

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	40	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	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1L	0.017	5.00	165.000	450	446567.352	310029.082	1.350
S1	0.030	5.00	164.893	1200	446570.505	310034.186	1.725
S2			165.629	1200	446587.138	310023.913	2.576
S3	0.017	5.00	165.424	1200	446594.767	310009.925	2.465
S4	0.016	5.00	164.763	1200	446593.461	309993.083	1.903
S5	0.016	5.00	164.103	1200	446637.208	309972.578	1.527
S6L	0.105	5.00	164.500	450	446647.415	309964.142	1.650
S6	0.020	5.00	164.103	1200	446641.841	309961.210	1.725
S7L	0.047	5.00	162.950	450	446625.942	309939.776	1.350
S7	0.013	5.00	162.839	1500	446631.442	309937.380	1.725
S8	0.019	5.00	162.357	1200	446633.065	309929.036	1.725
S9L	0.034	5.00	161.950	450	446645.185	309926.758	1.500
S9			161.682	1200	446644.221	309922.363	1.725
S10			161.118	1200	446657.263	309919.500	1.725
S11L	0.102	5.00	160.500	450	446688.505	309927.040	1.400
S11	0.010	5.00	160.413	1500	446677.294	309922.761	1.483
S12	0.041	5.00	160.782	1500	446669.318	309920.398	2.200
HW1			157.975	1200	446676.195	309891.709	1.484
S13L	0.068	5.00	163.250	450	446573.828	309969.225	1.400
S13	0.048	5.00	163.111	1500	446579.305	309966.776	1.425
S14L	0.104	5.00	161.600	600	446560.465	309939.338	1.425
S14	0.039	5.00	161.465	1500	446565.942	309936.889	1.425
S15L	0.055	5.00	161.675	450	446571.136	309933.002	1.700
S15			161.025	1200	446569.092	309928.439	1.700
S16L	0.047	5.00	161.150	450	446615.067	309910.376	1.450
S16			160.675	1200	446612.735	309904.042	1.800
HW2			157.975	1200	446666.215	309888.224	1.484
HW3		5.00	157.975	1200	446691.086	309887.372	1.500
S17 FCU			158.375	2700	446694.580	309880.175	2.275
HW4			155.580	1200	446696.787	309871.760	0.350

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)
S1L	S1L	S1	5.999	0.600	163.650	163.243	0.407	14.7	150	5.04	50.0
1.000	S1	S2	19.550	0.600	163.168	163.053	0.115	170.0	225	5.36	50.0
1.001	S2	S3	15.933	0.600	163.053	162.959	0.094	170.0	225	5.63	50.0
1.002	S3	S4	16.893	0.600	162.959	162.860	0.099	170.0	225	5.91	50.0
1.003	S4	S5	48.314	0.600	162.860	162.576	0.284	170.0	225	6.72	50.0
1.004	S5	S6	12.276	0.600	162.576	162.418	0.158	77.7	225	6.85	50.0
S6L	S6L	S6	6.298	0.600	162.850	162.453	0.397	15.9	150	5.04	50.0
1.005	S6	S7	26.000	0.600	162.378	161.114	1.264	20.6	225	7.00	50.0
S7L	S7L	S7	5.999	0.600	161.600	161.189	0.411	14.6	150	5.04	50.0
1.006	S7	S8	8.500	0.600	161.114	160.632	0.482	17.6	225	7.05	50.0
1.007	S8	S9	12.999	0.600	160.632	159.957	0.675	19.3	225	7.12	50.0
S9L	S9L	S9	4.499	0.600	160.450	160.032	0.418	10.8	150	5.02	50.0
1.008	S9	S10	13.353	0.600	159.957	159.393	0.564	23.7	225	7.20	50.0
1.009	S10	S12	12.088	0.600	159.393	158.657	0.736	16.4	225	7.27	50.0
S11L	S11L	S11	12.000	0.600	159.100	159.005	0.095	126.3	150	5.22	50.0
2.000	S11	S12	8.319	0.600	158.930	158.657	0.273	30.5	225	5.28	50.0
1.010	S12	HW1	29.502	0.600	158.582	156.700	1.882	15.7	300	7.39	50.0
S13L	S13L	S13	6.000	0.600	161.850	161.761	0.089	67.4	150	5.08	50.0
3.000	S13	S14	32.738	0.600	161.686	160.040	1.646	19.9	225	5.27	50.0
S14L	S14L	S14	6.000	0.600	160.175	160.040	0.135	44.4	225	5.05	50.0
3.001	S14	S15	9.018	0.600	160.040	159.400	0.640	14.1	225	5.31	50.0
S15L	S15L	S15	5.000	0.600	159.975	159.475	0.500	10.0	150	5.03	50.0
3.002	S15	S16	49.999	0.600	159.325	158.875	0.450	111.1	300	5.87	50.0
S16L	S16L	S16	6.750	0.600	159.700	159.025	0.675	10.0	150	5.04	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
S1L	2.637	46.6	3.2	1.200	1.500	0.017	0.0	27	1.519
1.000	1.000	39.7	8.9	1.500	2.351	0.047	0.0	73	0.811
1.001	1.000	39.7	8.9	2.351	2.240	0.047	0.0	73	0.811
1.002	1.000	39.7	12.1	2.240	1.678	0.064	0.0	85	0.879
1.003	1.000	39.7	15.2	1.678	1.302	0.080	0.0	96	0.934
1.004	1.485	59.0	18.2	1.302	1.460	0.096	0.0	86	1.312
S6L	2.541	44.9	19.9	1.500	1.500	0.105	0.0	70	2.468
1.005	2.898	115.2	41.9	1.500	1.500	0.221	0.0	94	2.673
S7L	2.650	46.8	8.9	1.200	1.500	0.047	0.0	44	2.047
1.006	3.130	124.5	53.3	1.500	1.500	0.281	0.0	102	3.008
1.007	2.995	119.1	56.9	1.500	1.500	0.300	0.0	109	2.961
S9L	3.088	54.6	6.5	1.350	1.500	0.034	0.0	35	2.087
1.008	2.700	107.4	63.4	1.500	1.500	0.334	0.0	124	2.807
1.009	3.244	129.0	63.4	1.500	1.900	0.334	0.0	111	3.229
S11L	0.892	15.8	19.4	1.250	1.258	0.102	0.0	150	0.909
2.000	2.378	94.6	21.3	1.258	1.900	0.112	0.0	73	1.932
1.010	3.990	282.0	92.4	1.900	0.975	0.487	0.0	118	3.589
S13L	1.226	21.7	12.9	1.250	1.200	0.068	0.0	83	1.279
3.000	2.947	117.2	22.0	1.200	1.200	0.116	0.0	65	2.269
S14L	1.967	78.2	19.7	1.200	1.200	0.104	0.0	77	1.647
3.001	3.504	139.3	49.1	1.200	1.400	0.259	0.0	92	3.204
S15L	3.204	56.6	10.4	1.550	1.400	0.055	0.0	44	2.458
3.002	1.491	105.4	59.6	1.400	1.500	0.314	0.0	161	1.534
S16L	3.204	56.6	8.9	1.300	1.500	0.047	0.0	40	2.347

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)
3.005	S16	HW2	55.770	0.600	158.875	156.700	2.175	25.6	300	6.17	50.0
1.011	HW3	S17 FCU	8.000	0.600	156.475	156.100	0.375	21.3	225	5.05	50.0
1.012	S17 FCU	HW4	8.700	0.600	156.100	155.230	0.870	10.0	225	5.08	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
3.005	3.117	220.3	68.5	1.500	0.975	0.361	0.0	115	2.763
1.011	2.845	113.1	0.0	1.275	2.050	0.000	0.0	0	0.000
1.012	4.161	165.5	0.0	2.050	0.125	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)
S1L	5.999	14.7	150	Circular_Default Sewer Type	165.000	163.650	1.200	164.893	163.243	1.500
1.000	19.550	170.0	225	Circular_Default Sewer Type	164.893	163.168	1.500	165.629	163.053	2.351
1.001	15.933	170.0	225	Circular_Default Sewer Type	165.629	163.053	2.351	165.424	162.959	2.240
1.002	16.893	170.0	225	Circular_Default Sewer Type	165.424	162.959	2.240	164.763	162.860	1.678
1.003	48.314	170.0	225	Circular_Default Sewer Type	164.763	162.860	1.678	164.103	162.576	1.302
1.004	12.276	77.7	225	Circular_Default Sewer Type	164.103	162.576	1.302	164.103	162.418	1.460
S6L	6.298	15.9	150	Circular_Default Sewer Type	164.500	162.850	1.500	164.103	162.453	1.500
1.005	26.000	20.6	225	Circular_Default Sewer Type	164.103	162.378	1.500	162.839	161.114	1.500
S7L	5.999	14.6	150	Circular_Default Sewer Type	162.950	161.600	1.200	162.839	161.189	1.500
1.006	8.500	17.6	225	Circular_Default Sewer Type	162.839	161.114	1.500	162.357	160.632	1.500
1.007	12.999	19.3	225	Circular_Default Sewer Type	162.357	160.632	1.500	161.682	159.957	1.500
S9L	4.499	10.8	150	Circular_Default Sewer Type	161.950	160.450	1.350	161.682	160.032	1.500
1.008	13.353	23.7	225	Circular_Default Sewer Type	161.682	159.957	1.500	161.118	159.393	1.500
1.009	12.088	16.4	225	Circular_Default Sewer Type	161.118	159.393	1.500	160.782	158.657	1.900
S11L	12.000	126.3	150	Circular_Default Sewer Type	160.500	159.100	1.250	160.413	159.005	1.258
2.000	8.319	30.5	225	Circular_Default Sewer Type	160.413	158.930	1.258	160.782	158.657	1.900
1.010	29.502	15.7	300	Circular_Default Sewer Type	160.782	158.582	1.900	157.975	156.700	0.975

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S1L	S1L	450	Manhole	Adoptable	S1	1200	Manhole	Adoptable
1.000	S1	1200	Manhole	Adoptable	S2	1200	Manhole	Adoptable
1.001	S2	1200	Manhole	Adoptable	S3	1200	Manhole	Adoptable
1.002	S3	1200	Manhole	Adoptable	S4	1200	Manhole	Adoptable
1.003	S4	1200	Manhole	Adoptable	S5	1200	Manhole	Adoptable
1.004	S5	1200	Manhole	Adoptable	S6	1200	Manhole	Adoptable
S6L	S6L	450	Manhole	Adoptable	S6	1200	Manhole	Adoptable
1.005	S6	1200	Manhole	Adoptable	S7	1500	Manhole	Adoptable
S7L	S7L	450	Manhole	Adoptable	S7	1500	Manhole	Adoptable
1.006	S7	1500	Manhole	Adoptable	S8	1200	Manhole	Adoptable
1.007	S8	1200	Manhole	Adoptable	S9	1200	Manhole	Adoptable
S9L	S9L	450	Manhole	Adoptable	S9	1200	Manhole	Adoptable
1.008	S9	1200	Manhole	Adoptable	S10	1200	Manhole	Adoptable
1.009	S10	1200	Manhole	Adoptable	S12	1500	Manhole	Adoptable
S11L	S11L	450	Manhole	Adoptable	S11	1500	Manhole	Adoptable
2.000	S11	1500	Manhole	Adoptable	S12	1500	Manhole	Adoptable
1.010	S12	1500	Manhole	Adoptable	HW1	1200	Manhole	Adoptable

Pipeline Schedule

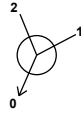
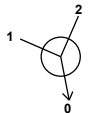
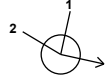
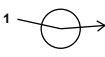
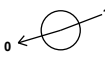
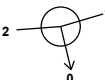
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
S13L	6.000	67.4	150	Circular_Default Sewer Type	163.250	161.850	1.250	163.111	161.761	1.200
3.000	32.738	19.9	225	Circular_Default Sewer Type	163.111	161.686	1.200	161.465	160.040	1.200
S14L	6.000	44.4	225	Circular_Default Sewer Type	161.600	160.175	1.200	161.465	160.040	1.200
3.001	9.018	14.1	225	Circular_Default Sewer Type	161.465	160.040	1.200	161.025	159.400	1.400
S15L	5.000	10.0	150	Circular_Default Sewer Type	161.675	159.975	1.550	161.025	159.475	1.400
3.002	49.999	111.1	300	Circular_Default Sewer Type	161.025	159.325	1.400	160.675	158.875	1.500
S16L	6.750	10.0	150	Circular_Default Sewer Type	161.150	159.700	1.300	160.675	159.025	1.500
3.005	55.770	25.6	300	Circular_Default Sewer Type	160.675	158.875	1.500	157.975	156.700	0.975
1.011	8.000	21.3	225	Circular_Default Sewer Type	157.975	156.475	1.275	158.375	156.100	2.050
1.012	8.700	10.0	225	Circular_Default Sewer Type	158.375	156.100	2.050	155.580	155.230	0.125

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S13L	S13L	450	Manhole	Adoptable	S13	1500	Manhole	Adoptable
3.000	S13	1500	Manhole	Adoptable	S14	1500	Manhole	Adoptable
S14L	S14L	600	Manhole	Adoptable	S14	1500	Manhole	Adoptable
3.001	S14	1500	Manhole	Adoptable	S15	1200	Manhole	Adoptable
S15L	S15L	450	Manhole	Adoptable	S15	1200	Manhole	Adoptable
3.002	S15	1200	Manhole	Adoptable	S16	1200	Manhole	Adoptable
S16L	S16L	450	Manhole	Adoptable	S16	1200	Manhole	Adoptable
3.005	S16	1200	Manhole	Adoptable	HW2	1200	Manhole	Adoptable
1.011	HW3	1200	Manhole	Adoptable	S17 FCU	2700	Manhole	Adoptable
1.012	S17 FCU	2700	Manhole	Adoptable	HW4	1200	Manhole	Adoptable

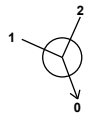
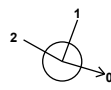
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1L	446567.352	310029.082	165.000	1.350	450					
						0	S1L	163.650	150	
S1	446570.505	310034.186	164.893	1.725	1200		1	S1L	163.243	150
						0	1.000	163.168	225	
S2	446587.138	310023.913	165.629	2.576	1200		1	1.000	163.053	225
						0	1.001	163.053	225	
S3	446594.767	310009.925	165.424	2.465	1200		1	1.001	162.959	225
						0	1.002	162.959	225	
S4	446593.461	309993.083	164.763	1.903	1200		1	1.002	162.860	225
						0	1.003	162.860	225	
S5	446637.208	309972.578	164.103	1.527	1200		1	1.003	162.576	225
						0	1.004	162.576	225	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S6L	446647.415	309964.142	164.500	1.650	450		0	S6L	162.850	150
S6	446641.841	309961.210	164.103	1.725	1200		1	S6L	162.453	150
							2	1.004	162.418	225
							0	1.005	162.378	225
S7L	446625.942	309939.776	162.950	1.350	450		0	S7L	161.600	150
S7	446631.442	309937.380	162.839	1.725	1500		1	S7L	161.189	150
							2	1.005	161.114	225
							0	1.006	161.114	225
S8	446633.065	309929.036	162.357	1.725	1200		1	1.006	160.632	225
							0	1.007	160.632	225
S9L	446645.185	309926.758	161.950	1.500	450		0	S9L	160.450	150
S9	446644.221	309922.363	161.682	1.725	1200		1	S9L	160.032	150
							2	1.007	159.957	225
							0	1.008	159.957	225
S10	446657.263	309919.500	161.118	1.725	1200		1	1.008	159.393	225
							0	1.009	159.393	225
S11L	446688.505	309927.040	160.500	1.400	450		0	S11L	159.100	150
S11	446677.294	309922.761	160.413	1.483	1500		1	S11L	159.005	150
							0	2.000	158.930	225
S12	446669.318	309920.398	160.782	2.200	1500		1	2.000	158.657	225
							2	1.009	158.657	225
							0	1.010	158.582	300
HW1	446676.195	309891.709	157.975	1.484	1200		1	1.010	156.700	300
S13L	446573.828	309969.225	163.250	1.400	450		0	S13L	161.850	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S13	446579.305	309966.776	163.111	1.425	1500		1	S13L 161.761	150	
						0	3.000	161.686	225	
S14L	446560.465	309939.338	161.600	1.425	600		0	S14L 160.175	225	
S14	446565.942	309936.889	161.465	1.425	1500		1	S14L 160.040	225	
						2	3.000	160.040	225	
						0	3.001	160.040	225	
S15L	446571.136	309933.002	161.675	1.700	450		0	S15L 159.975	150	
S15	446569.092	309928.439	161.025	1.700	1200		1	S15L 159.475	150	
						2	3.001	159.400	225	
						0	3.002	159.325	300	
S16L	446615.067	309910.376	161.150	1.450	450		0	S16L 159.700	150	
S16	446612.735	309904.042	160.675	1.800	1200		1	S16L 159.025	150	
						2	3.002	158.875	300	
						0	3.005	158.875	300	
HW2	446666.215	309888.224	157.975	1.484	1200		1	3.005	156.700	300
HW3	446691.086	309887.372	157.975	1.500	1200		0	1.011	156.475	225
S17 FCU	446694.580	309880.175	158.375	2.275	2700		1	1.011	156.100	225
						0	1.012	156.100	225	
HW4	446696.787	309871.760	155.580	0.350	1200		1	1.012	155.230	225

Simulation Settings

Rainfall Methodology FSR
Rainfall Events Singular
FSR Region England and Wales
M5-60 (mm) 20.000
Ratio-R 0.400
Summer CV 0.750

Winter CV 0.840
Analysis Speed Detailed
Skip Steady State x
Drain Down Time (mins) 240
Additional Storage (m³/ha) 0.0
Starting Level (m)



Simulation Settings

Check Discharge Rate(s) x | 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	40	0	0

Node S17 FCU Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	156.100	Product Number	CTL-SHE-0135-9700-1575-9700
Design Depth (m)	1.575	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	9.7	Min Node Diameter (mm)	0

Node HW1 Online Orifice Control

Flap Valve	x	Invert Level (m)	156.491	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.375		

Node HW2 Online Orifice Control

Flap Valve	x	Invert Level (m)	156.491	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.450		

Node HW3 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	16.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	156.475	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW2 | HW1

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	202.1	0.0	0.400	297.8	0.0	0.800	402.5	0.0	1.200	516.2	0.0
0.100	225.2	0.0	0.500	323.1	0.0	0.900	430.1	0.0	1.300	546.1	0.0
0.200	248.8	0.0	0.600	349.0	0.0	1.000	458.2	0.0	1.400	576.5	0.0
0.300	273.0	0.0	0.700	375.4	0.0	1.100	486.9	0.0	1.500	607.5	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1L	10	163.674	0.024	2.4	0.0038	0.0000	OK
15 minute winter	S1	10	163.231	0.063	6.6	0.0715	0.0000	OK
15 minute winter	S2	11	163.115	0.062	6.5	0.0705	0.0000	OK
15 minute winter	S3	11	163.034	0.075	8.8	0.0845	0.0000	OK
15 minute winter	S4	11	162.942	0.082	10.9	0.0929	0.0000	OK
15 minute winter	S5	11	162.651	0.075	13.0	0.0848	0.0000	OK
15 minute winter	S6L	10	162.916	0.066	14.8	0.0104	0.0000	OK
15 minute winter	S6	11	162.455	0.077	29.3	0.0872	0.0000	OK
15 minute winter	S7L	10	161.641	0.041	6.6	0.0064	0.0000	OK
15 minute winter	S7	11	161.207	0.093	37.3	0.1641	0.0000	OK
15 minute winter	S8	11	160.726	0.094	39.8	0.1058	0.0000	OK
15 minute winter	S9L	10	160.482	0.032	4.8	0.0050	0.0000	OK
15 minute winter	S9	11	160.067	0.110	44.4	0.1249	0.0000	OK
15 minute winter	S10	11	159.493	0.100	44.4	0.1127	0.0000	OK
15 minute winter	S11L	10	159.221	0.121	14.4	0.0193	0.0000	OK
15 minute winter	S11	10	158.996	0.066	15.5	0.1171	0.0000	OK
15 minute winter	S12	11	158.684	0.102	65.1	0.1802	0.0000	OK
15 minute winter	HW1	11	156.746	0.255	65.4	0.2884	0.0000	OK
15 minute winter	S13L	10	161.927	0.077	9.6	0.0123	0.0000	OK
15 minute winter	S13	10	161.742	0.056	16.3	0.0994	0.0000	OK
15 minute winter	S14L	10	160.248	0.073	14.7	0.0206	0.0000	OK
15 minute winter	S14	10	160.126	0.086	36.3	0.1521	0.0000	OK
15 minute winter	S15L	10	160.016	0.041	7.8	0.0064	0.0000	OK
15 minute winter	S15	10	159.468	0.143	43.6	0.1614	0.0000	OK
15 minute winter	S16L	10	159.736	0.036	6.6	0.0058	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	S1L	S1L	S1	2.4	1.353	0.051	0.0106	
15 minute winter	S1	1.000	S2	6.5	0.724	0.164	0.1760	
15 minute winter	S2	1.001	S3	6.5	0.637	0.163	0.1629	
15 minute winter	S3	1.002	S4	8.8	0.720	0.223	0.2078	
15 minute winter	S4	1.003	S5	10.9	0.883	0.274	0.5957	
15 minute winter	S5	1.004	S6	12.7	1.149	0.216	0.1361	
15 minute winter	S6L	S6L	S6	14.7	2.129	0.328	0.0436	
15 minute winter	S6	1.005	S7	29.3	2.140	0.255	0.3569	
15 minute winter	S7L	S7L	S7	6.6	1.790	0.140	0.0220	
15 minute winter	S7	1.006	S8	37.3	2.406	0.300	0.1319	
15 minute winter	S8	1.007	S9	39.9	2.282	0.335	0.2272	
15 minute winter	S9L	S9L	S9	4.8	1.780	0.088	0.0127	
15 minute winter	S9	1.008	S10	44.4	2.448	0.414	0.2425	
15 minute winter	S10	1.009	S12	44.5	2.789	0.345	0.1930	
15 minute winter	S11L	S11L	S11	14.1	0.970	0.893	0.1746	
15 minute winter	S11	2.000	S12	15.3	1.667	0.162	0.0767	
15 minute winter	S12	1.010	HW1	65.4	3.195	0.232	0.6038	
15 minute winter	HW1	Flow through pond	HW3	72.2	0.134	0.002	43.0373	
15 minute winter	S13L	S13L	S13	9.5	1.113	0.439	0.0512	
15 minute winter	S13	3.000	S14	16.2	1.502	0.138	0.3551	
15 minute winter	S14L	S14L	S14	14.6	1.171	0.187	0.0750	
15 minute winter	S14	3.001	S15	35.9	2.754	0.257	0.1175	
15 minute winter	S15L	S15L	S15	7.8	2.133	0.137	0.0182	
15 minute winter	S15	3.002	S16	43.3	1.643	0.411	1.3213	
15 minute winter	S16L	S16L	S16	6.6	2.066	0.116	0.0214	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S16	11	158.974	0.099	49.5	0.1116	0.0000	OK
60 minute winter	HW2	60	156.739	0.248	26.3	0.2802	0.0000	OK
60 minute winter	HW3	59	156.738	0.263	48.1	0.2977	0.0000	SURCHARGED
60 minute winter	S17 FCU	60	156.734	0.634	22.6	3.6301	0.0000	SURCHARGED
15 minute summer	HW4	1	155.230	0.000	9.7	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	S16	3.005	HW2	49.9	2.518	0.227	1.1061	
60 minute winter	HW2	Flow through pond	HW3	48.1	0.076	0.001	59.3125	
60 minute winter	HW3	1.011	S17 FCU	22.6	1.159	0.200	0.3182	
60 minute winter	S17 FCU	Hydro-Brake®	HW4	9.7				90.7

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1L	10	163.688	0.038	5.9	0.0061	0.0000	OK
15 minute winter	S1	10	163.273	0.105	16.3	0.1182	0.0000	OK
15 minute winter	S2	11	163.157	0.104	16.0	0.1176	0.0000	OK
15 minute winter	S3	11	163.086	0.127	21.6	0.1441	0.0000	OK
15 minute winter	S4	11	163.000	0.139	26.9	0.1577	0.0000	OK
15 minute winter	S5	11	162.705	0.129	32.1	0.1460	0.0000	OK
15 minute winter	S6L	10	162.976	0.126	36.3	0.0200	0.0000	OK
15 minute winter	S6	10	162.507	0.129	72.6	0.1458	0.0000	OK
15 minute winter	S7L	10	161.663	0.063	16.3	0.0100	0.0000	OK
15 minute winter	S7	11	161.309	0.195	92.3	0.3448	0.0000	OK
15 minute winter	S8	11	160.959	0.327	97.3	0.3693	0.0000	SURCHARGED
15 minute winter	S9L	10	160.497	0.047	11.8	0.0075	0.0000	OK
15 minute winter	S9	11	160.351	0.394	106.5	0.4460	0.0000	SURCHARGED
15 minute winter	S10	12	159.580	0.187	105.2	0.2112	0.0000	OK
15 minute winter	S11L	10	159.699	0.599	35.3	0.0952	0.0000	SURCHARGED
15 minute winter	S11	11	159.042	0.112	37.5	0.1975	0.0000	OK
15 minute winter	S12	11	158.740	0.157	155.6	0.2782	0.0000	OK
120 minute winter	HW1	120	157.170	0.679	52.6	0.7678	0.0000	OK
15 minute winter	S13L	10	162.049	0.199	23.5	0.0316	0.0000	SURCHARGED
15 minute winter	S13	10	161.776	0.089	39.7	0.1581	0.0000	OK
15 minute winter	S14L	10	160.305	0.130	36.0	0.0369	0.0000	OK
15 minute winter	S14	10	160.188	0.148	88.7	0.2610	0.0000	OK
15 minute winter	S15L	10	160.036	0.061	19.0	0.0097	0.0000	OK
15 minute winter	S15	11	159.594	0.269	106.8	0.3043	0.0000	OK
15 minute winter	S16L	10	159.760	0.060	16.3	0.0096	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	S1L	S1L	S1	5.9	1.731	0.126	0.0203	
15 minute winter	S1	1.000	S2	16.0	0.892	0.404	0.3515	
15 minute winter	S2	1.001	S3	15.9	0.774	0.400	0.3274	
15 minute winter	S3	1.002	S4	21.7	0.884	0.545	0.4141	
15 minute winter	S4	1.003	S5	26.9	1.090	0.677	1.1933	
15 minute winter	S5	1.004	S6	31.7	1.432	0.537	0.2718	
15 minute winter	S6L	S6L	S6	36.1	2.513	0.803	0.0898	
15 minute winter	S6	1.005	S7	72.7	2.517	0.631	0.7811	
15 minute winter	S7L	S7L	S7	16.3	2.077	0.347	0.0647	
15 minute winter	S7	1.006	S8	90.9	2.719	0.730	0.3245	
15 minute winter	S8	1.007	S9	95.4	2.542	0.801	0.5170	
15 minute winter	S9L	S9L	S9	11.8	1.792	0.216	0.0503	
15 minute winter	S9	1.008	S10	105.2	2.733	0.980	0.5008	
15 minute winter	S10	1.009	S12	105.6	3.278	0.819	0.3875	
15 minute winter	S11L	S11L	S11	34.0	1.933	2.158	0.2091	
15 minute winter	S11	2.000	S12	37.5	2.070	0.396	0.1507	
15 minute winter	S12	1.010	HW1	155.5	3.545	0.551	1.5911	
120 minute winter	HW1	Flow through pond	HW3	50.1	0.071	0.001	195.7132	
15 minute winter	S13L	S13L	S13	23.1	1.313	1.066	0.1031	
15 minute winter	S13	3.000	S14	39.4	1.858	0.336	0.6927	
15 minute winter	S14L	S14L	S14	35.8	1.391	0.458	0.1544	
15 minute winter	S14	3.001	S15	87.9	2.906	0.631	0.2875	
15 minute winter	S15L	S15L	S15	19.0	2.448	0.335	0.0536	
15 minute winter	S15	3.002	S16	106.1	1.986	1.007	2.6469	
15 minute winter	S16L	S16L	S16	16.2	2.607	0.287	0.0420	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S16	11	159.039	0.164	121.5	0.1850	0.0000	OK
120 minute winter	HW2	122	157.170	0.679	39.2	0.7677	0.0000	OK
120 minute winter	HW3	122	157.170	0.695	50.1	0.7856	0.0000	SURCHARGED
120 minute winter	S17 FCU	122	157.167	1.067	16.7	6.1071	0.0000	SURCHARGED
15 minute summer	HW4	1	155.230	0.000	9.7	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	S16	3.005	HW2	123.8	3.118	0.562	2.2921	
120 minute winter	HW2	Flow through pond	HW3	50.1	0.071	0.001	195.7132	
120 minute winter	HW3	1.011	S17 FCU	16.7	1.170	0.148	0.3182	
120 minute winter	S17 FCU	Hydro-Brake®	HW4	9.7				174.8

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1L	13	164.024	0.373	10.7	0.0594	0.0000	SURCHARGED
15 minute winter	S1	13	164.014	0.846	29.6	0.9565	0.0000	SURCHARGED
15 minute winter	S2	13	163.990	0.937	30.6	1.0598	0.0000	SURCHARGED
15 minute winter	S3	13	163.969	1.010	35.0	1.1418	0.0000	SURCHARGED
15 minute winter	S4	13	163.928	1.068	42.2	1.2081	0.0000	SURCHARGED
15 minute winter	S5	13	163.767	1.191	47.2	1.3473	0.0000	SURCHARGED
15 minute winter	S6L	12	164.496	1.646	66.0	0.2616	0.0000	FLOOD RISK
15 minute winter	S6	13	163.689	1.311	95.7	1.4825	0.0000	SURCHARGED
15 minute winter	S7L	12	162.912	1.312	29.5	0.2086	0.0000	FLOOD RISK
15 minute winter	S7	13	162.800	1.686	118.7	2.9799	0.0000	FLOOD RISK
15 minute winter	S8	13	162.179	1.547	121.9	1.7492	0.0000	FLOOD RISK
15 minute winter	S9L	12	161.256	0.806	21.4	0.1281	0.0000	SURCHARGED
15 minute winter	S9	13	161.214	1.257	135.6	1.4215	0.0000	SURCHARGED
15 minute winter	S10	13	159.988	0.595	134.4	0.6733	0.0000	SURCHARGED
15 minute winter	S11L	10	160.500	1.400	64.1	0.2226	1.0519	FLOOD
15 minute winter	S11	10	159.084	0.154	59.7	0.2723	0.0000	OK
15 minute winter	S12	12	158.806	0.224	212.6	0.3958	0.0000	OK
240 minute winter	HW1	236	157.689	1.198	57.2	1.3549	0.0000	OK
15 minute winter	S13L	10	162.394	0.544	42.7	0.0865	0.0000	SURCHARGED
15 minute winter	S13	12	161.969	0.283	71.9	0.5008	0.0000	SURCHARGED
15 minute winter	S14L	11	161.547	1.372	65.4	0.3883	0.0000	FLOOD RISK
15 minute winter	S14	12	161.422	1.382	151.0	2.4424	0.0000	FLOOD RISK
15 minute winter	S15L	12	160.669	0.694	34.6	0.1103	0.0000	SURCHARGED
15 minute winter	S15	12	160.471	1.146	169.8	1.2959	0.0000	SURCHARGED
15 minute winter	S16L	10	159.788	0.088	29.5	0.0140	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	S1L	S1L	S1	10.7	1.731	0.229	0.1056	
15 minute winter	S1	1.000	S2	30.6	0.985	0.769	0.7775	
15 minute winter	S2	1.001	S3	24.9	0.822	0.627	0.6337	
15 minute winter	S3	1.002	S4	33.0	0.949	0.829	0.6719	
15 minute winter	S4	1.003	S5	40.8	1.178	1.026	1.9215	
15 minute winter	S5	1.004	S6	49.5	1.563	0.838	0.4882	
15 minute winter	S6L	S6L	S6	58.4	3.316	1.300	0.1109	
15 minute winter	S6	1.005	S7	88.1	2.452	0.764	1.0340	
15 minute winter	S7L	S7L	S7	23.3	2.056	0.498	0.1056	
15 minute winter	S7	1.006	S8	112.6	2.832	0.905	0.3381	
15 minute winter	S8	1.007	S9	120.5	3.029	1.012	0.5170	
15 minute winter	S9L	S9L	S9	17.1	1.893	0.313	0.0792	
15 minute winter	S9	1.008	S10	134.4	3.380	1.252	0.5311	
15 minute winter	S10	1.009	S12	134.6	3.385	1.044	0.4807	
15 minute winter	S11L	S11L	S11	53.4	3.036	3.389	0.2091	
15 minute winter	S11	2.000	S12	59.7	2.273	0.631	0.2328	
15 minute winter	S12	1.010	HW1	211.6	3.450	0.750	1.8710	
240 minute winter	HW1	Flow through pond	HW3	54.4	0.058	0.002	425.8692	
15 minute winter	S13L	S13L	S13	41.7	2.367	1.923	0.1056	
15 minute winter	S13	3.000	S14	68.3	1.841	0.583	1.3020	
15 minute winter	S14L	S14L	S14	58.3	1.465	0.745	0.2386	
15 minute winter	S14	3.001	S15	139.7	3.514	1.003	0.3587	
15 minute winter	S15L	S15L	S15	30.0	2.440	0.531	0.0880	
15 minute winter	S15	3.002	S16	165.9	2.469	1.574	3.1096	
15 minute winter	S16L	S16L	S16	29.4	2.974	0.519	0.0667	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S16	12	159.090	0.215	189.3	0.2429	0.0000	OK
240 minute winter	HW2	236	157.689	1.198	42.4	1.3545	0.0000	OK
240 minute winter	HW3	236	157.689	1.213	54.4	1.3725	0.0000	FLOOD RISK
240 minute winter	S17 FCU	240	157.684	1.584	14.7	9.0703	0.0000	SURCHARGED
15 minute summer	HW4	1	155.230	0.000	9.7	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	S16	3.005	HW2	189.3	3.168	0.859	3.4686	
240 minute winter	HW2	Flow through pond	HW3	54.4	0.058	0.002	425.8692	
240 minute winter	HW3	1.011	S17 FCU	14.7	1.083	0.130	0.3182	
240 minute winter	S17 FCU	Hydro-Brake®	HW4	9.7				257.2