



79 Avenue Road, London, NW8 6JD

Hydraulic Model



Revision	Report Name	Date	Comment	By
P1	1463-HYDM-210709	09.07.21	Issued for Information	M.Brand

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	40	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	0.600
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)
SWMH01	0.010	5.00	46.000	450	0.995
JUNCTION01	0.010	5.00	45.950		1.000
SWPC01	0.001	5.00	48.540	800	0.550
JUNCTION02	0.010	5.00	45.760		1.120
SWPC02	0.002	5.00	48.540	800	0.550
SWMH02	0.018	5.00	46.060	450	0.635
SWMH03			46.160	450	0.925
SWPC03	0.001	5.00	48.540	800	0.550
SWMH04	0.008	5.00	46.360	450	1.325
SWMH05			45.750	450	0.905
SWMH06	0.014	5.00	45.740	450	0.975
SWMH08	0.022	5.00	45.630	1200	1.205
CWMH01			45.630	1200	1.275
SEWERJUNCTION			45.600		1.370

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
P01	SWMH01	JUNCTION01	3.254	0.600	45.005	44.950	0.055	59.2	150	5.04	50.0
P02	JUNCTION01	JUNCTION02	18.503	0.600	44.950	44.640	0.310	59.7	150	5.28	50.0
P03	SWPC01	JUNCTION02	8.800	0.600	47.990	44.665	3.325	2.6	100	5.03	50.0
P04	JUNCTION02	SWMH08	10.460	0.600	44.640	44.465	0.175	59.8	150	5.41	50.0
P05	SWPC02	SWMH02	1.600	0.600	47.990	45.435	2.555	0.6	100	5.00	50.0
P06	SWMH02	SWMH03	4.153	0.600	45.425	45.355	0.070	59.3	100	5.07	50.0
P07	SWMH03	SWMH04	11.228	0.600	45.235	45.045	0.190	59.1	150	5.21	50.0
P08	SWPC03	SWMH04	16.700	0.600	47.990	45.165	2.825	5.9	100	5.09	50.0
P09	SWMH04	SWMH05	10.693	0.600	45.035	44.855	0.180	59.4	150	5.35	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
P01	1.310	23.1	1.9	0.845	0.850	0.010	0.0	29	0.792
P02	1.304	23.0	3.8	0.850	0.970	0.020	0.0	41	0.969
P03	4.790	37.6	0.2	0.450	0.995	0.001	0.0	5	1.183
P04	1.303	23.0	5.9	0.970	1.015	0.031	0.0	52	1.094
P05	9.862	77.5	0.4	0.450	0.525	0.002	0.0	5	2.446
P06	1.002	7.9	3.8	0.535	0.705	0.020	0.0	49	0.992
P07	1.311	23.2	3.8	0.775	1.165	0.020	0.0	41	0.966
P08	3.201	25.1	0.2	0.450	1.095	0.001	0.0	7	0.953
P09	1.307	23.1	5.5	1.175	0.745	0.029	0.0	50	1.072

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
P10	SWMH05	SWMH06	3.923	0.600	44.845	44.775	0.070	56.0	150	5.40	50.0
P11	SWMH06	SWMH08	17.725	0.600	44.765	44.465	0.300	59.1	150	5.62	50.0
P12	SWMH08	CWMH01	1.497	0.600	44.425	44.385	0.040	37.4	150	5.64	50.0
P13	CWMH01	SEWERJUNCTION	5.000	0.600	44.355	44.230	0.125	40.0	150	5.69	50.0














Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
P10	1.346	23.8	5.5	0.755	0.815	0.029	0.0	49	1.097
P11	1.311	23.2	8.2	0.825	1.015	0.043	0.0	61	1.196
P12	1.650	29.2	18.2	1.055	1.095	0.096	0.0	86	1.738
P13	1.596	28.2	18.2	1.125	1.220	0.096	0.0	88	1.693

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
P01	3.254	59.2	150	Circular	46.000	45.005	0.845	45.950	44.950	0.850
P02	18.503	59.7	150	Circular	45.950	44.950	0.850	45.760	44.640	0.970
P03	8.800	2.6	100	Circular	48.540	47.990	0.450	45.760	44.665	0.995
P04	10.460	59.8	150	Circular	45.760	44.640	0.970	45.630	44.465	1.015
P05	1.600	0.6	100	Circular	48.540	47.990	0.450	46.060	45.435	0.525
P06	4.153	59.3	100	Circular	46.060	45.425	0.535	46.160	45.355	0.705
P07	11.228	59.1	150	Circular	46.160	45.235	0.775	46.360	45.045	1.165
P08	16.700	5.9	100	Circular	48.540	47.990	0.450	46.360	45.165	1.095
P09	10.693	59.4	150	Circular	46.360	45.035	1.175	45.750	44.855	0.745
P10	3.923	56.0	150	Circular	45.750	44.845	0.755	45.740	44.775	0.815
P11	17.725	59.1	150	Circular	45.740	44.765	0.825	45.630	44.465	1.015
P12	1.497	37.4	150	Circular	45.630	44.425	1.055	45.630	44.385	1.095
P13	5.000	40.0	150	Circular	45.630	44.355	1.125	45.600	44.230	1.220

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
P01	SWMH01	450	Manhole	Adoptable	JUNCTION01		Junction	
P02	JUNCTION01		Junction		JUNCTION02		Junction	
P03	SWPC01	800	Manhole	Adoptable	JUNCTION02		Junction	
P04	JUNCTION02		Junction		SWMH08	1200	Manhole	Adoptable
P05	SWPC02	800	Manhole	Adoptable	SWMH02	450	Manhole	Adoptable
P06	SWMH02	450	Manhole	Adoptable	SWMH03	450	Manhole	Adoptable
P07	SWMH03	450	Manhole	Adoptable	SWMH04	450	Manhole	Adoptable
P08	SWPC03	800	Manhole	Adoptable	SWMH04	450	Manhole	Adoptable
P09	SWMH04	450	Manhole	Adoptable	SWMH05	450	Manhole	Adoptable
P10	SWMH05	450	Manhole	Adoptable	SWMH06	450	Manhole	Adoptable
P11	SWMH06	450	Manhole	Adoptable	SWMH08	1200	Manhole	Adoptable
P12	SWMH08	1200	Manhole	Adoptable	CWMH01	1200	Manhole	Adoptable
P13	CWMH01	1200	Manhole	Adoptable	SEWERJUNCTION		Junction	

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWMH01	46.000	0.995	450				
				0	P01	45.005	150
JUNCTION01	45.950	1.000			1	P01	44.950
				0	P02	44.950	150
SWPC01	48.540	0.550	800				
				0	P03	47.990	100
JUNCTION02	45.760	1.120			1	P03	44.665
				2	P02	44.640	150
				0	P04	44.640	150
SWPC02	48.540	0.550	800				
				0	P05	47.990	100
SWMH02	46.060	0.635	450		1	P05	45.435
				0	P06	45.425	100
SWMH03	46.160	0.925	450		1	P06	45.355
				0	P07	45.235	150
SWPC03	48.540	0.550	800				
				0	P08	47.990	100
SWMH04	46.360	1.325	450		1	P08	45.165
				2	P07	45.045	150
				0	P09	45.035	150
SWMH05	45.750	0.905	450		1	P09	44.855
				0	P10	44.845	150
SWMH06	45.740	0.975	450		1	P10	44.775
				0	P11	44.765	150
SWMH08	45.630	1.205	1200		1	P04	44.465
				2	P11	44.465	150
				0	P12	44.425	150
CWMH01	45.630	1.275	1200		1	P12	44.385
				0	P13	44.355	150

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SEWERJUNCTION	45.600	1.370		1	P13	44.230	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m ³ /ha)	1.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Node SWPC01 Online Pump Control

Flap Valve	x	Design Depth (m)	0.550	Switch off depth (m)	0.001
Replaces Downstream Link	✓	Design Flow (l/s)	1.5		
Invert Level (m)	47.990	Switch on depth (m)	0.100		
		Depth (m)	Flow (l/s)		
		0.001	1.500		

Node SWPC02 Online Pump Control

Flap Valve	x	Design Depth (m)	0.550	Switch off depth (m)	0.001
Replaces Downstream Link	✓	Design Flow (l/s)	1.5		
Invert Level (m)	47.990	Switch on depth (m)	0.100		
		Depth (m)	Flow (l/s)		
		0.001	1.500		

Node SWPC03 Online Pump Control

Flap Valve	x	Design Depth (m)	0.550	Switch off depth (m)	0.001
Replaces Downstream Link	✓	Design Flow (l/s)	1.5		
Invert Level (m)	47.990	Switch on depth (m)	0.100		

Depth	Flow
(m)	(l/s)
0.001	1.500

Node SWMH08 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	44.425	Product Number	CTL-SHE-0106-5000-0945-5000
Design Depth (m)	0.945	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node SWMH08 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	45.040
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	54

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	84.7	0.0	0.300	84.7	0.0	0.301	0.0	0.0

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	109.521	30.991
1 year 15 minute winter	76.857	30.991
1 year 30 minute summer	71.439	20.215
1 year 30 minute winter	50.133	20.215
1 year 60 minute summer	48.435	12.800
1 year 60 minute winter	32.179	12.800
1 year 120 minute summer	30.053	7.942
1 year 120 minute winter	19.966	7.942
1 year 180 minute summer	23.233	5.979
1 year 180 minute winter	15.102	5.979
1 year 240 minute summer	18.475	4.882
1 year 240 minute winter	12.274	4.882
1 year 360 minute summer	14.169	3.646
1 year 360 minute winter	9.210	3.646
1 year 480 minute summer	11.185	2.956
1 year 480 minute winter	7.431	2.956
1 year 600 minute summer	9.182	2.511
1 year 600 minute winter	6.274	2.511
1 year 720 minute summer	8.203	2.199
1 year 720 minute winter	5.513	2.199
1 year 960 minute summer	6.768	1.782
1 year 960 minute winter	4.483	1.782
1 year 1440 minute summer	4.949	1.326
1 year 1440 minute winter	3.326	1.326
1 year 2160 minute summer	3.574	0.988
1 year 2160 minute winter	2.462	0.988
1 year 2880 minute summer	2.986	0.800
1 year 2880 minute winter	2.007	0.800
1 year 4320 minute summer	2.276	0.595
1 year 4320 minute winter	1.499	0.595
1 year 5760 minute summer	1.885	0.483

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 5760 minute winter	1.220	0.483
1 year 7200 minute summer	1.609	0.410
1 year 7200 minute winter	1.038	0.410
1 year 8640 minute summer	1.409	0.359
1 year 8640 minute winter	0.910	0.359
1 year 10080 minute summer	1.260	0.322
1 year 10080 minute winter	0.813	0.322
30 year 15 minute summer	268.706	76.035
30 year 15 minute winter	188.566	76.035
30 year 30 minute summer	174.929	49.499
30 year 30 minute winter	122.757	49.499
30 year 60 minute summer	116.589	30.811
30 year 60 minute winter	77.459	30.811
30 year 120 minute summer	70.438	18.615
30 year 120 minute winter	46.797	18.615
30 year 180 minute summer	53.298	13.715
30 year 180 minute winter	34.645	13.715
30 year 240 minute summer	41.604	10.995
30 year 240 minute winter	27.641	10.995
30 year 360 minute summer	31.221	8.034
30 year 360 minute winter	20.295	8.034
30 year 480 minute summer	24.324	6.428
30 year 480 minute winter	16.160	6.428
30 year 600 minute summer	19.756	5.404
30 year 600 minute winter	13.498	5.404
30 year 720 minute summer	17.490	4.687
30 year 720 minute winter	11.754	4.687
30 year 960 minute summer	14.215	3.743
30 year 960 minute winter	9.416	3.743
30 year 1440 minute summer	10.161	2.723
30 year 1440 minute winter	6.829	2.723
30 year 2160 minute summer	7.160	1.979
30 year 2160 minute winter	4.933	1.979
30 year 2880 minute summer	5.883	1.577
30 year 2880 minute winter	3.953	1.577
30 year 4320 minute summer	4.374	1.143
30 year 4320 minute winter	2.880	1.143
30 year 5760 minute summer	3.554	0.910
30 year 5760 minute winter	2.301	0.910
30 year 7200 minute summer	2.987	0.762
30 year 7200 minute winter	1.928	0.762
30 year 8640 minute summer	2.583	0.659
30 year 8640 minute winter	1.667	0.659
30 year 10080 minute summer	2.284	0.583
30 year 10080 minute winter	1.474	0.583
100 year 15 minute summer	348.738	98.681
100 year 15 minute winter	244.728	98.681
100 year 30 minute summer	228.965	64.789
100 year 30 minute winter	160.677	64.789
100 year 60 minute summer	153.288	40.510
100 year 60 minute winter	101.841	40.510
100 year 120 minute summer	92.562	24.461

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year 120 minute winter	61.496	24.461
100 year 180 minute summer	69.806	17.964
100 year 180 minute winter	45.376	17.964
100 year 240 minute summer	54.269	14.342
100 year 240 minute winter	36.055	14.342
100 year 360 minute summer	40.484	10.418
100 year 360 minute winter	26.315	10.418
100 year 480 minute summer	31.414	8.302
100 year 480 minute winter	20.871	8.302
100 year 600 minute summer	25.431	6.956
100 year 600 minute winter	17.376	6.956
100 year 720 minute summer	22.452	6.017
100 year 720 minute winter	15.089	6.017
100 year 960 minute summer	18.166	4.784
100 year 960 minute winter	12.033	4.784
100 year 1440 minute summer	12.896	3.456
100 year 1440 minute winter	8.667	3.456
100 year 2160 minute summer	9.021	2.493
100 year 2160 minute winter	6.216	2.493
100 year 2880 minute summer	7.371	1.975
100 year 2880 minute winter	4.954	1.975
100 year 4320 minute summer	5.435	1.421
100 year 4320 minute winter	3.579	1.421
100 year 5760 minute summer	4.390	1.124
100 year 5760 minute winter	2.841	1.124
100 year 7200 minute summer	3.670	0.936
100 year 7200 minute winter	2.368	0.936
100 year 8640 minute summer	3.160	0.806
100 year 8640 minute winter	2.039	0.806
100 year 10080 minute summer	2.784	0.710
100 year 10080 minute winter	1.797	0.710
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 15 minute winter	342.620	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 30 minute winter	224.948	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 60 minute winter	142.577	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 120 minute winter	86.094	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 180 minute winter	63.526	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 240 minute winter	50.477	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 360 minute winter	36.841	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 480 minute winter	29.219	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 600 minute winter	24.327	9.738
100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 720 minute winter	21.125	8.424
100 year +40% CC 960 minute summer	25.432	6.697

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 960 minute winter	16.847	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC 1440 minute winter	12.134	4.839
100 year +40% CC 2160 minute summer	12.630	3.490
100 year +40% CC 2160 minute winter	8.702	3.490
100 year +40% CC 2880 minute summer	10.319	2.766
100 year +40% CC 2880 minute winter	6.935	2.766
100 year +40% CC 4320 minute summer	7.609	1.989
100 year +40% CC 4320 minute winter	5.011	1.989
100 year +40% CC 5760 minute summer	6.145	1.573
100 year +40% CC 5760 minute winter	3.978	1.573
100 year +40% CC 7200 minute summer	5.137	1.311
100 year +40% CC 7200 minute winter	3.316	1.311
100 year +40% CC 8640 minute summer	4.424	1.129
100 year +40% CC 8640 minute winter	2.855	1.129
100 year +40% CC 10080 minute summer	3.897	0.994
100 year +40% CC 10080 minute winter	2.515	0.994

Results for 1 year Critical Storm Duration. Lowest mass balance: 98.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	SWMH01	10	45.030	0.025	1.4	0.0043	0.0000	OK
15 minute winter	JUNCTION01	15	45.031	0.081	2.8	0.0008	0.0000	OK
60 minute winter	SWPC01	41	48.074	0.084	0.1	0.0423	0.0000	OK
15 minute winter	JUNCTION02	15	45.028	0.388	5.2	0.0035	0.0000	SURCHARGED
60 minute winter	SWPC02	36	48.089	0.099	0.1	0.0501	0.0000	OK
30 minute winter	SWMH02	20	45.473	0.048	3.2	0.0090	0.0000	OK
30 minute winter	SWMH03	20	45.272	0.037	3.2	0.0059	0.0000	OK
60 minute winter	SWPC03	41	48.074	0.084	0.1	0.0423	0.0000	OK
15 minute winter	SWMH04	11	45.076	0.041	3.5	0.0068	0.0000	OK
15 minute winter	SWMH05	15	45.029	0.184	3.6	0.0293	0.0000	SURCHARGED
15 minute winter	SWMH06	15	45.029	0.264	5.6	0.0457	0.0000	SURCHARGED
15 minute winter	SWMH08	15	45.026	0.601	8.6	0.6902	0.0000	SURCHARGED
15 minute winter	CWMH01	9	44.400	0.045	5.0	0.0503	0.0000	OK
15 minute summer	SEWERJUNCTION	22	44.273	0.043	5.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	SWMH01	P01	JUNCTION01	1.4	0.548	0.060	0.0189	
15 minute winter	JUNCTION01	P02	JUNCTION02	2.7	0.701	0.118	0.2527	
15 minute summer	SWPC01	Pump	JUNCTION02	0.0				
30 minute summer	JUNCTION02	P04	SWMH08	3.6	0.555	0.156	0.1841	
15 minute summer	SWPC02	Pump	SWMH02	1.5				
30 minute winter	SWMH02	P06	SWMH03	3.2	0.897	0.404	0.0147	
15 minute winter	SWMH03	P07	SWMH04	2.9	0.872	0.124	0.0370	
15 minute summer	SWPC03	Pump	SWMH04	0.0				
15 minute winter	SWMH04	P09	SWMH05	3.6	0.929	0.154	0.1130	
15 minute winter	SWMH05	P10	SWMH06	3.7	0.902	0.155	0.0691	
15 minute winter	SWMH06	P11	SWMH08	5.4	0.546	0.233	0.3120	
60 minute summer	SWMH08	Hydro-Brake®	CWMH01	5.0				
15 minute summer	CWMH01	P13	SEWERJUNCTION	5.0	1.176	0.177	0.0213	5.4

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	SWMH01	49	45.149	0.144	3.8	0.0243	0.0000	OK
30 minute winter	JUNCTION01	29	45.149	0.199	8.7	0.0020	0.0000	SURCHARGED
30 minute summer	SWPC01	18	48.089	0.099	0.3	0.0499	0.0000	OK
30 minute winter	JUNCTION02	29	45.148	0.508	9.0	0.0046	0.0000	SURCHARGED
15 minute winter	SWPC02	14	48.089	0.099	0.7	0.0503	0.0000	OK
15 minute winter	SWMH02	10	45.520	0.095	7.7	0.0178	0.0000	OK
15 minute winter	SWMH03	10	45.294	0.059	7.5	0.0093	0.0000	OK
30 minute summer	SWPC03	18	48.089	0.099	0.3	0.0499	0.0000	OK
15 minute winter	SWMH04	12	45.257	0.222	10.3	0.0367	0.0000	SURCHARGED
15 minute winter	SWMH05	12	45.222	0.377	9.3	0.0599	0.0000	SURCHARGED
15 minute winter	SWMH06	12	45.205	0.440	13.5	0.0761	0.0000	SURCHARGED
30 minute winter	SWMH08	30	45.147	0.722	24.4	9.4610	0.0000	SURCHARGED
120 minute summer	CWMH01	128	44.400	0.045	5.0	0.0503	0.0000	OK
30 minute winter	SEWERJUNCTION	12	44.273	0.043	5.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
30 minute winter	SWMH01	P01	JUNCTION01	6.2	0.592	0.267	0.0569	
15 minute summer	JUNCTION01	P02	JUNCTION02	6.1	0.777	0.266	0.3257	
15 minute summer	SWPC01	Pump	JUNCTION02	1.5				
15 minute winter	JUNCTION02	P04	SWMH08	9.3	0.527	0.403	0.1841	
15 minute summer	SWPC02	Pump	SWMH02	1.5				
15 minute winter	SWMH02	P06	SWMH03	7.5	1.048	0.956	0.0296	
15 minute winter	SWMH03	P07	SWMH04	7.5	0.964	0.324	0.1347	
15 minute summer	SWPC03	Pump	SWMH04	1.5				
15 minute winter	SWMH04	P09	SWMH05	9.3	1.032	0.402	0.1882	
15 minute winter	SWMH05	P10	SWMH06	9.0	0.911	0.377	0.0691	
15 minute winter	SWMH06	P11	SWMH08	13.1	0.741	0.563	0.3120	
120 minute summer	SWMH08	Hydro-Brake®	CWMH01	5.0				
30 minute winter	CWMH01	P13	SEWERJUNCTION	5.0	1.176	0.177	0.0213	19.8

Results for 100 year Critical Storm Duration. Lowest mass balance: 98.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	SWMH01	50	45.213	0.208	2.3	0.0352	0.0000	SURCHARGED
60 minute winter	JUNCTION01	50	45.213	0.263	6.3	0.0026	0.0000	SURCHARGED
360 minute winter	SWPC01	208	48.088	0.098	0.1	0.0493	0.0000	OK
60 minute winter	JUNCTION02	51	45.212	0.572	7.3	0.0052	0.0000	SURCHARGED
30 minute summer	SWPC02	25	48.090	0.100	0.8	0.0504	0.0000	OK
15 minute winter	SWMH02	10	45.587	0.162	9.6	0.0304	0.0000	SURCHARGED
15 minute winter	SWMH03	12	45.390	0.155	9.3	0.0246	0.0000	SURCHARGED
360 minute winter	SWPC03	208	48.088	0.098	0.1	0.0493	0.0000	OK
15 minute winter	SWMH04	12	45.364	0.329	12.0	0.0543	0.0000	SURCHARGED
15 minute winter	SWMH05	12	45.315	0.470	11.2	0.0748	0.0000	SURCHARGED
15 minute winter	SWMH06	12	45.291	0.526	16.5	0.0911	0.0000	SURCHARGED
60 minute winter	SWMH08	51	45.212	0.787	21.2	14.7726	0.0000	SURCHARGED
30 minute winter	CWMH01	10	44.400	0.045	5.0	0.0503	0.0000	OK
30 minute winter	SEWERJUNCTION	10	44.273	0.043	5.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
30 minute summer	SWMH01	P01	JUNCTION01	6.6	0.600	0.285	0.0573	
15 minute winter	JUNCTION01	P02	JUNCTION02	7.8	0.718	0.338	0.3257	
15 minute summer	SWPC01	Pump	JUNCTION02	1.5				
15 minute winter	JUNCTION02	P04	SWMH08	13.1	0.745	0.570	0.1841	
15 minute summer	SWPC02	Pump	SWMH02	1.5				
15 minute winter	SWMH02	P06	SWMH03	9.3	1.183	1.176	0.0320	
15 minute summer	SWMH03	P07	SWMH04	8.7	0.986	0.375	0.1914	
15 minute summer	SWPC03	Pump	SWMH04	1.5				
15 minute winter	SWMH04	P09	SWMH05	11.2	1.035	0.487	0.1882	
15 minute summer	SWMH05	P10	SWMH06	10.7	0.900	0.451	0.0691	
15 minute winter	SWMH06	P11	SWMH08	16.0	0.908	0.690	0.3120	
30 minute summer	SWMH08	Hydro-Brake®	CWMH01	5.0				
30 minute winter	CWMH01	P13	SEWERJUNCTION	5.0	1.176	0.177	0.0213	26.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	SWMH01	52	45.344	0.339	3.8	0.0573	0.0000	SURCHARGED
60 minute winter	JUNCTION01	52	45.343	0.393	7.0	0.0039	0.0000	SURCHARGED
60 minute summer	SWPC01	43	48.090	0.100	0.4	0.0503	0.0000	OK
60 minute winter	JUNCTION02	54	45.344	0.704	10.0	0.0063	0.0000	SURCHARGED
180 minute summer	SWPC02	112	48.090	0.100	0.4	0.0506	0.0000	SURCHARGED
15 minute winter	SWMH02	11	45.812	0.387	12.8	0.0723	0.0000	FLOOD RISK
15 minute winter	SWMH03	12	45.642	0.407	11.1	0.0647	0.0000	SURCHARGED
60 minute summer	SWPC03	43	48.090	0.100	0.4	0.0503	0.0000	OK
15 minute winter	SWMH04	12	45.595	0.560	15.6	0.0923	0.0000	SURCHARGED
15 minute winter	SWMH05	12	45.507	0.662	14.0	0.1052	0.0000	FLOOD RISK
15 minute winter	SWMH06	12	45.466	0.701	21.3	0.1212	0.0000	FLOOD RISK
60 minute winter	SWMH08	57	45.342	0.917	29.7	25.2734	0.0000	FLOOD RISK
60 minute winter	CWMH01	17	44.400	0.045	5.0	0.0503	0.0000	OK
360 minute summer	SEWERJUNCTION	160	44.273	0.043	5.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	SWMH01	P01	JUNCTION01	6.9	0.635	0.296	0.0573	
15 minute winter	JUNCTION01	P02	JUNCTION02	11.4	0.793	0.494	0.3257	
15 minute summer	SWPC01	Pump	JUNCTION02	1.5				
15 minute winter	JUNCTION02	P04	SWMH08	17.2	0.980	0.749	0.1841	
15 minute summer	SWPC02	Pump	SWMH02	1.5				
15 minute summer	SWMH02	P06	SWMH03	11.1	1.424	1.416	0.0325	
15 minute winter	SWMH03	P07	SWMH04	10.2	1.038	0.442	0.1977	
15 minute summer	SWPC03	Pump	SWMH04	1.5				
15 minute summer	SWMH04	P09	SWMH05	14.1	1.051	0.610	0.1882	
15 minute winter	SWMH05	P10	SWMH06	13.8	0.910	0.580	0.0691	
15 minute winter	SWMH06	P11	SWMH08	20.5	1.166	0.886	0.3120	
60 minute summer	SWMH08	Hydro-Brake®	CWMH01	5.0				
360 minute summer	CWMH01	P13	SEWERJUNCTION	5.0	1.176	0.177	0.0213	61.1