30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
24.000	L	0.26		73.0	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
24.001	L	120 Winter	30	+0%	1/60 Summer				128.473	0.483	0.000
1.019	HW4	120 Winter	30	+0%					128.468	-0.255	0.000
1.020	HW9	120 Winter	30	+0%	1/30 Summer				128.431	0.970	0.000
1.021	27	960 Winter	30	+0%	100/240 Summer				127.458	-0.242	0.000
1.022	HW10	960 Winter	30	+0%	100/480 Summer				127.381	-0.269	0.000
25.000	L	180 Winter	30	+0%					127.813	-0.600	0.000
25.001	L	180 Winter	30	+0%					127.670	-0.600	0.000
25.002	S	180 Winter	30	+0%					127.520	-1.500	0.000
26.000	L	180 Winter	30	+0%					127.365	-0.600	0.000
26.001	L	960 Winter	30	+0%	100/600 Summer				127.281	-0.524	0.000
25.003	S	960 Winter	30	+0%					127.281	-1.268	0.000
25.004	HW7	960 Winter	30	+0%	100/480 Summer				127.282	-0.306	0.000
27.000	L	30 Summer	30	+0%	100/30 Summer				127.399	-0.484	0.000
27.001	L	30 Summer	30	+0%	100/30 Summer				127.399	-0.317	0.000
27.002	L	30 Summer	30	+0%	100/30 Summer				127.399	-0.320	0.000
25.005	28	30 Summer	30	+0%	100/30 Summer				127.401	-0.276	0.000
25.006	29	30 Summer	30	+0%	100/30 Summer				127.407	-0.111	0.000
28.000	30	30 Summer	30	+0%	100/30 Summer				128.530	-0.237	0.000
28.001	31	30 Summer	30	+0%	100/30 Summer				128.413	-0.227	0.000
28.002	32	30 Summer	30	+0%	100/30 Summer				128.218	-0.346	0.000
29.000	L	30 Summer	30	+0%	100/30 Summer				128.504	-0.167	0.000
28.003	33	30 Summer	30	+0%	100/30 Summer				128.174	-0.272	0.000
30.000	34	30 Summer	30	+0%	100/30 Summer				129.237	-0.192	0.000
30.001	35	30 Summer	30	+0%	100/30 Summer				128.417	-0.345	0.000
31.000	36	30 Summer	30	+0%	100/30 Summer				129.235	-0.118	0.000
30.002	37	30 Summer	30	+0%	100/30 Summer				128.307	-0.324	0.000
28.004	38	30 Summer	30	+0%	100/30 Summer				128.091	-0.204	0.000
28.005	39	30 Summer	30	+0%	100/30 Summer				128.017	-0.227	0.000
28.006	40	30 Summer	30	+0%	100/30 Summer				127.946	-0.138	0.000
32.000	L	30 Summer	30	+0%	100/30 Summer				128.409	-0.295	0.000
32.001	L	30 Summer	30	+0%	100/30 Summer				128.371	-0.248	0.000
32.002	L	30 Summer	30	+0%	100/30 Summer				128.331	-0.207	0.000
32.003	L	30 Summer	30	+0%	100/30 Summer				128.297	-0.193	0.000
32.004	L	30 Summer	30	+0%	100/30 Summer				128.194	-0.167	0.000
32.005	L	30 Summer	30	+0%	100/30 Summer				128.076	-0.229	0.000
32.006	L	30 Summer	30	+0%	100/30 Summer				127.953	-0.302	0.000
28.007	41	30 Summer	30	+0%	100/30 Summer				127.878	-0.126	0.000
33.000	L	30 Summer	30	+0%	100/30 Summer				127.868	-0.382	0.000
33.001	L	30 Summer	30	+0%	100/30 Summer				127.814	-0.202	0.000
33.002	L	30 Summer	30	+0%	100/30 Summer				127.763	-0.142	0.000
28.008	42	30 Summer	30	+0%	100/30 Summer				127.597	-0.281	0.000
28.009	43	30 Summer	30	+0%	100/30 Summer				127.536	-0.228	0.000
34.000	S	30 Summer	30	+0%	100/30 Summer				127.533	-0.357	0.000
34.001	S28	30 Summer	30	+0%	100/30 Summer				127.470	-0.389	0.000
28.010	44	30 Summer	30	+0%	100/30 Summer				127.449	-0.157	0.000
25.007	45	30 Summer	30	+0%	100/30 Summer				127.412	-0.153	0.000
25.008	HW8	960 Winter	30	+0%					127.316	-0.224	0.000
1.023	HW11	960 Winter	30	+0%	30/120 Summer				127.286	0.536	0.000
1.024	47	960 Winter	30	+0%	1/120 Summer				127.270	0.740	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
24.001	L	0.48		141.5	SURCHARGED	
1.019	HW4	0.02		334.4	OK	
1.020	HW9	4.14		256.2	SURCHARGED	
1.021	27	0.35		228.5	OK	
1.022	HW10	0.15		247.7	OK	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
25.000	L	0.00		0.0	OK	
25.001	L	0.00		0.0	OK	
25.002	S	0.00		0.0	OK	
26.000	L	0.00		0.0	OK	
26.001	L	0.00		0.0	OK	
25.003	S	0.00		0.4	OK	
25.004	HW7	0.04		0.7	OK*	
27.000	L	0.00		0.7	OK	
27.001	L	0.03		9.4	OK	
27.002	L	0.07		22.8	OK	
25.005	28	0.05		34.1	OK	
25.006	29	0.08		48.5	OK	
28.000	30	0.46		80.5	OK	
28.001	31	0.49		79.6	OK	
28.002	32	0.27		125.3	OK	
29.000	L	0.70		132.1	OK	
28.003	33	0.52		254.1	OK	
30.000	34	0.28		25.3	OK	
30.001	35	0.12		25.3	OK	
31.000	36	0.68		60.0	OK	
30.002	37	0.30		119.4	OK	
28.004	38	0.87		359.7	OK	
28.005	39	0.67		358.9	OK	
28.006	40	0.47		331.2	OK	
32.000	L	0.30		139.0	OK	
32.001	L	0.28		128.9	OK	
32.002	L	0.59		241.7	OK	
32.003	L	0.72		357.6	OK	
32.004	L	0.79		394.2	OK	
32.005	L	0.86		452.7	OK	
32.006	L	0.52		440.2	OK	
28.007	41	1.00		744.2	OK	
33.000	L	0.18		106.7	OK	
33.001	L	0.35		193.8	OK	
33.002	L	1.05		286.4	OK	
28.008	42	0.59		928.3	OK	
28.009	43	0.52		909.0	OK	
34.000	S	0.54		180.5	OK	
34.001	S28	0.46		358.9	OK	
28.010	44	0.91		973.9	OK	
25.007	45	1.45		934.3	OK	
25.008	HW8	0.12		155.8	OK*	
1.023	HW11	0.30		40.7	SURCHARGED	
1.024	47	0.56		39.6	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.243
FEH Rainfall Version	1999	E (1km)	0.298
Site Location	GB 445250 237800 SP 45250 37800	F (1km)	2.479
C (1km)	-0.023	Cv (Summer)	0.900
D1 (1km)	0.318	Cv (Winter)	0.900
D2 (1km)	0.317		

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

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	L	60 Winter	100	+40%	100/30 Summer				131.042	0.036	0.000
1.001	L	60 Winter	100	+40%	100/30 Summer				131.042	0.260	0.000
1.002	S	60 Winter	100	+40%					131.038	-0.076	0.000
2.000	L	30 Summer	100	+40%	100/30 Summer				131.328	0.385	0.000
2.001	L	30 Summer	100	+40%	100/30 Summer				131.264	0.464	0.000
2.002	L	30 Summer	100	+40%	100/30 Summer				131.019	0.396	0.000
1.003	S	30 Winter	100	+40%					130.920	0.000	0.000
1.004	HW1	30 Winter	100	+40%	1/30 Summer				130.856	0.733	0.000
3.000	L	30 Summer	100	+40%	100/30 Summer				130.869	0.011	0.000
3.001	L	30 Summer	100	+40%	100/30 Summer				130.869	0.195	0.000
3.002	L	30 Summer	100	+40%	100/30 Summer				130.855	0.327	0.000
3.003	L	30 Summer	100	+40%	100/30 Summer				130.822	0.449	0.000
1.005	5	30 Summer	100	+40%	30/30 Summer				130.784	0.693	0.000
4.000	1	30 Summer	100	+40%	100/30 Summer				131.997	0.752	0.000
4.001	2	30 Summer	100	+40%	100/30 Summer				131.738	0.671	0.000
4.002	3	30 Summer	100	+40%	100/30 Summer				131.250	0.400	0.000
5.000	L	30 Summer	100	+40%	100/30 Summer				132.841	1.566	0.000
5.001	L	30 Summer	100	+40%	30/30 Summer				132.601	1.495	0.000
5.002	L	30 Summer	100	+40%	30/30 Summer				131.281	0.455	0.000
4.003	4	30 Summer	100	+40%	100/30 Summer				130.756	0.040	0.000
1.006	6	30 Summer	100	+40%	30/30 Summer				130.486	0.455	0.000
1.007	HW2	30 Summer	100	+40%					129.474	-1.155	0.000
6.000	L	30 Summer	100	+40%	100/30 Summer				130.495	0.185	0.000
6.001	L	30 Summer	100	+40%	100/30 Summer				130.495	0.315	0.000
1.008	S	30 Summer	100	+40%					129.377	-1.152	0.000
7.000	L	30 Summer	100	+40%	30/30 Summer				131.134	1.161	0.000
8.000	7	30 Summer	100	+40%	100/30 Summer	100/30 Summer			131.303	0.903	23.402
8.001	8	30 Summer	100	+40%	100/30 Summer				131.483	1.272	0.000

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	L	0.00		0.7	SURCHARGED	
1.001	L	0.30		78.9	SURCHARGED	
1.002	S	0.03		168.2	OK	
2.000	L	0.65		195.6	SURCHARGED	
2.001	L	1.12		380.3	SURCHARGED	
2.002	L	2.05		550.9	SURCHARGED	
1.003	S	0.16		460.3	OK	
1.004	HW1	3.55		108.9	SURCHARGED*	
3.000	L	0.00		1.5	SURCHARGED	
3.001	L	0.21		60.2	SURCHARGED	
3.002	L	0.41		113.6	SURCHARGED	
3.003	L	0.83		168.1	SURCHARGED	
1.005	5	1.72		132.6	SURCHARGED	
4.000	1	1.26		47.2	FLOOD RISK	
4.001	2	1.44		97.3	SURCHARGED	
4.002	3	1.97		129.2	SURCHARGED	
5.000	L	1.18		77.0	FLOOD RISK	
5.001	L	2.13		142.8	FLOOD RISK	
5.002	L	2.20		141.4	SURCHARGED	
4.003	4	0.55		254.7	SURCHARGED	
1.006	6	3.50		392.8	SURCHARGED	
1.007	HW2	0.02		388.4	OK	
6.000	L	0.01		2.7	SURCHARGED	
6.001	L	1.72		545.2	SURCHARGED	
1.008	S	0.03		879.2	OK	
7.000	L	4.12		798.8	SURCHARGED	
8.000	7	1.01		67.6	FLOOD	3
8.001	8	1.09		75.4	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
8.002	9	30 Summer	100	+40%	30/30 Summer				131.408	1.509	0.000
8.003	10	30 Summer	100	+40%	30/30 Summer	100/30 Summer			131.253	1.463	3.105
8.004	11	30 Summer	100	+40%	30/30 Summer				131.211	1.532	0.000
8.005	12	30 Summer	100	+40%	30/30 Summer				130.974	1.417	0.000
9.000	13	30 Summer	100	+40%					130.258	-0.167	0.000
8.006	14	30 Summer	100	+40%	30/30 Summer				130.038	0.753	0.000
7.001	15	30 Summer	100	+40%	30/30 Summer				129.921	0.813	0.000
1.009	HW3	120 Winter	100	+40%					129.264	-0.700	0.000
1.010	S	120 Winter	100	+40%					129.260	-0.675	0.000
10.000	L	180 Winter	100	+40%					129.351	-0.600	0.000
10.001	L	120 Winter	100	+40%					129.246	-0.563	0.000
1.011	S	120 Winter	100	+40%					129.246	-0.635	0.000
11.000	L	30 Summer	100	+40%	100/30 Summer				130.463	0.653	0.000
11.001	L	30 Summer	100	+40%	100/30 Summer				130.463	0.763	0.000
11.002	L	30 Summer	100	+40%	30/30 Summer				130.467	0.847	0.000
1.012	S	120 Winter	100	+40%					129.222	-0.558	0.000
12.000	L	30 Summer	100	+40%	30/30 Summer				130.697	1.209	0.000
12.001	L	30 Summer	100	+40%	30/30 Summer				130.561	1.187	0.000
12.002	L	30 Summer	100	+40%	30/30 Summer				130.340	1.003	0.000
1.013	S	120 Winter	100	+40%					129.187	-0.310	0.000
13.000	L	30 Summer	100	+40%					130.366	-0.167	0.000
13.001	L	30 Summer	100	+40%					130.306	-0.073	0.000
14.000	L	30 Summer	100	+40%					129.979	-0.246	0.000
14.001	L	30 Summer	100	+40%	30/30 Summer				129.854	0.754	0.000
13.002	S	60 Summer	100	+40%					129.714	-0.406	0.000
13.003	S	60 Summer	100	+40%					129.686	-0.357	0.000
15.000	L	30 Summer	100	+40%	100/30 Summer				130.603	0.171	0.000
15.001	L	30 Summer	100	+40%	100/30 Summer				130.603	0.351	0.000
16.000	L	180 Winter	100	+40%					129.962	-0.600	0.000
16.001	L	60 Winter	100	+40%	30/30 Summer				129.661	0.445	0.000
13.004	S	60 Winter	100	+40%					129.661	-0.304	0.000
13.005	HW4	60 Winter	100	+40%	1/30 Summer				129.625	0.932	0.000
17.000	L	30 Summer	100	+40%					130.378	-0.038	0.000
17.001	L	30 Summer	100	+40%					130.281	-0.002	0.000
17.002	L	30 Summer	100	+40%	100/30 Summer				130.107	0.140	0.000
13.006	16	30 Summer	100	+40%	1/30 Summer				129.952	1.332	0.000
18.000	17	30 Summer	100	+40%	100/30 Summer				131.199	1.479	0.000
19.000	L	30 Summer	100	+40%	100/30 Summer				131.767	0.717	0.000
19.001	L	30 Summer	100	+40%	100/30 Summer				131.403	0.743	0.000
18.001	18	30 Summer	100	+40%	30/30 Summer				131.042	1.872	0.000
20.000	L	30 Summer	100	+40%	100/30 Summer				130.383	0.003	0.000
20.001	L	30 Summer	100	+40%	100/30 Summer				130.326	0.506	0.000
18.002	19	30 Summer	100	+40%	30/30 Summer				130.029	1.114	0.000
18.003	20	240 Summer	100	+40%	100/30 Summer				129.239	0.379	0.000
13.007	21	240 Summer	100	+40%					129.239	-0.491	0.000
13.008	HW5	240 Summer	100	+40%					129.229	-0.451	0.000
21.000	L	30 Summer	100	+40%					129.303	-0.036	0.000
21.001	L	30 Summer	100	+40%	100/30 Summer				129.303	0.058	0.000
13.009	S	240 Summer	100	+40%					129.186	-0.327	0.000
1.014	S	240 Winter	100	+40%					129.164	-0.035	0.000
1.015	S	240 Winter	100	+40%					129.101	-0.014	0.000
22.000	L	240 Winter	100	+40%	30/30 Summer				128.988	0.588	0.000
22.001	L	240 Winter	100	+40%	30/30 Summer				128.988	0.731	0.000
1.016	S	240 Winter	100	+40%					128.988	-0.024	0.000
23.000	22	30 Summer	100	+40%	100/30 Summer				130.002	0.677	0.000
23.001	23	30 Summer	100	+40%	30/30 Summer				129.261	1.094	0.000
23.002	24	30 Summer	100	+40%	1/60 Summer				129.123	1.103	0.000
23.003	25	120 Winter	100	+40%	1/30 Summer				128.881	0.971	0.000
1.017	HW6	120 Winter	100	+40%					128.872	-0.008	0.000

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
8.002	9	1.21		78.1	FLOOD RISK	
8.003	10	1.25		80.7	FLOOD	2
8.004	11	1.36		88.3	FLOOD RISK	
8.005	12	1.83		125.2	SURCHARGED	
9.000	13	0.15		18.6	OK	
8.006	14	0.82		153.6	SURCHARGED	
7.001	15	4.35		900.5	SURCHARGED	
1.009	HW3	0.04		719.7	OK	
1.010	S	0.04		717.1	OK	
10.000	L	0.00		0.0	OK	
10.001	L	0.00		0.1	OK	
1.011	S	0.04		706.4	OK	
11.000	L	0.02		4.8	SURCHARGED	
11.001	L	0.14		37.5	SURCHARGED	
11.002	L	2.50		690.7	SURCHARGED	
1.012	S	0.06		910.8	OK	
12.000	L	1.47		282.4	SURCHARGED	
12.001	L	2.31		463.0	SURCHARGED	
12.002	L	2.69		746.1	SURCHARGED	
1.013	S	0.05		945.7	OK	
13.000	L	0.21		55.1	OK	
13.001	L	1.00		349.1	OK	
14.000	L	0.07		7.7	OK	
14.001	L	1.80		135.4	SURCHARGED	
13.002	S	0.03		528.3	OK	
13.003	S	0.02		362.7	OK	
15.000	L	0.01		2.5	SURCHARGED	
15.001	L	1.64		477.4	SURCHARGED	
16.000	L	0.00		0.0	OK	
16.001	L	0.00		0.1	SURCHARGED	
13.004	S	0.03		332.0	OK	
13.005	HW4	2.33		73.7	SURCHARGED*	
17.000	L	0.54		151.1	OK	
17.001	L	0.81		253.0	OK	
17.002	L	1.41		347.9	SURCHARGED	
13.006	16	3.78		219.7	SURCHARGED	
18.000	17	0.52		120.6	SURCHARGED	
19.000	L	0.99		75.1	SURCHARGED	
19.001	L	0.50		138.3	FLOOD RISK	
18.001	18	1.85		298.8	FLOOD RISK	
20.000	L	0.28		27.0	SURCHARGED	
20.001	L	0.42		223.1	SURCHARGED	
18.002	19	2.53		515.4	SURCHARGED	
18.003	20	1.17		193.6	SURCHARGED	
13.007	21	0.02		341.8	OK	
13.008	HW5	0.02		321.0	OK	
21.000	L	0.01		2.6	OK	
21.001	L	1.25		376.4	SURCHARGED	
13.009	S	0.01		308.2	OK	
1.014	S	0.03		535.9	FLOOD RISK	
1.015	S	0.03		465.0	FLOOD RISK	
22.000	L	0.00		0.7	SURCHARGED	
22.001	L	0.41		118.2	SURCHARGED	
1.016	S	0.03		451.9	FLOOD RISK*	
23.000	22	0.94		17.1	SURCHARGED	
23.001	23	0.92		253.3	SURCHARGED	
23.002	24	1.78		487.5	SURCHARGED	
23.003	25	1.26		254.5	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.017	HW6	0.03		753.9	FLOOD RISK*	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.018	S	120 Winter	100	+40%					128.803	-0.017	0.000
24.000	L	30 Summer	100	+40%	30/30 Summer				129.927	1.756	0.000
24.001	L	30 Summer	100	+40%	1/60 Summer				129.489	1.499	0.000
1.019	HW4	120 Winter	100	+40%					128.685	-0.038	0.000
1.020	HW9	120 Summer	100	+40%	1/30 Summer				128.612	1.151	0.000
1.021	27	960 Winter	100	+40%	100/240 Summer				128.141	0.441	0.000
1.022	HW10	960 Winter	100	+40%	100/480 Summer				127.928	0.278	0.000
25.000	L	960 Winter	100	+40%					127.923	-0.490	0.000
25.001	L	960 Winter	100	+40%					127.923	-0.347	0.000
25.002	S	960 Winter	100	+40%					127.923	-1.097	0.000
26.000	L	960 Winter	100	+40%					127.923	-0.042	0.000
26.001	L	960 Winter	100	+40%	100/600 Summer				127.923	0.118	0.000
25.003	S	960 Winter	100	+40%					127.923	-0.626	0.000
25.004	HW7	960 Winter	100	+40%	100/480 Summer				127.923	0.335	0.000
27.000	L	30 Summer	100	+40%	100/30 Summer				128.274	0.391	0.000
27.001	L	30 Summer	100	+40%	100/30 Summer				128.274	0.558	0.000
27.002	L	30 Summer	100	+40%	100/30 Summer				128.276	0.557	0.000
25.005	28	30 Summer	100	+40%	100/30 Summer				128.278	0.601	0.000
25.006	29	30 Summer	100	+40%	100/30 Summer				128.295	0.777	0.000
28.000	30	30 Summer	100	+40%	100/30 Summer				130.087	1.320	0.000
28.001	31	30 Summer	100	+40%	100/30 Summer				129.978	1.338	0.000
28.002	32	30 Summer	100	+40%	100/30 Summer				129.877	1.313	0.000
29.000	L	30 Summer	100	+40%	100/30 Summer				130.057	1.386	0.000
28.003	33	30 Summer	100	+40%	100/30 Summer				129.855	1.409	0.000
30.000	34	30 Summer	100	+40%	100/30 Summer				130.056	0.627	0.000
30.001	35	30 Summer	100	+40%	100/30 Summer				129.973	1.211	0.000
31.000	36	30 Summer	100	+40%	100/30 Summer				130.417	1.064	0.000
30.002	37	30 Summer	100	+40%	100/30 Summer				129.957	1.326	0.000
28.004	38	30 Summer	100	+40%	100/30 Summer				129.780	1.485	0.000
28.005	39	30 Summer	100	+40%	100/30 Summer				129.690	1.446	0.000
28.006	40	30 Summer	100	+40%	100/30 Summer				129.494	1.410	0.000
32.000	L	30 Summer	100	+40%	100/30 Summer				130.351	1.647	0.000
32.001	L	30 Summer	100	+40%	100/30 Summer				130.322	1.703	0.000
32.002	L	30 Summer	100	+40%	100/30 Summer				130.294	1.756	0.000
32.003	L	30 Summer	100	+40%	100/30 Summer				130.248	1.758	0.000
32.004	L	30 Summer	100	+40%	100/30 Summer				130.090	1.729	0.000
32.005	L	30 Summer	100	+40%	100/30 Summer				129.852	1.547	0.000
32.006	L	30 Summer	100	+40%	100/30 Summer				129.659	1.404	0.000
28.007	41	30 Summer	100	+40%	100/30 Summer				129.434	1.430	0.000
33.000	L	30 Summer	100	+40%	100/30 Summer				129.051	0.801	0.000
33.001	L	30 Summer	100	+40%	100/30 Summer				129.023	1.007	0.000
33.002	L	30 Summer	100	+40%	100/30 Summer				128.985	1.080	0.000
28.008	42	30 Summer	100	+40%	100/30 Summer				128.947	1.069	0.000
28.009	43	30 Summer	100	+40%	100/30 Summer				128.788	1.024	0.000
34.000	S	30 Summer	100	+40%	100/30 Summer				128.776	0.886	0.000
34.001	S28	30 Summer	100	+40%	100/30 Summer				128.760	0.901	0.000
28.010	44	30 Summer	100	+40%	100/30 Summer				128.606	1.000	0.000
25.007	45	30 Summer	100	+40%	100/30 Summer				128.311	0.746	0.000
25.008	HW8	60 Winter	100	+40%					127.540	0.000	0.000
1.023	HW11	960 Winter	100	+40%	30/120 Summer				127.925	1.175	0.000
1.024	47	960 Winter	100	+40%	1/120 Summer				127.909	1.379	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.018	S	0.03		630.6	FLOOD RISK*	
24.000	L	1.52		430.9	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 4

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
24.001	L	2.71		794.9	FLOOD RISK	
1.019	HW4	0.02		413.3	FLOOD RISK*	
1.020	HW9	4.48		277.5	FLOOD RISK	
1.021	27	0.40		267.1	FLOOD RISK	
1.022	HW10	0.19		309.8	SURCHARGED	
25.000	L	0.00		0.0	OK	
25.001	L	0.00		0.1	OK	
25.002	S	0.00		0.2	OK	
26.000	L	0.00		0.0	OK	
26.001	L	0.00		0.0	SURCHARGED	
25.003	S	0.00		0.9	OK	
25.004	HW7	0.10		1.7	SURCHARGED*	
27.000	L	0.01		4.4	SURCHARGED	
27.001	L	0.05		18.7	SURCHARGED	
27.002	L	0.10		34.3	SURCHARGED	
25.005	28	0.09		56.5	FLOOD RISK	
25.006	29	0.11		67.3	FLOOD RISK	
28.000	30	0.89		157.2	SURCHARGED	
28.001	31	0.87		141.6	SURCHARGED	
28.002	32	0.44		208.3	SURCHARGED	
29.000	L	1.34		251.2	SURCHARGED	
28.003	33	0.87		428.2	SURCHARGED	
30.000	34	0.56		50.5	SURCHARGED	
30.001	35	0.23		46.5	SURCHARGED	
31.000	36	1.19		104.3	FLOOD RISK	
30.002	37	0.52		208.5	SURCHARGED	
28.004	38	1.37		565.5	SURCHARGED	
28.005	39	1.09		582.9	SURCHARGED	
28.006	40	0.85		594.9	SURCHARGED	
32.000	L	0.52		243.9	SURCHARGED	
32.001	L	0.47		219.1	SURCHARGED	
32.002	L	1.13		461.1	SURCHARGED	
32.003	L	1.35		674.3	SURCHARGED	
32.004	L	1.52		759.0	SURCHARGED	
32.005	L	1.70		894.2	SURCHARGED	
32.006	L	1.02		862.6	SURCHARGED	
28.007	41	1.94		1447.3	SURCHARGED	
33.000	L	0.34		201.6	SURCHARGED	
33.001	L	0.72		394.5	SURCHARGED	
33.002	L	2.25		612.5	SURCHARGED	
28.008	42	1.18		1853.4	SURCHARGED	
28.009	43	1.07		1874.7	SURCHARGED	
34.000	S	1.01		339.2	FLOOD RISK	
34.001	S28	0.85		672.7	FLOOD RISK	
28.010	44	2.03		2181.8	SURCHARGED	
25.007	45	3.27		2111.3	FLOOD RISK	
25.008	HW8	1.42		1882.4	SURCHARGED*	
1.023	HW11	0.30		40.5	SURCHARGED	
1.024	47	0.56		39.6	SURCHARGED	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for STORM NETWORK 3

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 445250 237800 SP 45250 37800
C (1km)	-0.023
D1 (1km)	0.318
D2 (1km)	0.317
D3 (1km)	0.243
E (1km)	0.298
F (1km)	2.479
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for STORM NETWORK 3

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.266	8-12	1.038	12-16	1.157	16-20	0.066

Total Area Contributing (ha) = 2.527

Total Pipe Volume (m³) = 267.517

Network Design Table for STORM NETWORK 3

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	53.969	0.174	310.2	0.000	5.00	0.0	0.600	o	375	Pipe/Conduit	
S1.001	67.896	0.170	399.4	0.385	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.002	52.057	0.495	105.2	0.083	0.00	0.0	0.600	o	450	Pipe/Conduit	

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)
S1.000	50.00	5.88	125.649	0.000	0.0	0.0	0.0	1.02	113.0	0.0
S1.001	50.00	7.00	125.400	0.385	0.0	0.0	0.0	1.01	160.8	52.1
S1.002	50.00	7.44	125.230	0.468	0.0	0.0	0.0	1.98	315.3	63.4

Network Design Table for STORM NETWORK 3

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S2.000	116.115	0.340	341.5	0.392	5.00	0.0	0.600	o	525	Pipe/Conduit	
S1.003	80.517	3.185	25.3	0.496	0.00	0.0	0.600	o	600	Pipe/Conduit	
S3.000	14.331	0.400	35.8	0.050	5.00	0.0	0.600	o	600	Pipe/Conduit	
S1.004	80.710	0.202	399.6	0.050	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.005	29.570	0.071	416.5	0.073	0.00	0.0	0.600	o	750	Pipe/Conduit	
S4.000	68.306	2.176	31.4	0.096	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.006	37.683	0.092	409.6	0.315	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.007	73.714	0.185	398.5	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.008	110.535	0.276	400.5	0.200	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.009	22.731	0.124	183.3	0.100	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.010	43.856	0.200	219.3	0.285	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.011	17.381	0.040	434.5	0.002	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.012	24.396	0.146	167.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.013	95.825	0.889	107.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.014	95.225	1.050	90.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.015	52.093	0.311	167.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.016	8.534	0.051	167.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.017	81.579	2.498	32.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.018	46.193	1.320	35.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.019	10.336	0.062	166.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.020	7.906	0.083	95.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

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)
S2.000	50.00	6.60	125.000	0.392	0.0	0.0	0.0	1.21	261.1	53.1
S1.003	50.00	7.71	124.585	1.356	0.0	0.0	0.0	4.86	1373.2	183.6
S3.000	50.00	5.06	121.800	0.050	0.0	0.0	0.0	4.08	1152.9	6.8
S1.004	50.00	8.82	121.400	1.456	0.0	0.0	0.0	1.21	342.7	197.2
S1.005	50.00	9.18	121.048	1.529	0.0	0.0	0.0	1.36	603.0	207.0
S4.000	50.00	5.49	123.678	0.096	0.0	0.0	0.0	2.34	93.2	13.0
S1.006	50.00	9.64	120.977	1.940	0.0	0.0	0.0	1.38	608.1	262.7
S1.007	50.00	10.52	120.885	1.940	0.0	0.0	0.0	1.40	616.6	262.7
S1.008	50.00	11.84	120.700	2.140	0.0	0.0	0.0	1.39	615.0	289.8
S1.009	50.00	12.03	120.424	2.240	0.0	0.0	0.0	2.06	911.7	303.3
S1.010	50.00	12.41	120.300	2.525	0.0	0.0	0.0	1.89	833.1	341.9
S1.011	50.00	12.63	120.100	2.527	0.0	0.0	0.0	1.34	590.2	342.2
S1.012	50.00	13.03	120.060	2.527	0.0	0.0	0.0	1.01	40.1«	342.2
S1.013	50.00	14.30	119.914	2.527	0.0	0.0	0.0	1.26	50.1«	342.2
S1.014	50.00	15.46	119.025	2.527	0.0	0.0	0.0	1.37	54.6«	342.2
S1.015	50.00	16.32	117.975	2.527	0.0	0.0	0.0	1.01	40.1«	342.2
S1.016	50.00	16.46	117.664	2.527	0.0	0.0	0.0	1.01	40.1«	342.2
S1.017	50.00	17.05	117.613	2.527	0.0	0.0	0.0	2.30	91.3«	342.2
S1.018	50.00	17.40	115.115	2.527	0.0	0.0	0.0	2.22	88.2«	342.2
S1.019	50.00	17.57	113.795	2.527	0.0	0.0	0.0	1.01	40.2«	342.2
S1.020	50.00	17.67	113.733	2.527	0.0	0.0	0.0	1.34	53.3«	342.2

Free Flowing Outfall Details for STORM NETWORK 3

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.020	S	114.250	113.650	0.000	0	0

Simulation Criteria for STORM NETWORK 3

Volumetric Runoff Coeff	0.900	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.298
Return Period (years)	1	F (1km)	2.479
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location	GB 445250 237800 SP 45250 37800	Winter Storms	No
C (1km)	-0.023	Cv (Summer)	0.900
D1 (1km)	0.318	Cv (Winter)	0.840
D2 (1km)	0.317	Storm Duration (mins)	30
D3 (1km)	0.243		

Online Controls for STORM NETWORK 3

Hydro-Brake® Optimum Manhole: SHW14, DS/PN: S1.011, Volume (m³): 25.7

Unit Reference	MD-SHE-0084-5000-2800-5000
Design Head (m)	2.800
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	84
Invert Level (m)	120.100
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.800	5.0	Kick-Flo®	0.756	2.7
Flush-Flo™	0.371	3.4	Mean Flow over Head Range	-	3.7

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)	Depth (m)	Flow (l/s)
0.100	2.5	0.800	2.8	2.000	4.3	4.000	5.9	7.000	7.7
0.200	3.2	1.000	3.1	2.200	4.5	4.500	6.2	7.500	8.0
0.300	3.4	1.200	3.4	2.400	4.7	5.000	6.6	8.000	8.2
0.400	3.4	1.400	3.6	2.600	4.8	5.500	6.9	8.500	8.4
0.500	3.3	1.600	3.9	3.000	5.2	6.000	7.2	9.000	8.7
0.600	3.2	1.800	4.1	3.500	5.5	6.500	7.4	9.500	8.9

Storage Structures for STORM NETWORK 3

Tank or Pond Manhole: SHW14, DS/PN: S1.011

Invert Level (m) 120.100

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	300.0	0.600	512.5	1.200	781.5	1.800	1107.1	2.400	1489.2
0.200	364.5	0.800	595.9	1.400	883.7	2.000	1228.2	2.600	1629.1
0.400	435.4	1.000	685.5	1.600	992.3	2.200	1355.5	2.800	1775.3

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 3

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.243
FEH Rainfall Version	1999	E (1km)	0.298
Site Location	GB 445250 237800 SP 45250 37800	F (1km)	2.479
C (1km)	-0.023	Cv (Summer)	0.900
D1 (1km)	0.318	Cv (Winter)	0.900
D2 (1km)	0.317		

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

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
S1.000	SL	180 Winter	1	+0%	100/30 Summer				125.649	-0.375	0.000
S1.001	SL	30 Summer	1	+0%	100/30 Summer				125.570	-0.280	0.000
S1.002	S48	30 Summer	1	+0%	100/30 Summer				125.360	-0.320	0.000
S2.000	SL	30 Summer	1	+0%	100/30 Summer				125.164	-0.361	0.000
S1.003	S49	30 Summer	1	+0%	100/30 Summer				124.726	-0.459	0.000
S3.000	S6	30 Summer	1	+0%	100/30 Summer				121.831	-0.569	0.000
S1.004	S50	30 Summer	1	+0%	30/30 Summer				121.714	-0.286	0.000
S1.005	S51	30 Summer	1	+0%	30/30 Summer				121.386	-0.412	0.000
S4.000	S52	30 Summer	1	+0%	100/30 Summer				123.735	-0.168	0.000
S1.006	S53	30 Summer	1	+0%	30/30 Summer				121.316	-0.411	0.000
S1.007	S54	30 Summer	1	+0%	30/480 Summer				121.198	-0.437	0.000
S1.008	S55	960 Winter	1	+0%	30/180 Summer				121.027	-0.423	0.000
S1.009	S56	960 Winter	1	+0%	30/60 Summer				121.026	-0.148	0.000
S1.010	SHW13	960 Winter	1	+0%	30/30 Summer				121.026	-0.024	0.000
S1.011	SHW14	960 Winter	1	+0%	1/240 Summer				121.020	0.170	0.000
S1.012	S57	960 Winter	1	+0%					120.106	-0.179	0.000
S1.013	S58	960 Winter	1	+0%					119.953	-0.186	0.000
S1.014	S59	960 Winter	1	+0%					119.062	-0.188	0.000
S1.015	S60	960 Winter	1	+0%					118.020	-0.180	0.000
S1.016	S61	30 Winter	1	+0%					117.713	-0.176	0.000
S1.017	S62	30 Winter	1	+0%					117.641	-0.197	0.000
S1.018	S63	30 Winter	1	+0%					115.144	-0.196	0.000
S1.019	S64	30 Winter	1	+0%					113.843	-0.177	0.000
S1.020	S65	30 Winter	1	+0%					113.776	-0.182	0.000

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 3

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL	0.00		0.0	OK	
S1.001	SL	0.29		43.6	OK	
S1.002	S48	0.18		52.6	OK	
S2.000	SL	0.20		50.3	OK	
S1.003	S49	0.12		157.3	OK	
S3.000	S6	0.01		6.8	OK	
S1.004	S50	0.52		162.0	OK	
S1.005	S51	0.36		166.1	OK	
S4.000	S52	0.14		13.1	OK	
S1.006	S53	0.41		199.6	OK	
S1.007	S54	0.36		196.2	OK	
S1.008	S55	0.04		24.1	OK	
S1.009	S56	0.04		22.8	OK	
S1.010	SHW13	0.04		25.2	OK	
S1.011	SHW14	0.01		3.4	SURCHARGED	
S1.012	S57	0.09		3.4	OK	
S1.013	S58	0.07		3.4	OK	
S1.014	S59	0.06		3.4	OK	
S1.015	S60	0.09		3.4	OK	
S1.016	S61	0.11		3.4	OK	
S1.017	S62	0.04		3.4	OK	
S1.018	S63	0.04		3.4	OK	
S1.019	S64	0.10		3.4	OK	
S1.020	S65	0.08		3.4	OK	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 3

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.243
FEH Rainfall Version	1999	E (1km)	0.298
Site Location	GB 445250 237800 SP 45250 37800	F (1km)	2.479
C (1km)	-0.023	Cv (Summer)	0.900
D1 (1km)	0.318	Cv (Winter)	0.900
D2 (1km)	0.317		

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

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
S1.000	SL	30 Summer	30	+0%	100/30 Summer				125.798	-0.226	0.000
S1.001	SL	30 Summer	30	+0%	100/30 Summer				125.798	-0.052	0.000
S1.002	S48	30 Summer	30	+0%	100/30 Summer				125.483	-0.197	0.000
S2.000	SL	30 Summer	30	+0%	100/30 Summer				125.301	-0.224	0.000
S1.003	S49	30 Summer	30	+0%	100/30 Summer				124.849	-0.336	0.000
S3.000	S6	30 Summer	30	+0%	100/30 Summer				122.358	-0.042	0.000
S1.004	S50	30 Summer	30	+0%	30/30 Summer				122.342	0.342	0.000
S1.005	S51	30 Summer	30	+0%	30/30 Summer				121.821	0.023	0.000
S4.000	S52	30 Summer	30	+0%	100/30 Summer				123.779	-0.124	0.000
S1.006	S53	960 Winter	30	+0%	30/30 Summer				121.796	0.069	0.000
S1.007	S54	960 Winter	30	+0%	30/480 Summer				121.796	0.161	0.000
S1.008	S55	960 Winter	30	+0%	30/180 Summer				121.796	0.346	0.000
S1.009	S56	960 Winter	30	+0%	30/60 Summer				121.796	0.622	0.000
S1.010	SHW13	960 Winter	30	+0%	30/30 Summer				121.796	0.746	0.000
S1.011	SHW14	960 Winter	30	+0%	1/240 Summer				121.796	0.946	0.000
S1.012	S57	960 Winter	30	+0%					120.109	-0.176	0.000
S1.013	S58	960 Winter	30	+0%					119.956	-0.183	0.000
S1.014	S59	960 Winter	30	+0%					119.065	-0.185	0.000
S1.015	S60	960 Winter	30	+0%					118.023	-0.177	0.000
S1.016	S61	960 Winter	30	+0%					117.716	-0.173	0.000
S1.017	S62	960 Winter	30	+0%					117.643	-0.195	0.000
S1.018	S63	960 Winter	30	+0%					115.146	-0.194	0.000
S1.019	S64	960 Winter	30	+0%					113.846	-0.174	0.000
S1.020	S65	960 Winter	30	+0%					113.780	-0.178	0.000

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 3

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL	0.01		1.0	OK	
S1.001	SL	0.97		145.6	OK	
S1.002	S48	0.60		171.5	OK	
S2.000	SL	0.57		141.4	OK	
S1.003	S49	0.39		487.0	OK	
S3.000	S6	0.03		17.6	OK	
S1.004	S50	1.58		495.8	SURCHARGED	
S1.005	S51	1.08		502.6	SURCHARGED	
S4.000	S52	0.42		37.9	OK	
S1.006	S53	0.10		48.8	SURCHARGED	
S1.007	S54	0.09		48.8	SURCHARGED	
S1.008	S55	0.10		53.8	SURCHARGED	
S1.009	S56	0.09		56.4	SURCHARGED	
S1.010	SHW13	0.09		63.0	SURCHARGED	
S1.011	SHW14	0.01		3.9	SURCHARGED	
S1.012	S57	0.11		3.9	OK	
S1.013	S58	0.08		3.9	OK	
S1.014	S59	0.07		3.9	OK	
S1.015	S60	0.10		3.9	OK	
S1.016	S61	0.12		3.9	OK	
S1.017	S62	0.04		3.9	OK	
S1.018	S63	0.05		3.9	OK	
S1.019	S64	0.12		3.9	OK	
S1.020	S65	0.10		3.9	OK	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM NETWORK 3

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.243
FEH Rainfall Version	1999	E (1km)	0.298
Site Location	GB 445250 237800 SP 45250 37800	F (1km)	2.479
C (1km)	-0.023	Cv (Summer)	0.900
D1 (1km)	0.318	Cv (Winter)	0.900
D2 (1km)	0.317		

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

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
S1.000	SL	30 Summer	100	+40%	100/30 Summer				126.893	0.869	0.000
S1.001	SL	30 Summer	100	+40%	100/30 Summer				126.894	1.044	0.000
S1.002	S48	30 Summer	100	+40%	100/30 Summer				126.641	0.961	0.000
S2.000	SL	30 Summer	100	+40%	100/30 Summer				126.526	1.001	0.000
S1.003	S49	30 Summer	100	+40%	100/30 Summer				126.255	1.070	0.000
S3.000	S6	30 Summer	100	+40%	100/30 Summer				125.153	2.753	0.000
S1.004	S50	30 Summer	100	+40%	30/30 Summer				125.149	3.149	0.000
S1.005	S51	30 Summer	100	+40%	30/30 Summer				123.917	2.119	0.000
S4.000	S52	30 Summer	100	+40%	100/30 Summer				124.384	0.481	0.000
S1.006	S53	30 Summer	100	+40%	30/30 Summer				123.666	1.939	0.000
S1.007	S54	30 Summer	100	+40%	30/480 Summer				123.308	1.673	0.000
S1.008	S55	30 Summer	100	+40%	30/180 Summer				122.792	1.342	0.000
S1.009	S56	960 Winter	100	+40%	30/60 Summer				122.687	1.513	0.000
S1.010	SHW13	960 Winter	100	+40%	30/30 Summer				122.686	1.636	0.000
S1.011	SHW14	960 Winter	100	+40%	1/240 Summer				122.685	1.835	0.000
S1.012	S57	960 Winter	100	+40%					120.114	-0.171	0.000
S1.013	S58	960 Winter	100	+40%					119.961	-0.178	0.000
S1.014	S59	960 Winter	100	+40%					119.070	-0.180	0.000
S1.015	S60	960 Winter	100	+40%					118.028	-0.172	0.000
S1.016	S61	960 Winter	100	+40%					117.722	-0.167	0.000
S1.017	S62	960 Winter	100	+40%					117.646	-0.192	0.000
S1.018	S63	960 Winter	100	+40%					115.149	-0.191	0.000
S1.019	S64	960 Winter	100	+40%					113.851	-0.169	0.000
S1.020	S65	960 Winter	100	+40%					113.784	-0.174	0.000