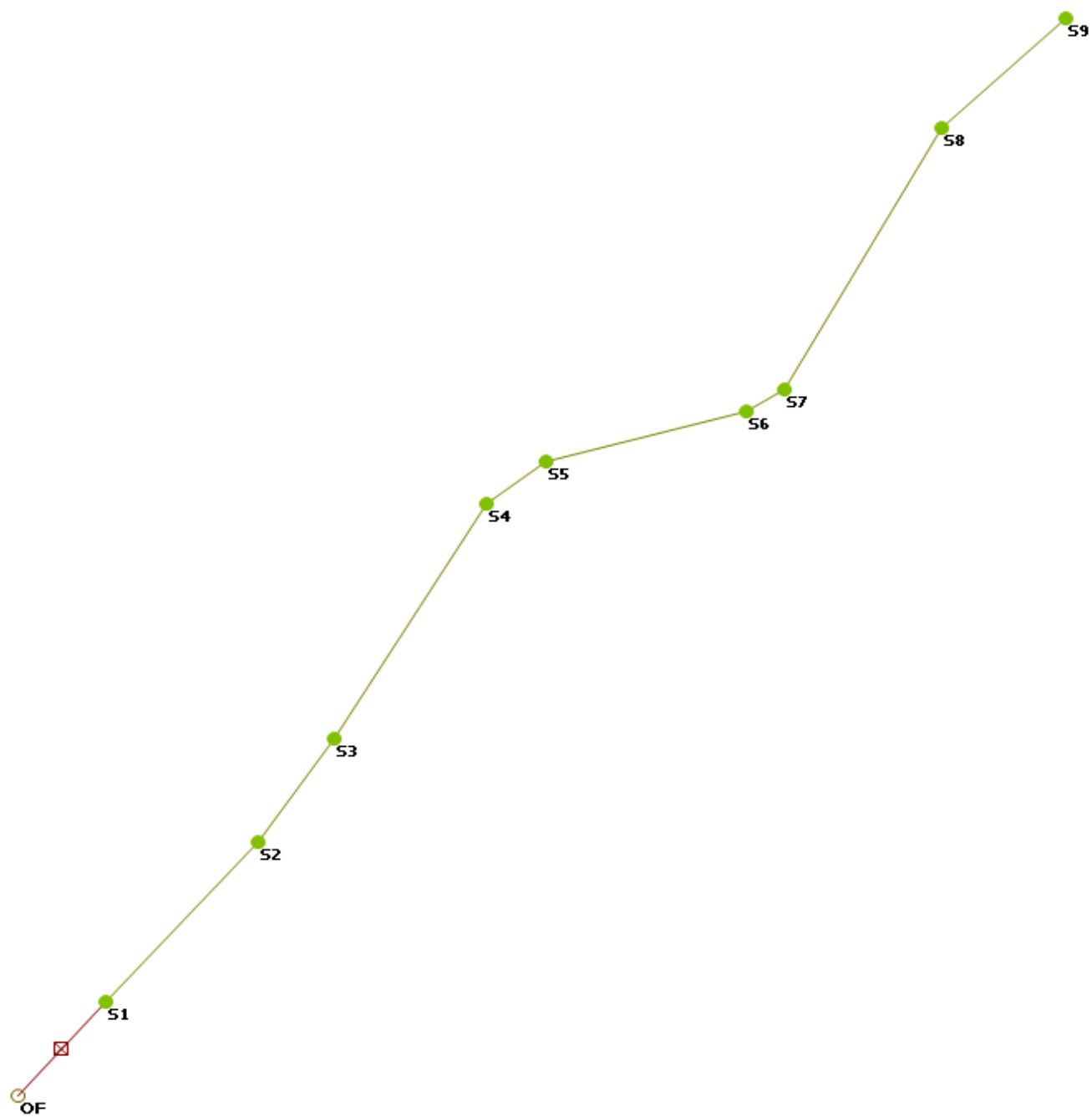
Fold Farm

Netherton

**Met Engineers Limited
Southgate House
Pontefract Road
Stourton
Leeds
West Yorkshire
LS10 1SW**

**T : 0113 200 8900
F : 0113 270 1292
E : admin@metengineers.com
W: www.metengineers.com**

**Ref : P19-00650 Rev 2/SS
Date : Oct 20**



PLAN

Grid [Node] - Model network														
	Node ID	Node type	System type	Connection type	x (m)	y (m)	Ground level (m AD)	Flood level (m AD)	Chamber floor level (m AD)	Chamber roof level (m AD)	Chamber plan area (m2)	Shaft plan area (m2)	Flood type	Benching method
	OF	Outfall	storm	Lost	412171.8	412774.1	141.500	141.500	138.879	138.899	0.5	0.5	Stored	Full Benching
	S10	Manhole	storm	Lost	412181.5	412787.4	141.900	141.900	138.879	140.139	4.5	4.5	Lost	Full Benching
	S9	Manhole	storm	Lost	412205.9	412810.4	141.594	141.594	139.025	140.225	4.5	4.5	Lost	Full Benching
	S8	Manhole	storm	Lost	412215.5	412823.9	141.750	141.750	139.065	140.265	4.5	4.5	Lost	Full Benching
	S7	Manhole	storm	Lost	412236.5	412858.3	142.161	142.161	139.166	140.366	4.5	4.5	Lost	Full Benching
	S6	Manhole	storm	Lost	412243.7	412862.7	142.307	142.307	140.172	140.472	1.1	1.1	Lost	Full Benching
	S5A	Manhole	storm	Lost	412269.9	412871.2	144.525	144.525	142.803	143.103	1.1	1.1	Lost	Full Benching
	S4A	Manhole	storm	Lost	412275.1	412874.4	145.192	145.192	143.412	143.712	1.1	1.1	Lost	Full Benching
	S3A	Manhole	storm	Lost	412296.2	412911.6	149.507	149.507	147.764	147.989	1.1	1.1	Lost	Full Benching
	S2	Manhole	storm	Lost	412312.9	412927.1	151.724	151.724	150.117	150.267	1.1	1.1	Lost	Full Benching
*														

MANHOLES

Grid [Conduit] - Model network															
	US node ID	Link suffix	DS node ID	System type	Number of barrels	Length (m)	Shape ID	Width (mm)	Height (mm)	Roughness type	Bottom roughness Colebrook-White (mm)	Top roughness Colebrook-White (mm)	US invert level (m AD)	DS invert level (m AD)	A
	S2	1	S3A	storm	1	22.8	CIRC	150	150	CW	0.600	0.600	150.117	147.839	
	S3A	1	S4A	storm	1	42.8	CIRC	225	225	CW	0.600	0.600	147.764	143.487	
	S4A	1	S5A	storm	1	6.1	CIRC	300	300	CW	0.600	0.600	143.412	142.803	
	S5A	1	S6	storm	1	27.5	CIRC	300	300	CW	0.600	0.600	142.803	140.172	
	S6	1	S7	storm	1	8.5	CIRC	300	300	CW	0.600	0.600	140.172	140.066	
	S7	1	S8	storm	1	40.2	CIRC	1200	1200	CW	0.600	0.600	139.166	139.065	
	S8	1	S9	storm	1	16.6	CIRC	1200	1200	CW	0.600	0.600	139.065	139.025	
	S9	1	S10	storm	1	33.5	CIRC	1200	1200	CW	0.600	0.600	139.025	138.939	
*															

PIPES

Grid [Subcatchment] - Model network											
	Subcatchment ID	System type	Drains to	Node ID	Lateral weights	Total area (ha)	x (m)	y (m)	Land use ID	Contributing area (ha)	Area measurement type
	S9	storm	Node	S2	Length	0.024	412312.9	412927.1	99	0.024	Percent
	S8	storm	Node	S3A	Length	0.021	412296.2	412911.6	99	0.021	Percent
	S7	storm	Node	S4A	Length	0.012	412275.1	412874.4	99	0.012	Percent
	S6	storm	Node	S5A	Length	0.057	412269.9	412871.2	99	0.057	Percent
	S5	storm	Node	S6	Length	0.090	412243.0	412864.1	99	0.090	Percent
	S3	storm	Node	S8	Length	0.094	412214.5	412824.9	99	0.094	Percent
	S1	storm	Node	S10	Length	0.124	412183.6	412787.5	99	0.124	Percent
*											

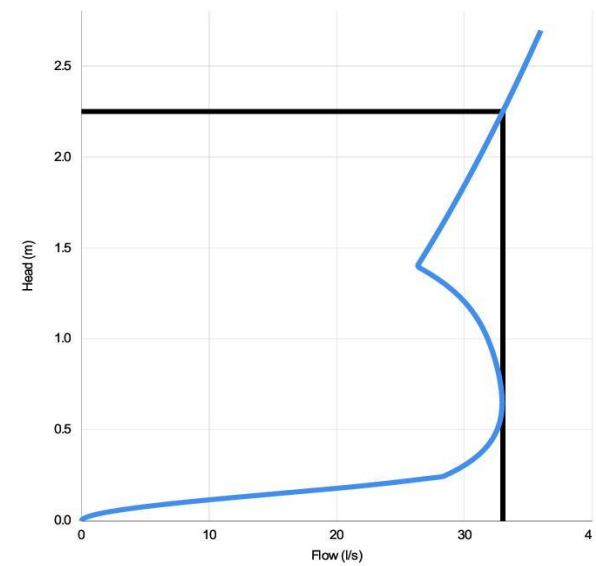
▲ < > ▼ Subcatchment Land use Build-up/washoff land use Runoff si

SUBCATCHMENT

US node ID	Link suffix	DS node ID	Link type	System type	Initial level (m AD)	Head discharge table
S1	1	OF	Vortex	storm	138.673	33l/sec : 2.25m head

MANUFACTURERS DATA

Technical Specification		
Control Point	Head (m)	Flow (l/s)
Primary Design	2.250	33.000
Flush-Flo	0.649	32.944
Kick-Flo®	1.397	26.268
Mean Flow		28.638



Head (m)	Flow (l/s)
0.000	0.000
0.078	4.798
0.155	16.049
0.233	26.961
0.310	30.086
0.388	31.469
0.466	32.306
0.543	32.756
0.621	32.931
0.698	32.915
0.776	32.766
0.853	32.522
0.931	32.194
1.009	31.773
1.086	31.222
1.164	30.485
1.241	29.485
1.319	28.135
1.397	26.378
1.474	26.948
1.552	27.616
1.629	28.268
1.707	28.904
1.784	29.525
1.862	30.133
1.940	30.728
2.017	31.311
2.095	31.882
2.172	32.443
2.250	32.994

DESIGN ADVICE

The head/flow characteristics of this SHE-0229-3300-2250-3300 Hydro-Brake Optimum® Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International

SHE-0229-3300-2250-3300

Hydro-Brake Optimum®

DATE	05/07/2019 13:00
Site	Fold Farm, Netherton
DESIGNER	Stuart Seabrook
Ref	P19-00650

MH S1 HYDROGRAPH DETAILS

SIMULATION RESULTS

1 in 30 year RETURN PERIOD
(Peak Storm Event plus two either side).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M30-30

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113850_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132032eventiid90539.re M30-30 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.00

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132032.iwr

Total rainfall	=	87.0 m3
Total runoff	=	68.5 m3
Total inflow	=	68.5 m3
Total outflow	=	68.6 m3
Total lost	=	0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.452	0.0	0.000	0.0	2.6	20.1	-0.000	0.000
S2	151.724	150.158	0.0	0.000	0.0	0.0	3.9	-0.000	0.000
S3A	149.507	147.812	0.0	0.000	0.0	0.1	3.4	-0.000	0.000
S4A	145.192	143.465	0.0	0.000	0.0	0.1	1.9	-0.000	0.000
S5A	144.525	142.873	0.0	0.000	0.0	0.1	9.3	0.000	0.000
S6	142.307	140.322	0.0	0.000	0.0	0.2	14.6	-0.000	0.000
S7	142.161	139.452	0.0	0.000	0.0	1.3	0.0	-0.000	0.000
S8	141.750	139.452	0.0	0.000	0.0	1.7	15.3	-0.000	0.000
S9	141.594	139.452	0.0	0.000	0.0	1.9	0.0	0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	0.563	0.026		68.6	138.889	0.000	0.026		68.6
S2.1	S3A	22	150	0	0.057	150.117	0.041	0.007	1.821	3.9	147.839	0.041	0.007	1.821	3.9
S3A.1	S4A	42	225	0	0.165	147.764	0.048	0.013	2.140	7.3	143.487	0.048	0.013	2.135	7.3
S4A.1	S5A	6	300	0	0.353	143.412	0.053	0.017	2.007	9.3	142.803	0.070	0.017	1.351	9.3
S5A.1	S6	27	300	0	0.346	142.803	0.069	0.034	2.729	18.5	140.172	0.150	0.034	0.952	18.5
S6.1	S7	8	300	0	0.124	140.172	0.150	0.059	1.682	33.1	140.066	0.150	0.059	1.679	33.1
S7.1	S8	40	1200	0	2.112	139.166	0.286	0.058	0.733	33.1	139.065	0.387	0.039	0.430	33.1
S8.1	S9	16	1200	0	2.068	139.065	0.387	0.060	0.672	48.4	139.025	0.427	0.045	0.525	48.4
S9.1	S10	33	1200	0	2.135	139.025	0.427	0.040	0.504	48.4	138.939	0.513	0.025	0.281	48.4

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes <= 0.01, 10% otherwise, subject to a minimum of 0.02 m).

Message 253: Run finished for event 1.

Model network (version 6)

Event -

1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M30-45

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113850_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132033eventiid81059.re M30-45 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.00

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132033.iwr

Total rainfall = 107.8 m3

Total runoff = 84.9 m3

Total inflow = 84.9 m3

Total outflow = 84.9 m3

Total lost = 0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.476	0.0	0.000	0.0	2.7	24.9	0.000	0.000
S2	151.724	150.156	0.0	0.000	0.0	0.0	4.8	0.000	0.000
S3A	149.507	147.810	0.0	0.000	0.0	0.1	4.2	-0.000	0.000
S4A	145.192	143.463	0.0	0.000	0.0	0.1	2.4	-0.000	0.000
S5A	144.525	142.869	0.0	0.000	0.0	0.1	11.5	0.000	0.000
S6	142.307	140.311	0.0	0.000	0.0	0.2	18.1	-0.000	0.000
S7	142.161	139.476	0.0	0.000	0.0	1.4	0.0	0.000	0.000
S8	141.750	139.476	0.0	0.000	0.0	1.8	18.9	-0.000	0.000
S9	141.594	139.476	0.0	0.000	0.0	2.0	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream					Total Flow (m3)
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	
S10.1	OF					138.889	0.587	0.026		84.9	138.889	0.000	0.026		84.9
S2.1	S3A	22	150	0	0.057	150.117	0.039	0.006	1.708	4.8	147.839	0.039	0.006	1.708	4.8
S3A.1	S4A	42	225	0	0.165	147.764	0.046	0.012	2.011	9.0	143.487	0.046	0.012	2.008	9.1
S4A.1	S5A	6	300	0	0.353	143.412	0.051	0.015	1.868	11.5	142.803	0.066	0.015	1.276	11.5
S5A.1	S6	27	300	0	0.346	142.803	0.066	0.029	2.575	22.9	140.172	0.139	0.029	0.912	22.9
S6.1	S7	8	300	0	0.124	140.172	0.139	0.052	1.620	41.0	140.066	0.139	0.052	1.618	41.0
S7.1	S8	40	1200	0	2.112	139.166	0.310	0.051	0.679	41.0	139.065	0.411	0.031	0.399	41.0
S8.1	S9	16	1200	0	2.068	139.065	0.411	0.048	0.608	60.0	139.025	0.451	0.037	0.486	60.0
S9.1	S10	33	1200	0	2.135	139.025	0.451	0.033	0.468	60.0	138.939	0.537	0.025	0.288	60.0

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

Message 253: Run finished for event 1.

Model network (version 6)

Event -

1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M30-60

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113850_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132034eventiid93342.re M30-60 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.00

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132034.iwr

Total rainfall = 122.3 m3

Total runoff = 96.3 m3

Total inflow = 96.3 m3

Total outflow = 96.3 m3

Total lost = 0.0 m3

Model network (version 6)

Event -

1 WS88880294PM Produced 2020-10-29 Pg 2

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.484	0.0	0.000	0.0	2.7	28.3	-0.000	0.000
S2	151.724	150.154	0.0	0.000	0.0	0.0	5.5	-0.000	0.000
S3A	149.507	147.808	0.0	0.000	0.0	0.0	4.8	-0.000	0.000
S4A	145.192	143.461	0.0	0.000	0.0	0.1	2.7	-0.000	0.000
S5A	144.525	142.866	0.0	0.000	0.0	0.1	13.0	0.000	0.000
S6	142.307	140.303	0.0	0.000	0.0	0.1	20.5	-0.000	0.000
S7	142.161	139.485	0.0	0.000	0.0	1.4	0.0	0.000	0.000
S8	141.750	139.485	0.0	0.000	0.0	1.9	21.4	0.000	0.000
S9	141.594	139.484	0.0	0.000	0.0	2.1	0.0	0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)
S10.1	OF					138.889	0.595	0.026		138.889	0.000	0.026		96.3
S2.1	S3A	22	150	0	0.057	150.117	0.037	0.006	1.622	147.839	0.037	0.006	1.621	5.5
S3A.1	S4A	42	225	0	0.165	147.764	0.044	0.010	1.913	143.487	0.044	0.010	1.909	10.3
S4A.1	S5A	6	300	0	0.353	143.412	0.049	0.013	1.762	142.803	0.063	0.013	1.217	13.0
S5A.1	S6	27	300	0	0.346	142.803	0.063	0.026	2.456	140.172	0.131	0.026	0.883	26.0
S6.1	S7	8	300	0	0.124	140.172	0.131	0.047	1.571	140.066	0.131	0.047	1.569	46.6
S7.1	S8	40	1200	0	2.112	139.166	0.319	0.045	0.625	139.065	0.420	0.027	0.380	46.6
S8.1	S9	16	1200	0	2.068	139.065	0.420	0.042	0.574	139.025	0.459	0.033	0.473	68.0
S9.1	S10	33	1200	0	2.135	139.025	0.459	0.030	0.460	138.939	0.545	0.025	0.284	68.0

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

End of run

0 mins (elapsed)

Produced on 2020-10-29

Last page Total lost

=

0.0 m3

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M30-90

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113850_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132035eventiid86973.re M30-90 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.00

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132035.iwr

Total rainfall	=	146.8 m3
Total runoff	=	115.6 m3
Total inflow	=	115.6 m3
Total outflow	=	115.6 m3
Total lost	=	0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.482	0.0	0.000	0.0	2.7	34.0	-0.000	0.000
S2	151.724	150.152	0.0	0.000	0.0	0.0	6.6	-0.000	0.000
S3A	149.507	147.805	0.0	0.000	0.0	0.0	5.8	-0.000	0.000
S4A	145.192	143.458	0.0	0.000	0.0	0.1	3.3	-0.000	0.000
S5A	144.525	142.862	0.0	0.000	0.0	0.1	15.6	0.000	0.000
S6	142.307	140.291	0.0	0.000	0.0	0.1	24.6	-0.000	0.000
S7	142.161	139.482	0.0	0.000	0.0	1.4	0.0	0.000	0.000
S8	141.750	139.482	0.0	0.000	0.0	1.9	25.7	-0.000	0.000
S9	141.594	139.482	0.0	0.000	0.0	2.1	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	0.593	0.026		115.6	138.889	0.000	0.026		115.6
S2.1	S3A	22	150	0	0.057	150.117	0.035	0.005	1.475	6.6	147.839	0.035	0.005	1.475	6.6
S3A.1	S4A	42	225	0	0.165	147.764	0.041	0.009	1.746	12.3	143.487	0.041	0.009	1.744	12.3
S4A.1	S5A	6	300	0	0.353	143.412	0.046	0.011	1.584	15.6	142.803	0.059	0.011	1.119	15.6
S5A.1	S6	27	300	0	0.346	142.803	0.058	0.022	2.254	31.2	140.172	0.119	0.022	0.833	31.2
S6.1	S7	8	300	0	0.124	140.172	0.119	0.039	1.485	55.9	140.066	0.119	0.039	1.484	55.9
S7.1	S8	40	1200	0	2.112	139.166	0.316	0.037	0.558	55.9	139.065	0.417	0.022	0.355	55.9
S8.1	S9	16	1200	0	2.068	139.065	0.417	0.035	0.530	81.6	139.025	0.457	0.028	0.453	81.7
S9.1	S10	33	1200	0	2.135	139.025	0.457	0.026	0.442	81.7	138.939	0.543	0.024	0.282	81.7

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

Message 253: Run finished for event 1.

Model network (version 6)

Event -

1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M30-120

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113850_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132036eventiid50729.re M30-120 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.00

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132036.iwr

Total rainfall = 165.6 m3

Total runoff = 130.4 m3

Total inflow = 130.4 m3

Total outflow = 130.5 m3

Total lost = 0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.465	0.0	0.000	0.0	2.6	38.3	-0.000	0.000
S2	151.724	150.150	0.0	0.000	0.0	0.0	7.4	0.000	0.000
S3A	149.507	147.803	0.0	0.000	0.0	0.0	6.5	-0.000	0.000
S4A	145.192	143.456	0.0	0.000	0.0	0.0	3.7	-0.000	0.000
S5A	144.525	142.859	0.0	0.000	0.0	0.1	17.6	0.000	0.000
S6	142.307	140.282	0.0	0.000	0.0	0.1	27.8	0.000	0.000
S7	142.161	139.465	0.0	0.000	0.0	1.3	0.0	-0.000	0.000
S8	141.750	139.465	0.0	0.000	0.0	1.8	29.0	-0.000	0.000
S9	141.594	139.465	0.0	0.000	0.0	2.0	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	0.576	0.026		130.5	138.889	0.000	0.026		130.5
S2.1	S3A	22	150	0	0.057	150.117	0.033	0.004	1.361	7.4	147.839	0.033	0.004	1.361	7.4
S3A.1	S4A	42	225	0	0.165	147.764	0.039	0.007	1.616	13.9	143.487	0.039	0.007	1.614	13.9
S4A.1	S5A	6	300	0	0.353	143.412	0.044	0.009	1.447	17.6	142.803	0.056	0.009	1.041	17.6
S5A.1	S6	27	300	0	0.346	142.803	0.055	0.019	2.096	35.2	140.172	0.110	0.019	0.793	35.2
S6.1	S7	8	300	0	0.124	140.172	0.110	0.033	1.416	63.0	140.066	0.110	0.033	1.415	63.0
S7.1	S8	40	1200	0	2.112	139.166	0.299	0.032	0.519	63.0	139.065	0.400	0.020	0.339	63.1
S8.1	S9	16	1200	0	2.068	139.065	0.400	0.032	0.503	92.1	139.025	0.440	0.026	0.437	92.1
S9.1	S10	33	1200	0	2.135	139.025	0.440	0.024	0.429	92.1	138.939	0.526	0.023	0.279	92.2

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

SIMULATION RESULTS

1 in 100 year RETURN PERIOD
(Peak Storm Event plus two either side).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M100-60

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113523_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...m132014eventiid6493.re M100-60 (OS): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.30

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132014.iwr

Total rainfall	=	209.5 m3
Total runoff	=	165.0 m3
Total inflow	=	165.0 m3
Total outflow	=	165.0 m3
Total lost	=	0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.891	0.0	0.000	0.0	4.6	48.5	0.000	0.000
S2	151.724	150.164	0.0	0.000	0.0	0.1	9.4	-0.000	0.000
S3A	149.507	147.819	0.0	0.000	0.0	0.1	8.2	0.000	0.000
S4A	145.192	143.471	0.0	0.000	0.0	0.1	4.7	-0.000	0.000
S5A	144.525	142.882	0.0	0.000	0.0	0.1	22.3	0.000	0.000
S6	142.307	140.357	0.0	0.000	0.0	0.2	35.2	0.000	0.000
S7	142.161	139.891	0.0	0.000	0.0	3.3	0.0	-0.000	0.000
S8	141.750	139.891	0.0	0.000	0.0	3.7	36.7	-0.000	0.000
S9	141.594	139.891	0.0	0.000	0.0	3.9	0.0	0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream					Total Flow (m3)
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	
S10.1	OF					138.889	1.002	0.026		165.0	138.889	0.000	0.026		165.0
S2.1	S3A	22	150	0	0.057	150.117	0.046	0.010	2.073	9.4	147.839	0.046	0.010	2.075	9.4
S3A.1	S4A	42	225	0	0.165	147.764	0.055	0.018	2.427	17.6	143.487	0.055	0.018	2.428	17.6
S4A.1	S5A	6	300	0	0.353	143.412	0.059	0.023	2.330	22.3	142.803	0.080	0.023	1.527	22.3
S5A.1	S6	27	300	0	0.346	142.803	0.079	0.046	3.078	44.6	140.172	0.186	0.046	0.997	44.6
S6.1	S7	8	300	0	0.124	140.172	0.181	0.081	1.823	79.7	140.066	0.181	0.081	1.822	79.7
S7.1	S8	40	1200	0	2.112	139.166	0.725	0.076	0.626	79.7	139.065	0.826	0.025	0.346	79.7
S8.1	S9	16	1200	0	2.068	139.065	0.826	0.056	0.521	116.5	139.025	0.866	0.035	0.423	116.5
S9.1	S10	33	1200	0	2.135	139.025	0.866	0.030	0.416	116.5	138.939	0.952	0.025	0.287	116.5

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes <= 0.01, 10% otherwise, subject to a minimum of 0.02 m).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event -

1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M100-90

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113523_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132015eventiid34260.re M100-90 (OS): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.30

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132015.iwr

Total rainfall = 251.3 m3

Total runoff = 197.9 m3

Total inflow = 197.9 m3

Total outflow = 197.9 m3

Total lost = 0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.937	0.0	0.000	0.0	4.8	58.2	-0.000	0.000
S2	151.724	150.160	0.0	0.000	0.0	0.0	11.3	-0.000	0.000
S3A	149.507	147.815	0.0	0.000	0.0	0.1	9.8	0.000	0.000
S4A	145.192	143.467	0.0	0.000	0.0	0.1	5.6	-0.000	0.000
S5A	144.525	142.876	0.0	0.000	0.0	0.1	26.7	-0.000	0.000
S6	142.307	140.335	0.0	0.000	0.0	0.2	42.2	0.000	0.000
S7	142.161	139.937	0.0	0.000	0.0	3.5	0.0	0.000	0.000
S8	141.750	139.937	0.0	0.000	0.0	3.9	44.1	-0.000	0.000
S9	141.594	139.937	0.0	0.000	0.0	4.1	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream					Total Flow (m3)
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	
S10.1	OF					138.889	1.048	0.026		197.9	138.889	0.000	0.026		197.9
S2.1	S3A	22	150	0	0.057	150.117	0.043	0.008	1.912	11.3	147.839	0.043	0.008	1.913	11.3
S3A.1	S4A	42	225	0	0.165	147.764	0.050	0.015	2.243	21.1	143.487	0.050	0.015	2.243	21.1
S4A.1	S5A	6	300	0	0.353	143.412	0.055	0.019	2.126	26.7	142.803	0.073	0.019	1.417	26.7
S5A.1	S6	27	300	0	0.346	142.803	0.073	0.038	2.857	53.5	140.172	0.163	0.038	0.964	53.5
S6.1	S7	8	300	0	0.124	140.172	0.161	0.067	1.739	95.7	140.066	0.161	0.067	1.738	95.7
S7.1	S8	40	1200	0	2.112	139.166	0.771	0.063	0.565	95.7	139.065	0.872	0.022	0.338	95.7
S8.1	S9	16	1200	0	2.068	139.065	0.872	0.048	0.505	139.7	139.025	0.912	0.031	0.424	139.7
S9.1	S10	33	1200	0	2.135	139.025	0.912	0.027	0.417	139.7	138.939	0.998	0.025	0.287	139.7

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M100-120

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113523_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...m132016eventiid1683.re M100-120 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.30

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132016.iwr

Total rainfall	=	282.4 m3
Total runoff	=	222.4 m3
Total inflow	=	222.4 m3
Total outflow	=	222.4 m3
Total lost	=	0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.944	0.0	0.000	0.0	4.8	65.4	0.000	0.000
S2	151.724	150.157	0.0	0.000	0.0	0.0	12.6	0.000	0.000
S3A	149.507	147.812	0.0	0.000	0.0	0.1	11.1	-0.000	0.000
S4A	145.192	143.464	0.0	0.000	0.0	0.1	6.3	0.000	0.000
S5A	144.525	142.871	0.0	0.000	0.0	0.1	30.0	-0.000	0.000
S6	142.307	140.319	0.0	0.000	0.0	0.2	47.4	0.000	0.000
S7	142.161	139.944	0.0	0.000	0.0	3.5	0.0	0.000	0.000
S8	141.750	139.944	0.0	0.000	0.0	4.0	49.5	-0.000	0.000
S9	141.594	139.944	0.0	0.000	0.0	4.1	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	1.055	0.026		222.4	138.889	0.000	0.026		222.4
S2.1	S3A	22	150	0	0.057	150.117	0.040	0.007	1.781	12.6	147.839	0.040	0.007	1.782	12.6
S3A.1	S4A	42	225	0	0.165	147.764	0.047	0.013	2.095	23.7	143.487	0.047	0.013	2.094	23.7
S4A.1	S5A	6	300	0	0.353	143.412	0.052	0.016	1.962	30.0	142.803	0.068	0.016	1.328	30.0
S5A.1	S6	27	300	0	0.346	142.803	0.068	0.032	2.678	60.1	140.172	0.147	0.032	0.933	60.1
S6.1	S7	8	300	0	0.124	140.172	0.147	0.058	1.666	107.5	140.066	0.147	0.058	1.666	107.5
S7.1	S8	40	1200	0	2.112	139.166	0.778	0.054	0.530	107.5	139.065	0.879	0.020	0.332	107.5
S8.1	S9	16	1200	0	2.068	139.065	0.879	0.043	0.493	157.0	139.025	0.919	0.029	0.420	157.0
S9.1	S10	33	1200	0	2.135	139.025	0.919	0.025	0.414	157.0	138.939	1.005	0.025	0.277	157.0

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes ≤ 0.01 , 10% otherwise, subject to a minimum of 0.02 m).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M100-180

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113523_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132017eventiid84416.re M100-180 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.30

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132017.iwr

Total rainfall = 328.3 m3

Total runoff = 258.5 m3

Total inflow = 258.5 m3

Total outflow = 258.5 m3

Total lost = 0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.909	0.0	0.000	0.0	4.6	76.0	0.000	0.000
S2	151.724	150.154	0.0	0.000	0.0	0.0	14.7	-0.000	0.000
S3A	149.507	147.807	0.0	0.000	0.0	0.0	12.9	-0.000	0.000
S4A	145.192	143.460	0.0	0.000	0.0	0.1	7.4	0.000	0.000
S5A	144.525	142.865	0.0	0.000	0.0	0.1	34.9	-0.000	0.000
S6	142.307	140.301	0.0	0.000	0.0	0.1	55.1	0.000	0.000
S7	142.161	139.909	0.0	0.000	0.0	3.3	0.0	0.000	0.000
S8	141.750	139.909	0.0	0.000	0.0	3.8	57.6	-0.000	0.000
S9	141.594	139.909	0.0	0.000	0.0	4.0	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	1.020	0.026		258.5	138.889	0.000	0.026		258.5
S2.1	S3A	22	150	0	0.057	150.117	0.037	0.005	1.587	14.7	147.839	0.037	0.005	1.587	14.7
S3A.1	S4A	42	225	0	0.165	147.764	0.043	0.010	1.874	27.6	143.487	0.043	0.010	1.873	27.6
S4A.1	S5A	6	300	0	0.353	143.412	0.048	0.013	1.722	34.9	142.803	0.062	0.013	1.196	34.9
S5A.1	S6	27	300	0	0.346	142.803	0.062	0.025	2.411	69.8	140.172	0.129	0.025	0.869	69.8
S6.1	S7	8	300	0	0.124	140.172	0.129	0.045	1.554	125.0	140.066	0.129	0.045	1.554	125.0
S7.1	S8	40	1200	0	2.112	139.166	0.743	0.043	0.485	125.0	139.065	0.844	0.018	0.322	125.0
S8.1	S9	16	1200	0	2.068	139.065	0.844	0.036	0.475	182.6	139.025	0.884	0.026	0.413	182.6
S9.1	S10	33	1200	0	2.135	139.025	0.884	0.023	0.408	182.6	138.939	0.970	0.025	0.281	182.6

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes <= 0.01, 10% otherwise, subject to a minimum of 0.02 m).

InfoWorks ICM SIM

Summary results from Simulation

Version 10.0.0.20012 (x64) dated May 2019

Licence Number - WS88880294PM

Message 253: Run finished for event 1.

Model network (version 6)

Event - 1 WS88880294PM Produced 2020-10-29 Pg 1

Summary results for event 1 - M100-240

Started at 0 day(s) 00:00:00. Run for 900.00 min. (Requested simulation time 900.00 min)

Files used:

Network: ...\\nnet131949#6.spb Model network (version 6)

State: ...1029_113523_initial.sp

Runoff: ...\\nnet131949#6.rpf Model network (version 6) (InfoWorks 10.0.0.20012(64bit))

Rainfall: ...132018eventiid64339.re M100-240 (0S): M5-60=20.0mm, r=0.20, AT=0.01km2 x1.30

DWF:

Inflows:

Levels:

RTC:

Results: ...\\sim132018.iwr

Total rainfall = 364.9 m3

Total runoff = 287.3 m3

Total inflow = 287.3 m3

Total outflow = 287.4 m3

Total lost = 0.0 m3

***** Node data *****

Node Reference	Ground Level (m AD)	Max Level (m AD)	Flood Volume (m3)	Flood Depth (m)	Flood Area (m2)	Max Stored (m3)	Inflow (m3)	Vol Balance (m3)	Vol Balance (%)
S10	141.900	139.856	0.0	0.000	0.0	4.4	84.4	-0.000	0.000
S2	151.724	150.152	0.0	0.000	0.0	0.0	16.3	-0.000	0.000
S3A	149.507	147.805	0.0	0.000	0.0	0.0	14.3	-0.000	0.000
S4A	145.192	143.458	0.0	0.000	0.0	0.1	8.2	-0.000	0.000
S5A	144.525	142.861	0.0	0.000	0.0	0.1	38.8	0.000	0.000
S6	142.307	140.290	0.0	0.000	0.0	0.1	61.3	-0.000	0.000
S7	142.161	139.856	0.0	0.000	0.0	3.1	0.0	-0.000	0.000
S8	141.750	139.856	0.0	0.000	0.0	3.6	64.0	-0.000	0.000
S9	141.594	139.856	0.0	0.000	0.0	3.7	0.0	-0.000	0.000

A %% indicates water lost from the system.

***** Link data *****

Link Reference	D/S Node	Pipe Len (m)	Pipe Hgt (mm)	Sed Dpth (mm)	P.Full Flow (m3/s)	< Upstream				> Downstream				Total Flow (m3)	
						Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)	Max Vel (m/s)	Total Flow (m3)	Invert Level (m AD)	Max Depth (m)	Max Flow (m3/s)		Max Vel (m/s)
S10.1	OF					138.889	0.967	0.026		287.4	138.889	0.000	0.026		287.4
S2.1	S3A	22	150	0	0.057	150.117	0.035	0.004	1.450	16.3	147.839	0.035	0.004	1.450	16.3
S3A.1	S4A	42	225	0	0.165	147.764	0.041	0.008	1.718	30.6	143.487	0.040	0.008	1.717	30.6
S4A.1	S5A	6	300	0	0.353	143.412	0.046	0.011	1.555	38.8	142.803	0.058	0.011	1.103	38.8
S5A.1	S6	27	300	0	0.346	142.803	0.058	0.021	2.221	77.6	140.172	0.118	0.021	0.823	77.6
S6.1	S7	8	300	0	0.124	140.172	0.118	0.038	1.473	138.9	140.066	0.118	0.038	1.472	138.9
S7.1	S8	40	1200	0	2.112	139.166	0.690	0.036	0.459	138.9	139.065	0.791	0.017	0.314	138.9
S8.1	S9	16	1200	0	2.068	139.065	0.791	0.032	0.463	202.9	139.025	0.831	0.024	0.407	202.9
S9.1	S10	33	1200	0	2.135	139.025	0.831	0.022	0.403	202.9	138.939	0.917	0.023	0.277	202.9

+ after total flow indicates a conduit surcharged by flow and depth at that end.

x after total flow indicates a conduit surcharged by depth only at that end.

NOTE :

- (i) Maximum elevations, depths, volumes, velocities and discharges are selected from the values at each time increment and will be in general more extreme than the maximum values in the time varying results.
- (ii) Maximum elevations, velocities and discharges are not necessarily calculated at the same time.
- (iii) Maximum velocity is not calculated for a conduit unless the depth exceeds the base flow depth (by default, this is 5% of height for slopes <= 0.01, 10% otherwise, subject to a minimum of 0.02 m).

