

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

1900 culvert Link Type

Shape	Closed Rectangular	Auto Increment (mm)	100
Barrels	1	Follow Ground	x
Height (mm)	1900		

Available Diameters (mm)

500

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S2	0.034	5.00	179.419	1350	411948.915	419032.394	1.419
S3	0.014	5.00	179.025	1350	411944.734	419017.516	1.675
S15	0.106	5.00	179.659	1200	411920.979	419004.344	1.659
S1	0.013	5.00	179.372	1200	411922.478	418993.525	1.972
S4	0.042	5.00	178.372	1500	411942.705	418995.628	3.072
S5	0.053	5.00	177.681	1200	411956.262	418992.898	3.181
S6	0.000		177.460	1200	411960.461	418991.822	3.360
S7	0.041	5.00	177.173	1350	411966.343	418991.437	3.523
S8	0.060	5.00	176.450	1200	412018.005	419016.063	3.950
S9	0.000		177.370	1200	411991.640	419022.841	4.920
S10	0.036	5.00	177.492	1500	411982.614	419023.341	5.092
S11	0.019	5.00	176.486	1800	411980.222	418990.293	4.186
S12	0.102	5.00	175.167	2400	412007.583	418986.935	3.017

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S13	0.000		174.692	1200	412016.434	418984.669	2.692
S14	0.000	5.00	173.145	1350	412021.457	418968.710	1.345
S16	0.000		171.517	1350	412019.407	418948.556	1.417
EXMH	0.000		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)
2.000	S2	S3	15.454	0.600	178.000	177.500	0.500	30.9	150	5.14	48.3
2.001	S3	S4	21.982	0.600	177.350	175.300	2.050	10.7	300	5.22	48.1
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
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	174.100	0.400	10.8	300	5.29	47.7
1.004	S6	S7	5.895	0.600	174.100	173.800	0.300	19.7	300	5.32	47.6
1.005	S7	S11	13.926	0.600	173.650	172.300	1.350	10.3	450	5.36	47.3
3.000	S8	S9	28.000	0.600	172.500	172.450	0.050	560.0	6500	5.17	48.3
3.001	S9	S10	9.040	0.600	172.450	172.400	0.050	180.8	450	5.27	47.8
3.002	S10	S11	33.134	0.600	172.400	172.300	0.100	331.3	450	5.77	46.0
1.006	S11	S12	27.566	0.600	172.300	172.200	0.100	275.7	450	6.15	43.9
1.007	S12	S13	9.136	0.600	172.150	172.000	0.150	60.9	150	6.26	43.4
1.008	S13	S14	16.731	0.600	172.000	171.800	0.200	83.7	150	6.52	43.2
1.009	S14	S16	20.258	0.600	171.800	170.100	1.700	11.9	150	6.63	43.1
1.010	S16	EXMH	33.391	0.600	170.100	167.300	2.800	11.9	150	6.82	42.8

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)
2.000	1.817	32.1	4.5	1.269	1.375	0.034	0.0	38	1.285
2.001	4.827	341.2	6.3	1.375	2.772	0.048	0.0	28	1.890
1.000	2.052	36.3	14.0	1.509	1.672	0.106	0.0	65	1.924
1.001	5.080	359.1	15.6	1.672	2.772	0.119	0.0	42	2.569
1.002	3.799	268.5	27.1	2.772	2.881	0.209	0.0	64	2.459
1.003	4.801	339.4	33.9	2.881	3.060	0.262	0.0	64	3.109
1.004	3.562	251.8	33.8	3.060	3.073	0.262	0.0	74	2.503
1.005	6.357	1011.0	38.8	3.073	3.736	0.303	0.0	59	3.132
3.000	2.720	33592.4	7.9	2.050	3.020	0.060	0.0	8	0.141
3.001	1.508	239.9	7.8	4.470	4.642	0.060	0.0	55	0.704
3.002	1.111	176.7	12.0	4.642	3.736	0.096	0.0	79	0.643
1.006	1.219	193.9	49.7	3.736	2.517	0.418	0.0	155	1.028
1.007	1.291	22.8	61.2	2.867	2.542	0.520	0.0	150	1.315
1.008	1.100	19.4	60.9	2.542	1.195	0.520	0.0	150	1.120
1.009	2.934	51.9	60.7	1.195	1.267	0.520	0.0	150	2.989
1.010	2.933	51.8	60.3	1.267	1.400	0.520	0.0	150	2.988

Pipeline Schedule

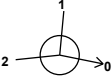
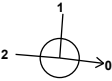
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.000	15.454	30.9	150	Circular	179.419	178.000	1.269	179.025	177.500	1.375
2.001	21.982	10.7	300	Circular	179.025	177.350	1.375	178.372	175.300	2.772
1.000	10.922	24.3	150	Circular	179.659	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
1.002	13.829	17.3	300	Circular	178.372	175.300	2.772	177.681	174.500	2.881
1.003	4.335	10.8	300	Circular	177.681	174.500	2.881	177.460	174.100	3.060
1.004	5.895	19.7	300	Circular	177.460	174.100	3.060	177.173	173.800	3.073
1.005	13.926	10.3	450	Circular	177.173	173.650	3.073	176.486	172.300	3.736
3.000	28.000	560.0	6500	1900 culvert	176.450	172.500	2.050	177.370	172.450	3.020
3.001	9.040	180.8	450	Circular	177.370	172.450	4.470	177.492	172.400	4.642
3.002	33.134	331.3	450	Circular	177.492	172.400	4.642	176.486	172.300	3.736
1.006	27.566	275.7	450	Circular	176.486	172.300	3.736	175.167	172.200	2.517
1.007	9.136	60.9	150	Circular	175.167	172.150	2.867	174.692	172.000	2.542
1.008	16.731	83.7	150	Circular	174.692	172.000	2.542	173.145	171.800	1.195
1.009	20.258	11.9	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
2.000	S2	1350	Manhole	Adoptable	S3	1350	Manhole	Adoptable
2.001	S3	1350	Manhole	Adoptable	S4	1500	Manhole	Adoptable
1.000	S15	1200	Manhole	Adoptable	S1	1200	Manhole	Adoptable
1.001	S1	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	1350	Manhole	Adoptable
1.009	S14	1350	Manhole	Adoptable	S16	1350	Manhole	Adoptable
1.010	S16	1350	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)
S2	411948.915	419032.394	179.419	1.419	1350				
						0	2.000	178.000	150
S3	411944.734	419017.516	179.025	1.675	1350		1	2.000	177.500
						0	2.001	177.350	300
S15	411920.979	419004.344	179.659	1.659	1200		0	1.000	178.000
						0	1.000	178.000	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1	411922.478	418993.525	179.372	1.972	1200		1	1.000	177.550	150
							0	1.001	177.400	300
S4	411942.705	418995.628	178.372	3.072	1500		1	2.001	175.300	300
							2	1.001	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	3.360	1200		1	1.003	174.100	300
							0	1.004	174.100	300
S7	411966.343	418991.437	177.173	3.523	1350		1	1.004	173.800	300
							0	1.005	173.650	450
S8	412018.005	419016.063	176.450	3.950	1200					
							0	3.000	172.500	6500
S9	411991.640	419022.841	177.370	4.920	1200		1	3.000	172.450	6500
							0	3.001	172.450	450
S10	411982.614	419023.341	177.492	5.092	1500		1	3.001	172.400	450
							0	3.002	172.400	450
S11	411980.222	418990.293	176.486	4.186	1800		1	3.002	172.300	450
							2	1.005	172.300	450
							0	1.006	172.300	450
S12	412007.583	418986.935	175.167	3.017	2400		1	1.006	172.200	450
							0	1.007	172.150	150
S13	412016.434	418984.669	174.692	2.692	1200		1	1.007	172.000	150
							0	1.008	172.000	150
S14	412021.457	418968.710	173.145	1.345	1350		1	1.008	171.800	150
							0	1.009	171.800	150
S16	412019.407	418948.556	171.517	1.417	1350		1	1.009	170.100	150
							0	1.010	170.100	150

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 (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)	172.150	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

Approval Settings

Node Size	✓	Minimum Backdrop Height (m)	
Node Losses	✓	Maximum Backdrop Height (m)	1.500
Link Size	✓	Full Bore Velocity	✓
Minimum Diameter (mm)	150	Minimum Full Bore Velocity (m/s)	
Link Length	✓	Maximum Full Bore Velocity (m/s)	3.000
Maximum Length (m)	100.000	Proportional Velocity	✓
Coordinates	✓	Return Period (years)	
Accuracy (m)	1.000	Minimum Proportional Velocity (m/s)	0.750
Crossings	✓	Maximum Proportional Velocity (m/s)	3.000
Cover Depth	✓	Surcharged Depth	✓
Minimum Cover Depth (m)		Return Period (years)	
Maximum Cover Depth (m)	3.000	Maximum Surcharged Depth (m)	0.100
Backdrops	✓	Flooding	✓

Approval Settings

Return Period (years)	30	Discharge Volume	✓
Time to Half Empty	x	100 year 360 minute (m ³)	
Discharge Rates	✓		

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	30 year 1440 minute summer	11.926	3.196
1 year 15 minute winter	71.376	28.781	30 year 1440 minute winter	8.015	3.196
1 year 30 minute summer	68.580	19.406	100 year 15 minute summer	322.553	91.271
1 year 30 minute winter	48.126	19.406	100 year 15 minute winter	226.353	91.271
1 year 60 minute summer	48.435	12.800	100 year 30 minute summer	220.004	62.254
1 year 60 minute winter	32.179	12.800	100 year 30 minute winter	154.389	62.254
1 year 120 minute summer	31.422	8.304	100 year 60 minute summer	153.288	40.510
1 year 120 minute winter	20.876	8.304	100 year 60 minute winter	101.841	40.510
1 year 180 minute summer	24.970	6.426	100 year 120 minute summer	95.993	25.368
1 year 180 minute winter	16.231	6.426	100 year 120 minute winter	63.776	25.368
1 year 240 minute summer	20.186	5.335	100 year 180 minute summer	73.626	18.946
1 year 240 minute winter	13.411	5.335	100 year 180 minute winter	47.859	18.946
1 year 360 minute summer	15.845	4.078	100 year 240 minute summer	57.983	15.323
1 year 360 minute winter	10.300	4.078	100 year 240 minute winter	38.523	15.323
1 year 480 minute summer	12.751	3.370	100 year 360 minute summer	44.157	11.363
1 year 480 minute winter	8.471	3.370	100 year 360 minute winter	28.703	11.363
1 year 600 minute summer	10.627	2.907	100 year 480 minute summer	34.714	9.174
1 year 600 minute winter	7.261	2.907	100 year 480 minute winter	23.063	9.174
1 year 720 minute summer	9.614	2.577	100 year 600 minute summer	28.381	7.763
1 year 720 minute winter	6.461	2.577	100 year 600 minute winter	19.392	7.763
1 year 960 minute summer	8.093	2.131	100 year 720 minute summer	25.255	6.769
1 year 960 minute winter	5.361	2.131	100 year 720 minute winter	16.973	6.769
1 year 1440 minute summer	6.078	1.629	100 year 960 minute summer	20.682	5.446
1 year 1440 minute winter	4.085	1.629	100 year 960 minute winter	13.700	5.446
30 year 15 minute summer	249.196	70.514	100 year 1440 minute summer	14.924	4.000
30 year 15 minute winter	174.874	70.514	100 year 1440 minute winter	10.030	4.000
30 year 30 minute summer	168.269	47.614	100 year +40% CC 15 minute summer	451.575	127.780
30 year 30 minute winter	118.084	47.614	100 year +40% CC 15 minute winter	316.895	127.780
30 year 60 minute summer	116.589	30.811	100 year +40% CC 30 minute summer	308.006	87.155
30 year 60 minute winter	77.459	30.811	100 year +40% CC 30 minute winter	216.144	87.155
30 year 120 minute summer	73.116	19.322	100 year +40% CC 60 minute summer	214.603	56.713
30 year 120 minute winter	48.577	19.322	100 year +40% CC 60 minute winter	142.577	56.713
30 year 180 minute summer	56.402	14.514	100 year +40% CC 120 minute summer	134.390	35.515
30 year 180 minute winter	36.663	14.514	100 year +40% CC 120 minute winter	89.286	35.515
30 year 240 minute summer	44.662	11.803	100 year +40% CC 180 minute summer	103.076	26.525
30 year 240 minute winter	29.673	11.803	100 year +40% CC 180 minute winter	67.002	26.525
30 year 360 minute summer	34.253	8.815	100 year +40% CC 240 minute summer	81.176	21.453
30 year 360 minute winter	22.265	8.815	100 year +40% CC 240 minute winter	53.932	21.453
30 year 480 minute summer	27.074	7.155	100 year +40% CC 360 minute summer	61.820	15.908
30 year 480 minute winter	17.988	7.155	100 year +40% CC 360 minute winter	40.184	15.908
30 year 600 minute summer	22.234	6.082	100 year +40% CC 480 minute summer	48.599	12.843
30 year 600 minute winter	15.192	6.082	100 year +40% CC 480 minute winter	32.288	12.843
30 year 720 minute summer	19.861	5.323	100 year +40% CC 600 minute summer	39.734	10.868
30 year 720 minute winter	13.348	5.323	100 year +40% CC 600 minute winter	27.148	10.868
30 year 960 minute summer	16.368	4.310	100 year +40% CC 720 minute summer	35.357	9.476
30 year 960 minute winter	10.843	4.310	100 year +40% CC 720 minute winter	23.762	9.476

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 960 minute summer	28.955	7.625	100 year +40% CC 1440 minute summer	20.894	5.600
100 year +40% CC 960 minute winter	19.180	7.625	100 year +40% CC 1440 minute winter	14.042	5.600

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S2	10	178.039	0.039	4.5	0.0553	0.0000	OK
15 minute winter	S3	10	177.378	0.028	6.2	0.0400	0.0000	OK
15 minute winter	S15	10	178.069	0.069	13.9	0.0776	0.0000	OK
15 minute winter	S1	10	177.442	0.042	15.5	0.0477	0.0000	OK
15 minute winter	S4	10	175.366	0.066	27.1	0.1165	0.0000	OK
15 minute winter	S5	10	174.571	0.071	33.7	0.0800	0.0000	OK
15 minute winter	S6	10	174.184	0.084	33.6	0.0954	0.0000	OK
15 minute winter	S7	10	173.710	0.059	38.8	0.0851	0.0000	OK
360 minute winter	S8	304	172.724	0.224	4.5	0.2537	0.0000	OK
360 minute winter	S9	304	172.724	0.274	6.9	0.3103	0.0000	OK
360 minute winter	S10	304	172.724	0.324	7.4	0.5731	0.0000	OK
360 minute winter	S11	304	172.724	0.424	7.7	1.0799	0.0000	OK
360 minute winter	S12	312	172.724	0.574	3.9	2.5982	0.0000	SURCHARGED
15 minute winter	S13	142	172.040	0.040	2.6	0.0456	0.0000	OK
120 minute winter	S14	44	171.823	0.023	2.6	0.0330	0.0000	OK
15 minute summer	S16	122	170.123	0.023	2.6	0.0329	0.0000	OK
480 minute summer	EXMH	208	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 (m³)	Discharge Vol (m³)
15 minute winter	S2	2.000	S3	4.4	1.256	0.138	0.0544	
15 minute winter	S3	2.001	S4	6.2	0.879	0.018	0.1618	
15 minute winter	S15	1.000	S1	13.8	1.834	0.380	0.0821	
15 minute winter	S1	1.001	S4	15.4	1.793	0.043	0.1774	
15 minute winter	S4	1.002	S5	26.8	2.226	0.100	0.1666	
15 minute winter	S5	1.003	S6	33.6	2.329	0.099	0.0626	
15 minute winter	S6	1.004	S7	33.4	2.267	0.133	0.0870	
15 minute winter	S7	1.005	S11	38.7	1.322	0.038	1.0087	
360 minute winter	S8	3.000	S9	-3.2	0.014	0.000	45.3842	
360 minute winter	S9	3.001	S10	-6.9	0.239	-0.029	1.0103	
360 minute winter	S10	3.002	S11	-6.5	0.175	-0.037	4.5931	
360 minute winter	S11	1.006	S12	2.7	0.379	0.014	4.3191	
360 minute winter	S12	Hydro-Brake®	S13	2.6				
15 minute winter	S13	1.008	S14	2.6	0.955	0.133	0.0461	
120 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	28.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S2	10	178.063	0.063	10.9	0.0896	0.0000	OK
15 minute winter	S3	10	177.393	0.043	15.3	0.0614	0.0000	OK
15 minute winter	S15	10	178.136	0.136	34.0	0.1539	0.0000	OK
15 minute winter	S1	10	177.465	0.065	37.7	0.0736	0.0000	OK
15 minute winter	S4	10	175.406	0.106	66.3	0.1881	0.0000	OK
15 minute winter	S5	10	174.623	0.123	82.7	0.1390	0.0000	OK
15 minute winter	S6	10	174.246	0.146	82.4	0.1654	0.0000	OK
15 minute winter	S7	10	173.742	0.092	95.3	0.1316	0.0000	OK
480 minute winter	S8	464	173.336	0.836	9.2	0.9450	0.0000	OK
480 minute winter	S9	464	173.336	0.886	16.0	1.0016	0.0000	SURCHARGED
480 minute winter	S10	464	173.336	0.936	16.2	1.6532	0.0000	SURCHARGED
480 minute winter	S11	464	173.336	1.036	15.1	2.6355	0.0000	SURCHARGED
480 minute winter	S12	464	173.336	1.186	4.3	5.3633	0.0000	SURCHARGED
480 minute winter	S13	464	172.041	0.041	2.7	0.0466	0.0000	OK
480 minute winter	S14	464	171.824	0.024	2.7	0.0337	0.0000	OK
480 minute winter	S16	464	170.124	0.023	2.7	0.0336	0.0000	OK
480 minute winter	EXMH	464	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	S2	2.000	S3	10.8	1.595	0.336	0.1044	
15 minute winter	S3	2.001	S4	15.2	1.113	0.045	0.3136	
15 minute winter	S15	1.000	S1	33.5	2.156	0.924	0.1700	
15 minute winter	S1	1.001	S4	37.6	2.266	0.105	0.3417	
15 minute winter	S4	1.002	S5	65.7	2.661	0.245	0.3424	
15 minute winter	S5	1.003	S6	82.4	2.693	0.243	0.1328	
15 minute winter	S6	1.004	S7	82.1	2.764	0.326	0.1753	
15 minute winter	S7	1.005	S11	95.1	1.732	0.094	1.2649	
480 minute winter	S8	3.000	S9	-6.7	0.016	0.000	156.6404	
480 minute winter	S9	3.001	S10	-16.0	0.245	-0.067	1.4323	
480 minute winter	S10	3.002	S11	-14.7	0.174	-0.083	5.2499	
480 minute winter	S11	1.006	S12	2.6	0.394	0.014	4.3677	
480 minute winter	S12	Hydro-Brake®	S13	2.7				
480 minute winter	S13	1.008	S14	2.7	0.967	0.139	0.0476	
480 minute winter	S14	1.009	S16	2.7	1.533	0.052	0.0356	
480 minute winter	S16	1.010	EXMH	2.7	1.544	0.052	0.0583	249.8

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S2	10	178.073	0.073	14.1	0.1043	0.0000	OK
15 minute winter	S3	10	177.399	0.049	19.7	0.0695	0.0000	OK
15 minute winter	S15	11	178.477	0.477	44.0	0.5391	0.0000	SURCHARGED
15 minute winter	S1	11	177.473	0.073	47.4	0.0827	0.0000	OK
15 minute winter	S4	10	175.422	0.122	84.0	0.2152	0.0000	OK
15 minute winter	S5	10	174.645	0.145	105.2	0.1639	0.0000	OK
15 minute winter	S6	10	174.272	0.172	104.7	0.1944	0.0000	OK
15 minute winter	S7	10	173.754	0.104	121.2	0.1483	0.0000	OK
600 minute winter	S8	585	173.674	1.174	10.0	1.3274	0.0000	OK
600 minute winter	S9	585	173.674	1.224	17.3	1.3839	0.0000	SURCHARGED
600 minute winter	S10	585	173.674	1.274	17.5	2.2505	0.0000	SURCHARGED
600 minute winter	S11	585	173.674	1.374	16.4	3.4958	0.0000	SURCHARGED
600 minute winter	S12	585	173.674	1.524	4.6	6.8926	0.0000	SURCHARGED
600 minute winter	S13	585	172.044	0.044	3.0	0.0494	0.0000	OK
600 minute winter	S14	585	171.825	0.025	3.0	0.0356	0.0000	OK
600 minute winter	S16	585	170.125	0.025	3.0	0.0356	0.0000	OK
600 minute winter	EXMH	585	167.325	0.025	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 (m³)	Discharge Vol (m³)
15 minute winter	S2	2.000	S3	13.9	1.699	0.434	0.1268	
15 minute winter	S3	2.001	S4	19.7	1.197	0.058	0.3760	
15 minute winter	S15	1.000	S1	42.3	2.403	1.167	0.1923	
15 minute winter	S1	1.001	S4	47.5	2.398	0.132	0.4072	
15 minute winter	S4	1.002	S5	83.4	2.770	0.311	0.4184	
15 minute winter	S5	1.003	S6	104.7	2.776	0.308	0.1635	
15 minute winter	S6	1.004	S7	104.6	2.905	0.416	0.2123	
15 minute winter	S7	1.005	S11	120.9	1.755	0.120	1.2949	
600 minute winter	S8	3.000	S9	-7.3	0.016	0.000	218.1723	
600 minute winter	S9	3.001	S10	-17.3	0.155	-0.072	1.4323	
600 minute winter	S10	3.002	S11	-15.9	-0.100	-0.090	5.2499	
600 minute winter	S11	1.006	S12	2.9	0.381	0.015	4.3677	
600 minute winter	S12	Hydro-Brake®	S13	3.0				
600 minute winter	S13	1.008	S14	3.0	0.999	0.156	0.0516	
600 minute winter	S14	1.009	S16	3.0	1.583	0.058	0.0387	
600 minute winter	S16	1.010	EXMH	3.0	1.595	0.058	0.0633	309.5

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S2	10	178.091	0.091	19.8	0.1295	0.0000	OK
15 minute winter	S3	10	177.407	0.057	27.7	0.0820	0.0000	OK
15 minute winter	S15	11	179.204	1.204	61.6	1.3615	0.0000	SURCHARGED
15 minute winter	S1	11	177.486	0.086	65.8	0.0976	0.0000	OK
15 minute winter	S4	11	175.449	0.149	116.3	0.2626	0.0000	OK
15 minute winter	S5	10	174.686	0.186	145.9	0.2099	0.0000	OK
15 minute winter	S6	11	174.320	0.220	145.3	0.2486	0.0000	OK
600 minute winter	S7	585	174.312	0.662	19.3	0.9467	0.0000	SURCHARGED
600 minute winter	S8	585	174.312	1.812	14.4	2.0489	0.0000	OK
600 minute winter	S9	585	174.312	1.862	24.9	2.1054	0.0000	SURCHARGED
600 minute winter	S10	585	174.312	1.912	25.2	3.3777	0.0000	SURCHARGED
600 minute winter	S11	585	174.312	2.012	23.6	5.1194	0.0000	SURCHARGED
600 minute winter	S12	585	174.312	2.162	6.5	9.7787	0.0000	SURCHARGED
600 minute winter	S13	585	172.048	0.048	3.6	0.0537	0.0000	OK
600 minute winter	S14	585	171.827	0.027	3.6	0.0386	0.0000	OK
600 minute winter	S16	585	170.127	0.027	3.6	0.0385	0.0000	OK
600 minute winter	EXMH	585	167.327	0.027	3.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S2	2.000	S3	19.6	1.834	0.609	0.1649	
15 minute winter	S3	2.001	S4	27.6	1.291	0.081	0.4846	
15 minute winter	S15	1.000	S1	58.7	3.334	1.618	0.1903	
15 minute winter	S1	1.001	S4	65.8	2.576	0.183	0.5241	
15 minute winter	S4	1.002	S5	116.0	2.881	0.432	0.5565	
15 minute winter	S5	1.003	S6	145.3	2.872	0.428	0.2188	
15 minute winter	S6	1.004	S7	145.7	3.078	0.578	0.2775	
600 minute winter	S7	1.005	S11	19.3	0.605	0.019	2.2065	
600 minute winter	S8	3.000	S9	-10.6	0.023	0.000	334.2888	
600 minute winter	S9	3.001	S10	-24.9	-0.172	-0.104	1.4323	
600 minute winter	S10	3.002	S11	-22.9	-0.145	-0.130	5.2499	
600 minute winter	S11	1.006	S12	3.5	0.297	0.018	4.3677	
600 minute winter	S12	Hydro-Brake®	S13	3.6				
600 minute winter	S13	1.008	S14	3.6	1.044	0.183	0.0580	
600 minute winter	S14	1.009	S16	3.6	1.659	0.069	0.0434	
600 minute winter	S16	1.010	EXMH	3.6	1.672	0.069	0.0710	356.3