Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.335	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
EX IC1	0.075	5.00	162.790	600		415037.422	420436.143	1.215
MH14	0.000	5.00	161.520	1200		415046.700	420397.334	1.370
MH15	0.096	5.00	162.770	1200		415006.128	420387.481	1.470
EX MH15A	0.033	5.00	162.150			415021.937	420378.353	0.409
EX MH12	0.106	5.00	161.900	1200		415023.618	420364.928	1.400
EX MH6	0.025	5.00	161.750	620	470	415026.576	420344.124	0.700
EX MH7	0.017	5.00	161.450	600	450	415034.351	420341.075	0.600
EX MH8	0.037	5.00	161.200	1200		415040.595	420337.446	0.700
EX MH11	0.050	5.00	160.570	820	470	415055.932	420315.266	1.100
OUT_B			160.500			415062.055	420310.167	2.000
1	0.095	5.00	165.500			414949.103	420438.363	1.700
2	0.221	5.00	164.900	1500		414959.580	420416.931	2.525
3			162.600	1500		415039.428	420427.751	1.250
4	0.075	5.00	162.600	1200		415033.617	420466.125	1.050
5			162.300	1200		415065.482	420470.606	0.950
J1			162.100			415073.043	420471.588	1.000
BASIN_2		5.00	162.100			415082.462	420443.041	1.000
6_FC2	0.154	5.00	162.050	1500		415076.907	420432.540	1.725
7_IN			161.000			415084.267	420416.296	1.080
8_CP	0.155	5.00	161.300	1200		415074.149	420400.741	1.600
J2			160.920			415083.573	420401.940	1.000
BASIN_1		5.00	160.920			415085.259	420391.012	1.000
9			161.300	1500		415074.901	420384.928	1.700
10			160.850	1200		415049.183	420348.433	1.145
11			160.850	1200		415051.883	420335.162	1.200
12_FC1			160.750	1800		415054.436	420322.615	1.200

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)
7.000	MH15	MH14	41.751	0.600	161.300	160.225	1.075	38.8	225	5.33	50.0
5.000	EX MH15A	EX MH12	13.530	0.600	161.741	161.320	0.421	32.1	100	5.17	50.0
5.001	EX MH12	10	30.425	0.600	160.500	160.240	0.260	117.0	225	5.59	50.0
6.000	EX MH6	EX MH7	8.351	0.600	161.050	160.900	0.150	55.7	100	5.13	50.0
6.001	EX MH7	EX MH8	7.222	0.600	160.850	160.500	0.350	20.6	150	5.19	50.0
6.002	EX MH8	11	11.517	0.600	160.500	159.800	0.700	16.5	150	5.27	50.0
1.000	1	2	23.856	0.600	163.800	162.525	1.275	18.7	225	5.13	50.0
1.001	2	3	80.578	0.600	162.375	161.425	0.950	84.8	300	5.92	50.0
2.000	EX IC1	3	8.628	0.600	161.575	161.500	0.075	115.0	225	5.12	50.0
1.002	3	6_FC2	37.784	0.600	161.350	160.675	0.675	56.0	375	6.18	50.0
8.000	4	5	32.179	0.600	161.550	161.350	0.200	160.9	225	5.52	50.0
8.001	5	J1	7.625	0.600	161.350	161.275	0.075	101.7	225	5.62	50.0
3.000	BASIN_2	6_FC2	11.880	0.600	161.100	160.675	0.425	28.0	375	5.06	50.0
1.003	6_FC2	7_IN	17.834	0.600	160.625	160.000	0.625	28.5	300	6.28	50.0
7.001	MH14	8_CP	27.660	0.600	160.150	160.000	0.150	184.4	300	5.73	50.0
7.002	8_CP	J2	9.500	0.600	160.000	159.920	0.080	118.7	300	5.84	50.0
4.000	BASIN_1	9	12.013	0.600	159.920	159.900	0.020	600.6	300	5.32	50.0
4.001	9	10	44.646	0.600	159.900	159.705	0.195	229.0	300	6.03	50.0
4.002	10	11	13.543	0.600	159.705	159.650	0.055	246.2	300	6.26	50.0
4.003	11	12_FC1	12.804	0.600	159.650	159.600	0.050	256.1	300	6.48	50.0
4.004	12_FC1	EX MH11	7.500	0.600	159.550	159.470	0.080	93.7	300	6.56	50.0
4.005	EX MH11	OUT_B	7.968	0.600	159.470	158.500	0.970	8.2	150	6.59	50.0

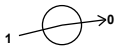
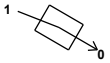
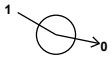
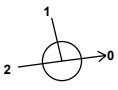
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
7.000	2.105	83.7	13.0	1.245	1.070	0.096	0.0	59	1.535
5.000	1.366	10.7	4.5	0.309	0.480	0.033	0.0	45	1.303
5.001	1.207	48.0	18.8	1.175	0.385	0.139	0.0	98	1.137
6.000	1.034	8.1	3.4	0.600	0.450	0.025	0.0	45	0.987
6.001	2.227	39.4	5.7	0.450	0.550	0.042	0.0	38	1.589
6.002	2.495	44.1	10.7	0.550	0.900	0.079	0.0	50	2.060
1.000	3.039	120.8	12.9	1.475	2.150	0.095	0.0	50	2.005
1.001	1.708	120.7	42.8	2.225	0.875	0.316	0.0	123	1.567
2.000	1.218	48.4	10.2	0.990	0.875	0.075	0.0	70	0.969
1.002	2.426	267.9	53.0	0.875	1.000	0.391	0.0	112	1.904
8.000	1.028	40.9	10.2	0.825	0.725	0.075	0.0	76	0.855
8.001	1.296	51.5	10.2	0.725	0.600	0.075	0.0	67	1.011
3.000	3.438	379.7	0.0	0.625	1.000	0.000	0.0	0	0.000
1.003	2.954	208.8	73.9	1.125	0.700	0.545	0.0	123	2.706
7.001	1.154	81.6	13.0	1.070	1.000	0.096	0.0	81	0.851
7.002	1.441	101.9	34.0	1.000	0.700	0.251	0.0	119	1.302
4.000	0.634	44.8	0.0	0.700	1.100	0.000	0.0	0	0.000
4.001	1.035	73.1	0.0	1.100	0.845	0.000	0.0	0	0.000
4.002	0.997	70.5	18.8	0.845	0.900	0.139	0.0	106	0.849
4.003	0.978	69.1	29.5	0.900	0.850	0.218	0.0	137	0.940
4.004	1.624	114.8	29.5	0.900	0.800	0.218	0.0	103	1.368
4.005	3.537	62.5	36.3	0.950	1.850	0.268	0.0	82	3.669

Pipeline Schedule

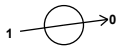
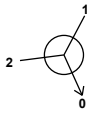
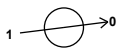
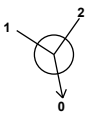
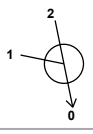
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
7.000	41.751	38.8	225	Circular	162.770	161.300	1.245	161.520	160.225	1.070
5.000	13.530	32.1	100	Circular	162.150	161.741	0.309	161.900	161.320	0.480
5.001	30.425	117.0	225	Circular	161.900	160.500	1.175	160.850	160.240	0.385
6.000	8.351	55.7	100	Circular	161.750	161.050	0.600	161.450	160.900	0.450
6.001	7.222	20.6	150	Circular	161.450	160.850	0.450	161.200	160.500	0.550
6.002	11.517	16.5	150	Circular	161.200	160.500	0.550	160.850	159.800	0.900
1.000	23.856	18.7	225	Circular	165.500	163.800	1.475	164.900	162.525	2.150
1.001	80.578	84.8	300	Circular	164.900	162.375	2.225	162.600	161.425	0.875
2.000	8.628	115.0	225	Circular	162.790	161.575	0.990	162.600	161.500	0.875
1.002	37.784	56.0	375	Circular	162.600	161.350	0.875	162.050	160.675	1.000
8.000	32.179	160.9	225	Circular	162.600	161.550	0.825	162.300	161.350	0.725
8.001	7.625	101.7	225	Circular	162.300	161.350	0.725	162.100	161.275	0.600
3.000	11.880	28.0	375	Circular	162.100	161.100	0.625	162.050	160.675	1.000
1.003	17.834	28.5	300	Circular	162.050	160.625	1.125	161.000	160.000	0.700
7.001	27.660	184.4	300	Circular	161.520	160.150	1.070	161.300	160.000	1.000
7.002	9.500	118.7	300	Circular	161.300	160.000	1.000	160.920	159.920	0.700
4.000	12.013	600.6	300	Circular	160.920	159.920	0.700	161.300	159.900	1.100
4.001	44.646	229.0	300	Circular	161.300	159.900	1.100	160.850	159.705	0.845
4.002	13.543	246.2	300	Circular	160.850	159.705	0.845	160.850	159.650	0.900
4.003	12.804	256.1	300	Circular	160.850	159.650	0.900	160.750	159.600	0.850
4.004	7.500	93.7	300	Circular	160.750	159.550	0.900	160.570	159.470	0.800
4.005	7.968	8.2	150	Circular	160.570	159.470	0.950	160.500	158.500	1.850

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
7.000	MH15	1200		Manhole	Adoptable	MH14	1200		Manhole	Adoptable
5.000	EX MH15A			Junction		EX MH12	1200		Manhole	Adoptable
5.001	EX MH12	1200		Manhole	Adoptable	10	1200		Manhole	Adoptable
6.000	EX MH6	620	470	Manhole	Adoptable	EX MH7	600	450	Manhole	Adoptable
6.001	EX MH7	600	450	Manhole	Adoptable	EX MH8	1200		Manhole	Adoptable
6.002	EX MH8	1200		Manhole	Adoptable	11	1200		Manhole	Adoptable
1.000	1			Junction		2	1500		Manhole	Adoptable
1.001	2	1500		Manhole	Adoptable	3	1500		Manhole	Adoptable
2.000	EX IC1	600		Manhole	Adoptable	3	1500		Manhole	Adoptable
1.002	3	1500		Manhole	Adoptable	6_FC2	1500		Manhole	Adoptable
8.000	4	1200		Manhole	Adoptable	5	1200		Manhole	Adoptable
8.001	5	1200		Manhole	Adoptable	J1			Junction	
3.000	BASIN_2			Junction		6_FC2	1500		Manhole	Adoptable
1.003	6_FC2	1500		Manhole	Adoptable	7_IN			Junction	
7.001	MH14	1200		Manhole	Adoptable	8_CP	1200		Manhole	Adoptable
7.002	8_CP	1200		Manhole	Adoptable	J2			Junction	
4.000	BASIN_1			Junction		9	1500		Manhole	Adoptable
4.001	9	1500		Manhole	Adoptable	10	1200		Manhole	Adoptable
4.002	10	1200		Manhole	Adoptable	11	1200		Manhole	Adoptable
4.003	11	1200		Manhole	Adoptable	12_FC1	1800		Manhole	Adoptable
4.004	12_FC1	1800		Manhole	Adoptable	EX MH11	820	470	Manhole	Adoptable
4.005	EX MH11	820	470	Manhole	Adoptable	OUT_B			Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
EX IC1	415037.422	420436.143	162.790	1.215	600			0	2.000	161.575	225
MH14	415046.700	420397.334	161.520	1.370	1200			1	7.000	160.225	225
								0	7.001	160.150	300
MH15	415006.128	420387.481	162.770	1.470	1200			0	7.000	161.300	225
EX MH15A	415021.937	420378.353	162.150	0.409				0	5.000	161.741	100
EX MH12	415023.618	420364.928	161.900	1.400	1200			1	5.000	161.320	100
								0	5.001	160.500	225
EX MH6	415026.576	420344.124	161.750	0.700	620	470		0	6.000	161.050	100
EX MH7	415034.351	420341.075	161.450	0.600	600	450		1	6.000	160.900	100
								0	6.001	160.850	150
EX MH8	415040.595	420337.446	161.200	0.700	1200			1	6.001	160.500	150
								0	6.002	160.500	150
EX MH11	415055.932	420315.266	160.570	1.100	820	470		1	4.004	159.470	300
								0	4.005	159.470	150
OUT_B	415062.055	420310.167	160.500	2.000				1	4.005	158.500	150
1	414949.103	420438.363	165.500	1.700				0	1.000	163.800	225
2	414959.580	420416.931	164.900	2.525	1500			1	1.000	162.525	225
								0	1.001	162.375	300
3	415039.428	420427.751	162.600	1.250	1500			1	2.000	161.500	225
								2	1.001	161.425	300
								0	1.002	161.350	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
4	415033.617	420466.125	162.600	1.050	1200					
							0	8.000	161.550	225
5	415065.482	420470.606	162.300	0.950	1200			1	8.000	161.350	225
										
							0	8.001	161.350	225
J1	415073.043	420471.588	162.100	1.000				1	8.001	161.275	225
BASIN_2	415082.462	420443.041	162.100	1.000						
										
							0	3.000	161.100	375
6_FC2	415076.907	420432.540	162.050	1.725	1500			1	3.000	160.675	375
								2	1.002	160.675	375
							0	1.003	160.625	300
7_IN	415084.267	420416.296	161.000	1.080				1	1.003	160.000	300
										
8_CP	415074.149	420400.741	161.300	1.600	1200			1	7.001	160.000	300
										
							0	7.002	160.000	300
J2	415083.573	420401.940	160.920	1.000				1	7.002	159.920	300
BASIN_1	415085.259	420391.012	160.920	1.000						
										
							0	4.000	159.920	300
9	415074.901	420384.928	161.300	1.700	1500			1	4.000	159.900	300
										
							0	4.001	159.900	300
10	415049.183	420348.433	160.850	1.145	1200			1	5.001	160.240	225
								2	4.001	159.705	300
							0	4.002	159.705	300
11	415051.883	420335.162	160.850	1.200	1200			1	6.002	159.800	150
								2	4.002	159.650	300
							0	4.003	159.650	300
12_FC1	415054.436	420322.615	160.750	1.200	1800			1	4.003	159.600	300
										
							0	4.004	159.550	300

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	360
M5-60 (mm)	19.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.335	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
100	0	0	0
100	45	0	0

Node 12_FC1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	159.550	Product Number	CTL-SHE-0216-2500-1200-2500
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.300
Design Flow (l/s)	25.0	Min Node Diameter (mm)	1800

Node 6_FC2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	160.625	Product Number	CTL-SHE-0099-5000-1425-5000
Design Depth (m)	1.425	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node BASIN_1 Pond Storage Structure

Invert Level (m)	159.920	Analyse flow through structure	x
Time to half empty (mins)	98		

Inlets

7_IN	J2

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	127.0	1.000	333.0	1.001	0.0

Node BASIN_2 Pond Storage Structure

Invert Level (m)	161.100	Analyse flow through structure	x
Time to half empty (mins)			

Inlets

J1

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	246.0	1.000	537.0	1.001	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	EX IC1	10	161.647	0.072	9.5	0.1087	0.0000	OK
15 minute winter	MH14	11	160.226	0.076	11.7	0.0862	0.0000	OK
15 minute winter	MH15	10	161.358	0.058	12.1	0.1406	0.0000	OK
15 minute winter	EX MH15A	10	161.785	0.044	4.2	0.0707	0.0000	OK
15 minute winter	EX MH12	10	160.595	0.095	17.5	0.2515	0.0000	OK
15 minute winter	EX MH6	10	161.095	0.045	3.2	0.0457	0.0000	OK
15 minute winter	EX MH7	10	160.887	0.037	5.2	0.0309	0.0000	OK
15 minute winter	EX MH8	10	160.550	0.050	9.9	0.1102	0.0000	OK
30 minute winter	EX MH11	20	159.544	0.074	27.9	0.0959	0.0000	OK
30 minute winter	OUT_B	20	158.570	0.070	27.9	0.0000	0.0000	OK
15 minute winter	1	10	163.848	0.048	12.0	0.0537	0.0000	OK
15 minute winter	2	11	162.492	0.117	39.7	0.4130	0.0000	OK
15 minute winter	3	11	161.456	0.106	47.5	0.1868	0.0000	OK
15 minute winter	4	10	161.625	0.075	9.5	0.1921	0.0000	OK
15 minute winter	5	11	161.417	0.067	9.2	0.0755	0.0000	OK
180 minute winter	J1	148	161.262	0.162	7.9	0.0000	0.0000	OK
180 minute winter	BASIN_2	140	161.261	0.161	31.0	43.4589	0.0000	OK
180 minute winter	6_FC2	140	161.261	0.636	31.1	2.4992	0.0000	SURCHARGED
60 minute winter	7_IN	42	160.040	0.120	5.0	0.0000	0.0000	OK
15 minute winter	8_CP	11	160.113	0.113	30.9	0.3956	0.0000	OK
60 minute winter	J2	40	160.044	0.124	17.2	0.0000	0.0000	OK
60 minute winter	BASIN_1	41	160.035	0.115	16.5	16.6470	0.0000	OK
60 minute winter	9	42	159.993	0.093	15.8	0.1650	0.0000	OK
60 minute summer	10	39	159.945	0.240	23.4	0.2717	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX IC1	2.000	3	9.4	0.906	0.193	0.0891	
15 minute winter	MH14	7.001	8_CP	11.8	0.621	0.144	0.5280	
15 minute winter	MH15	7.000	MH14	11.7	1.482	0.140	0.3309	
15 minute winter	EX MH15A	5.000	EX MH12	4.1	1.260	0.382	0.0441	
15 minute winter	EX MH12	5.001	10	17.0	1.095	0.355	0.4735	
15 minute winter	EX MH6	6.000	EX MH7	3.1	0.939	0.387	0.0280	
15 minute winter	EX MH7	6.001	EX MH8	5.2	1.226	0.133	0.0309	
15 minute winter	EX MH8	6.002	11	9.8	1.948	0.222	0.0817	
30 minute winter	EX MH11	4.005	OUT_B	27.9	3.333	0.447	0.0668	85.7
15 minute winter	1	1.000	2	11.9	1.933	0.098	0.1464	
15 minute winter	2	1.001	3	38.5	1.525	0.319	2.0321	
15 minute winter	3	1.002	6_FC2	47.6	0.731	0.178	2.5645	
15 minute winter	4	8.000	5	9.2	0.873	0.226	0.3409	
15 minute winter	5	8.001	J1	9.3	0.969	0.180	0.0731	
15 minute winter	BASIN_2	3.000	6_FC2	-60.1	-0.855	-0.158	0.7898	
480 minute summer	6_FC2	1.003	7_IN	5.0	1.243	0.024	0.0718	
15 minute winter	8_CP	7.002	J2	30.4	1.919	0.299	0.1864	
60 minute winter	BASIN_1	4.000	9	15.8	0.728	0.351	0.2605	
60 minute winter	9	4.001	10	15.7	0.671	0.215	1.7656	
60 minute winter	10	4.002	11	21.4	0.609	0.303	0.8808	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	11	39	159.940	0.290	26.5	0.3277	0.0000	OK
60 minute summer	12_FC1	39	159.931	0.381	25.0	0.9690	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	11	4.003	12_FC1	25.0	0.485	0.362	0.8971	
60 minute summer	12_FC1	4.004	EX MH11	24.5	1.446	0.213	0.1296	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	EX IC1	10	161.657	0.082	12.2	0.1250	0.0000	OK
15 minute winter	MH14	11	160.237	0.087	15.2	0.0982	0.0000	OK
15 minute winter	MH15	10	161.366	0.066	15.7	0.1611	0.0000	OK
15 minute winter	EX MH15A	10	161.792	0.051	5.4	0.0821	0.0000	OK
15 minute winter	EX MH12	10	160.611	0.111	22.6	0.2930	0.0000	OK
15 minute winter	EX MH6	10	161.103	0.053	4.1	0.0531	0.0000	OK
15 minute winter	EX MH7	10	160.892	0.042	6.8	0.0354	0.0000	OK
15 minute winter	EX MH8	10	160.557	0.057	12.8	0.1250	0.0000	OK
15 minute winter	EX MH11	11	159.551	0.080	31.9	0.1042	0.0000	OK
15 minute winter	OUT_B	11	158.576	0.076	31.9	0.0000	0.0000	OK
15 minute winter	1	10	163.855	0.055	15.5	0.0612	0.0000	OK
15 minute winter	2	11	162.511	0.136	51.3	0.4779	0.0000	OK
15 minute winter	3	11	161.471	0.121	61.5	0.2134	0.0000	OK
15 minute winter	4	10	161.636	0.086	12.2	0.2201	0.0000	OK
15 minute winter	5	11	161.426	0.076	11.9	0.0864	0.0000	OK
180 minute winter	J1	164	161.323	0.223	10.4	0.0000	0.0000	OK
180 minute winter	BASIN_2	148	161.321	0.221	27.6	61.7261	0.0000	OK
180 minute winter	6_FC2	148	161.321	0.696	32.7	2.7362	0.0000	SURCHARGED
60 minute winter	7_IN	44	160.073	0.153	5.0	0.0000	0.0000	OK
15 minute winter	8_CP	11	160.129	0.129	40.2	0.4541	0.0000	OK
60 minute winter	J2	43	160.077	0.157	21.9	0.0000	0.0000	OK
60 minute winter	BASIN_1	43	160.068	0.147	19.4	21.7731	0.0000	OK
60 minute winter	9	42	160.059	0.159	18.4	0.2815	0.0000	OK
60 minute winter	10	40	160.053	0.348	27.5	0.3931	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX IC1	2.000	3	12.0	0.967	0.249	0.1075	
15 minute winter	MH14	7.001	8_CP	15.2	0.668	0.187	0.6346	
15 minute winter	MH15	7.000	MH14	15.2	1.593	0.182	0.3992	
15 minute winter	EX MH15A	5.000	EX MH12	5.3	1.345	0.495	0.0534	
15 minute winter	EX MH12	5.001	10	22.0	1.168	0.459	0.5741	
15 minute winter	EX MH6	6.000	EX MH7	4.0	0.996	0.495	0.0337	
15 minute winter	EX MH7	6.001	EX MH8	6.8	1.346	0.172	0.0369	
15 minute winter	EX MH8	6.002	11	13.1	2.026	0.296	0.1311	
15 minute winter	EX MH11	4.005	OUT_B	31.9	3.438	0.511	0.0740	82.7
15 minute winter	1	1.000	2	15.3	2.079	0.127	0.1759	
15 minute winter	2	1.001	3	49.8	1.632	0.413	2.4609	
15 minute winter	3	1.002	6_FC2	61.7	0.735	0.230	2.6624	
15 minute winter	4	8.000	5	11.9	0.932	0.292	0.4118	
15 minute winter	5	8.001	J1	12.0	1.037	0.232	0.0879	
15 minute summer	BASIN_2	3.000	6_FC2	-85.5	-1.174	-0.225	0.8276	
30 minute summer	6_FC2	1.003	7_IN	5.0	1.243	0.024	0.1092	
15 minute winter	8_CP	7.002	J2	39.3	2.011	0.386	0.2335	
60 minute winter	BASIN_1	4.000	9	18.4	0.748	0.410	0.4342	
60 minute winter	9	4.001	10	19.8	0.688	0.271	2.4203	
60 minute winter	10	4.002	11	23.0	0.608	0.326	0.9537	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	11	40	160.046	0.396	28.0	0.4477	0.0000	SURCHARGED
60 minute winter	12_FC1	40	160.036	0.486	26.9	1.2368	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	11	4.003	12_FC1	27.8	0.599	0.402	0.9016	
60 minute winter	12_FC1	4.004	EX MH11	25.0	1.460	0.218	0.1341	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	EX IC1	10	161.695	0.120	23.1	0.1821	0.0000	OK
60 minute winter	MH14	46	160.273	0.123	16.1	0.1388	0.0000	OK
15 minute winter	MH15	10	161.394	0.094	29.6	0.2282	0.0000	OK
15 minute winter	EX MH15A	10	161.821	0.080	10.2	0.1290	0.0000	OK
15 minute winter	EX MH12	10	160.671	0.171	42.6	0.4524	0.0000	OK
15 minute winter	EX MH6	10	161.135	0.085	7.7	0.0857	0.0000	OK
15 minute winter	EX MH7	10	160.910	0.060	12.7	0.0505	0.0000	OK
15 minute winter	EX MH8	11	160.589	0.089	24.1	0.1950	0.0000	OK
15 minute winter	EX MH11	10	159.564	0.094	40.3	0.1214	0.0000	OK
15 minute winter	OUT_B	10	158.588	0.087	40.2	0.0000	0.0000	OK
15 minute winter	1	10	163.876	0.076	29.3	0.0855	0.0000	OK
15 minute winter	2	11	162.580	0.205	97.2	0.7195	0.0000	OK
240 minute winter	3	232	161.592	0.242	25.4	0.4280	0.0000	OK
15 minute winter	4	10	161.674	0.124	23.1	0.3185	0.0000	OK
240 minute winter	5	240	161.592	0.242	7.6	0.2737	0.0000	SURCHARGED
240 minute winter	J1	240	161.592	0.492	17.5	0.0000	0.0000	OK
240 minute winter	BASIN_2	236	161.592	0.492	29.9	156.2287	0.0000	SURCHARGED
240 minute winter	6_FC2	236	161.592	0.967	35.4	3.8003	0.0000	SURCHARGED
60 minute winter	7_IN	49	160.266	0.346	17.6	0.0000	0.0000	OK
60 minute winter	8_CP	46	160.272	0.272	42.0	0.9579	0.0000	OK
60 minute winter	J2	47	160.271	0.351	41.0	0.0000	0.0000	OK
60 minute winter	BASIN_1	48	160.260	0.339	29.7	56.1060	0.0000	SURCHARGED
60 minute winter	9	47	160.257	0.357	23.8	0.6304	0.0000	SURCHARGED
60 minute winter	10	45	160.249	0.544	31.2	0.6157	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX IC1	2.000	3	22.8	1.133	0.472	0.1739	
15 minute winter	MH14	7.001	8_CP	28.8	0.779	0.353	1.0359	
15 minute winter	MH15	7.000	MH14	28.9	1.892	0.346	0.6387	
15 minute winter	EX MH15A	5.000	EX MH12	10.0	1.521	0.929	0.0889	
15 minute winter	EX MH12	5.001	10	41.6	1.333	0.867	0.9498	
15 minute winter	EX MH6	6.000	EX MH7	7.5	1.118	0.929	0.0564	
15 minute winter	EX MH7	6.001	EX MH8	12.7	1.548	0.323	0.0624	
15 minute winter	EX MH8	6.002	11	23.5	2.106	0.532	0.1642	
15 minute winter	EX MH11	4.005	OUT_B	40.2	3.613	0.643	0.0887	156.5
15 minute winter	1	1.000	2	29.0	2.482	0.240	0.2790	
15 minute winter	2	1.001	3	94.6	1.887	0.783	4.0387	
15 minute winter	3	1.002	6_FC2	116.4	1.242	0.435	3.0847	
15 minute winter	4	8.000	5	22.7	1.091	0.554	0.6679	
15 minute winter	5	8.001	J1	22.6	1.225	0.439	0.1410	
15 minute winter	BASIN_2	3.000	6_FC2	-154.2	-1.832	-0.406	1.1512	
30 minute summer	6_FC2	1.003	7_IN	5.0	1.243	0.024	0.4851	
15 minute winter	8_CP	7.002	J2	74.9	2.201	0.735	0.5436	
15 minute winter	BASIN_1	4.000	9	-35.0	0.773	-0.780	0.7965	
15 minute winter	9	4.001	10	-39.9	0.695	-0.546	3.0871	
30 minute winter	10	4.002	11	24.5	0.608	0.348	0.9537	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	11	45	160.243	0.593	31.5	0.6706	0.0000	SURCHARGED
60 minute winter	12_FC1	45	160.234	0.683	28.8	1.7394	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	11	4.003	12_FC1	30.9	0.625	0.448	0.9016	
30 minute winter	12_FC1	4.004	EX MH11	25.0	1.477	0.218	0.1471	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	EX IC1	344	161.749	0.174	4.7	0.2639	0.0000	OK
60 minute winter	MH14	49	160.402	0.252	21.1	0.2845	0.0000	OK
15 minute winter	MH15	10	161.409	0.109	38.3	0.2651	0.0000	OK
15 minute winter	EX MH15A	11	161.966	0.225	13.2	0.3638	0.0000	FLOOD RISK
15 minute winter	EX MH12	11	160.752	0.252	53.3	0.6655	0.0000	SURCHARGED
15 minute winter	EX MH6	11	161.245	0.195	10.0	0.1961	0.0000	SURCHARGED
15 minute winter	EX MH7	10	160.918	0.068	16.0	0.0568	0.0000	OK
15 minute winter	EX MH8	11	160.631	0.131	30.7	0.2858	0.0000	OK
15 minute winter	EX MH11	10	159.571	0.101	44.3	0.1301	0.0000	OK
15 minute winter	OUT_B	10	158.593	0.093	44.2	0.0000	0.0000	OK
15 minute winter	1	10	163.886	0.086	37.9	0.0961	0.0000	OK
15 minute winter	2	11	162.632	0.257	125.8	0.9030	0.0000	OK
360 minute winter	3	344	161.749	0.399	24.5	0.7049	0.0000	SURCHARGED
360 minute winter	4	352	161.749	0.199	4.7	0.5098	0.0000	OK
360 minute winter	5	352	161.749	0.399	4.7	0.4514	0.0000	SURCHARGED
360 minute winter	J1	352	161.749	0.649	17.2	0.0000	0.0000	OK
360 minute winter	BASIN_2	344	161.749	0.649	28.4	220.9004	0.0000	SURCHARGED
360 minute winter	6_FC2	344	161.749	1.124	33.5	4.4155	0.0000	SURCHARGED
60 minute winter	7_IN	54	160.394	0.474	25.1	0.0000	0.0000	OK
60 minute winter	8_CP	49	160.401	0.401	55.2	1.4109	0.0000	SURCHARGED
60 minute winter	J2	49	160.400	0.480	51.9	0.0000	0.0000	OK
60 minute winter	BASIN_1	52	160.387	0.467	45.6	83.2423	0.0000	SURCHARGED
60 minute winter	9	49	160.385	0.485	24.1	0.8568	0.0000	SURCHARGED
60 minute winter	10	48	160.378	0.673	30.6	0.7609	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX IC1	2.000	3	29.6	1.202	0.611	0.2344	
15 minute winter	MH14	7.001	8_CP	37.4	0.810	0.458	1.3311	
15 minute winter	MH15	7.000	MH14	37.5	2.019	0.448	0.7748	
15 minute winter	EX MH15A	5.000	EX MH12	11.7	1.502	1.092	0.1059	
15 minute winter	EX MH12	5.001	10	51.4	1.355	1.071	1.1455	
15 minute winter	EX MH6	6.000	EX MH7	9.5	1.216	1.171	0.0644	
15 minute winter	EX MH7	6.001	EX MH8	16.0	1.561	0.406	0.0866	
15 minute winter	EX MH8	6.002	11	29.6	2.210	0.671	0.1951	
15 minute winter	EX MH11	4.005	OUT_B	44.2	3.680	0.708	0.0957	191.7
15 minute winter	1	1.000	2	37.7	2.600	0.312	0.3811	
15 minute winter	2	1.001	3	121.7	1.949	1.008	5.2435	
15 minute winter	3	1.002	6_FC2	147.6	1.366	0.551	3.8556	
15 minute winter	4	8.000	5	29.3	1.156	0.717	0.8155	
15 minute winter	5	8.001	J1	29.3	1.303	0.568	0.1727	
15 minute winter	BASIN_2	3.000	6_FC2	-198.9	-2.155	-0.524	1.2788	
15 minute winter	6_FC2	1.003	7_IN	5.0	1.243	0.024	0.6256	
15 minute winter	8_CP	7.002	J2	96.5	2.274	0.947	0.6577	
15 minute winter	BASIN_1	4.000	9	-51.1	-0.882	-1.140	0.8459	
15 minute winter	9	4.001	10	-52.9	-0.752	-0.724	3.1439	
15 minute summer	10	4.002	11	24.5	0.608	0.348	0.9537	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	11	48	160.372	0.722	32.9	0.8161	0.0000	SURCHARGED
60 minute winter	12_FC1	48	160.363	0.813	30.7	2.0685	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	11	4.003	12_FC1	39.5	0.615	0.571	0.9016	
120 minute winter	12_FC1	4.004	EX MH11	25.0	1.477	0.218	0.1376	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	EX IC1	12	162.137	0.562	43.4	0.8530	0.0000	SURCHARGED
120 minute winter	MH14	98	160.660	0.510	19.4	0.5766	0.0000	SURCHARGED
15 minute winter	MH15	10	161.438	0.138	55.4	0.3354	0.0000	OK
15 minute summer	EX MH15A	10	162.150	0.409	18.2	0.9636	0.0000	FLOOD RISK
15 minute winter	EX MH12	12	161.182	0.682	75.6	1.8042	0.0000	SURCHARGED
15 minute winter	EX MH6	12	161.667	0.617	14.5	0.6208	0.0000	FLOOD RISK
15 minute winter	EX MH7	12	161.290	0.440	21.7	0.3679	0.0000	FLOOD RISK
15 minute winter	EX MH8	12	161.173	0.673	39.8	1.4720	0.0000	FLOOD RISK
15 minute winter	EX MH11	10	159.585	0.115	52.0	0.1483	0.0000	OK
15 minute winter	OUT_B	10	158.604	0.104	51.9	0.0000	0.0000	OK
15 minute winter	1	12	164.017	0.217	54.8	0.2429	0.0000	OK
15 minute winter	2	12	163.803	1.428	179.5	5.0244	0.0000	SURCHARGED
15 minute winter	3	12	162.082	0.732	192.6	1.2929	0.0000	SURCHARGED
480 minute winter	4	472	162.050	0.500	5.5	1.2807	0.0000	SURCHARGED
480 minute winter	5	472	162.050	0.700	5.3	0.7920	0.0000	FLOOD RISK
480 minute winter	J1	472	162.050	0.950	19.0	0.0000	0.0000	OK
480 minute winter	BASIN_2	464	162.050	0.950	33.6	364.7777	0.0000	FLOOD RISK
480 minute winter	6_FC2	464	162.050	1.425	38.3	5.5980	0.0000	FLOOD RISK
120 minute winter	7_IN	102	160.654	0.734	23.0	0.0000	0.0000	OK
120 minute winter	8_CP	98	160.660	0.659	48.8	2.3187	0.0000	SURCHARGED
120 minute winter	J2	98	160.658	0.738	47.7	0.0000	0.0000	OK
120 minute winter	BASIN_1	100	160.646	0.726	41.8	148.3968	0.0000	FLOOD RISK
120 minute winter	9	100	160.644	0.744	24.1	1.3138	0.0000	SURCHARGED
120 minute winter	10	94	160.635	0.930	28.1	1.0523	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX IC1	2.000	3	39.1	1.216	0.808	0.3431	
15 minute winter	MH14	7.001	8_CP	51.2	0.814	0.627	1.9478	
15 minute winter	MH15	7.000	MH14	55.5	2.143	0.663	1.3205	
15 minute winter	EX MH15A	5.000	EX MH12	15.8	2.017	1.470	0.1058	
15 minute winter	EX MH12	5.001	10	69.2	1.741	1.442	1.2100	
15 minute summer	EX MH6	6.000	EX MH7	12.4	1.588	1.529	0.0653	
15 minute winter	EX MH7	6.001	EX MH8	19.5	1.570	0.496	0.1271	
15 minute winter	EX MH8	6.002	11	34.8	2.207	0.790	0.2028	
15 minute winter	EX MH11	4.005	OUT_B	51.9	3.772	0.831	0.1096	225.7
15 minute winter	1	1.000	2	51.8	2.612	0.429	0.9433	
15 minute winter	2	1.001	3	153.8	2.184	1.274	5.6742	
15 minute winter	3	1.002	6_FC2	190.5	1.727	0.711	4.1675	
15 minute winter	4	8.000	5	42.0	1.212	1.027	1.1086	
15 minute winter	5	8.001	J1	42.2	1.406	0.819	0.3017	
15 minute winter	BASIN_2	3.000	6_FC2	-266.6	-2.589	-0.702	1.3103	
240 minute summer	6_FC2	1.003	7_IN	5.0	1.243	0.024	0.6623	
15 minute winter	8_CP	7.002	J2	131.7	2.364	1.292	0.6690	
15 minute winter	BASIN_1	4.000	9	-74.5	-1.059	-1.663	0.8459	
15 minute winter	9	4.001	10	-76.2	-1.082	-1.042	3.1439	
240 minute winter	10	4.002	11	24.5	0.608	0.348	0.9537	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	11	92	160.630	0.980	27.5	1.1080	0.0000	FLOOD RISK
120 minute winter	12_FC1	92	160.622	1.071	26.1	2.7269	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	11	4.003	12_FC1	37.9	0.649	0.549	0.9016	
30 minute winter	12_FC1	4.004	EX MH11	25.0	1.477	0.218	0.1622	