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	✓

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)
S3	0.128	5.00	179.336	1800	411923.506	418994.516	4.236
S4	0.078	5.00	178.372	2100	411942.705	418995.628	3.322
S1	0.028	5.00	179.419	1800	411948.915	419032.394	4.219
S6			177.460	1200	411960.461	418991.822	2.560
S7	0.014	5.00	177.173	1800	411966.343	418991.437	5.073
S14			171.809	1200	412021.636	418951.044	1.709
S13			173.537	1200	412025.597	418985.412	2.937
S12			174.580	2400	412015.822	418987.472	3.780
S9	0.096	5.00	176.486	2100	411980.222	418990.293	4.436
S8	0.112	5.00	177.579	1800	411982.842	419026.266	5.429
S15			168.888	1200	412013.365	418918.202	3.288
S16			163.804	1200	412028.155	418895.134	0.804
S11			175.737	2100	411994.098	418989.084	3.737

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S5			177.681	2400	411956.262	418992.898	2.681
S2	0.033	5.00	179.025	1800	411944.734	419017.516	3.875
TANK1		5.00	179.400	1200	411932.112	418990.034	4.100
TANK2			177.900	1200	411953.875	418988.203	2.700
TANK3		5.00	177.300	1200	411968.598	418985.968	5.000
TANK4			175.900	1200	411991.621	418984.594	3.700

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)
S1-S2	S1	S2	15.454	0.600	175.200	175.150	0.050	309.1	900	5.14	48.7
S2-S4	S2	S4	21.982	0.600	175.150	175.050	0.100	219.8	900	5.32	48.6
S3-S4	S3	S4	19.231	0.600	175.100	175.050	0.050	384.6	900	5.20	48.2
S4-S5	S4	S5	13.829	0.600	175.050	175.000	0.050	276.6	900	5.44	47.8
S5-S6	S5	S6	4.335	0.600	175.000	174.900	0.100	43.4	225	5.48	47.7
S6-S7	S6	S7	5.895	0.600	174.900	174.700	0.200	29.5	225	5.52	47.6
S7-S9	S7	S9	13.926	0.600	172.100	172.050	0.050	278.5	900	5.64	47.1
S8-S9	S8	S9	36.068	0.600	172.150	172.050	0.100	360.7	900	5.37	46.2
S9-S10	S9	S11	13.929	0.600	172.050	172.000	0.050	278.6	900	5.77	45.8
S11-S12	S11	S12	21.784	0.600	172.000	170.800	1.200	18.2	225	5.88	45.0
S12-S13	S12	S13	9.990	0.600	170.800	170.600	0.200	50.0	225	5.97	44.7
S13-S14	S13	S14	34.596	0.600	170.600	170.100	0.500	69.2	225	6.34	43.8
S14-S15	S14	S15	33.867	0.600	170.100	167.100	3.000	11.3	225	6.48	43.4
S15-S16	S15	S16	27.402	0.600	165.600	163.000	2.600	10.5	300	6.58	43.1
3.000	TANK1	TANK2	22.000	0.600	175.300	175.200	0.100	220.0	2100	5.10	47.5
3.001	TANK2	S5	5.267	0.600	175.200	175.000	0.200	26.3	450	5.13	47.2
5.000	TANK3	TANK4	25.000	0.600	172.300	172.200	0.100	250.0	2100	5.13	47.4
5.001	TANK4	S11	5.128	0.600	172.200	172.000	0.200	25.6	450	5.15	47.1

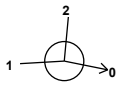
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
S1-S2	1.777	1130.2	3.7	3.319	2.975	0.028	0.0	36	0.419
S2-S4	2.109	1341.7	8.0	2.975	2.422	0.061	0.0	49	0.603
S3-S4	1.591	1012.3	16.7	3.336	2.422	0.128	0.0	79	0.614
S4-S5	1.879	1195.2	34.6	2.422	1.781	0.267	0.0	103	0.859
S5-S6	1.992	79.2	34.5	2.456	2.335	0.267	0.0	104	1.928
S6-S7	2.418	96.2	34.4	2.335	2.248	0.267	0.0	93	2.221
S7-S9	1.872	1191.0	35.9	4.173	3.536	0.281	0.0	105	0.864
S8-S9	1.644	1045.6	14.0	4.529	3.536	0.112	0.0	72	0.598
S9-S10	1.872	1190.9	60.7	3.536	2.837	0.489	0.0	136	1.008
S11-S12	3.085	122.7	59.6	3.512	3.555	0.489	0.0	110	3.060
S12-S13	1.855	73.7	59.2	3.555	2.712	0.489	0.0	153	2.056
S13-S14	1.574	62.6	58.1	2.712	1.484	0.489	0.0	172	1.779
S14-S15	3.916	155.7	57.5	1.484	1.563	0.489	0.0	94	3.628
S15-S16	4.869	344.2	57.1	2.988	0.504	0.489	0.0	82	3.642
3.000	3.545	15635.2	0.0	2.000	0.600	0.000	0.0	0	0.000
3.001	3.973	631.9	0.0	2.250	2.231	0.000	0.0	0	0.000
5.000	3.325	14663.5	0.0	2.900	1.600	0.000	0.0	0	0.000
5.001	4.027	640.5	0.0	3.250	3.287	0.000	0.0	0	0.000

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)
S1-S2	15.454	309.1	900	Circular	179.419	175.200	3.319	179.025	175.150	2.975
S2-S4	21.982	219.8	900	Circular	179.025	175.150	2.975	178.372	175.050	2.422
S3-S4	19.231	384.6	900	Circular	179.336	175.100	3.336	178.372	175.050	2.422
S4-S5	13.829	276.6	900	Circular	178.372	175.050	2.422	177.681	175.000	1.781
S5-S6	4.335	43.4	225	Circular	177.681	175.000	2.456	177.460	174.900	2.335
S6-S7	5.895	29.5	225	Circular	177.460	174.900	2.335	177.173	174.700	2.248
S7-S9	13.926	278.5	900	Circular	177.173	172.100	4.173	176.486	172.050	3.536
S8-S9	36.068	360.7	900	Circular	177.579	172.150	4.529	176.486	172.050	3.536
S9-S10	13.929	278.6	900	Circular	176.486	172.050	3.536	175.737	172.000	2.837
S11-S12	21.784	18.2	225	Circular	175.737	172.000	3.512	174.580	170.800	3.555
S12-S13	9.990	50.0	225	Circular	174.580	170.800	3.555	173.537	170.600	2.712
S13-S14	34.596	69.2	225	Circular	173.537	170.600	2.712	171.809	170.100	1.484
S14-S15	33.867	11.3	225	Circular	171.809	170.100	1.484	168.888	167.100	1.563
S15-S16	27.402	10.5	300	Circular	168.888	165.600	2.988	163.804	163.000	0.504
3.000	22.000	220.0	2100	2100 culvert	179.400	175.300	2.000	177.900	175.200	0.600
3.001	5.267	26.3	450	Circular	177.900	175.200	2.250	177.681	175.000	2.231
5.000	25.000	250.0	2100	2100 culvert	177.300	172.300	2.900	175.900	172.200	1.600
5.001	5.128	25.6	450	Circular	175.900	172.200	3.250	175.737	172.000	3.287

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S1-S2	S1	1800	Manhole	Adoptable	S2	1800	Manhole	Adoptable
S2-S4	S2	1800	Manhole	Adoptable	S4	2100	Manhole	Adoptable
S3-S4	S3	1800	Manhole	Adoptable	S4	2100	Manhole	Adoptable
S4-S5	S4	2100	Manhole	Adoptable	S5	2400	Manhole	Adoptable
S5-S6	S5	2400	Manhole	Adoptable	S6	1200	Manhole	Adoptable
S6-S7	S6	1200	Manhole	Adoptable	S7	1800	Manhole	Adoptable
S7-S9	S7	1800	Manhole	Adoptable	S9	2100	Manhole	Adoptable
S8-S9	S8	1800	Manhole	Adoptable	S9	2100	Manhole	Adoptable
S9-S10	S9	2100	Manhole	Adoptable	S11	2100	Manhole	Adoptable
S11-S12	S11	2100	Manhole	Adoptable	S12	2400	Manhole	Adoptable
S12-S13	S12	2400	Manhole	Adoptable	S13	1200	Manhole	Adoptable
S13-S14	S13	1200	Manhole	Adoptable	S14	1200	Manhole	Adoptable
S14-S15	S14	1200	Manhole	Adoptable	S15	1200	Manhole	Adoptable
S15-S16	S15	1200	Manhole	Adoptable	S16	1200	Manhole	Adoptable
3.000	TANK1	1200	Manhole	Adoptable	TANK2	1200	Manhole	Adoptable
3.001	TANK2	1200	Manhole	Adoptable	S5	2400	Manhole	Adoptable
5.000	TANK3	1200	Manhole	Adoptable	TANK4	1200	Manhole	Adoptable
5.001	TANK4	1200	Manhole	Adoptable	S11	2100	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S3	411923.506	418994.516	179.336	4.236	1800				
						0	S3-S4	175.100	900
S4	411942.705	418995.628	178.372	3.322	2100		1	S3-S4	175.050	900
							2	S2-S4	175.050	900
							0	S4-S5	175.050	900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	411948.915	419032.394	179.419	4.219	1800	0	S1-S2	175.200	900
S6	411960.461	418991.822	177.460	2.560	1200	1 0	S5-S6 S6-S7	174.900 174.900	225 225
S7	411966.343	418991.437	177.173	5.073	1800	1 0	S6-S7 S7-S9	174.700 172.100	225 900
S14	412021.636	418951.044	171.809	1.709	1200	1 0	S13-S14 S14-S15	170.100 170.100	225 225
S13	412025.597	418985.412	173.537	2.937	1200	1 0	S12-S13 S13-S14	170.600 170.600	225 225
S12	412015.822	418987.472	174.580	3.780	2400	1 0	S11-S12 S12-S13	170.800 170.800	225 225
S9	411980.222	418990.293	176.486	4.436	2100	1 2 0	S8-S9 S7-S9 S9-S10	172.050 172.050 172.050	900 900 900
S8	411982.842	419026.266	177.579	5.429	1800	0	S8-S9	172.150	900
S15	412013.365	418918.202	168.888	3.288	1200	1 0	S14-S15 S15-S16	167.100 165.600	225 300
S16	412028.155	418895.134	163.804	0.804	1200	1	S15-S16	163.000	300
S11	411994.098	418989.084	175.737	3.737	2100	1 2 0	5.001 S9-S10 S11-S12	172.000 172.000 172.000	450 900 225
S5	411956.262	418992.898	177.681	2.681	2400	1 2 0	3.001 S4-S5 S5-S6	175.000 175.000 175.000	450 900 225
S2	411944.734	419017.516	179.025	3.875	1800	1 0	S1-S2 S2-S4	175.150 175.150	900 900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
TANK1	411932.112	418990.034	179.400	4.100	1200				
						0	3.000	175.300	2100
TANK2	411953.875	418988.203	177.900	2.700	1200		1	3.000	175.200	2100
							0	3.001	175.200	450
TANK3	411968.598	418985.968	177.300	5.000	1200				
						0	5.000	172.300	2100
TANK4	411991.621	418984.594	175.900	3.700	1200		1	5.000	172.200	2100
							0	5.001	172.200	450

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	1440
Ratio-R	0.320	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 %)
1	0	0	0
2	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Node S11 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	x
Invert Level (m)	172.000	Product Number	CTL-CHE-0064-3500-3300-3500
Design Depth (m)	3.300	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.5	Min Node Diameter (mm)	1200

Node S5 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	x
Invert Level (m)	175.000	Product Number	CTL-CHE-0062-3000-2700-3000
Design Depth (m)	2.700	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	3.0	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

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S3	368	175.451	0.351	2.5	0.8936	0.0000	OK
480 minute winter	S4	368	175.451	0.401	4.1	1.3895	0.0000	OK
480 minute winter	S1	368	175.451	0.251	0.6	0.6390	0.0000	OK
15 minute winter	S6	227	174.920	0.020	1.5	0.0231	0.0000	OK
960 minute winter	S7	915	172.584	0.483	1.6	1.2305	0.0000	OK
960 minute summer	S14	375	170.117	0.016	1.6	0.0186	0.0000	OK
960 minute summer	S13	375	170.627	0.027	1.6	0.0307	0.0000	OK
240 minute winter	S12	64	170.823	0.023	1.6	0.1051	0.0000	OK
960 minute winter	S9	915	172.584	0.533	3.3	1.8480	0.0000	OK
960 minute winter	S8	915	172.584	0.433	1.4	1.1032	0.0000	OK
960 minute summer	S15	375	165.615	0.015	1.6	0.0171	0.0000	OK
960 minute summer	S16	375	163.015	0.015	1.6	0.0000	0.0000	OK
960 minute winter	S11	915	172.584	0.583	2.7	2.0212	0.0000	SURCHARGED
480 minute winter	S5	368	175.451	0.451	3.3	2.0408	0.0000	SURCHARGED
480 minute winter	S2	368	175.451	0.301	1.0	0.7664	0.0000	OK
480 minute winter	TANK1	368	175.451	0.151	0.9	0.1709	0.0000	OK
480 minute winter	TANK2	368	175.451	0.251	1.8	0.2840	0.0000	OK
960 minute winter	TANK3	915	172.584	0.283	0.6	0.3206	0.0000	OK
960 minute winter	TANK4	915	172.584	0.383	1.2	0.4337	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)
480 minute winter	S3	S3-S4	S4	2.2	0.175	0.002	4.8273	
480 minute winter	S4	S4-S5	S5	3.3	0.206	0.003	4.0870	
480 minute winter	S1	S1-S2	S2	0.4	0.159	0.000	2.5508	
15 minute winter	S6	S6-S7	S7	1.5	0.883	0.016	0.0102	
960 minute winter	S7	S7-S9	S9	1.5	0.219	0.001	5.1413	
960 minute summer	S14	S14-S15	S15	1.6	1.278	0.011	0.0436	
960 minute summer	S13	S13-S14	S14	1.6	0.840	0.026	0.0691	
240 minute winter	S12	S12-S13	S13	1.6	0.681	0.022	0.0243	
960 minute winter	S9	S9-S10	S11	2.7	0.151	0.002	5.7551	
960 minute winter	S8	S8-S9	S9	1.1	0.127	0.001	12.5067	
960 minute summer	S15	S15-S16	S16	1.6	1.255	0.005	0.0359	124.9
960 minute winter	S11	Hydro-Brake®	S12	1.6				
480 minute winter	S5	Hydro-Brake®	S6	1.5				
480 minute winter	S2	S2-S4	S4	0.7	0.108	0.001	5.0441	
480 minute winter	TANK1	3.000	TANK2	-0.9	-0.005	0.000	9.2916	
480 minute winter	TANK2	3.001	S5	-1.8	-0.031	-0.003	0.6564	
960 minute winter	TANK3	5.000	TANK4	-0.6	-0.004	0.000	17.5078	
960 minute winter	TANK4	5.001	S11	-1.2	-0.020	-0.002	0.7752	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S3	320	175.524	0.423	3.7	1.0777	0.0000	OK
360 minute winter	S4	328	175.524	0.473	5.8	1.6400	0.0000	OK
360 minute winter	S1	320	175.524	0.323	0.8	0.8233	0.0000	OK
120 minute winter	S6	656	174.920	0.020	1.5	0.0231	0.0000	OK
960 minute winter	S7	930	172.677	0.577	1.6	1.4695	0.0000	OK
960 minute winter	S14	300	170.117	0.016	1.6	0.0187	0.0000	OK
180 minute summer	S13	48	170.627	0.027	1.6	0.0307	0.0000	OK
180 minute summer	S12	48	170.823	0.023	1.6	0.1051	0.0000	OK
960 minute winter	S9	930	172.677	0.627	3.8	2.1733	0.0000	OK
960 minute winter	S8	930	172.677	0.527	1.7	1.3422	0.0000	OK
960 minute winter	S15	300	165.615	0.015	1.6	0.0171	0.0000	OK
960 minute winter	S16	300	163.015	0.015	1.6	0.0000	0.0000	OK
960 minute winter	S11	930	172.677	0.677	3.0	2.3465	0.0000	SURCHARGED
360 minute winter	S5	328	175.524	0.523	4.3	2.3682	0.0000	SURCHARGED
360 minute winter	S2	328	175.523	0.373	1.3	0.9504	0.0000	OK
360 minute winter	TANK1	328	175.524	0.223	1.3	0.2527	0.0000	OK
360 minute winter	TANK2	328	175.524	0.323	2.6	0.3659	0.0000	OK
960 minute winter	TANK3	930	172.677	0.377	0.7	0.4268	0.0000	OK
960 minute winter	TANK4	930	172.677	0.477	1.4	0.5399	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S3	S3-S4	S4	3.1	0.185	0.003	6.0681	
360 minute winter	S4	S4-S5	S5	4.3	0.256	0.004	4.9822	
360 minute winter	S1	S1-S2	S2	0.5	0.177	0.000	3.5039	
120 minute winter	S6	S6-S7	S7	1.5	0.883	0.016	0.0102	
960 minute winter	S7	S7-S9	S9	1.5	0.216	0.001	6.2784	
960 minute winter	S14	S14-S15	S15	1.6	1.278	0.011	0.0436	
180 minute summer	S13	S13-S14	S14	1.6	0.840	0.026	0.0691	
180 minute summer	S12	S12-S13	S13	1.6	0.681	0.022	0.0243	
960 minute winter	S9	S9-S10	S11	3.0	0.151	0.002	6.8529	
960 minute winter	S8	S8-S9	S9	1.3	0.116	0.001	15.4732	
960 minute winter	S15	S15-S16	S16	1.6	1.255	0.005	0.0359	165.4
960 minute winter	S11	Hydro-Brake®	S12	1.6				
360 minute winter	S5	Hydro-Brake®	S6	1.5				
360 minute winter	S2	S2-S4	S4	0.8	0.115	0.001	6.4465	
360 minute winter	TANK1	3.000	TANK2	-1.3	-0.007	0.000	12.6343	
360 minute winter	TANK2	3.001	S5	-2.6	-0.040	-0.004	0.7385	
960 minute winter	TANK3	5.000	TANK4	-0.7	-0.003	0.000	22.4387	
960 minute winter	TANK4	5.001	S11	-1.4	-0.031	-0.002	0.8125	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S3	344	175.922	0.822	6.6	2.0926	0.0000	OK
360 minute winter	S4	344	175.922	0.872	10.1	3.0215	0.0000	OK
360 minute winter	S1	344	175.922	0.722	1.5	1.8381	0.0000	OK
360 minute winter	S6	344	174.922	0.022	1.8	0.0248	0.0000	OK
960 minute winter	S7	930	173.315	1.215	1.9	3.0920	0.0000	SURCHARGED
960 minute winter	S14	930	170.119	0.019	2.2	0.0215	0.0000	OK
960 minute winter	S13	930	170.631	0.031	2.2	0.0356	0.0000	OK
960 minute winter	S12	930	170.827	0.027	2.2	0.1216	0.0000	OK
960 minute winter	S9	930	173.315	1.265	5.8	4.3817	0.0000	SURCHARGED
960 minute winter	S8	930	173.315	1.165	2.8	2.9647	0.0000	SURCHARGED
960 minute winter	S15	930	165.618	0.018	2.2	0.0198	0.0000	OK
960 minute winter	S16	930	163.017	0.017	2.2	0.0000	0.0000	OK
960 minute winter	S11	930	173.315	1.315	4.6	4.5549	0.0000	SURCHARGED
360 minute winter	S5	344	175.922	0.922	7.3	4.1723	0.0000	SURCHARGED
360 minute winter	S2	344	175.922	0.772	2.3	1.9654	0.0000	OK
360 minute winter	TANK1	344	175.922	0.622	2.5	0.7038	0.0000	OK
360 minute winter	TANK2	344	175.922	0.722	4.8	0.8169	0.0000	SURCHARGED
960 minute winter	TANK3	930	173.315	1.015	1.2	1.1479	0.0000	OK
960 minute winter	TANK4	930	173.315	1.115	2.5	1.2610	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S3	S3-S4	S4	5.6	0.220	0.005	11.8816	
360 minute winter	S4	S4-S5	S5	7.3	0.263	0.006	8.7264	
360 minute winter	S1	S1-S2	S2	0.6	0.162	0.001	8.6886	
360 minute winter	S6	S6-S7	S7	1.8	0.920	0.018	0.0114	
960 minute winter	S7	S7-S9	S9	1.8	0.202	0.002	8.8259	
960 minute winter	S14	S14-S15	S15	2.2	1.407	0.014	0.0539	
960 minute winter	S13	S13-S14	S14	2.2	0.923	0.036	0.0856	
960 minute winter	S12	S12-S13	S13	2.2	0.745	0.030	0.0301	
960 minute winter	S9	S9-S10	S11	4.6	0.138	0.004	8.8278	
960 minute winter	S8	S8-S9	S9	2.0	0.124	0.002	22.8590	
960 minute winter	S15	S15-S16	S16	2.2	1.374	0.006	0.0446	251.9
960 minute winter	S11	Hydro-Brake®	S12	2.2				
360 minute winter	S5	Hydro-Brake®	S6	1.8				
360 minute winter	S2	S2-S4	S4	0.7	0.117	0.001	13.2699	
360 minute winter	TANK1	3.000	TANK2	-2.5	-0.011	0.000	31.0583	
360 minute winter	TANK2	3.001	S5	-4.8	-0.039	-0.008	0.8345	
960 minute winter	TANK3	5.000	TANK4	-1.2	-0.006	0.000	55.9094	
960 minute winter	TANK4	5.001	S11	-2.5	-0.019	-0.004	0.8125	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S3	456	176.384	1.283	6.9	3.2664	0.0000	SURCHARGED
480 minute winter	S4	456	176.384	1.333	10.4	4.6191	0.0000	SURCHARGED
480 minute winter	S1	456	176.384	1.183	1.5	3.0119	0.0000	SURCHARGED
480 minute winter	S6	456	174.924	0.024	2.2	0.0274	0.0000	OK
960 minute winter	S7	945	173.814	1.714	2.3	4.3621	0.0000	SURCHARGED
960 minute winter	S14	945	170.121	0.020	2.6	0.0232	0.0000	OK
960 minute winter	S13	945	170.634	0.034	2.6	0.0383	0.0000	OK
960 minute winter	S12	945	170.829	0.029	2.6	0.1310	0.0000	OK
960 minute winter	S9	945	173.814	1.764	7.6	6.1105	0.0000	SURCHARGED
960 minute winter	S8	945	173.814	1.664	3.6	4.2349	0.0000	SURCHARGED
960 minute winter	S15	945	165.619	0.019	2.6	0.0214	0.0000	OK
960 minute winter	S16	945	163.019	0.019	2.6	0.0000	0.0000	OK
960 minute winter	S11	945	173.814	1.814	7.3	6.2837	0.0000	SURCHARGED
480 minute winter	S5	456	176.384	1.383	8.3	6.2588	0.0000	SURCHARGED
480 minute winter	S2	456	176.384	1.233	2.3	3.1392	0.0000	SURCHARGED
480 minute winter	TANK1	456	176.384	1.083	3.0	1.2254	0.0000	OK
480 minute winter	TANK2	456	176.384	1.183	5.9	1.3385	0.0000	SURCHARGED
960 minute winter	TANK3	945	173.814	1.514	2.5	1.7123	0.0000	OK
960 minute winter	TANK4	945	173.814	1.614	5.0	1.8254	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S3	S3-S4	S4	5.8	0.204	0.006	12.1881	
480 minute winter	S4	S4-S5	S5	8.3	0.272	0.007	8.7645	
480 minute winter	S1	S1-S2	S2	0.7	0.162	0.001	9.7943	
480 minute winter	S6	S6-S7	S7	2.2	0.974	0.023	0.0131	
960 minute winter	S7	S7-S9	S9	2.2	0.213	0.002	8.8259	
960 minute winter	S14	S14-S15	S15	2.6	1.476	0.017	0.0601	
960 minute winter	S13	S13-S14	S14	2.6	0.965	0.042	0.0955	
960 minute winter	S12	S12-S13	S13	2.6	0.781	0.035	0.0335	
960 minute winter	S9	S9-S10	S11	7.3	0.143	0.006	8.8278	
960 minute winter	S8	S8-S9	S9	3.0	0.152	0.003	22.8590	
960 minute winter	S15	S15-S16	S16	2.6	1.443	0.008	0.0497	292.5
960 minute winter	S11	Hydro-Brake®	S12	2.6				
480 minute winter	S5	Hydro-Brake®	S6	2.2				
480 minute winter	S2	S2-S4	S4	1.5	0.120	0.001	13.9316	
480 minute winter	TANK1	3.000	TANK2	-3.0	-0.006	0.000	52.3666	
480 minute winter	TANK2	3.001	S5	-5.9	-0.037	-0.009	0.8345	
960 minute winter	TANK3	5.000	TANK4	-2.5	-0.003	0.000	82.1111	
960 minute winter	TANK4	5.001	S11	-5.0	-0.032	-0.008	0.8125	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S3	570	177.279	2.179	8.1	5.5461	0.0000	SURCHARGED
600 minute winter	S4	570	177.279	2.229	15.1	7.7221	0.0000	SURCHARGED
600 minute winter	S1	570	177.279	2.079	1.8	5.2916	0.0000	SURCHARGED
1440 minute winter	S6	1140	175.717	0.817	2.6	0.9243	0.0000	SURCHARGED
1440 minute winter	S7	1140	175.717	3.617	2.9	9.2053	0.0000	SURCHARGED
1440 minute winter	S14	1140	170.124	0.024	3.7	0.0274	0.0000	OK
1440 minute winter	S13	1140	170.640	0.040	3.7	0.0455	0.0000	OK
1440 minute winter	S12	1140	170.835	0.035	3.7	0.1561	0.0000	OK
1440 minute winter	S9	1140	175.717	3.667	8.7	12.7026	0.0000	SURCHARGED
1440 minute winter	S8	1140	175.717	3.567	3.7	9.0781	0.0000	SURCHARGED
1440 minute winter	S15	1140	165.622	0.022	3.7	0.0251	0.0000	OK
1440 minute winter	S16	1140	163.022	0.022	3.7	0.0000	0.0000	OK
1440 minute winter	S11	1140	175.717	3.717	8.4	12.8758	0.0000	FLOOD RISK
600 minute winter	S5	570	177.279	2.279	14.3	10.3113	0.0000	SURCHARGED
600 minute winter	S2	570	177.279	2.129	3.3	5.4189	0.0000	SURCHARGED
600 minute winter	TANK1	570	177.279	1.979	5.7	2.2385	0.0000	OK
600 minute winter	TANK2	570	177.279	2.079	11.3	2.3516	0.0000	SURCHARGED
1440 minute winter	TANK3	1140	175.717	3.417	2.8	3.8647	0.0000	SURCHARGED
1440 minute winter	TANK4	1140	175.717	3.517	5.6	3.9778	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S3	S3-S4	S4	7.5	0.213	0.007	12.1881	
600 minute winter	S4	S4-S5	S5	14.3	0.132	0.012	8.7645	
600 minute winter	S1	S1-S2	S2	1.2	0.161	0.001	9.7943	
1440 minute winter	S6	S6-S7	S7	2.6	1.021	0.027	0.2345	
1440 minute winter	S7	S7-S9	S9	2.7	0.198	0.002	8.8259	
1440 minute winter	S14	S14-S15	S15	3.7	1.638	0.024	0.0769	
1440 minute winter	S13	S13-S14	S14	3.7	1.069	0.059	0.1225	
1440 minute winter	S12	S12-S13	S13	3.7	0.862	0.050	0.0431	
1440 minute winter	S9	S9-S10	S11	8.4	0.111	0.007	8.8278	
1440 minute winter	S8	S8-S9	S9	3.4	0.137	0.003	22.8590	
1440 minute winter	S15	S15-S16	S16	3.7	1.606	0.011	0.0635	435.6
1440 minute winter	S11	Hydro-Brake®	S12	3.7				
600 minute winter	S5	Hydro-Brake®	S6	2.8				
600 minute winter	S2	S2-S4	S4	2.7	0.126	0.002	13.9316	
600 minute winter	TANK1	3.000	TANK2	-5.7	-0.007	0.000	93.7489	
600 minute winter	TANK2	3.001	S5	-11.3	-0.071	-0.018	0.8345	
1440 minute winter	TANK3	5.000	TANK4	-2.8	-0.004	0.000	110.3009	
1440 minute winter	TANK4	5.001	S11	-5.6	-0.036	-0.009	0.8125	