

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	5.00
Return Period (years)	1	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)	20.000	Minimum Backdrop Height (m)	1.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
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)	Easting (m)	Northing (m)	Depth (m)
S61	0.148	5.00	162.867	1200	397410.444	338977.965	2.215
S62	0.092	5.00	162.614	1200	397444.891	338963.942	2.229
S63	0.076	5.00	162.668	1200	397476.409	338950.941	2.480
S64	0.050	5.00	161.220	1200	397487.111	338978.385	2.110
S65	0.069	5.00	160.853	1200	397487.175	338985.868	2.027
S66	0.041	5.00	159.890	1200	397505.099	338992.832	1.980
S67	0.096	5.00	158.890	1200	397514.553	339009.007	1.858
S68	0.138	5.00	157.857	1350	397529.616	339031.445	1.500
HW4			157.700	1350	397544.444	339033.025	1.403
S69	0.094	5.00	162.235	1350	397517.596	338932.917	1.424
S70	0.097	5.00	161.932	1350	397545.906	338924.977	1.500
S71	0.030	5.00	161.341	1350	397549.404	338935.701	1.650
S72	0.065	5.00	159.214	1350	397557.396	338971.506	1.750
S73			157.450	1350	397582.990	338994.315	1.030
HW5			157.700		397587.572	339006.049	1.350
HW6			157.700		397545.568	339036.098	1.500
SH74			157.350	3000	397541.964	339042.606	1.200
HW7			157.454		397530.548	339053.081	1.804
S23	0.118	5.00	159.245	1350	397470.513	339014.974	1.588
S37	0.039	5.00	158.768	1350	397460.333	339028.946	1.511
S39	0.141	5.00	158.570	1350	397459.903	339043.963	1.750
S40	0.173	5.00	158.324	1350	397432.346	339116.254	1.600
S41	0.023	5.00	158.245	1200	397457.935	339095.185	1.959
S42	0.148	5.00	158.130	1350	397462.972	339092.869	1.930
S43	0.202	5.00	158.567	1350	397477.090	339159.126	1.500
S44	0.116	5.00	157.960	1350	397500.448	339140.173	1.948
S47	0.145	5.00	158.722	1350	397505.988	339189.374	1.584
S48	0.030	5.00	158.354	1350	397529.348	339166.195	1.704
S49	0.085	5.00	158.246	1350	397537.322	339153.120	1.946
S51	0.090	5.00	157.950	1500	397521.902	339123.620	2.051
S52	0.230	5.00	158.030	1500	397546.722	339111.841	2.186
S53	0.063	5.00	157.382	1500	397546.267	339104.422	1.559
S57	0.110	5.00	157.326	1500	397534.458	339090.007	1.582
HW1			157.454		397537.153	339082.999	1.742
HW2			157.454		397541.299	339075.675	1.854
SH58			157.454	3000	397545.662	339073.504	1.864
HW3			156.769		397577.704	339120.539	1.585
S59			156.000	1200	397590.788	339139.957	0.925
S60			156.000	1350	397598.337	339143.777	1.000



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)
1.000	S61	S62	37.192	0.600	160.652	160.385	0.267	139.3	300	5.00	50.0
1.001	S62	S63	34.094	0.600	160.385	160.338	0.047	725.4	300	5.00	50.0
1.002	S63	S64	29.457	0.600	160.188	159.110	1.078	27.3	450	5.00	50.0
1.003	S64	S65	7.483	0.600	159.110	158.826	0.284	26.3	450	5.00	50.0
1.004	S65	S66	19.229	0.600	158.826	157.910	0.916	21.0	450	5.00	50.0
1.005	S66	S67	18.735	0.600	157.910	157.032	0.878	21.3	450	5.00	50.0
1.006	S67	S68	27.025	0.600	157.032	156.357	0.675	40.0	450	5.00	50.0
1.007	S68	HW4	14.912	0.600	156.357	156.297	0.060	248.5	450	5.00	50.0
1.008	HW4	HW6	3.272	0.600	156.297	156.200	0.097	33.7	450	5.00	50.0
2.000	S69	S70	29.402	0.600	160.811	160.507	0.304	96.7	225	5.00	50.0
2.001	S70	S71	11.280	0.600	160.432	159.841	0.591	19.1	300	5.00	50.0
2.002	S71	S72	36.686	0.600	159.691	157.464	2.227	16.5	450	5.00	50.0
2.003	S72	S73	34.283	0.600	157.464	156.420	1.044	32.8	450	5.00	50.0
2.004	S73	HW5	12.597	0.600	156.420	156.350	0.070	180.0	450	5.00	50.0
2.005	HW5	HW6	51.646	0.600	156.350	156.200	0.150	344.3	450	5.00	50.0
1.009	HW6	SH74	7.439	0.600	156.200	156.150	0.050	148.8	450	5.00	50.0
1.010	SH74	HW7	15.494	0.600	156.150	155.650	0.500	31.0	225	5.00	50.0
1.011	HW7	HW2	25.021	0.600	155.650	155.600	0.050	500.4	600	5.00	50.0
3.000	S23	S37	17.287	0.600	157.657	157.332	0.325	53.2	225	5.00	50.0
3.001	S37	S39	15.023	0.600	157.257	156.970	0.287	52.3	300	5.00	50.0
3.002	S39	S42	49.002	0.600	156.820	156.350	0.470	104.3	450	5.00	50.0
4.000	S40	S41	33.147	0.600	156.724	156.586	0.138	240.2	300	5.00	50.0
4.001	S41	S42	5.544	0.600	156.286	156.200	0.086	64.5	600	5.00	50.0
3.003	S42	S44	60.350	0.600	156.200	156.012	0.188	321.0	600	5.00	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)
1.000	1.330	94.0	20.0	1.915	1.929	0.148	0.0
1.001	0.576	40.7	32.5	1.929	2.030	0.240	0.0
1.002	3.900	620.3	42.8	2.030	1.660	0.316	0.0
1.003	3.972	631.8	49.6	1.660	1.577	0.366	0.0
1.004	4.452	708.1	58.9	1.577	1.530	0.434	0.0
1.005	4.416	702.3	64.4	1.530	1.408	0.475	0.0
1.006	3.220	512.1	77.5	1.408	1.050	0.572	0.0
1.007	1.285	204.3	96.2	1.050	0.953	0.710	0.0
1.008	3.509	558.1	96.2	0.953	1.050	0.710	0.0
2.000	1.329	52.9	12.8	1.199	1.200	0.094	0.0
2.001	3.615	255.5	25.9	1.200	1.200	0.191	0.0
2.002	5.027	799.6	29.9	1.200	1.300	0.221	0.0
2.003	3.557	565.7	38.8	1.300	0.580	0.286	0.0
2.004	1.512	240.5	38.8	0.580	0.900	0.286	0.0
2.005	1.090	173.3	38.8	0.900	1.050	0.286	0.0
1.009	1.664	264.7	135.0	1.050	0.750	0.996	0.0
1.010	2.358	93.8	135.0	0.975	1.579	0.996	0.0
1.011	1.082	305.8	135.0	1.204	1.254	0.996	0.0
3.000	1.797	71.5	16.0	1.363	1.211	0.118	0.0
3.001	2.178	153.9	21.3	1.211	1.300	0.158	0.0
3.002	1.991	316.6	40.5	1.300	1.330	0.299	0.0
4.000	1.010	71.4	23.5	1.300	1.359	0.173	0.0
4.001	3.036	858.4	26.6	1.359	1.330	0.196	0.0
3.003	1.353	382.7	87.1	1.330	1.348	0.643	0.0



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)
5.000	S43	S44	30.080	0.600	157.067	156.312	0.755	39.8	300	5.00	50.0
3.004	S44	S51	27.098	0.600	156.012	155.899	0.113	239.8	600	5.00	50.0
6.000	S47	S48	32.908	0.600	157.138	156.800	0.338	97.4	300	5.00	50.0
6.001	S48	S49	15.315	0.600	156.650	156.450	0.200	76.6	450	5.00	50.0
6.002	S49	S51	33.287	0.600	156.300	155.899	0.401	83.0	600	5.00	50.0
3.005	S51	S52	27.473	0.600	155.899	155.844	0.055	499.5	600	5.00	50.0
3.006	S52	S53	7.433	0.600	155.844	155.823	0.021	354.0	600	5.00	50.0
3.007	S53	S57	18.635	0.600	155.823	155.744	0.079	235.9	600	5.00	50.0
3.008	S57	HW1	7.508	0.600	155.744	155.712	0.032	234.6	600	5.00	50.0
3.009	HW1	HW2	8.416	0.600	155.712	155.600	0.112	75.1	600	5.00	50.0
1.012	HW2	SH58	4.873	0.600	155.600	155.590	0.010	487.3	750	5.00	50.0
1.013	SH58	HW3	56.912	0.600	155.590	155.184	0.406	140.2	225	5.00	50.0
1.014	HW3	S59	23.415	0.600	155.184	155.075	0.109	214.8	225	5.00	50.0
1.015	S59	S60	8.460	0.600	155.075	155.000	0.075	112.8	225	5.00	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)
5.000	2.498	176.6	27.4	1.200	1.348	0.202	0.0
3.004	1.568	443.3	130.2	1.348	1.451	0.961	0.0
6.000	1.593	112.6	19.7	1.284	1.254	0.145	0.0
6.001	2.325	369.7	23.7	1.254	1.346	0.175	0.0
6.002	2.674	756.0	35.3	1.346	1.451	0.260	0.0
3.005	1.083	306.1	177.6	1.451	1.586	1.311	0.0
3.006	1.288	364.3	208.8	1.586	0.959	1.541	0.0
3.007	1.581	447.0	217.4	0.959	0.982	1.604	0.0
3.008	1.585	448.2	232.3	0.982	1.142	1.714	0.0
3.009	2.811	794.8	232.3	1.142	1.254	1.714	0.0
1.012	1.261	556.9	367.3	1.104	1.114	2.710	0.0
1.013	1.102	43.8	367.3	1.639	1.360	2.710	0.0
1.014	0.888	35.3	367.3	1.360	0.700	2.710	0.0
1.015	1.230	48.9	367.3	0.700	0.775	2.710	0.0

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
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 (m³/ha)	0.0
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 %)
2	0	0	0
30	0	0	0
100	30	0	0

Node SH58 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	155.590	Product Number	CTL-SHE-0181-1790-1590-1790
Design Depth (m)	1.590	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	17.9	Min Node Diameter (mm)	1500

Node SH74 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	156.150	Product Number	CTL-SHE-0123-8000-1550-8000
Design Depth (m)	1.550	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	8.0	Min Node Diameter (mm)	1200

Node HW2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	155.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	208.5	0.0	0.500	339.7	0.0	1.000	486.9	0.0	1.500	649.4	0.0
0.100	233.1	0.0	0.600	367.9	0.0	1.100	518.2	0.0	1.501	0.0	0.0
0.200	258.8	0.0	0.700	396.8	0.0	1.200	550.1	0.0			
0.300	285.2	0.0	0.800	426.2	0.0	1.300	582.6	0.0			
0.400	312.2	0.0	0.900	456.2	0.0	1.400	615.7	0.0			

Node HW6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	156.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	409.2	0.0	0.400	550.3	0.0	0.800	702.8	0.0	1.200	865.8	0.0
0.100	442.9	0.0	0.500	587.5	0.0	0.900	742.6	0.0	1.300	908.2	0.0
0.200	478.1	0.0	0.600	625.3	0.0	1.000	783.0	0.0	1.400	951.3	0.0
0.300	513.9	0.0	0.700	663.7	0.0	1.100	824.1	0.0	1.500	995.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S61	10	160.760	0.108	26.9	0.1219	0.0000	OK
15 minute winter	S62	11	160.611	0.225	43.3	0.2550	0.0000	OK
15 minute winter	S63	11	160.277	0.089	54.8	0.1010	0.0000	OK
15 minute winter	S64	11	159.219	0.109	63.4	0.1236	0.0000	OK
15 minute winter	S65	11	158.929	0.103	75.3	0.1168	0.0000	OK
15 minute winter	S66	11	158.016	0.106	82.3	0.1194	0.0000	OK
15 minute winter	S67	11	157.164	0.132	98.9	0.1494	0.0000	OK
15 minute winter	S68	11	156.603	0.245	122.8	0.3513	0.0000	OK
120 minute winter	HW4	108	156.489	0.192	44.7	0.2752	0.0000	OK
15 minute winter	S69	10	160.901	0.090	17.2	0.1287	0.0000	OK
15 minute winter	S70	10	160.512	0.080	34.4	0.1142	0.0000	OK
15 minute winter	S71	10	159.758	0.067	39.6	0.0960	0.0000	OK
15 minute winter	S72	10	157.554	0.090	51.2	0.1283	0.0000	OK
15 minute winter	S73	11	156.572	0.152	50.5	0.2179	0.0000	OK
15 minute winter	HW5	11	156.513	0.163	50.9	0.0000	0.0000	OK
180 minute winter	HW6	172	156.467	0.266	63.9	121.2251	0.0000	OK
180 minute winter	SH74	160	156.475	0.325	30.2	2.2967	0.0000	SURCHARGED
180 minute winter	HW7	176	156.254	0.604	9.5	0.0000	0.0000	SURCHARGED
15 minute winter	S23	10	157.746	0.089	21.6	0.1273	0.0000	OK
15 minute winter	S37	10	157.350	0.093	28.4	0.1324	0.0000	OK
15 minute winter	S39	10	156.947	0.127	53.8	0.1813	0.0000	OK
15 minute winter	S40	10	156.867	0.143	31.6	0.2045	0.0000	OK
15 minute winter	S41	11	156.413	0.127	34.8	0.1433	0.0000	OK
15 minute winter	S42	11	156.421	0.221	113.6	0.3160	0.0000	OK
15 minute winter	S43	10	157.163	0.096	36.9	0.1369	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	S61	1.000	S62	26.5	0.691	0.282	1.4696	
15 minute winter	S62	1.001	S63	41.7	0.878	1.024	1.6081	
15 minute winter	S63	1.002	S64	54.8	2.118	0.088	0.7649	
15 minute winter	S64	1.003	S65	63.5	2.224	0.100	0.2136	
15 minute winter	S65	1.004	S66	75.3	2.707	0.106	0.5351	
15 minute winter	S66	1.005	S67	82.4	2.467	0.117	0.6277	
15 minute winter	S67	1.006	S68	99.0	1.570	0.193	1.7181	
15 minute winter	S68	1.007	HW4	123.2	1.792	0.603	1.0282	
15 minute winter	HW4	1.008	HW6	122.9	4.347	0.220	0.1300	
15 minute winter	S69	2.000	S70	16.8	1.166	0.318	0.4241	
15 minute winter	S70	2.001	S71	34.2	2.409	0.134	0.1602	
15 minute winter	S71	2.002	S72	39.3	2.135	0.049	0.6804	
15 minute winter	S72	2.003	S73	50.5	1.491	0.089	1.1916	
15 minute winter	S73	2.004	HW5	50.9	1.029	0.212	0.6236	
15 minute winter	HW5	2.005	HW6	51.4	1.561	0.296	2.0319	
60 minute summer	HW6	1.009	SH74	31.3	0.561	0.118	0.6742	
60 minute winter	SH74	Hydro-Brake®	HW7	7.7				
60 minute winter	HW7	1.011	HW2	18.3	0.093	0.060	6.8845	
15 minute winter	S23	3.000	S37	21.3	1.522	0.299	0.2423	
15 minute winter	S37	3.001	S39	28.1	1.602	0.183	0.2640	
15 minute winter	S39	3.002	S42	53.0	1.485	0.167	1.7494	
15 minute winter	S40	4.000	S41	30.6	0.971	0.429	1.0530	
15 minute winter	S41	4.001	S42	34.8	0.533	0.041	0.3806	
15 minute winter	S42	3.003	S44	114.9	0.928	0.300	7.7757	
15 minute winter	S43	5.000	S44	36.4	1.940	0.206	0.5645	

Results for 2 year Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S44	12	156.351	0.339	170.0	0.4854	0.0000	OK
15 minute winter	S47	10	157.239	0.101	26.4	0.1443	0.0000	OK
15 minute winter	S48	10	156.743	0.093	31.3	0.1332	0.0000	OK
15 minute winter	S49	10	156.398	0.098	46.6	0.1409	0.0000	OK
15 minute winter	S51	12	156.329	0.430	222.6	0.7602	0.0000	OK
15 minute winter	S52	12	156.265	0.421	254.6	0.7439	0.0000	OK
180 minute winter	S53	176	156.254	0.431	67.2	0.7619	0.0000	OK
180 minute winter	S57	176	156.254	0.510	71.3	0.9015	0.0000	OK
180 minute winter	HW1	176	156.254	0.542	85.3	0.0000	0.0000	OK
180 minute winter	HW2	176	156.254	0.654	90.7	192.0930	0.0000	OK
180 minute winter	SH58	176	156.254	0.664	24.3	4.6952	0.0000	SURCHARGED
30 minute winter	HW3	79	155.298	0.114	17.9	0.0000	0.0000	OK
30 minute summer	S59	48	155.178	0.103	17.9	0.1163	0.0000	OK
30 minute summer	S60	48	155.093	0.093	17.9	0.0000	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	S44	3.004	S51	161.3	0.868	0.364	5.1553	
15 minute winter	S47	6.000	S48	25.8	1.281	0.229	0.6647	
15 minute winter	S48	6.001	S49	31.0	1.383	0.084	0.3446	
15 minute winter	S49	6.002	S51	46.0	0.540	0.061	4.0790	
15 minute winter	S51	3.005	S52	219.3	1.026	0.717	5.8727	
15 minute winter	S52	3.006	S53	254.3	1.287	0.698	1.4673	
15 minute winter	S53	3.007	S57	264.7	1.535	0.592	3.2138	
15 minute winter	S57	3.008	HW1	281.2	2.101	0.627	1.0885	
15 minute winter	HW1	3.009	HW2	279.6	3.732	0.352	1.5727	
600 minute winter	HW2	1.012	SH58	50.9	0.246	0.091	1.8121	
240 minute summer	SH58	Hydro-Brake®	HW3	17.9				
30 minute winter	HW3	1.014	S59	17.9	0.944	0.507	0.4440	
30 minute summer	S59	1.015	S60	17.9	1.077	0.366	0.1406	234.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S61	11	160.829	0.177	51.1	0.2003	0.0000	OK
15 minute winter	S62	11	160.772	0.386	79.1	0.4371	0.0000	SURCHARGED
15 minute winter	S63	10	160.312	0.124	103.9	0.1406	0.0000	OK
15 minute winter	S64	11	159.270	0.160	120.9	0.1805	0.0000	OK
15 minute winter	S65	10	158.973	0.147	143.6	0.1664	0.0000	OK
15 minute winter	S66	10	158.061	0.151	157.0	0.1703	0.0000	OK
15 minute winter	S67	10	157.228	0.196	189.2	0.2222	0.0000	OK
360 minute winter	S68	360	156.787	0.430	33.6	0.6148	0.0000	OK
360 minute winter	HW4	360	156.786	0.489	31.0	0.6997	0.0000	SURCHARGED
15 minute winter	S69	10	160.944	0.133	32.7	0.1899	0.0000	OK
15 minute winter	S70	10	160.547	0.115	65.4	0.1649	0.0000	OK
15 minute winter	S71	10	159.783	0.092	75.4	0.1315	0.0000	OK
15 minute winter	S72	10	157.588	0.124	97.6	0.1774	0.0000	OK
360 minute winter	S73	360	156.785	0.365	13.6	0.5223	0.0000	OK
360 minute winter	HW5	360	156.785	0.435	13.1	0.0000	0.0000	OK
360 minute winter	HW6	360	156.785	0.585	116.9	299.6921	0.0000	SURCHARGED
360 minute winter	SH74	360	156.785	0.635	24.5	4.4889	0.0000	SURCHARGED
240 minute winter	HW7	236	156.717	1.067	11.6	0.0000	0.0000	SURCHARGED
15 minute winter	S23	10	157.789	0.132	40.9	0.1882	0.0000	OK
15 minute winter	S37	10	157.391	0.134	54.0	0.1916	0.0000	OK
15 minute winter	S39	10	156.999	0.179	102.4	0.2556	0.0000	OK
15 minute winter	S40	10	156.941	0.217	59.9	0.3110	0.0000	OK
15 minute winter	S41	12	156.770	0.484	66.2	0.5471	0.0000	OK
15 minute winter	S42	12	156.770	0.570	216.7	0.8161	0.0000	OK
15 minute winter	S43	10	157.197	0.130	70.1	0.1857	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	S61	1.000	S62	48.8	0.790	0.519	2.1141	
15 minute winter	S62	1.001	S63	79.1	1.170	1.943	2.1425	
15 minute winter	S63	1.002	S64	104.0	2.431	0.168	1.2645	
15 minute winter	S64	1.003	S65	120.6	2.537	0.191	0.3564	
15 minute winter	S65	1.004	S66	143.1	3.140	0.202	0.8793	
15 minute winter	S66	1.005	S67	156.7	2.790	0.223	1.0577	
15 minute winter	S67	1.006	S68	188.7	1.821	0.368	2.7509	
15 minute winter	S68	1.007	HW4	235.2	2.123	1.151	1.6478	
15 minute winter	HW4	1.008	HW6	234.8	4.689	0.421	0.3184	
15 minute winter	S69	2.000	S70	32.0	1.364	0.606	0.6916	
15 minute winter	S70	2.001	S71	65.1	2.824	0.255	0.2602	
15 minute winter	S71	2.002	S72	75.0	2.574	0.094	1.0755	
15 minute winter	S72	2.003	S73	96.5	1.755	0.171	1.9116	
15 minute winter	S73	2.004	HW5	96.5	1.242	0.401	0.9785	
15 minute winter	HW5	2.005	HW6	97.1	1.737	0.560	4.2434	
30 minute summer	HW6	1.009	SH74	43.9	0.606	0.166	1.0371	
15 minute winter	SH74	Hydro-Brake®	HW7	7.8				
15 minute winter	HW7	1.011	HW2	22.8	-0.271	0.075	7.0478	
15 minute winter	S23	3.000	S37	40.4	1.771	0.566	0.3948	
15 minute winter	S37	3.001	S39	53.6	1.880	0.348	0.4281	
15 minute winter	S39	3.002	S42	102.7	1.675	0.324	4.9872	
15 minute winter	S40	4.000	S41	58.1	1.159	0.815	1.6743	
15 minute winter	S41	4.001	S42	62.9	0.529	0.073	1.4416	
15 minute winter	S42	3.003	S44	200.9	0.960	0.525	16.8461	
15 minute winter	S43	5.000	S44	69.7	2.109	0.395	1.4820	

Results for 30 year Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S44	232	156.717	0.705	61.7	1.0088	0.0000	SURCHARGED
15 minute winter	S47	10	157.284	0.146	50.2	0.2083	0.0000	OK
15 minute winter	S48	10	156.782	0.132	59.6	0.1889	0.0000	OK
240 minute winter	S49	232	156.717	0.417	16.8	0.5962	0.0000	OK
240 minute winter	S51	232	156.717	0.818	78.7	1.4451	0.0000	SURCHARGED
240 minute winter	S52	232	156.717	0.873	88.3	1.5428	0.0000	SURCHARGED
240 minute winter	S53	236	156.718	0.895	90.2	1.5809	0.0000	SURCHARGED
240 minute winter	S57	232	156.717	0.973	95.8	1.7192	0.0000	SURCHARGED
240 minute winter	HW1	236	156.717	1.005	103.4	0.0000	0.0000	SURCHARGED
240 minute winter	HW2	236	156.717	1.117	125.3	401.2373	0.0000	SURCHARGED
240 minute winter	SH58	236	156.717	1.126	23.4	7.9632	0.0000	SURCHARGED
30 minute summer	HW3	19	155.298	0.114	17.9	0.0000	0.0000	OK
15 minute winter	S59	213	155.178	0.103	17.9	0.1163	0.0000	OK
15 minute winter	S60	213	155.093	0.093	17.9	0.0000	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	S44	3.004	S51	289.6	1.028	0.653	7.6329	
15 minute winter	S47	6.000	S48	49.2	1.511	0.437	1.0742	
15 minute winter	S48	6.001	S49	59.1	1.631	0.160	0.7600	
15 minute winter	S49	6.002	S51	81.2	0.619	0.107	7.4508	
15 minute winter	S51	3.005	S52	389.6	1.383	1.273	7.7385	
15 minute winter	S52	3.006	S53	452.0	1.605	1.241	2.0812	
15 minute winter	S53	3.007	S57	469.6	1.801	1.051	4.8882	
15 minute winter	S57	3.008	HW1	501.4	2.467	1.119	2.0948	
15 minute winter	HW1	3.009	HW2	492.7	3.979	0.620	2.3699	
480 minute summer	HW2	1.012	SH58	39.6	0.309	0.071	2.1447	
15 minute summer	SH58	Hydro-Brake®	HW3	17.9				
15 minute summer	HW3	1.014	S59	17.9	0.944	0.507	0.4440	
15 minute winter	S59	1.015	S60	17.9	1.077	0.366	0.1406	261.8

Results for 100 year +30% CC Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S61	10	161.466	0.814	86.2	0.9208	0.0000	SURCHARGED
15 minute winter	S62	10	161.206	0.821	137.1	0.9287	0.0000	SURCHARGED
15 minute winter	S63	10	160.356	0.168	178.9	0.1897	0.0000	OK
15 minute winter	S64	10	159.335	0.225	207.2	0.2547	0.0000	OK
15 minute winter	S65	10	159.028	0.202	245.5	0.2287	0.0000	OK
15 minute winter	S66	10	158.117	0.207	268.4	0.2337	0.0000	OK
15 minute winter	S67	11	157.384	0.352	323.4	0.3977	0.0000	OK
600 minute winter	S68	585	157.217	0.860	37.4	1.2309	0.0000	SURCHARGED
600 minute winter	HW4	585	157.218	0.921	36.8	1.3174	0.0000	SURCHARGED
15 minute winter	S69	10	161.019	0.208	55.2	0.2969	0.0000	OK
15 minute winter	S70	10	160.591	0.159	109.4	0.2275	0.0000	OK
15 minute winter	S71	10	159.810	0.119	126.3	0.1702	0.0000	OK
15 minute winter	S72	10	157.627	0.162	163.9	0.2325	0.0000	OK
600 minute winter	S73	585	157.217	0.797	15.1	1.1407	0.0000	FLOOD RISK
600 minute winter	HW5	585	157.217	0.867	14.2	0.0000	0.0000	SURCHARGED
600 minute winter	HW6	585	157.217	1.017	114.8	603.7989	0.0000	SURCHARGED
600 minute winter	SH74	585	157.217	1.067	23.1	7.5434	0.0000	FLOOD RISK
480 minute winter	HW7	320	157.107	1.457	10.8	0.0000	0.0000	SURCHARGED
15 minute winter	S23	11	158.640	0.983	69.0	1.4062	0.0000	SURCHARGED
15 minute winter	S37	11	158.352	1.095	84.1	1.5663	0.0000	SURCHARGED
15 minute winter	S39	11	158.246	1.426	159.7	2.0411	0.0000	SURCHARGED
15 minute winter	S40	11	158.324	1.600	101.1	2.2896	0.6804	FLOOD
15 minute winter	S41	11	158.110	1.824	97.6	2.0627	0.0000	FLOOD RISK
15 minute winter	S42	11	158.110	1.910	324.3	2.7338	0.0000	FLOOD RISK
15 minute winter	S43	11	158.298	1.231	118.2	1.7620	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	S61	1.000	S62	83.5	1.186	0.888	2.6190	
15 minute winter	S62	1.001	S63	135.0	1.918	3.316	2.3515	
15 minute winter	S63	1.002	S64	178.0	2.688	0.287	1.9607	
15 minute winter	S64	1.003	S65	206.0	2.791	0.326	0.5550	
15 minute winter	S65	1.004	S66	244.5	3.520	0.345	1.3461	
15 minute winter	S66	1.005	S67	268.0	2.925	0.382	1.9035	
15 minute winter	S67	1.006	S68	323.5	2.092	0.632	3.9369	
15 minute winter	S68	1.007	HW4	399.8	2.588	1.957	2.2079	
15 minute winter	HW4	1.008	HW6	398.1	4.952	0.713	0.4993	
15 minute winter	S69	2.000	S70	53.4	1.482	1.011	1.0922	
15 minute winter	S70	2.001	S71	108.9	3.165	0.426	0.3880	
15 minute winter	S71	2.002	S72	125.7	2.973	0.157	1.5592	
15 minute winter	S72	2.003	S73	162.5	1.976	0.287	2.8457	
15 minute winter	S73	2.004	HW5	160.9	1.428	0.669	1.4631	
15 minute winter	HW5	2.005	HW6	158.9	1.849	0.917	7.4784	
15 minute winter	HW6	1.009	SH74	55.8	0.877	0.211	1.1787	
15 minute summer	SH74	Hydro-Brake®	HW7	7.8				
15 minute winter	HW7	1.011	HW2	-20.0	-0.296	-0.065	7.0478	
15 minute winter	S23	3.000	S37	62.6	1.900	0.876	0.6875	
15 minute winter	S37	3.001	S39	82.5	2.061	0.536	1.0579	
15 minute summer	S39	3.002	S42	155.9	1.673	0.493	7.7640	
30 minute summer	S40	4.000	S41	88.0	1.249	1.233	2.3342	
30 minute summer	S41	4.001	S42	108.4	0.538	0.126	1.5616	
15 minute winter	S42	3.003	S44	320.4	1.138	0.837	16.9992	
15 minute winter	S43	5.000	S44	107.4	2.217	0.608	2.1182	

Results for 100 year +30% CC Critical Storm Duration. Lowest mass balance: 90.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S44	11	157.940	1.928	491.3	2.7593	0.0000	FLOOD RISK
15 minute winter	S47	11	157.952	0.814	84.7	1.1649	0.0000	SURCHARGED
15 minute winter	S48	11	157.766	1.116	92.4	1.5965	0.0000	SURCHARGED
15 minute winter	S49	11	157.751	1.451	139.4	2.0759	0.0000	SURCHARGED
15 minute winter	S51	11	157.730	1.831	668.0	3.2360	0.0000	FLOOD RISK
15 minute winter	S52	12	157.340	1.496	791.4	2.6441	0.0000	SURCHARGED
240 minute winter	S53	156	157.114	1.291	162.6	2.2812	0.0000	FLOOD RISK
480 minute winter	S57	320	157.108	1.364	100.5	2.4104	0.0000	FLOOD RISK
120 minute winter	HW1	110	157.109	1.397	291.1	0.0000	0.0000	SURCHARGED
240 minute winter	HW2	224	157.106	1.505	172.8	626.1793	0.0000	SURCHARGED
480 minute winter	SH58	320	157.104	1.513	39.2	10.6987	0.0000	SURCHARGED
60 minute summer	HW3	28	155.298	0.114	17.9	0.0000	0.0000	OK
1440 minute winter	S59	570	155.178	0.103	17.9	0.1163	0.0000	OK
1440 minute winter	S60	570	155.093	0.093	17.9	0.0000	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	S44	3.004	S51	487.9	1.732	1.101	7.6329	
15 minute winter	S47	6.000	S48	75.9	1.648	0.674	2.3174	
15 minute summer	S48	6.001	S49	95.4	1.632	0.258	2.4266	
15 minute winter	S49	6.002	S51	131.0	0.682	0.173	9.3762	
15 minute winter	S51	3.005	S52	664.9	2.361	2.172	7.7385	
15 minute winter	S52	3.006	S53	788.6	2.800	2.165	2.0937	
15 minute winter	S53	3.007	S57	821.7	2.917	1.838	5.2491	
15 minute winter	S57	3.008	HW1	881.4	3.129	1.966	2.1148	
15 minute winter	HW1	3.009	HW2	876.1	4.227	1.102	2.3706	
120 minute winter	HW2	1.012	SH58	60.0	0.538	0.108	2.1447	
240 minute winter	SH58	Hydro-Brake®	HW3	17.9				
60 minute summer	HW3	1.014	S59	17.9	0.944	0.507	0.4439	
1440 minute winter	S59	1.015	S60	17.9	1.077	0.366	0.1406	1478.7