

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
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)	0.200
Ratio-R	0.320	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Circular Link Type

Shape	Circular	Auto Increment (mm)	75
Barrels	1	Follow Ground	x

Available Diameters (mm)

100 | 150

2100 culvert Link Type

Shape	Closed Rectangular	Auto Increment (mm)	100
Barrels	1	Follow Ground	x
Height (mm)	2100		

Available Diameters (mm)

100

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S15	0.091	5.00	179.659	1200	411920.979	419004.344	1.659
S1	0.050	5.00	179.372	1200	411922.478	418993.525	1.972
S2	0.012	5.00	179.419	1200	411948.915	419032.394	1.419
S3	0.041	5.00	179.025	1200	411944.734	419017.516	1.675
S4	0.068	5.00	178.372	1500	411942.705	418995.628	3.072
S5	0.032	5.00	177.681	1200	411956.262	418992.898	3.181
S6			177.460	1200	411960.461	418991.822	3.110
S7	0.014	5.00	177.173	1350	411966.343	418991.437	3.073
S8	0.060	5.00	176.200	1200	412018.005	419016.063	2.350
S9			177.370	1200	411991.640	419022.841	3.580
S10	0.060	5.00	177.492	1500	411982.614	419023.341	3.732
S11	0.103	5.00	176.486	1800	411980.222	418990.293	2.816
S12			175.737	2400	411994.098	418989.084	2.152

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S13			174.600	1200	412016.434	418984.669	2.100
S14			173.360	1200	412021.457	418968.710	1.560
S16			171.517	1200	412019.407	418948.556	1.417
EXMH			168.850	1200	412010.904	418916.266	1.550

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	S15	S1	10.922	0.600	178.000	177.550	0.450	24.3	150	5.09	48.6
1.001	S1	S4	20.336	0.600	177.400	175.300	2.100	9.7	300	5.16	48.3
2.000	S2	S3	15.454	0.600	178.000	177.500	0.500	30.9	150	5.14	48.2
2.001	S3	S4	21.982	0.600	177.350	175.300	2.050	10.7	300	5.22	47.9
1.002	S4	S5	13.829	0.600	175.300	174.500	0.800	17.3	300	5.28	47.8
1.003	S5	S6	4.335	0.600	174.500	174.350	0.150	28.9	300	5.30	47.7
1.004	S6	S7	5.895	0.600	174.350	174.250	0.100	59.0	300	5.35	47.6
1.005	S7	S11	13.926	0.600	174.100	173.670	0.430	32.4	450	5.42	47.4
3.000	S8	S9	28.000	0.600	173.850	173.790	0.060	466.7	6500	5.15	48.3
3.001	S9	S10	9.040	0.600	173.790	173.760	0.030	301.3	450	5.28	47.8
3.002	S10	S11	33.134	0.600	173.760	173.670	0.090	368.2	450	5.80	45.5
1.006	S11	S12	13.929	0.600	173.670	173.635	0.035	398.0	450	6.03	44.7
1.007	S12	S13	22.768	0.600	173.585	172.500	1.085	21.0	150	6.20	44.3
1.008	S13	S14	16.731	0.600	172.500	171.800	0.700	23.9	150	6.34	44.1
1.009	S14	S16	20.258	0.600	171.800	170.100	1.700	11.9	150	6.45	43.8
1.010	S16	EXMH	33.391	0.600	170.100	167.300	2.800	11.9	150	6.64	42.2

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)
1.000	2.052	36.3	12.0	1.509	1.672	0.091	0.0	59	1.848
1.001	5.080	359.1	18.5	1.672	2.772	0.141	0.0	46	2.718
2.000	1.817	32.1	1.6	1.269	1.375	0.012	0.0	23	0.942
2.001	4.827	341.2	6.9	1.375	2.772	0.053	0.0	29	1.940
1.002	3.799	268.5	33.9	2.772	2.881	0.262	0.0	72	2.634
1.003	2.935	207.5	38.0	2.881	2.810	0.294	0.0	86	2.252
1.004	2.051	145.0	37.9	2.810	2.623	0.294	0.0	105	1.738
1.005	3.582	569.6	39.6	2.623	2.366	0.308	0.0	80	2.098
3.000	3.122	42615.0	7.9	0.250	1.480	0.060	0.0	8	0.156
3.001	1.166	185.4	7.8	3.130	3.282	0.060	0.0	62	0.585
3.002	1.053	167.5	14.8	3.282	2.366	0.120	0.0	89	0.656
1.006	1.013	161.1	64.3	2.366	1.652	0.531	0.0	197	0.958
1.007	2.208	39.0	63.8	2.002	1.950	0.531	0.0	150	2.249
1.008	2.068	36.5	63.5	1.950	1.410	0.531	0.0	150	2.107
1.009	2.934	51.9	63.0	1.410	1.267	0.531	0.0	150	2.989
1.010	2.933	51.8	60.7	1.267	1.400	0.531	0.0	150	2.988

Pipeline Schedule

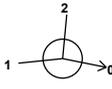
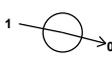
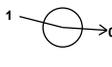
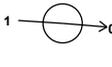
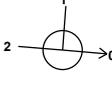
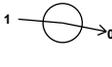
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	10.922	24.3	150	Circular	179.659	178.000	1.509	179.372	177.550	1.672
1.001	20.336	9.7	300	Circular	179.372	177.400	1.672	178.372	175.300	2.772
2.000	15.454	30.9	150	Circular	179.419	178.000	1.269	179.025	177.500	1.375
2.001	21.982	10.7	300	Circular	179.025	177.350	1.375	178.372	175.300	2.772
1.002	13.829	17.3	300	Circular	178.372	175.300	2.772	177.681	174.500	2.881
1.003	4.335	28.9	300	Circular	177.681	174.500	2.881	177.460	174.350	2.810
1.004	5.895	59.0	300	Circular	177.460	174.350	2.810	177.173	174.250	2.623
1.005	13.926	32.4	450	Circular	177.173	174.100	2.623	176.486	173.670	2.366
3.000	28.000	466.7	6500	2100 culvert	176.200	173.850	0.250	177.370	173.790	1.480
3.001	9.040	301.3	450	Circular	177.370	173.790	3.130	177.492	173.760	3.282
3.002	33.134	368.2	450	Circular	177.492	173.760	3.282	176.486	173.670	2.366
1.006	13.929	398.0	450	Circular	176.486	173.670	2.366	175.737	173.635	1.652
1.007	22.768	21.0	150	Circular	175.737	173.585	2.002	174.600	172.500	1.950
1.008	16.731	23.9	150	Circular	174.600	172.500	1.950	173.360	171.800	1.410
1.009	20.258	11.9	150	Circular	173.360	171.800	1.410	171.517	170.100	1.267
1.010	33.391	11.9	150	Circular	171.517	170.100	1.267	168.850	167.300	1.400

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S15	1200	Manhole	Adoptable	S1	1200	Manhole	Adoptable
1.001	S1	1200	Manhole	Adoptable	S4	1500	Manhole	Adoptable
2.000	S2	1200	Manhole	Adoptable	S3	1200	Manhole	Adoptable
2.001	S3	1200	Manhole	Adoptable	S4	1500	Manhole	Adoptable
1.002	S4	1500	Manhole	Adoptable	S5	1200	Manhole	Adoptable
1.003	S5	1200	Manhole	Adoptable	S6	1200	Manhole	Adoptable
1.004	S6	1200	Manhole	Adoptable	S7	1350	Manhole	Adoptable
1.005	S7	1350	Manhole	Adoptable	S11	1800	Manhole	Adoptable
3.000	S8	1200	Manhole	Adoptable	S9	1200	Manhole	Adoptable
3.001	S9	1200	Manhole	Adoptable	S10	1500	Manhole	Adoptable
3.002	S10	1500	Manhole	Adoptable	S11	1800	Manhole	Adoptable
1.006	S11	1800	Manhole	Adoptable	S12	2400	Manhole	Adoptable
1.007	S12	2400	Manhole	Adoptable	S13	1200	Manhole	Adoptable
1.008	S13	1200	Manhole	Adoptable	S14	1200	Manhole	Adoptable
1.009	S14	1200	Manhole	Adoptable	S16	1200	Manhole	Adoptable
1.010	S16	1200	Manhole	Adoptable	EXMH	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S15	411920.979	419004.344	179.659	1.659	1200				
						0	1.000	178.000	150
S1	411922.478	418993.525	179.372	1.972	1200				
						1	1.000	177.550	150
						0	1.001	177.400	300
S2	411948.915	419032.394	179.419	1.419	1200				
						0	2.000	178.000	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S3	411944.734	419017.516	179.025	1.675	1200		1	2.000	177.500	150
							0	2.001	177.350	300
S4	411942.705	418995.628	178.372	3.072	1500		1	1.001	175.300	300
							2	2.001	175.300	300
							0	1.002	175.300	300
S5	411956.262	418992.898	177.681	3.181	1200		1	1.002	174.500	300
							0	1.003	174.500	300
S6	411960.461	418991.822	177.460	3.110	1200		1	1.003	174.350	300
							0	1.004	174.350	300
S7	411966.343	418991.437	177.173	3.073	1350		1	1.004	174.250	300
							0	1.005	174.100	450
S8	412018.005	419016.063	176.200	2.350	1200		0	3.000	173.850	6500
							1	3.000	173.790	6500
S9	411991.640	419022.841	177.370	3.580	1200		0	3.001	173.790	450
							1	3.001	173.760	450
S10	411982.614	419023.341	177.492	3.732	1500		1	3.002	173.760	450
							2	1.005	173.670	450
S11	411980.222	418990.293	176.486	2.816	1800		1	1.006	173.670	450
							2	1.006	173.635	450
S12	411994.098	418989.084	175.737	2.152	2400		1	1.007	173.585	150
							0	1.007	172.500	150
S13	412016.434	418984.669	174.600	2.100	1200		1	1.008	171.800	150
							0	1.009	171.800	150
S14	412021.457	418968.710	173.360	1.560	1200		1	1.009	170.100	150
							0	1.010	170.100	150
S16	412019.407	418948.556	171.517	1.417	1200		1			
							0			

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
EXMH	412010.904	418916.266	168.850	1.550	1200		1	1.010	167.300	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	1440
M5-60 (mm)	20.000	Additional Storage (m ³ /ha)	0.0
Ratio-R	0.320	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
30	0	0	0
100	0	0	0
100	40	0	0

Node S12 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	173.585	Product Number	CTL-SHE-0075-3500-2100-3500
Design Depth (m)	2.100	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.5	Min Node Diameter (mm)	1200

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	101.711	28.781	1 year 240 minute summer	20.186	5.335
1 year 15 minute winter	71.376	28.781	1 year 240 minute winter	13.411	5.335
1 year 30 minute summer	68.580	19.406	1 year 360 minute summer	15.845	4.078
1 year 30 minute winter	48.126	19.406	1 year 360 minute winter	10.300	4.078
1 year 60 minute summer	48.435	12.800	1 year 480 minute summer	12.751	3.370
1 year 60 minute winter	32.179	12.800	1 year 480 minute winter	8.471	3.370
1 year 120 minute summer	31.422	8.304	1 year 600 minute summer	10.627	2.907
1 year 120 minute winter	20.876	8.304	1 year 600 minute winter	7.261	2.907
1 year 180 minute summer	24.970	6.426	1 year 720 minute summer	9.614	2.577
1 year 180 minute winter	16.231	6.426	1 year 720 minute winter	6.461	2.577

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 960 minute summer	8.093	2.131	100 year 240 minute summer	57.983	15.323
1 year 960 minute winter	5.361	2.131	100 year 240 minute winter	38.523	15.323
1 year 1440 minute summer	6.078	1.629	100 year 360 minute summer	44.157	11.363
1 year 1440 minute winter	4.085	1.629	100 year 360 minute winter	28.703	11.363
30 year 15 minute summer	249.196	70.514	100 year 480 minute summer	34.714	9.174
30 year 15 minute winter	174.874	70.514	100 year 480 minute winter	23.063	9.174
30 year 30 minute summer	168.269	47.614	100 year 600 minute summer	28.381	7.763
30 year 30 minute winter	118.084	47.614	100 year 600 minute winter	19.392	7.763
30 year 60 minute summer	116.589	30.811	100 year 720 minute summer	25.255	6.769
30 year 60 minute winter	77.459	30.811	100 year 720 minute winter	16.973	6.769
30 year 120 minute summer	73.116	19.322	100 year 960 minute summer	20.682	5.446
30 year 120 minute winter	48.577	19.322	100 year 960 minute winter	13.700	5.446
30 year 180 minute summer	56.402	14.514	100 year 1440 minute summer	14.924	4.000
30 year 180 minute winter	36.663	14.514	100 year 1440 minute winter	10.030	4.000
30 year 240 minute summer	44.662	11.803	100 year +40% CC 15 minute summer	451.575	127.780
30 year 240 minute winter	29.673	11.803	100 year +40% CC 15 minute winter	316.895	127.780
30 year 360 minute summer	34.253	8.815	100 year +40% CC 30 minute summer	308.006	87.155
30 year 360 minute winter	22.265	8.815	100 year +40% CC 30 minute winter	216.144	87.155
30 year 480 minute summer	27.074	7.155	100 year +40% CC 60 minute summer	214.603	56.713
30 year 480 minute winter	17.988	7.155	100 year +40% CC 60 minute winter	142.577	56.713
30 year 600 minute summer	22.234	6.082	100 year +40% CC 120 minute summer	134.390	35.515
30 year 600 minute winter	15.192	6.082	100 year +40% CC 120 minute winter	89.286	35.515
30 year 720 minute summer	19.861	5.323	100 year +40% CC 180 minute summer	103.076	26.525
30 year 720 minute winter	13.348	5.323	100 year +40% CC 180 minute winter	67.002	26.525
30 year 960 minute summer	16.368	4.310	100 year +40% CC 240 minute summer	81.176	21.453
30 year 960 minute winter	10.843	4.310	100 year +40% CC 240 minute winter	53.932	21.453
30 year 1440 minute summer	11.926	3.196	100 year +40% CC 360 minute summer	61.820	15.908
30 year 1440 minute winter	8.015	3.196	100 year +40% CC 360 minute winter	40.184	15.908
100 year 15 minute summer	322.553	91.271	100 year +40% CC 480 minute summer	48.599	12.843
100 year 15 minute winter	226.353	91.271	100 year +40% CC 480 minute winter	32.288	12.843
100 year 30 minute summer	220.004	62.254	100 year +40% CC 600 minute summer	39.734	10.868
100 year 30 minute winter	154.389	62.254	100 year +40% CC 600 minute winter	27.148	10.868
100 year 60 minute summer	153.288	40.510	100 year +40% CC 720 minute summer	35.357	9.476
100 year 60 minute winter	101.841	40.510	100 year +40% CC 720 minute winter	23.762	9.476
100 year 120 minute summer	95.993	25.368	100 year +40% CC 960 minute summer	28.955	7.625
100 year 120 minute winter	63.776	25.368	100 year +40% CC 960 minute winter	19.180	7.625
100 year 180 minute summer	73.626	18.946	100 year +40% CC 1440 minute summer	20.894	5.600
100 year 180 minute winter	47.859	18.946	100 year +40% CC 1440 minute winter	14.042	5.600

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.81%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S15	10	178.063	0.063	11.9	0.0708	0.0000	OK
15 minute winter	S1	10	177.446	0.046	18.3	0.0517	0.0000	OK
15 minute winter	S2	10	178.023	0.023	1.6	0.0259	0.0000	OK
15 minute winter	S3	10	177.380	0.030	7.0	0.0334	0.0000	OK
15 minute winter	S4	10	175.371	0.071	34.0	0.1261	0.0000	OK
15 minute winter	S5	10	174.605	0.105	37.9	0.1183	0.0000	OK
15 minute winter	S6	10	174.471	0.121	37.7	0.1371	0.0000	OK
15 minute winter	S7	11	174.179	0.079	39.2	0.1129	0.0000	OK
360 minute winter	S8	296	174.089	0.239	4.3	0.2700	0.0000	OK
360 minute winter	S9	296	174.089	0.299	7.2	0.3379	0.0000	OK
360 minute winter	S10	296	174.089	0.329	7.6	0.5809	0.0000	OK
360 minute winter	S11	296	174.089	0.419	9.9	1.0657	0.0000	OK
360 minute winter	S12	296	174.089	0.504	3.0	2.2788	0.0000	SURCHARGED
60 minute summer	S13	29	172.528	0.028	2.6	0.0321	0.0000	OK
60 minute winter	S14	27	171.823	0.023	2.6	0.0261	0.0000	OK
15 minute summer	S16	22	170.123	0.023	2.6	0.0260	0.0000	OK
15 minute summer	EXMH	22	167.323	0.023	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S15	1.000	S1	11.8	1.766	0.325	0.0730	
15 minute winter	S1	1.001	S4	18.2	1.889	0.051	0.1989	
15 minute winter	S2	2.000	S3	1.6	0.934	0.049	0.0259	
15 minute winter	S3	2.001	S4	6.9	0.888	0.020	0.1799	
15 minute winter	S4	1.002	S5	33.8	1.962	0.126	0.2396	
15 minute winter	S5	1.003	S6	37.7	1.556	0.182	0.1051	
15 minute winter	S6	1.004	S7	37.4	1.564	0.258	0.1416	
15 minute winter	S7	1.005	S11	39.1	0.787	0.069	1.0531	
360 minute winter	S8	3.000	S9	-2.9	0.014	0.000	48.9201	
360 minute winter	S9	3.001	S10	-7.2	0.264	-0.039	1.0659	
360 minute winter	S10	3.002	S11	-6.2	0.189	-0.037	4.6019	
360 minute winter	S11	1.006	S12	3.0	0.383	0.018	2.1735	
360 minute winter	S12	Hydro-Brake®	S13	2.6				
60 minute summer	S13	1.008	S14	2.6	1.291	0.071	0.0336	
60 minute winter	S14	1.009	S16	2.6	1.514	0.050	0.0346	
15 minute summer	S16	1.010	EXMH	2.6	1.525	0.050	0.0566	28.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.81%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S15	10	178.115	0.115	29.2	0.1297	0.0000	OK
15 minute winter	S1	10	177.471	0.071	44.9	0.0804	0.0000	OK
15 minute winter	S2	10	178.036	0.036	3.9	0.0406	0.0000	OK
15 minute winter	S3	10	177.395	0.045	17.0	0.0511	0.0000	OK
15 minute winter	S4	10	175.416	0.116	83.5	0.2042	0.0000	OK
480 minute winter	S5	464	174.711	0.211	12.3	0.2387	0.0000	OK
480 minute winter	S6	464	174.711	0.361	31.6	0.4083	0.0000	SURCHARGED
480 minute winter	S7	464	174.711	0.611	28.3	0.8744	0.0000	SURCHARGED
480 minute winter	S8	464	174.711	0.861	10.9	0.9738	0.0000	OK
480 minute winter	S9	464	174.711	0.921	16.1	1.0417	0.0000	SURCHARGED
480 minute winter	S10	464	174.711	0.951	16.3	1.6805	0.0000	SURCHARGED
480 minute winter	S11	464	174.711	1.041	30.0	2.6494	0.0000	SURCHARGED
480 minute winter	S12	464	174.711	1.126	10.6	5.0941	0.0000	SURCHARGED
480 minute winter	S13	464	172.529	0.029	2.6	0.0324	0.0000	OK
15 minute winter	S14	5	171.824	0.024	2.6	0.0266	0.0000	OK
480 minute winter	S16	464	170.123	0.023	2.6	0.0263	0.0000	OK
480 minute winter	EXMH	464	167.323	0.023	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S15	1.000	S1	28.9	2.132	0.798	0.1480	
15 minute winter	S1	1.001	S4	44.8	2.401	0.125	0.3838	
15 minute winter	S2	2.000	S3	3.8	1.206	0.119	0.0490	
15 minute winter	S3	2.001	S4	16.9	1.117	0.050	0.3479	
15 minute winter	S4	1.002	S5	82.9	2.224	0.309	0.5142	
480 minute winter	S5	1.003	S6	31.6	1.304	0.152	0.2675	
480 minute winter	S6	1.004	S7	27.9	1.184	0.192	0.4151	
480 minute winter	S7	1.005	S11	12.5	0.430	0.022	2.2065	
480 minute winter	S8	3.000	S9	-9.9	0.016	0.000	162.1961	
480 minute winter	S9	3.001	S10	-16.1	0.263	-0.087	1.4323	
480 minute winter	S10	3.002	S11	-13.8	0.194	-0.082	5.2499	
480 minute winter	S11	1.006	S12	-22.8	0.401	-0.141	2.2070	
480 minute winter	S12	Hydro-Brake®	S13	2.6				
480 minute winter	S13	1.008	S14	2.6	1.298	0.072	0.0340	
15 minute winter	S14	1.009	S16	2.6	1.655	0.050	0.0346	
480 minute winter	S16	1.010	EXMH	2.6	1.533	0.051	0.0573	255.3

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.81%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S15	11	178.281	0.280	37.8	0.3172	0.0000	SURCHARGED
15 minute winter	S1	10	177.480	0.080	56.2	0.0899	0.0000	OK
15 minute winter	S2	10	178.041	0.041	5.0	0.0463	0.0000	OK
15 minute winter	S3	10	177.401	0.051	21.9	0.0579	0.0000	OK
15 minute winter	S4	10	175.434	0.134	106.0	0.2366	0.0000	OK
480 minute winter	S5	472	175.051	0.550	15.8	0.6226	0.0000	SURCHARGED
480 minute winter	S6	472	175.050	0.700	21.2	0.7922	0.0000	SURCHARGED
480 minute winter	S7	472	175.050	0.950	19.6	1.3601	0.0000	SURCHARGED
480 minute winter	S8	472	175.051	1.200	15.3	1.3577	0.0000	OK
480 minute winter	S9	472	175.051	1.260	22.0	1.4256	0.0000	SURCHARGED
480 minute winter	S10	472	175.051	1.290	21.4	2.2803	0.0000	SURCHARGED
480 minute winter	S11	472	175.050	1.380	21.6	3.5132	0.0000	SURCHARGED
480 minute winter	S12	472	175.050	1.465	7.8	6.6296	0.0000	SURCHARGED
480 minute winter	S13	472	172.530	0.030	3.0	0.0344	0.0000	OK
480 minute winter	S14	472	171.825	0.025	3.0	0.0279	0.0000	OK
480 minute winter	S16	472	170.125	0.025	3.0	0.0279	0.0000	OK
480 minute winter	EXMH	472	167.324	0.024	3.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S15	1.000	S1	36.3	2.116	1.000	0.1923	
15 minute winter	S1	1.001	S4	56.0	2.518	0.156	0.4610	
15 minute winter	S2	2.000	S3	4.9	1.295	0.154	0.0588	
15 minute winter	S3	2.001	S4	21.8	1.184	0.064	0.4217	
15 minute winter	S4	1.002	S5	104.9	2.246	0.390	0.6366	
480 minute winter	S5	1.003	S6	21.2	1.384	0.102	0.3053	
480 minute winter	S6	1.004	S7	18.9	1.241	0.130	0.4151	
480 minute winter	S7	1.005	S11	16.1	0.420	0.028	2.2065	
480 minute winter	S8	3.000	S9	-12.5	0.020	0.000	223.9848	
480 minute winter	S9	3.001	S10	-22.0	-0.195	-0.119	1.4323	
480 minute winter	S10	3.002	S11	-18.2	-0.115	-0.109	5.2499	
480 minute winter	S11	1.006	S12	7.8	0.353	0.048	2.2070	
480 minute winter	S12	Hydro-Brake®	S13	3.0				
480 minute winter	S13	1.008	S14	3.0	1.344	0.081	0.0371	
480 minute winter	S14	1.009	S16	3.0	1.575	0.057	0.0382	
480 minute winter	S16	1.010	EXMH	3.0	1.587	0.057	0.0625	288.8

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.81%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S15	11	178.819	0.819	52.9	0.9260	0.0000	SURCHARGED
15 minute winter	S1	10	177.495	0.095	78.7	0.1069	0.0000	OK
15 minute winter	S2	10	178.049	0.049	7.0	0.0554	0.0000	OK
15 minute winter	S3	10	177.410	0.060	30.7	0.0682	0.0000	OK
720 minute winter	S4	705	175.697	0.397	14.6	0.7016	0.0000	SURCHARGED
720 minute winter	S5	705	175.697	1.197	16.4	1.3538	0.0000	SURCHARGED
720 minute winter	S6	705	175.697	1.347	29.5	1.5234	0.0000	SURCHARGED
720 minute winter	S7	705	175.697	1.597	18.2	2.2853	0.0000	SURCHARGED
720 minute winter	S8	705	175.697	1.847	16.4	2.0889	0.0000	OK
720 minute winter	S9	705	175.697	1.907	22.0	2.1568	0.0000	SURCHARGED
720 minute winter	S10	705	175.697	1.937	21.9	3.4226	0.0000	SURCHARGED
720 minute winter	S11	705	175.697	2.027	30.9	5.1586	0.0000	SURCHARGED
720 minute winter	S12	705	175.697	2.112	4.4	9.5544	0.0000	FLOOD RISK
720 minute winter	S13	705	172.533	0.033	3.5	0.0374	0.0000	OK
720 minute winter	S14	705	171.827	0.027	3.5	0.0304	0.0000	OK
720 minute winter	S16	705	170.127	0.027	3.5	0.0303	0.0000	OK
720 minute winter	EXMH	705	167.327	0.027	3.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S15	1.000	S1	50.7	2.879	1.397	0.1922	
15 minute winter	S1	1.001	S4	78.4	2.563	0.218	0.7091	
15 minute winter	S2	2.000	S3	6.9	1.420	0.215	0.0753	
15 minute winter	S3	2.001	S4	30.6	1.220	0.090	0.6654	
720 minute winter	S4	1.002	S5	14.6	1.707	0.054	0.9738	
720 minute winter	S5	1.003	S6	29.5	1.378	0.142	0.3053	
720 minute winter	S6	1.004	S7	17.5	1.180	0.121	0.4151	
720 minute winter	S7	1.005	S11	16.6	0.402	0.029	2.2065	
720 minute winter	S8	3.000	S9	-13.2	0.015	0.000	341.6674	
720 minute winter	S9	3.001	S10	-22.0	-0.199	-0.119	1.4323	
720 minute winter	S10	3.002	S11	-18.6	-0.117	-0.111	5.2499	
720 minute winter	S11	1.006	S12	-11.9	0.375	-0.074	2.2070	
720 minute winter	S12	Hydro-Brake®	S13	3.5				
720 minute winter	S13	1.008	S14	3.5	1.409	0.096	0.0419	
720 minute winter	S14	1.009	S16	3.5	1.654	0.068	0.0431	
720 minute winter	S16	1.010	EXMH	3.5	1.667	0.068	0.0704	374.1