STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NEW FULL STORM NETWORK 2.SWS

Pipe Sizes NETWORK 2 STORM Manhole Sizes NETWORK 2 STORM

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	0.200
Ratio R	0.350	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	50	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	0.75
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500
Volumetric Runoff Coeff.	0.750		

Designed with Level Soffits

Time Area Diagram for NEW FULL STORM NETWORK 2.SWS

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.333	4-8	0.200

Total Area Contributing (ha) = 0.533

Total Pipe Volume (m³) = 17.304

Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.000	5.000	0.200	25.0	0.017	5.00	0.0	0.600	o	100	
1.001	4.406	0.050	88.1	0.000	0.00	0.0	0.600	o	100	
1.002	9.341	0.115	81.2	0.000	0.00	0.0	0.600	o	100	
2.000	5.000	0.050	100.0	0.008	5.00	0.0	0.600	o	100	
2.001	5.000	0.415	12.0	0.000	0.00	0.0	0.600	o	100	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.05	6.550	0.017	0.0	0.0	0.0	1.55	12.2	2.3
1.001	50.00	5.14	6.350	0.017	0.0	0.0	0.0	0.82	6.4	2.3
1.002	50.00	5.33	6.300	0.017	0.0	0.0	0.0	0.85	6.7	2.3
2.000	50.00	5.11	6.650	0.008	0.0	0.0	0.0	0.77	6.0	1.1
2.001	50.00	5.15	6.600	0.008	0.0	0.0	0.0	2.24	17.6	1.1

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.003	7.945	0.098	81.1	0.000	0.00	0.0	0.600	o	100	
3.000	5.000	0.050	100.0	0.007	5.00	0.0	0.600	o	100	
3.001	4.594	0.463	9.9	0.000	0.00	0.0	0.600	o	100	
1.004	3.000	0.037	81.1	0.000	0.00	0.0	0.600	o	100	
4.000	3.250	0.750	4.3	0.004	5.00	0.0	0.600	o	100	
1.005	15.485	0.200	77.4	0.002	0.00	0.0	0.600	o	100	
5.000	15.087	0.700	21.6	0.009	5.00	0.0	0.600	o	100	
1.006	3.725	0.050	74.5	0.000	0.00	0.0	0.600	o	100	
6.000	21.822	0.250	87.3	0.014	5.00	0.0	0.600	o	100	
6.001	6.871	0.150	45.8	0.000	0.00	0.0	0.600	o	100	
1.007	9.512	0.100	95.1	0.000	0.00	0.0	0.600	o	150	
7.000	5.000	0.050	100.0	0.007	5.00	0.0	0.600	o	100	
7.001	5.000	0.250	20.0	0.000	0.00	0.0	0.600	o	100	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.003	50.00	5.48	6.185	0.025	0.0	0.0	0.0	0.86	6.7	3.4
3.000	50.00	5.11	6.600	0.007	0.0	0.0	0.0	0.77	6.0	0.9
3.001	50.00	5.14	6.550	0.007	0.0	0.0	0.0	2.47	19.4	0.9
1.004	50.00	5.54	6.087	0.032	0.0	0.0	0.0	0.86	6.7	4.3
4.000	50.00	5.01	6.800	0.004	0.0	0.0	0.0	3.74	29.4	0.5
1.005	50.00	5.83	6.050	0.038	0.0	0.0	0.0	0.88	6.9	5.1
5.000	50.00	5.15	6.550	0.009	0.0	0.0	0.0	1.67	13.1	1.2
1.006	50.00	5.90	5.850	0.047	0.0	0.0	0.0	0.89	7.0	6.4
6.000	50.00	5.44	6.200	0.014	0.0	0.0	0.0	0.82	6.5	1.9
6.001	50.00	5.54	5.950	0.014	0.0	0.0	0.0	1.14	9.0	1.9
1.007	50.00	6.06	5.750	0.061	0.0	0.0	0.0	1.03	18.2	8.3
7.000	50.00	5.11	6.000	0.007	0.0	0.0	0.0	0.77	6.0	0.9
7.001	50.00	5.16	5.950	0.007	0.0	0.0	0.0	1.73	13.6	0.9

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.008	6.360	0.160	39.8	0.000	0.00	0.0	0.600	o	150	
1.009	27.516	0.819	33.6	0.018	0.00	0.0	0.600	o	150	
8.000	5.000	0.050	100.0	0.038	5.00	0.0	0.600	o	100	
8.001	7.832	0.629	12.5	0.000	0.00	0.0	0.600	o	100	
9.000	5.000	0.050	100.0	0.027	5.00	0.0	0.600	o	100	
9.001	5.000	1.029	4.9	0.000	0.00	0.0	0.600	o	100	
1.010	24.702	0.561	44.0	0.021	0.00	0.0	0.600	o	150	
10.000	5.000	0.300	16.7	0.019	5.00	0.0	0.600	o	100	
10.001	5.000	0.475	10.5	0.000	0.00	0.0	0.600	o	100	
10.002	15.551	0.489	31.8	0.015	0.00	0.0	0.600	o	100	
11.000	5.000	0.050	100.0	0.014	5.00	0.0	0.600	o	100	
11.001	5.000	0.914	5.5	0.000	0.00	0.0	0.600	o	100	
10.003	7.960	0.077	103.4	0.000	0.00	0.0	0.600	o	150	
12.000	18.406	0.200	92.0	0.005	5.00	0.0	0.600	o	100	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.008	50.00	6.12	5.650	0.068	0.0	0.0	0.0	1.60	28.3	9.2
1.009	50.00	6.39	5.490	0.086	0.0	0.0	0.0	1.74	30.8	11.6
8.000	50.00	5.11	5.400	0.038	0.0	0.0	0.0	0.77	6.0	5.1
8.001	50.00	5.17	5.350	0.038	0.0	0.0	0.0	2.20	17.3	5.1
9.000	50.00	5.11	5.800	0.027	0.0	0.0	0.0	0.77	6.0	3.7
9.001	50.00	5.13	5.750	0.027	0.0	0.0	0.0	3.53	27.7	3.7
1.010	50.00	6.66	4.671	0.172	0.0	0.0	0.0	1.52	26.9	23.3
10.000	50.00	5.04	5.750	0.019	0.0	0.0	0.0	1.90	14.9	2.6
10.001	50.00	5.08	5.450	0.019	0.0	0.0	0.0	2.40	18.8	2.6
10.002	50.00	5.27	4.975	0.034	0.0	0.0	0.0	1.37	10.8	4.6
11.000	50.00	5.11	5.450	0.014	0.0	0.0	0.0	0.77	6.0	1.9
11.001	50.00	5.13	5.400	0.014	0.0	0.0	0.0	3.33	26.1	1.9
10.003	50.00	5.40	4.436	0.048	0.0	0.0	0.0	0.99	17.5	6.5
12.000	50.00	5.38	6.050	0.005	0.0	0.0	0.0	0.80	6.3	0.7

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
12.001	9.456	0.254	37.3	0.000	0.00	0.0	0.600	o	100	
13.000	5.000	0.050	100.0	0.019	5.00	0.0	0.600	o	100	
13.001	5.000	0.104	48.1	0.000	0.00	0.0	0.600	o	100	
12.002	15.112	0.405	37.3	0.000	0.00	0.0	0.600	o	100	
14.000	5.000	0.050	100.0	0.015	5.00	0.0	0.600	o	100	
14.001	5.000	0.209	23.9	0.000	0.00	0.0	0.600	o	100	
12.003	3.371	0.091	37.0	0.000	0.00	0.0	0.600	o	100	
12.004	7.004	0.940	7.5	0.000	0.00	0.0	0.600	o	100	
1.011	20.923	0.262	79.9	0.040	0.00	0.0	0.600	o	225	
15.000	5.000	0.017	300.0	0.014	5.00	0.0	0.600	o	300	
15.001	5.000	0.017	300.0	0.000	0.00	0.0	0.600	o	300	
1.012	11.450	0.031	375.0	0.000	0.00	0.0	0.600	o	375	
16.000	5.000	0.013	375.0	0.012	5.00	0.0	0.600	o	375	
16.001	5.000	0.013	375.0	0.000	0.00	0.0	0.600	o	375	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
12.001	50.00	5.51	5.850	0.005	0.0	0.0	0.0	1.27	9.9	0.7
13.000	50.00	5.11	5.750	0.019	0.0	0.0	0.0	0.77	6.0	2.6
13.001	50.00	5.18	5.700	0.019	0.0	0.0	0.0	1.11	8.8	2.6
12.002	50.00	5.71	5.596	0.024	0.0	0.0	0.0	1.27	9.9	3.2
14.000	50.00	5.11	5.450	0.015	0.0	0.0	0.0	0.77	6.0	2.0
14.001	50.00	5.16	5.400	0.015	0.0	0.0	0.0	1.58	12.4	2.0
12.003	50.00	5.75	5.191	0.039	0.0	0.0	0.0	1.27	10.0	5.3
12.004	50.00	5.79	5.100	0.039	0.0	0.0	0.0	2.85	22.4	5.3
1.011	50.00	6.90	4.035	0.299	0.0	0.0	0.0	1.46	58.2	40.5
15.000	50.00	5.09	4.100	0.014	0.0	0.0	0.0	0.90	63.8	1.9
15.001	50.00	5.18	4.083	0.014	0.0	0.0	0.0	0.90	63.8	1.9
1.012	50.00	7.10	3.623	0.313	0.0	0.0	0.0	0.93	102.7	42.4
16.000	50.00	5.09	4.000	0.012	0.0	0.0	0.0	0.93	102.7	1.6
16.001	50.00	5.18	3.987	0.012	0.0	0.0	0.0	0.93	102.7	1.6

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.013	10.269	0.027	375.0	0.000	0.00	0.0	0.600	o	375	
17.000	5.000	0.050	100.0	0.021	5.00	0.0	0.600	o	100	
17.001	18.892	0.200	94.5	0.000	0.00	0.0	0.600	o	100	
18.000	5.000	0.050	100.0	0.065	5.00	0.0	0.600	o	150	
18.001	5.000	0.250	20.0	0.000	0.00	0.0	0.600	o	150	
17.002	25.556	0.350	73.0	0.012	0.00	0.0	0.600	o	150	
17.003	5.796	0.100	58.0	0.000	0.00	0.0	0.600	o	150	
19.000	5.000	0.150	33.3	0.028	5.00	0.0	0.600	o	100	
20.000	5.000	0.050	100.0	0.011	5.00	0.0	0.600	o	100	
19.001	13.914	0.250	55.7	0.002	0.00	0.0	0.600	o	100	
17.004	14.526	0.613	23.7	0.003	0.00	0.0	0.600	o	150	
21.000	5.000	0.050	100.0	0.007	5.00	0.0	0.600	o	100	
21.001	7.316	0.713	10.3	0.004	0.00	0.0	0.600	o	300	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.013	50.00	7.28	3.592	0.325	0.0	0.0	0.0	0.93	102.7	44.0
17.000	50.00	5.11	6.200	0.021	0.0	0.0	0.0	0.77	6.0	2.8
17.001	50.00	5.51	6.150	0.021	0.0	0.0	0.0	0.79	6.2	2.8
18.000	50.00	5.08	6.200	0.065	0.0	0.0	0.0	1.00	17.8	8.8
18.001	50.00	5.12	6.150	0.065	0.0	0.0	0.0	2.26	40.0	8.8
17.002	50.00	5.87	5.900	0.098	0.0	0.0	0.0	1.18	20.8	13.3
17.003	50.00	5.94	5.550	0.098	0.0	0.0	0.0	1.32	23.4	13.3
19.000	50.00	5.06	5.900	0.028	0.0	0.0	0.0	1.34	10.5	3.8
20.000	50.00	5.11	5.800	0.011	0.0	0.0	0.0	0.77	6.0	1.5
19.001	50.00	5.33	5.750	0.041	0.0	0.0	0.0	1.03	8.1	5.6
17.004	50.00	6.06	5.450	0.142	0.0	0.0	0.0	2.08	36.7	19.2
21.000	50.00	5.11	5.650	0.007	0.0	0.0	0.0	0.77	6.0	0.9
21.001	50.00	5.13	5.400	0.011	0.0	0.0	0.0	4.94	348.9	1.5

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
17.005	6.829	0.287	23.8	0.000	0.00	0.0	0.600	o	300	
22.000	5.000	0.050	100.0	0.012	5.00	0.0	0.600	o	375	
22.001	5.000	0.050	100.0	0.000	0.00	0.0	0.600	o	375	
17.006	3.586	0.035	102.5	0.000	0.00	0.0	0.600	o	375	
23.000	12.296	0.290	42.4	0.001	5.00	0.0	0.600	o	100	
24.000	5.000	0.050	100.0	0.014	5.00	0.0	0.600	o	100	
24.001	5.000	0.090	55.6	0.000	0.00	0.0	0.600	o	100	
23.001	11.415	0.270	42.3	0.000	0.00	0.0	0.600	o	100	
25.000	5.000	0.050	100.0	0.014	5.00	0.0	0.600	o	100	
25.001	5.000	0.260	19.2	0.000	0.00	0.0	0.600	o	100	
23.002	12.369	0.041	300.0	0.000	0.00	0.0	0.600	o	300	
26.000	5.000	0.550	9.1	0.014	5.00	0.0	0.600	o	300	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
17.005	50.00	6.09	4.687	0.153	0.0	0.0	0.0	3.24	228.8	20.7
22.000	50.00	5.05	3.800	0.012	0.0	0.0	0.0	1.81	200.1	1.6
22.001	50.00	5.09	3.750	0.012	0.0	0.0	0.0	1.81	200.1	1.6
17.006	50.00	6.13	3.700	0.165	0.0	0.0	0.0	1.79	197.7	22.3
23.000	50.00	5.17	5.000	0.001	0.0	0.0	0.0	1.19	9.3	0.1
24.000	50.00	5.11	4.850	0.014	0.0	0.0	0.0	0.77	6.0	1.9
24.001	50.00	5.19	4.800	0.014	0.0	0.0	0.0	1.04	8.1	1.9
23.001	50.00	5.35	4.710	0.015	0.0	0.0	0.0	1.19	9.3	2.0
25.000	50.00	5.11	4.750	0.014	0.0	0.0	0.0	0.77	6.0	1.9
25.001	50.00	5.16	4.700	0.014	0.0	0.0	0.0	1.77	13.9	1.9
23.002	50.00	5.58	4.240	0.029	0.0	0.0	0.0	0.90	63.8	3.9
26.000	50.00	5.02	4.000	0.014	0.0	0.0	0.0	5.24	370.7	1.9

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Network Design Table for NEW FULL STORM NETWORK 2.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
23.003	5.211	0.014	375.0	0.000	0.00	0.0	0.600	o	375	
1.014	25.789	0.806	32.0	0.000	0.00	0.0	0.600	o	375	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
23.003	50.00	5.67	3.375	0.043	0.0	0.0	0.0	0.93	102.7	5.8
1.014	50.00	7.42	2.852	0.533	0.0	0.0	0.0	3.21	354.9	72.2

Free Flowing Outfall Details for NEW FULL STORM NETWORK 2.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.014	715	5.972	2.046	0.000	0	0

Simulation Criteria for NEW FULL STORM NETWORK 2.SWS

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	21
Number of Online Controls	21	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	30
Ratio R	0.350		

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Online Controls for NEW FULL STORM NETWORK 2.SWS

Orifice Manhole: 701, DS/PN: 1.001, Volume (m³): 0.8

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.350

Orifice Manhole: 721, DS/PN: 2.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.600

Orifice Manhole: 723, DS/PN: 3.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.550

Orifice Manhole: 729, DS/PN: 7.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.950

Orifice Manhole: 731, DS/PN: 8.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.350

Orifice Manhole: 733, DS/PN: 9.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.750

Orifice Manhole: 735, DS/PN: 10.001, Volume (m³): 0.8

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.450

Orifice Manhole: 739, DS/PN: 11.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.400

Orifice Manhole: 746, DS/PN: 13.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.700

Orifice Manhole: 782, DS/PN: 14.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.400

Orifice Manhole: 748, DS/PN: 15.001, Volume (m³): 1.5

Diameter (m) 0.090 Discharge Coefficient 0.600 Invert Level (m) 4.083

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Orifice Manhole: 750, DS/PN: 16.001, Volume (m³): 2.3

Diameter (m) 0.090 Discharge Coefficient 0.600 Invert Level (m) 3.987

Orifice Manhole: 753, DS/PN: 17.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.150

Orifice Manhole: 760, DS/PN: 18.001, Volume (m³): 0.6

Diameter (m) 0.090 Discharge Coefficient 0.600 Invert Level (m) 6.150

Orifice Manhole: 763, DS/PN: 19.001, Volume (m³): 0.7

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.750

Orifice Manhole: 768, DS/PN: 21.001, Volume (m³): 0.8

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 5.600

Orifice Manhole: 770, DS/PN: 22.001, Volume (m³): 2.6

Diameter (m) 0.090 Discharge Coefficient 0.600 Invert Level (m) 3.750

Orifice Manhole: 776, DS/PN: 24.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 4.800

Orifice Manhole: 778, DS/PN: 25.001, Volume (m³): 0.6

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 4.700

Orifice Manhole: 774, DS/PN: 23.003, Volume (m³): 3.8

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 3.375

Hydro-Brake Optimum® Manhole: 13, DS/PN: 1.014, Volume (m³): 5.2

Unit Reference	MD-SHE-0242-3500-1708-3500
Design Head (m)	1.708
Design Flow (l/s)	35.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Diameter (mm)	242
Invert Level (m)	2.852
Minimum Outlet Pipe Diameter (mm)	300
Suggested Manhole Diameter (mm)	1800

Control Points	**Head (m)**	**Flow (l/s)**
Design Point (Calculated)	1.708	34.4

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Hydro-Brake Optimum® Manhole: 13, DS/PN: 1.014, Volume (m³): 5.2

Control Points	Head (m)	Flow (l/s)
Flush-Flo™	0.515	34.4
Kick-Flo®	1.134	28.3
Mean Flow over Head Range	-	29.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.9	1.200	29.0	3.000	45.1	7.000	68.0
0.200	24.5	1.400	31.3	3.500	48.6	7.500	70.3
0.300	32.7	1.600	33.3	4.000	51.8	8.000	72.5
0.400	34.0	1.800	35.3	4.500	54.9	8.500	74.7
0.500	34.4	2.000	37.1	5.000	57.7	9.000	76.8
0.600	34.2	2.200	38.8	5.500	60.5	9.500	78.9
0.800	33.4	2.400	40.5	6.000	63.1		
1.000	31.4	2.600	42.1	6.500	65.6		

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Storage Structures for NEW FULL STORM NETWORK 2.SWS

Porous Car Park Manhole: 700, DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.1
Membrane Percolation (mm/hr)	1000	Length (m)	12.7
Max Percolation (l/s)	10.9	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.550	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 720, DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.5
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	10.4	Slope (1:X)	50.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.650	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 722, DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.5
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	10.4	Slope (1:X)	50.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.600	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 728, DS/PN: 7.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	2.7
Membrane Percolation (mm/hr)	1000	Length (m)	10.5
Max Percolation (l/s)	7.9	Slope (1:X)	50.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 730, DS/PN: 8.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	27.1
Max Percolation (l/s)	37.6	Slope (1:X)	45.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.400	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 732, DS/PN: 9.000

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	37.6
Membrane Percolation (mm/hr)	1000	Safety Factor	1.0

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Porous Car Park Manhole: 732, DS/PN: 9.000

Porosity	0.40	Slope (1:X)	40.0
Invert Level (m)	5.800	Depression Storage (mm)	5
Width (m)	5.0	Evaporation (mm/day)	3
Length (m)	27.1	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 734, DS/PN: 10.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.2
Membrane Percolation (mm/hr)	1000	Length (m)	11.4
Max Percolation (l/s)	19.6	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.750	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 738, DS/PN: 11.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	16.7
Max Percolation (l/s)	13.9	Slope (1:X)	50.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.450	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 745, DS/PN: 13.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.2
Membrane Percolation (mm/hr)	1000	Length (m)	11.6
Max Percolation (l/s)	20.0	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.750	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 781, DS/PN: 14.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	16.1
Max Percolation (l/s)	13.4	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.450	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 747, DS/PN: 15.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.5
Max Percolation (l/s)	11.3	Slope (1:X)	0.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	4.100	Cap Volume Depth (m)	0.400

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Porous Car Park Manhole: 749, DS/PN: 16.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.5
Max Percolation (l/s)	11.3	Slope (1:X)	0.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	4.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 752, DS/PN: 17.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.5
Max Percolation (l/s)	11.8	Slope (1:X)	43.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.200	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 759, DS/PN: 18.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	45.0
Max Percolation (l/s)	75.0	Slope (1:X)	50.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	6.200	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 761, DS/PN: 19.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	30.0
Max Percolation (l/s)	41.7	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.900	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 764, DS/PN: 20.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.3
Max Percolation (l/s)	11.1	Slope (1:X)	100.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	5.800	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 767, DS/PN: 21.000

Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	5.650
Membrane Percolation (mm/hr)	1000	Width (m)	3.0
Max Percolation (l/s)	10.9	Length (m)	13.1
Safety Factor	1.0	Slope (1:X)	100.0
Porosity	0.40	Depression Storage (mm)	5

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Porous Car Park Manhole: 767, DS/PN: 21.000

Evaporation (mm/day) 3 Cap Volume Depth (m) 0.400

Porous Car Park Manhole: 769, DS/PN: 22.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.1
Membrane Percolation (mm/hr)	1000	Length (m)	14.3
Max Percolation (l/s)	12.3	Slope (1:X)	38.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	3.800	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 775, DS/PN: 24.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.5
Max Percolation (l/s)	11.3	Slope (1:X)	35.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	4.850	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 777, DS/PN: 25.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.5
Max Percolation (l/s)	11.3	Slope (1:X)	60.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	4.750	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 780, DS/PN: 26.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.1
Membrane Percolation (mm/hr)	1000	Length (m)	15.2
Max Percolation (l/s)	13.1	Slope (1:X)	60.0
Safety Factor	1.0	Depression Storage (mm)	5
Porosity	0.40	Evaporation (mm/day)	3
Invert Level (m)	4.000	Cap Volume Depth (m)	0.400

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 5.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 21
Number of Online Controls 21 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.350
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.300 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	700	15 minute 1 year Winter I+0%	7.250	6.580	-0.070	0.000	0.20	
1.001	701	15 minute 1 year Winter I+0%	7.250	6.503	0.053	0.000	0.33	
1.002	702	15 minute 1 year Winter I+0%	7.400	6.337	-0.063	0.000	0.30	
2.000	720	15 minute 1 year Winter I+0%	7.250	6.676	-0.074	0.000	0.15	
2.001	721	30 minute 1 year Summer I+0%	7.250	6.654	-0.046	0.000	0.05	
1.003	703	15 minute 1 year Winter I+0%	7.250	6.230	-0.055	0.000	0.42	
3.000	722	15 minute 1 year Winter I+0%	7.200	6.623	-0.077	0.000	0.12	
3.001	723	30 minute 1 year Winter I+0%	7.200	6.598	-0.052	0.000	0.04	
1.004	704	15 minute 1 year Winter I+0%	7.200	6.142	-0.045	0.000	0.59	
4.000	724	15 minute 1 year Winter I+0%	7.250	6.810	-0.090	0.000	0.02	
1.005	705	15 minute 1 year Winter I+0%	7.250	6.102	-0.048	0.000	0.53	
5.000	725	15 minute 1 year Winter I+0%	7.150	6.570	-0.080	0.000	0.09	
1.006	706	30 minute 1 year Winter I+0%	7.000	5.912	-0.038	0.000	0.70	
6.000	726	15 minute 1 year Winter I+0%	7.000	6.237	-0.063	0.000	0.28	
6.001	727	15 minute 1 year Winter I+0%	6.800	5.982	-0.068	0.000	0.22	
1.007	707	30 minute 1 year Winter I+0%	6.800	5.809	-0.091	0.000	0.33	
7.000	728	15 minute 1 year Winter I+0%	6.650	6.027	-0.073	0.000	0.15	
7.001	729	15 minute 1 year Winter I+0%	6.650	6.005	-0.045	0.000	0.06	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.000	700	0.079	0.824	2.1	OK
1.001	701	0.144	0.824	1.9	SURCHARGED
1.002	702	0.035	0.824	1.9	OK
2.000	720	0.068	0.293	0.8	OK
2.001	721	0.054	0.382	0.7	OK
1.003	703	0.048	1.116	2.6	OK
3.000	722	0.057	0.233	0.6	OK
3.001	723	0.048	0.370	0.6	OK
1.004	704	0.059	1.349	3.2	OK
4.000	724	0.004	0.240	0.5	OK
1.005	705	0.048	1.709	3.5	OK
5.000	725	0.013	0.539	1.1	OK
1.006	706	0.070	3.173	4.1	OK
6.000	726	0.027	0.840	1.8	OK
6.001	727	0.032	0.840	1.8	OK
1.007	707	0.051	4.286	5.4	OK
7.000	728	0.038	0.278	0.8	OK
7.001	729	0.056	0.278	0.8	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.008	708	15 minute 1 year Winter I+0%	6.500	5.701	-0.099	0.000	0.25	
1.009	9	30 minute 1 year Winter I+0%	6.882	5.541	-0.099	0.000	0.25	
8.000	730	30 minute 1 year Winter I+0%	6.000	5.504	0.004	0.000	0.35	
8.001	731	30 minute 1 year Winter I+0%	6.000	5.494	0.044	0.000	0.11	
9.000	732	30 minute 1 year Winter I+0%	6.400	5.872	-0.028	0.000	0.33	
9.001	733	30 minute 1 year Winter I+0%	6.400	5.864	0.014	0.000	0.06	
1.010	10	30 minute 1 year Winter I+0%	6.195	4.745	-0.076	0.000	0.49	
10.000	734	15 minute 1 year Winter I+0%	6.350	5.778	-0.072	0.000	0.17	
10.001	735	15 minute 1 year Winter I+0%	6.350	5.606	0.056	0.000	0.11	
10.002	736	15 minute 1 year Winter I+0%	6.333	5.014	-0.061	0.000	0.31	
11.000	738	15 minute 1 year Winter I+0%	6.050	5.493	-0.057	0.000	0.28	
11.001	739	15 minute 1 year Winter I+0%	6.050	5.485	-0.015	0.000	0.06	
10.003	737	15 minute 1 year Winter I+0%	6.019	4.492	-0.094	0.000	0.30	
12.000	740	15 minute 1 year Winter I+0%	6.650	6.072	-0.078	0.000	0.10	
12.001	741	15 minute 1 year Winter I+0%	6.650	5.867	-0.083	0.000	0.07	
13.000	745	30 minute 1 year Winter I+0%	6.350	5.793	-0.057	0.000	0.25	
13.001	746	30 minute 1 year Winter I+0%	6.350	5.786	-0.014	0.000	0.17	
12.002	742	15 minute 1 year Winter I+0%	6.151	5.626	-0.070	0.000	0.19	
14.000	781	15 minute 1 year Winter I+0%	6.050	5.492	-0.058	0.000	0.27	
14.001	782	15 minute 1 year Winter I+0%	6.050	5.484	-0.016	0.000	0.12	
12.003	743	15 minute 1 year Winter I+0%	6.004	5.233	-0.058	0.000	0.37	
12.004	744	15 minute 1 year Winter I+0%	5.971	5.126	-0.074	0.000	0.15	
1.011	12	15 minute 1 year Winter I+0%	5.857	4.139	-0.121	0.000	0.43	
15.000	747	30 minute 1 year Winter I+0%	5.450	4.128	-0.272	0.000	0.01	
15.001	748	60 minute 1 year Winter I+0%	5.450	4.121	-0.263	0.000	0.01	
1.012	712	30 minute 1 year Winter I+0%	5.438	3.778	-0.220	0.000	0.34	
16.000	749	60 minute 1 year Winter I+0%	5.300	4.024	-0.351	0.000	0.01	
16.001	750	60 minute 1 year Winter I+0%	5.300	4.020	-0.342	0.000	0.01	
1.013	713	30 minute 1 year Winter I+0%	5.312	3.745	-0.222	0.000	0.35	
17.000	752	15 minute 1 year Winter I+0%	6.800	6.265	-0.035	0.000	0.31	
17.001	753	15 minute 1 year Winter I+0%	6.800	6.257	0.007	0.000	0.25	
18.000	759	30 minute 1 year Winter I+0%	6.800	6.287	-0.063	0.000	0.34	
18.001	760	30 minute 1 year Winter I+0%	6.800	6.277	-0.023	0.000	0.15	
17.002	754	30 minute 1 year Winter I+0%	6.800	5.963	-0.087	0.000	0.36	
17.003	755	30 minute 1 year Winter I+0%	6.650	5.613	-0.087	0.000	0.37	
19.000	761	15 minute 1 year Winter I+0%	6.500	5.937	-0.063	0.000	0.29	
20.000	764	30 minute 1 year Winter I+0%	6.400	5.892	-0.008	0.000	0.20	
19.001	763	30 minute 1 year Summer I+0%	6.500	5.907	0.057	0.000	0.24	
17.004	756	30 minute 1 year Winter I+0%	6.350	5.503	-0.097	0.000	0.27	
21.000	767	30 minute 1 year Summer I+0%	6.250	5.674	-0.076	0.000	0.12	
21.001	768	30 minute 1 year Winter I+0%	6.250	5.659	-0.041	0.000	0.00	
17.005	757	30 minute 1 year Winter I+0%	5.850	4.741	-0.246	0.000	0.08	
22.000	769	30 minute 1 year Winter I+0%	5.300	3.825	-0.350	0.000	0.01	
22.001	770	30 minute 1 year Winter I+0%	5.300	3.819	-0.306	0.000	0.01	
17.006	758	30 minute 1 year Winter I+0%	5.300	3.780	-0.295	0.000	0.10	
23.000	771	15 minute 1 year Winter I+0%	5.700	5.007	-0.093	0.000	0.01	
24.000	775	15 minute 1 year Winter I+0%	5.450	4.896	-0.054	0.000	0.29	
24.001	776	15 minute 1 year Winter I+0%	5.450	4.889	-0.011	0.000	0.18	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.008	708	0.062	3.367	5.9	OK
1.009	9	0.049	6.130	7.5	OK
8.000	730	0.575	2.353	1.8	SURCHARGED
8.001	731	0.148	2.354	1.8	SURCHARGED
9.000	732	0.268	1.474	1.8	OK
9.001	733	0.119	1.474	1.6	SURCHARGED
1.010	10	0.073	11.641	12.4	OK
10.000	734	0.115	0.787	2.2	OK
10.001	735	0.141	0.787	1.9	SURCHARGED
10.002	736	0.030	1.686	3.2	OK
11.000	738	0.087	0.590	1.5	OK
11.001	739	0.089	0.590	1.3	OK
10.003	737	0.045	2.276	4.5	OK
12.000	740	0.015	0.300	0.6	OK
12.001	741	0.014	0.300	0.6	OK
13.000	745	0.260	1.154	1.3	OK
13.001	746	0.090	1.154	1.3	OK
12.002	742	0.028	1.082	1.8	OK
14.000	781	0.138	0.659	1.4	OK
14.001	782	0.088	0.659	1.3	OK
12.003	743	0.040	1.741	3.1	OK
12.004	744	0.020	1.742	3.1	OK
1.011	12	0.113	14.681	22.8	OK
15.000	747	0.478	0.864	0.6	OK
15.001	748	0.044	1.246	0.6	OK
1.012	712	0.220	21.385	23.5	OK
16.000	749	0.411	1.037	0.5	OK
16.001	750	0.053	1.035	0.5	OK
1.013	713	0.501	22.061	23.8	OK
17.000	752	0.236	1.048	1.6	OK
17.001	753	0.113	1.048	1.5	SURCHARGED
18.000	759	0.520	3.830	4.8	OK
18.001	760	0.148	3.830	4.8	OK
17.002	754	0.059	6.256	7.2	OK
17.003	755	0.073	6.256	7.2	OK
19.000	761	0.167	0.930	2.6	OK
20.000	764	0.588	0.679	1.1	OK
19.001	763	0.180	1.974	1.9	SURCHARGED
17.004	756	0.057	8.816	9.3	OK
21.000	767	0.050	0.302	0.7	OK
21.001	768	0.234	0.460	0.8	OK
17.005	757	0.046	9.277	10.1	OK
22.000	769	0.044	0.734	1.2	OK
22.001	770	0.121	0.733	1.0	OK
17.006	758	0.142	10.012	11.0	OK
23.000	771	0.002	0.060	0.1	OK
24.000	775	0.081	0.638	1.5	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
24.001	776	0.093	0.638	1.3	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
23.001	772	15 minute 1 year Winter I+0%	5.450	4.737	-0.073	0.000	0.16	
25.000	777	15 minute 1 year Winter I+0%	5.350	4.793	-0.057	0.000	0.26	
25.001	778	15 minute 1 year Winter I+0%	5.350	4.786	-0.014	0.000	0.11	
23.002	773	15 minute 1 year Winter I+0%	5.350	4.284	-0.256	0.000	0.05	
26.000	780	15 minute 1 year Winter I+0%	5.300	4.014	-0.286	0.000	0.01	
23.003	774	30 minute 1 year Winter I+0%	5.300	3.877	0.127	0.000	0.04	
1.014	13	30 minute 1 year Winter I+0%	5.335	3.611	0.384	0.000	0.11	

PN	US/MH Name	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
23.001	772	0.026	0.698	1.4	OK
25.000	777	0.101	0.638	1.4	OK
25.001	778	0.090	0.638	1.3	OK
23.002	773	0.034	1.335	2.7	OK
26.000	780	0.015	0.605	1.8	OK
23.003	774	0.845	2.787	3.3	SURCHARGED
1.014	13	1.366	34.843	33.6	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 5.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 21
Number of Online Controls 21 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.350
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.300 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	700	15 minute 30 year Winter I+0%	7.250	6.644	-0.006	0.000	0.30	
1.001	701	15 minute 30 year Winter I+0%	7.250	6.629	0.179	0.000	0.47	
1.002	702	15 minute 30 year Winter I+0%	7.400	6.345	-0.055	0.000	0.42	
2.000	720	15 minute 30 year Winter I+0%	7.250	6.707	-0.043	0.000	0.29	
2.001	721	15 minute 30 year Winter I+0%	7.250	6.699	-0.001	0.000	0.09	
1.003	703	15 minute 30 year Winter I+0%	7.250	6.255	-0.030	0.000	0.68	
3.000	722	15 minute 30 year Winter I+0%	7.200	6.650	-0.050	0.000	0.29	
3.001	723	15 minute 30 year Winter I+0%	7.200	6.642	-0.008	0.000	0.08	
1.004	704	15 minute 30 year Winter I+0%	7.200	6.212	0.025	0.000	1.06	
4.000	724	15 minute 30 year Winter I+0%	7.250	6.815	-0.085	0.000	0.05	
1.005	705	15 minute 30 year Winter I+0%	7.250	6.178	0.028	0.000	0.97	
5.000	725	15 minute 30 year Winter I+0%	7.150	6.582	-0.068	0.000	0.23	
1.006	706	15 minute 30 year Winter I+0%	7.000	5.999	0.049	0.000	1.44	
6.000	726	15 minute 30 year Winter I+0%	7.000	6.263	-0.037	0.000	0.69	
6.001	727	15 minute 30 year Winter I+0%	6.800	6.002	-0.048	0.000	0.54	
1.007	707	15 minute 30 year Winter I+0%	6.800	5.851	-0.049	0.000	0.78	
7.000	728	15 minute 30 year Winter I+0%	6.650	6.065	-0.035	0.000	0.31	
7.001	729	15 minute 30 year Winter I+0%	6.650	6.056	0.006	0.000	0.12	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.000	700	0.624	2.302	3.2	OK
1.001	701	0.266	2.302	2.6	SURCHARGED
1.002	702	0.043	2.302	2.6	OK
2.000	720	0.292	0.988	1.5	OK
2.001	721	0.105	0.988	1.4	OK
1.003	703	0.077	3.290	4.2	OK
3.000	722	0.227	0.841	1.5	OK
3.001	723	0.097	0.841	1.4	OK
1.004	704	0.142	4.131	5.7	SURCHARGED
4.000	724	0.008	0.588	1.3	OK
1.005	705	0.122	5.013	6.4	SURCHARGED
5.000	725	0.024	1.322	2.8	OK
1.006	706	0.193	6.335	8.5	SURCHARGED
6.000	726	0.050	2.058	4.3	OK
6.001	727	0.057	2.058	4.4	OK
1.007	707	0.090	8.394	12.7	OK
7.000	728	0.166	0.887	1.6	OK
7.001	729	0.112	0.887	1.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
1.008	708	15 minute 30 year Winter I+0%	6.500	5.733	-0.067	0.000	0.59
1.009	9	15 minute 30 year Winter I+0%	6.882	5.578	-0.062	0.000	0.62
8.000	730	30 minute 30 year Winter I+0%	6.000	5.649	0.149	0.000	0.51
8.001	731	30 minute 30 year Winter I+0%	6.000	5.634	0.184	0.000	0.17
9.000	732	30 minute 30 year Winter I+0%	6.400	6.000	0.100	0.000	0.46
9.001	733	30 minute 30 year Winter I+0%	6.400	5.987	0.137	0.000	0.10
1.010	10	30 minute 30 year Winter I+0%	6.195	5.009	0.188	0.000	0.99
10.000	734	15 minute 30 year Winter I+0%	6.350	5.820	-0.030	0.000	0.33
10.001	735	15 minute 30 year Winter I+0%	6.350	5.803	0.253	0.000	0.18
10.002	736	15 minute 30 year Winter I+0%	6.333	5.042	-0.033	0.000	0.74
11.000	738	15 minute 30 year Winter I+0%	6.050	5.577	0.027	0.000	0.39
11.001	739	15 minute 30 year Winter I+0%	6.050	5.566	0.066	0.000	0.09
10.003	737	30 minute 30 year Winter I+0%	6.019	4.576	-0.010	0.000	0.56
12.000	740	15 minute 30 year Winter I+0%	6.650	6.085	-0.065	0.000	0.26
12.001	741	15 minute 30 year Winter I+0%	6.650	5.878	-0.072	0.000	0.17
13.000	745	30 minute 30 year Winter I+0%	6.350	5.853	0.003	0.000	0.34
13.001	746	30 minute 30 year Winter I+0%	6.350	5.844	0.044	0.000	0.23
12.002	742	15 minute 30 year Winter I+0%	6.151	5.636	-0.060	0.000	0.33
14.000	781	30 minute 30 year Winter I+0%	6.050	5.560	0.010	0.000	0.35
14.001	782	30 minute 30 year Winter I+0%	6.050	5.550	0.050	0.000	0.17
12.003	743	15 minute 30 year Winter I+0%	6.004	5.246	-0.044	0.000	0.59
12.004	744	15 minute 30 year Winter I+0%	5.971	5.133	-0.067	0.000	0.24
1.011	12	30 minute 30 year Winter I+0%	5.857	4.554	0.294	0.000	0.86
15.000	747	30 minute 30 year Winter I+0%	5.450	4.302	-0.098	0.000	0.11
15.001	748	30 minute 30 year Winter I+0%	5.450	4.303	-0.080	0.000	0.12
1.012	712	30 minute 30 year Winter I+0%	5.438	4.396	0.398	0.000	0.57
16.000	749	60 minute 30 year Winter I+0%	5.300	4.311	-0.064	0.000	0.07
16.001	750	60 minute 30 year Winter I+0%	5.300	4.311	-0.051	0.000	0.08
1.013	713	30 minute 30 year Winter I+0%	5.312	4.382	0.414	0.000	0.52
17.000	752	30 minute 30 year Winter I+0%	6.800	6.364	0.064	0.000	0.42
17.001	753	30 minute 30 year Winter I+0%	6.800	6.352	0.102	0.000	0.37
18.000	759	30 minute 30 year Winter I+0%	6.800	6.427	0.077	0.000	0.56
18.001	760	30 minute 30 year Winter I+0%	6.800	6.411	0.111	0.000	0.25
17.002	754	15 minute 30 year Winter I+0%	6.800	5.986	-0.064	0.000	0.61
17.003	755	15 minute 30 year Winter I+0%	6.650	5.637	-0.063	0.000	0.63
19.000	761	30 minute 30 year Winter I+0%	6.500	6.013	0.013	0.000	0.43
20.000	764	60 minute 30 year Winter I+0%	6.400	6.006	0.106	0.000	0.28
19.001	763	60 minute 30 year Winter I+0%	6.500	6.003	0.153	0.000	0.32
17.004	756	15 minute 30 year Winter I+0%	6.350	5.521	-0.079	0.000	0.45
21.000	767	30 minute 30 year Winter I+0%	6.250	5.726	-0.024	0.000	0.23
21.001	768	30 minute 30 year Winter I+0%	6.250	5.721	0.021	0.000	0.01
17.005	757	15 minute 30 year Winter I+0%	5.850	4.757	-0.230	0.000	0.12
22.000	769	60 minute 30 year Winter I+0%	5.300	4.327	0.152	0.000	0.05
22.001	770	60 minute 30 year Winter I+0%	5.300	4.327	0.202	0.000	0.06
17.006	758	30 minute 30 year Winter I+0%	5.300	4.373	0.298	0.000	0.12
23.000	771	15 minute 30 year Winter I+0%	5.700	5.012	-0.088	0.000	0.04
24.000	775	15 minute 30 year Winter I+0%	5.450	4.992	0.042	0.000	0.41
24.001	776	15 minute 30 year Winter I+0%	5.450	4.980	0.080	0.000	0.29

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.008	708		0.105	9.281	14.1	OK
1.009	9		0.087	11.926	18.1	OK
8.000	730		2.994	6.522	2.7	SURCHARGED
8.001	731		0.273	6.423	2.7	SURCHARGED
9.000	732		1.769	4.606	2.4	SURCHARGED
9.001	733		0.232	4.601	2.4	SURCHARGED
1.010	10		0.463	31.196	25.2	SURCHARGED
10.000	734		0.664	2.440	4.3	OK
10.001	735		0.330	2.439	3.0	SURCHARGED
10.002	736		0.055	4.643	7.7	OK
11.000	738		0.591	1.807	2.1	SURCHARGED
11.001	739		0.168	1.807	2.0	SURCHARGED
10.003	737		0.128	8.787	8.4	OK
12.000	740		0.026	0.735	1.5	OK
12.001	741		0.027	0.735	1.6	OK
13.000	745		1.413	3.358	1.8	SURCHARGED
13.001	746		0.147	3.355	1.8	SURCHARGED
12.002	742		0.040	3.167	3.2	OK
14.000	781		0.816	2.694	1.9	SURCHARGED
14.001	782		0.153	2.693	1.8	SURCHARGED
12.003	743		0.054	5.130	4.9	OK
12.004	744		0.027	5.130	4.9	OK
1.011	12		0.980	54.772	45.6	SURCHARGED
15.000	747		3.450	2.048	5.0	OK
15.001	748		0.364	1.997	5.6	OK
1.012	712		2.133	56.685	39.7	SURCHARGED
16.000	749		5.472	2.722	5.2	OK
16.001	750		0.775	2.705	5.8	OK
1.013	713		2.627	57.672	35.2	SURCHARGED
17.000	752		1.300	3.900	2.2	SURCHARGED
17.001	753		0.202	3.899	2.2	SURCHARGED
18.000	759		3.282	11.369	7.9	SURCHARGED
18.001	760		0.292	11.368	7.9	SURCHARGED
17.002	754		0.084	12.841	12.1	OK
17.003	755		0.102	12.841	12.1	OK
19.000	761		1.365	4.729	4.0	SURCHARGED
20.000	764		2.405	2.547	1.5	SURCHARGED
19.001	763		0.276	9.284	2.5	SURCHARGED
17.004	756		0.077	18.355	15.1	OK
21.000	767		0.408	1.173	1.2	OK
21.001	768		0.299	1.734	1.6	SURCHARGED
17.005	757		0.061	19.554	16.7	OK
22.000	769		6.377	2.776	5.5	SURCHARGED
22.001	770		1.222	2.775	6.8	SURCHARGED
17.006	758		1.359	28.079	13.4	SURCHARGED
23.000	771		0.006	0.147	0.3	OK
24.000	775		0.545	1.855	2.2	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
24.001	776		0.181	1.855	2.1	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
23.001	772	15 minute 30 year Winter I+0%	5.450	4.744	-0.066	0.000	0.26
25.000	777	15 minute 30 year Winter I+0%	5.350	4.872	0.022	0.000	0.38
25.001	778	15 minute 30 year Winter I+0%	5.350	4.861	0.061	0.000	0.16
23.002	773	60 minute 30 year Winter I+0%	5.350	4.396	-0.144	0.000	0.07
26.000	780	60 minute 30 year Winter I+0%	5.300	4.396	0.096	0.000	0.02
23.003	774	60 minute 30 year Winter I+0%	5.300	4.395	0.645	0.000	0.06
1.014	13	30 minute 30 year Winter I+0%	5.335	4.371	1.144	0.000	0.11

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
23.001	772		0.035	2.002	2.3	OK
25.000	777		0.635	1.855	2.0	SURCHARGED
25.001	778		0.163	1.855	1.9	SURCHARGED
23.002	773		0.131	6.834	3.7	OK
26.000	780		5.406	3.267	4.2	SURCHARGED
23.003	774		2.135	10.102	4.8	SURCHARGED
1.014	13		3.826	90.156	33.1	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 5.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 21
Number of Online Controls 21 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.350
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.300 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
1.000	700	30 minute 100 year Winter I+30%	7.250	6.723	0.073	0.000	0.28
1.001	701	30 minute 100 year Winter I+30%	7.250	6.709	0.259	0.000	0.51
1.002	702	30 minute 100 year Winter I+30%	7.400	6.480	0.080	0.000	0.50
2.000	720	30 minute 100 year Winter I+30%	7.250	6.746	-0.004	0.000	0.33
2.001	721	30 minute 100 year Winter I+30%	7.250	6.736	0.036	0.000	0.11
1.003	703	30 minute 100 year Winter I+30%	7.250	6.460	0.175	0.000	0.81
3.000	722	15 minute 100 year Winter I+30%	7.200	6.685	-0.015	0.000	0.32
3.001	723	15 minute 100 year Winter I+30%	7.200	6.675	0.025	0.000	0.10
1.004	704	30 minute 100 year Winter I+30%	7.200	6.415	0.228	0.000	1.27
4.000	724	15 minute 100 year Winter I+30%	7.250	6.820	-0.080	0.000	0.09
1.005	705	30 minute 100 year Winter I+30%	7.250	6.375	0.225	0.000	1.17
5.000	725	15 minute 100 year Winter I+30%	7.150	6.593	-0.057	0.000	0.38
1.006	706	30 minute 100 year Winter I+30%	7.000	6.189	0.239	0.000	1.70
6.000	726	15 minute 100 year Winter I+30%	7.000	6.343	0.043	0.000	1.07
6.001	727	15 minute 100 year Winter I+30%	6.800	6.129	0.079	0.000	0.79
1.007	707	30 minute 100 year Winter I+30%	6.800	6.086	0.186	0.000	0.93
7.000	728	15 minute 100 year Winter I+30%	6.650	6.119	0.019	0.000	0.38
7.001	729	30 minute 100 year Winter I+30%	6.650	6.110	0.060	0.000	0.16

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.000	700		1.864	5.454	3.0	SURCHARGED
1.001	701		0.338	5.453	2.8	SURCHARGED
1.002	702		0.176	5.453	3.1	SURCHARGED
2.000	720		0.764	2.472	1.8	OK
2.001	721		0.140	2.471	1.7	SURCHARGED
1.003	703		0.316	7.924	5.0	SURCHARGED
3.000	722		0.605	1.543	1.7	OK
3.001	723		0.130	1.543	1.7	SURCHARGED
1.004	704		0.350	10.062	6.8	SURCHARGED
4.000	724		0.013	0.989	2.1	OK
1.005	705		0.299	12.056	7.7	SURCHARGED
5.000	725		0.033	2.225	4.7	OK
1.006	706		0.448	15.047	10.0	SURCHARGED
6.000	726		0.120	3.461	6.7	SURCHARGED
6.001	727		0.232	3.461	6.4	SURCHARGED
1.007	707		0.353	19.701	15.0	SURCHARGED
7.000	728		0.482	1.589	2.0	SURCHARGED
7.001	729		0.163	2.185	1.9	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
1.008	708	30 minute 100 year Winter I+30%	6.500	6.026	0.226	0.000	0.67
1.009	9	30 minute 100 year Winter I+30%	6.882	5.973	0.333	0.000	0.74
8.000	730	60 minute 100 year Winter I+30%	6.000	5.805	0.305	0.000	0.60
8.001	731	60 minute 100 year Winter I+30%	6.000	5.794	0.344	0.000	0.20
9.000	732	60 minute 100 year Winter I+30%	6.400	6.111	0.211	0.000	0.56
9.001	733	60 minute 100 year Winter I+30%	6.400	6.095	0.245	0.000	0.12
1.010	10	30 minute 100 year Winter I+30%	6.195	5.661	0.840	0.000	1.09
10.000	734	30 minute 100 year Winter I+30%	6.350	5.876	0.026	0.000	0.29
10.001	735	30 minute 100 year Winter I+30%	6.350	5.858	0.308	0.000	0.20
10.002	736	60 minute 100 year Winter I+30%	6.333	5.483	0.408	0.000	0.72
11.000	738	30 minute 100 year Winter I+30%	6.050	5.663	0.113	0.000	0.48
11.001	739	30 minute 100 year Winter I+30%	6.050	5.649	0.149	0.000	0.11
10.003	737	60 minute 100 year Winter I+30%	6.019	5.420	0.834	0.000	0.55
12.000	740	15 minute 100 year Winter I+30%	6.650	6.096	-0.054	0.000	0.43
12.001	741	15 minute 100 year Winter I+30%	6.650	5.886	-0.064	0.000	0.28
13.000	745	30 minute 100 year Winter I+30%	6.350	5.913	0.063	0.000	0.42
13.001	746	30 minute 100 year Winter I+30%	6.350	5.901	0.101	0.000	0.29
12.002	742	15 minute 100 year Winter I+30%	6.151	5.644	-0.052	0.000	0.47
14.000	781	30 minute 100 year Winter I+30%	6.050	5.627	0.077	0.000	0.44
14.001	782	30 minute 100 year Winter I+30%	6.050	5.614	0.114	0.000	0.21
12.003	743	60 minute 100 year Winter I+30%	6.004	5.465	0.174	0.000	0.66
12.004	744	60 minute 100 year Winter I+30%	5.971	5.442	0.242	0.000	0.27
1.011	12	60 minute 100 year Winter I+30%	5.857	5.403	1.143	0.000	0.94
15.000	747	60 minute 100 year Winter I+30%	5.450	5.339	0.939	0.000	0.13
15.001	748	60 minute 100 year Winter I+30%	5.450	5.338	0.955	0.000	0.14
1.012	712	60 minute 100 year Winter I+30%	5.438	5.325	1.327	0.000	0.58
16.000	749	60 minute 100 year Winter I+30%	5.300	5.300	0.925	0.303	0.07
16.001	750	60 minute 100 year Winter I+30%	5.300	5.300	0.939	0.313	0.08
1.013	713	60 minute 100 year Winter I+30%	5.312	5.312	1.345	0.126	0.48
17.000	752	30 minute 100 year Winter I+30%	6.800	6.464	0.164	0.000	0.53
17.001	753	30 minute 100 year Winter I+30%	6.800	6.449	0.199	0.000	0.46
18.000	759	30 minute 100 year Winter I+30%	6.800	6.561	0.211	0.000	0.71
18.001	760	30 minute 100 year Winter I+30%	6.800	6.537	0.237	0.000	0.32
17.002	754	15 minute 100 year Winter I+30%	6.800	6.007	-0.043	0.000	0.84
17.003	755	15 minute 100 year Winter I+30%	6.650	5.657	-0.043	0.000	0.86
19.000	761	60 minute 100 year Winter I+30%	6.500	6.110	0.110	0.000	0.36
20.000	764	60 minute 100 year Winter I+30%	6.400	6.104	0.204	0.000	0.28
19.001	763	60 minute 100 year Winter I+30%	6.500	6.099	0.249	0.000	0.39
17.004	756	15 minute 100 year Winter I+30%	6.350	5.535	-0.065	0.000	0.61
21.000	767	30 minute 100 year Winter I+30%	6.250	5.783	0.033	0.000	0.30
21.001	768	30 minute 100 year Winter I+30%	6.250	5.777	0.077	0.000	0.01
17.005	757	60 minute 100 year Winter I+30%	5.850	5.309	0.322	0.000	0.15
22.000	769	60 minute 100 year Winter I+30%	5.300	5.300	1.125	0.165	0.05
22.001	770	60 minute 100 year Winter I+30%	5.300	5.300	1.175	0.175	0.06
17.006	758	60 minute 100 year Winter I+30%	5.300	5.301	1.226	0.566	0.18
23.000	771	60 minute 100 year Winter I+30%	5.700	5.141	0.041	0.000	0.03
24.000	775	120 minute 100 year Winter I+30%	5.450	5.123	0.173	0.000	0.40
24.001	776	60 minute 100 year Winter I+30%	5.450	5.123	0.223	0.000	0.35

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.008	708		0.500	21.885	16.0	SURCHARGED
1.009	9		0.508	27.867	21.8	SURCHARGED
8.000	730		7.731	15.293	3.2	FLOOD RISK
8.001	731		0.411	15.195	3.2	FLOOD RISK
9.000	732		4.139	10.835	3.0	FLOOD RISK
9.001	733		0.325	10.834	3.0	SURCHARGED
1.010	10		1.400	50.106	28.0	SURCHARGED
10.000	734		2.058	5.962	3.8	SURCHARGED
10.001	735		0.380	5.961	3.2	SURCHARGED
10.002	736		0.465	14.143	7.4	SURCHARGED
11.000	738		1.542	4.403	2.5	SURCHARGED
11.001	739		0.243	4.402	2.5	SURCHARGED
10.003	737		0.992	19.861	8.3	SURCHARGED
12.000	740		0.036	1.236	2.6	OK
12.001	741		0.038	1.236	2.6	OK
13.000	745		3.154	5.657	2.2	SURCHARGED
13.001	746		0.200	5.558	2.2	SURCHARGED
12.002	742		0.050	5.570	4.5	OK
14.000	781		2.006	4.744	2.3	SURCHARGED
14.001	782		0.212	4.740	2.3	SURCHARGED
12.003	743		0.321	16.026	5.5	SURCHARGED
12.004	744		0.310	16.026	5.5	SURCHARGED
1.011	12		2.125	123.768	49.6	SURCHARGED
15.000	747		7.548	5.457	6.1	FLOOD RISK
15.001	748		1.362	5.421	6.7	FLOOD RISK
1.012	712		3.479	129.119	40.4	FLOOD RISK
16.000	749		8.636	4.442	5.0	FLOOD
16.001	750		2.584	4.377	5.8	FLOOD
1.013	713		4.090	133.364	32.7	FLOOD
17.000	752		3.027	6.718	2.8	SURCHARGED
17.001	753		0.285	6.657	2.7	SURCHARGED
18.000	759		8.122	20.217	9.9	FLOOD RISK
18.001	760		0.401	20.195	9.9	FLOOD RISK
17.002	754		0.107	22.666	16.7	OK
17.003	755		0.129	22.666	16.6	OK
19.000	761		4.596	11.189	3.3	SURCHARGED
20.000	764		4.042	3.988	1.5	FLOOD RISK
19.001	763		0.360	15.861	3.0	SURCHARGED
17.004	756		0.093	31.239	20.5	OK
21.000	767		1.172	2.130	1.6	SURCHARGED
21.001	768		0.351	3.236	2.0	SURCHARGED
17.005	757		0.977	61.574	20.1	SURCHARGED
22.000	769		9.396	4.897	5.3	FLOOD
22.001	770		2.787	4.889	6.6	FLOOD
17.006	758		3.641	66.403	18.8	FLOOD
23.000	771		0.118	0.426	0.3	SURCHARGED
24.000	775		1.799	7.188	2.1	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
24.001	776		0.306	5.769	2.5	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NEW FULL STORM NETWORK 2.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
23.001	772	60 minute 100 year Winter I+30%	5.450	5.141	0.331	0.000	0.30
25.000	777	120 minute 100 year Winter I+30%	5.350	5.081	0.231	0.000	0.42
25.001	778	120 minute 100 year Winter I+30%	5.350	5.079	0.279	0.000	0.19
23.002	773	60 minute 100 year Winter I+30%	5.350	5.149	0.609	0.000	0.09
26.000	780	60 minute 100 year Winter I+30%	5.300	5.151	0.851	0.000	0.02
23.003	774	60 minute 100 year Winter I+30%	5.300	5.151	1.401	0.000	0.07
1.014	13	60 minute 100 year Winter I+30%	5.335	5.305	2.078	0.000	0.13

PN	US/MH Name	Overflow (l/s)	Maximum Vol (m³)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
23.001	772		0.488	6.195	2.7	SURCHARGED
25.000	777		3.818	7.188	2.2	FLOOD RISK
25.001	778		0.355	7.188	2.3	FLOOD RISK
23.002	773		0.895	11.798	4.5	FLOOD RISK
26.000	780		8.532	-0.124	4.1	FLOOD RISK
23.003	774		3.594	9.467	5.5	FLOOD RISK
1.014	13		5.162	208.998	40.9	FLOOD RISK

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