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	3.481
S6			177.460	1200	411960.461	418991.822	3.335
S7	0.014	5.00	177.173	1350	411966.343	418991.437	3.273
S8	0.060	5.00	176.200	1200	412011.553	419020.025	2.500
S9			177.370	1200	411991.640	419022.841	3.720
S10	0.060	5.00	177.492	1500	411982.614	419023.341	3.892
S11	0.103	5.00	176.486	1800	411980.222	418990.293	2.986
S12			175.737	2400	411994.098	418989.084	2.987

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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			173.145	1200	412021.457	418968.710	1.345
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	174.200	1.100	12.6	300	5.27	47.8
1.003	S5	S6	4.335	0.600	174.200	174.125	0.075	57.8	300	5.30	47.7
1.004	S6	S7	5.895	0.600	174.125	174.050	0.075	78.6	300	5.36	47.6
1.005	S7	S11	13.926	0.600	173.900	173.500	0.400	34.8	450	5.43	47.4
3.000	S8	S9	26.000	0.600	173.700	173.650	0.050	520.0	6500	5.15	48.3
3.001	S9	S10	9.040	0.600	173.650	173.600	0.050	180.8	450	5.25	47.8
3.002	S10	S11	33.134	0.600	173.600	173.500	0.100	331.3	450	5.74	45.5
1.006	S11	S12	13.929	0.600	173.500	172.800	0.700	19.9	450	5.79	44.7
1.007	S12	S13	22.768	0.600	172.750	172.500	0.250	91.1	150	6.15	44.3
1.008	S13	S14	11.053	0.600	172.500	171.800	0.700	15.8	150	6.23	44.1
1.009	S14	S16	26.868	0.600	171.800	170.100	1.700	15.8	150	6.40	43.8
1.010	S16	EXMH	33.391	0.600	170.100	167.300	2.800	11.9	150	6.59	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	4.457	315.0	33.9	2.772	3.181	0.262	0.0	66	2.946
1.003	2.072	146.4	38.0	3.181	3.035	0.294	0.0	104	1.750
1.004	1.775	125.4	37.9	3.035	2.823	0.294	0.0	113	1.561
1.005	3.454	549.3	39.6	2.823	2.536	0.308	0.0	80	2.037
3.000	2.957	40361.2	7.9	0.400	1.620	0.060	0.0	8	0.147
3.001	1.508	239.9	7.8	3.270	3.442	0.060	0.0	55	0.704
3.002	1.111	176.7	14.8	3.442	2.536	0.120	0.0	87	0.685
1.006	4.573	727.3	64.3	2.536	2.487	0.531	0.0	89	2.865
1.007	1.053	18.6	63.8	2.837	1.950	0.531	0.0	150	1.073
1.008	2.547	45.0	63.5	1.950	1.195	0.531	0.0	150	2.595
1.009	2.546	45.0	63.0	1.195	1.267	0.531	0.0	150	2.594
1.010	2.933	51.8	60.7	1.267	1.400	0.531	0.0	150	2.988

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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	12.6	300	Circular	178.372	175.300	2.772	177.681	174.200	3.181
1.003	4.335	57.8	300	Circular	177.681	174.200	3.181	177.460	174.125	3.035
1.004	5.895	78.6	300	Circular	177.460	174.125	3.035	177.173	174.050	2.823
1.005	13.926	34.8	450	Circular	177.173	173.900	2.823	176.486	173.500	2.536
3.000	26.000	520.0	6500	2100 culvert	176.200	173.700	0.400	177.370	173.650	1.620
3.001	9.040	180.8	450	Circular	177.370	173.650	3.270	177.492	173.600	3.442
3.002	33.134	331.3	450	Circular	177.492	173.600	3.442	176.486	173.500	2.536
1.006	13.929	19.9	450	Circular	176.486	173.500	2.536	175.737	172.800	2.487
1.007	22.768	91.1	150	Circular	175.737	172.750	2.837	174.600	172.500	1.950
1.008	11.053	15.8	150	Circular	174.600	172.500	1.950	173.145	171.800	1.195
1.009	26.868	15.8	150	Circular	173.145	171.800	1.195	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

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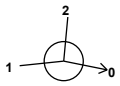
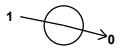
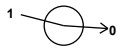
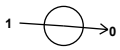
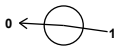
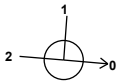
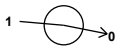
Manhole Schedule

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	3.481	1200		1	1.002	174.200	300
							0	1.003	174.200	300
S6	411960.461	418991.822	177.460	3.335	1200		1	1.003	174.125	300
							0	1.004	174.125	300
S7	411966.343	418991.437	177.173	3.273	1350		1	1.004	174.050	300
							0	1.005	173.900	450
S8	412011.553	419020.025	176.200	2.500	1200		0	3.000	173.700	6500
S9	411991.640	419022.841	177.370	3.720	1200		1	3.000	173.650	6500
							0	3.001	173.650	450
S10	411982.614	419023.341	177.492	3.892	1500		1	3.001	173.600	450
							0	3.002	173.600	450
S11	411980.222	418990.293	176.486	2.986	1800		1	3.002	173.500	450
							2	1.005	173.500	450
							0	1.006	173.500	450
S12	411994.098	418989.084	175.737	2.987	2400		1	1.006	172.800	450
							0	1.007	172.750	150
S13	412016.434	418984.669	174.600	2.100	1200		1	1.007	172.500	150
							0	1.008	172.500	150
S14	412021.457	418968.710	173.145	1.345	1200		1	1.008	171.800	150
							0	1.009	171.800	150
S16	412019.407	418948.556	171.517	1.417	1200		1	1.009	170.100	150
							0	1.010	170.100	150

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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	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 (m³/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)	172.750	Product Number	CTL-SHE-0075-3900-2700-3900
Design Depth (m)	2.700	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.9	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

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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

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Results for 1 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	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	175.366	0.066	34.0	0.1165	0.0000	OK
15 minute winter	S5	10	174.330	0.130	38.0	0.1468	0.0000	OK
15 minute winter	S6	10	174.255	0.130	37.7	0.1471	0.0000	OK
15 minute winter	S7	11	173.980	0.080	39.2	0.1150	0.0000	OK
360 minute winter	S8	288	173.937	0.237	4.8	0.2683	0.0000	OK
360 minute winter	S9	288	173.937	0.287	7.3	0.3248	0.0000	OK
360 minute winter	S10	288	173.937	0.337	7.7	0.5958	0.0000	OK
360 minute winter	S11	288	173.937	0.437	9.9	1.1126	0.0000	OK
360 minute winter	S12	288	173.937	1.187	6.0	5.3706	0.0000	SURCHARGED
360 minute winter	S13	288	172.525	0.025	2.7	0.0286	0.0000	OK
360 minute winter	S14	288	171.825	0.025	2.7	0.0287	0.0000	OK
360 minute winter	S16	288	170.123	0.023	2.7	0.0264	0.0000	OK
360 minute winter	EXMH	288	167.323	0.023	2.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S15	1.000	S1	11.8	1.766	0.325	0.0730	
15 minute winter	S1	1.001	S4	18.2	2.022	0.051	0.1849	
15 minute winter	S2	2.000	S3	1.6	0.934	0.049	0.0259	
15 minute winter	S3	2.001	S4	6.9	0.962	0.020	0.1648	
15 minute winter	S4	1.002	S5	33.8	1.695	0.107	0.2809	
15 minute winter	S5	1.003	S6	37.7	1.289	0.257	0.1267	
15 minute winter	S6	1.004	S7	37.4	1.416	0.298	0.1562	
15 minute winter	S7	1.005	S11	39.2	1.673	0.071	1.0594	
360 minute winter	S8	3.000	S9	-3.6	0.014	0.000	44.3210	
360 minute winter	S9	3.001	S10	-7.3	-0.249	-0.030	1.0586	
360 minute winter	S10	3.002	S11	-6.3	0.287	-0.036	4.7153	
360 minute winter	S11	1.006	S12	6.0	0.911	0.008	2.1983	
360 minute winter	S12	Hydro-Brake®	S13	2.7				
360 minute winter	S13	1.008	S14	2.7	1.361	0.059	0.0217	
360 minute winter	S14	1.009	S16	2.7	1.438	0.059	0.0499	
360 minute winter	S16	1.010	EXMH	2.7	1.539	0.052	0.0579	109.7

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	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	175.404	0.104	83.5	0.1843	0.0000	OK
480 minute winter	S5	456	174.558	0.358	12.3	0.4048	0.0000	SURCHARGED
480 minute winter	S6	456	174.558	0.433	13.7	0.4895	0.0000	SURCHARGED
480 minute winter	S7	456	174.558	0.658	18.2	0.9412	0.0000	SURCHARGED
480 minute winter	S8	456	174.558	0.858	15.6	0.9704	0.0000	OK
480 minute winter	S9	456	174.558	0.908	21.3	1.0264	0.0000	SURCHARGED
480 minute winter	S10	456	174.557	0.957	15.5	1.6917	0.0000	SURCHARGED
480 minute winter	S11	456	174.558	1.058	22.9	2.6918	0.0000	SURCHARGED
480 minute winter	S12	456	174.558	1.808	10.4	8.1786	0.0000	SURCHARGED
480 minute winter	S13	456	172.528	0.028	3.2	0.0315	0.0000	OK
480 minute winter	S14	456	171.828	0.028	3.2	0.0316	0.0000	OK
480 minute winter	S16	456	170.126	0.026	3.2	0.0291	0.0000	OK
480 minute winter	EXMH	456	167.326	0.025	3.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S15	1.000	S1	28.9	2.132	0.798	0.1480	
15 minute winter	S1	1.001	S4	44.8	2.618	0.125	0.3507	
15 minute winter	S2	2.000	S3	3.8	1.206	0.119	0.0490	
15 minute winter	S3	2.001	S4	16.9	1.238	0.050	0.3122	
15 minute winter	S4	1.002	S5	83.0	1.940	0.264	0.5796	
480 minute winter	S5	1.003	S6	13.7	1.066	0.093	0.3053	
480 minute winter	S6	1.004	S7	17.8	1.069	0.142	0.4151	
480 minute winter	S7	1.005	S11	12.4	0.823	0.023	2.2065	
480 minute winter	S8	3.000	S9	-14.0	0.020	0.000	149.2121	
480 minute winter	S9	3.001	S10	-15.4	0.241	-0.064	1.4323	
480 minute winter	S10	3.002	S11	-13.0	0.275	-0.074	5.2499	
480 minute winter	S11	1.006	S12	10.4	0.871	0.014	2.2070	
480 minute winter	S12	Hydro-Brake®	S13	3.2				
480 minute winter	S13	1.008	S14	3.2	1.438	0.072	0.0249	
480 minute winter	S14	1.009	S16	3.2	1.522	0.072	0.0572	
480 minute winter	S16	1.010	EXMH	3.2	1.628	0.062	0.0665	255.5

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Results for 100 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	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	175.419	0.118	106.0	0.2093	0.0000	OK
480 minute winter	S5	464	174.920	0.720	15.8	0.8146	0.0000	SURCHARGED
480 minute winter	S6	464	174.920	0.795	15.8	0.8994	0.0000	SURCHARGED
480 minute winter	S7	464	174.920	1.020	16.6	1.4599	0.0000	SURCHARGED
480 minute winter	S8	464	174.920	1.220	11.8	1.3800	0.0000	OK
480 minute winter	S9	464	174.920	1.270	20.1	1.4366	0.0000	SURCHARGED
480 minute winter	S10	464	174.920	1.320	20.4	2.3328	0.0000	SURCHARGED
480 minute winter	S11	464	174.920	1.420	21.2	3.6143	0.0000	SURCHARGED
480 minute winter	S12	464	174.920	2.170	4.8	9.8177	0.0000	SURCHARGED
480 minute winter	S13	464	172.529	0.029	3.5	0.0328	0.0000	OK
480 minute winter	S14	464	171.829	0.029	3.5	0.0329	0.0000	OK
480 minute winter	S16	464	170.127	0.027	3.5	0.0303	0.0000	OK
480 minute winter	EXMH	464	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 (m³)	Discharge Vol (m³)
15 minute winter	S15	1.000	S1	36.3	2.116	1.000	0.1923	
15 minute winter	S1	1.001	S4	56.0	2.781	0.156	0.4145	
15 minute winter	S2	2.000	S3	4.9	1.295	0.154	0.0588	
15 minute winter	S3	2.001	S4	21.8	1.337	0.064	0.3715	
15 minute winter	S4	1.002	S5	105.3	1.964	0.334	0.6656	
480 minute winter	S5	1.003	S6	15.8	1.079	0.108	0.3053	
480 minute winter	S6	1.004	S7	15.8	1.101	0.126	0.4151	
480 minute winter	S7	1.005	S11	15.7	0.860	0.029	2.2065	
480 minute winter	S8	3.000	S9	-8.7	0.019	0.000	210.4729	
480 minute winter	S9	3.001	S10	-20.1	0.248	-0.084	1.4323	
480 minute winter	S10	3.002	S11	-17.2	0.274	-0.097	5.2499	
480 minute winter	S11	1.006	S12	4.8	0.979	0.007	2.2070	
480 minute winter	S12	Hydro-Brake®	S13	3.5				
480 minute winter	S13	1.008	S14	3.5	1.474	0.078	0.0264	
480 minute winter	S14	1.009	S16	3.5	1.559	0.078	0.0608	
480 minute winter	S16	1.010	EXMH	3.5	1.668	0.068	0.0706	327.4

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	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
600 minute winter	S4	585	175.600	0.300	16.7	0.5302	0.0000	SURCHARGED
600 minute winter	S5	585	175.600	1.400	18.7	1.5834	0.0000	SURCHARGED
600 minute winter	S6	585	175.600	1.475	18.4	1.6682	0.0000	SURCHARGED
600 minute winter	S7	585	175.600	1.700	19.1	2.4326	0.0000	SURCHARGED
600 minute winter	S8	585	175.600	1.900	14.3	2.1489	0.0000	OK
600 minute winter	S9	585	175.600	1.950	24.4	2.2054	0.0000	SURCHARGED
600 minute winter	S10	585	175.600	2.000	24.7	3.5340	0.0000	SURCHARGED
600 minute winter	S11	585	175.600	2.100	25.3	5.3444	0.0000	SURCHARGED
600 minute winter	S12	585	175.600	2.850	5.2	12.8930	0.0000	FLOOD RISK
600 minute winter	S13	585	172.531	0.031	4.0	0.0350	0.0000	OK
600 minute winter	S14	585	171.831	0.031	4.0	0.0351	0.0000	OK
600 minute winter	S16	585	170.129	0.029	4.0	0.0322	0.0000	OK
600 minute winter	EXMH	585	167.328	0.028	4.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S15	1.000	S1	50.7	2.879	1.397	0.1922	
15 minute winter	S1	1.001	S4	78.4	2.767	0.218	0.6357	
15 minute winter	S2	2.000	S3	6.9	1.420	0.215	0.0753	
15 minute winter	S3	2.001	S4	30.6	1.384	0.090	0.5861	
600 minute winter	S4	1.002	S5	16.7	1.393	0.053	0.9735	
600 minute winter	S5	1.003	S6	18.4	1.076	0.125	0.3053	
600 minute winter	S6	1.004	S7	18.2	1.076	0.145	0.4151	
600 minute winter	S7	1.005	S11	18.8	0.887	0.034	2.2065	
600 minute winter	S8	3.000	S9	-10.5	0.022	0.000	325.3747	
600 minute winter	S9	3.001	S10	-24.4	-0.185	-0.102	1.4323	
600 minute winter	S10	3.002	S11	-20.9	0.267	-0.118	5.2499	
600 minute winter	S11	1.006	S12	5.2	0.399	0.007	2.2070	
600 minute winter	S12	Hydro-Brake®	S13	4.0				
600 minute winter	S13	1.008	S14	4.0	1.527	0.089	0.0290	
600 minute winter	S14	1.009	S16	4.0	1.618	0.089	0.0665	
600 minute winter	S16	1.010	EXMH	4.0	1.732	0.077	0.0771	405.1

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