



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	250.0
Additional Flow (%)	10	Minimum Velocity (m/s)	0.75
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)	0.550
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
29	0.007	5.00	22.825	600	475193.006	107838.784	0.650
28			22.800		475193.006	107841.296	0.650
27	0.004	5.00	24.000		475174.524	107860.788	0.650
26	0.008	5.00	24.825		475154.287	107859.635	0.650
25	0.005	5.00	25.000		475155.850	107866.998	0.650
24			25.150	600	475155.855	107869.784	0.827
23	0.004	5.00	25.200	600	475159.655	107872.940	0.925
22	0.004	5.00	25.000	600	475166.839	107872.940	0.794
21	0.014	5.00	24.600		475198.330	107871.863	0.650
20	0.015	5.00	24.600	600	475183.710	107871.863	0.840
19	0.008	5.00	24.750	600	475171.658	107871.863	1.105
18			23.900	600	475171.658	107858.622	0.700
17	0.012	5.00	23.100	600	475171.658	107844.069	0.700
16			23.000		475174.995	107844.069	0.700
15	0.014	5.00	23.100		475155.833	107838.784	0.650
14	0.005	5.00	21.950		475200.033	107824.975	0.650
13	0.005	5.00	22.950		475156.339	107824.975	0.650
12	0.017	5.00	22.775	600	475183.422	107824.975	1.684
11	0.015	5.00	22.825	600	475183.422	107838.784	1.866
10	0.007	5.00	22.975	600	475175.546	107838.784	2.061
9			23.000		475175.546	107841.296	2.101
8	0.003	5.00	24.400		475182.700	107859.751	0.650
7	0.006	5.00	23.800	600	475198.584	107859.751	0.650
6	0.009	5.00	22.825	600	475198.584	107844.073	0.650
5			22.850		475194.766	107844.073	0.712
4			22.850		475187.192	107841.296	2.050
3			22.825	1200	475187.191	107839.207	2.032
2			21.900	600	475187.192	107819.334	1.173
1			21.250	600	475205.319	107813.714	0.586



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)
1.008	2	1	18.978	0.600	20.727	20.664	0.063	300.0	225	7.27	59.2
1.007	3	2	19.873	0.600	20.793	20.727	0.066	300.0	225	6.85	60.9
1.006	4	3	2.089	0.600	20.800	20.793	0.007	300.0	225	6.41	62.9
9.001	28	4	5.814	0.600	22.150	22.094	0.056	103.8	100	5.18	69.2
8.003	5	4	8.067	0.600	22.138	22.061	0.077	104.8	100	5.57	67.0
1.005	16	4	12.508	0.600	22.300	22.150	0.150	83.4	150	5.97	65.0
5.004	9	4	11.646	0.600	20.899	20.850	0.049	237.7	150	6.36	63.1
5.003	10	9	2.512	0.600	20.914	20.899	0.015	167.5	150	6.06	64.5
5.002	11	10	7.876	0.600	20.959	20.914	0.045	175.0	150	6.01	64.8
7.000	15	10	19.713	0.600	22.450	22.262	0.188	104.9	100	5.44	67.8
5.001	12	11	13.809	0.600	21.091	20.959	0.132	104.6	150	5.84	65.7
6.000	14	12	16.611	0.600	21.300	21.141	0.159	104.5	100	5.37	68.1
5.000	13	12	27.083	0.600	22.300	22.041	0.259	104.6	100	5.60	66.9
1.004	17	16	3.337	0.600	22.400	22.300	0.100	33.4	150	5.78	65.9
1.003	18	17	14.553	0.600	23.200	22.400	0.800	18.2	150	5.75	66.1
4.000	27	18	3.592	0.600	23.350	23.250	0.100	35.9	100	5.05	70.0
3.000	26	18	17.401	0.600	24.175	23.250	0.925	18.8	100	5.16	69.3
1.002	19	18	13.241	0.600	23.645	23.200	0.445	29.8	150	5.65	66.6
1.001	20	19	12.052	0.600	23.760	23.645	0.115	104.8	150	5.53	67.3
2.003	22	19	4.938	0.600	24.206	24.100	0.106	46.6	100	5.40	68.0
2.002	23	22	7.184	0.600	24.275	24.206	0.069	104.1	100	5.33	68.4
2.001	24	23	4.940	0.600	24.323	24.275	0.048	102.9	100	5.17	69.3
2.000	25	24	2.786	0.600	24.350	24.323	0.027	103.2	100	5.06	69.9
1.000	21	20	14.620	0.600	23.950	23.810	0.140	104.4	100	5.32	68.4

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.008	0.750	29.8	28.6	0.948	0.361	0.162	0.0
1.007	0.750	29.8	29.4	1.807	0.948	0.162	0.0
1.006	0.750	29.8	30.4	1.825	1.807	0.162	0.0
9.001	0.754	5.9	1.4	0.550	0.656	0.007	0.0
8.003	0.751	5.9	3.6	0.612	0.689	0.018	0.0
1.005	1.101	19.5	14.3	0.550	0.550	0.074	0.0
5.004	0.647	11.4	11.9	1.951	1.850	0.063	0.0
5.003	0.774	13.7	12.1	1.911	1.951	0.063	0.0
5.002	0.756	13.4	8.1	1.716	1.911	0.042	0.0
7.000	0.750	5.9	2.8	0.550	0.613	0.014	0.0
5.001	0.982	17.4	5.3	1.534	1.716	0.027	0.0
6.000	0.752	5.9	1.0	0.550	1.534	0.005	0.0
5.000	0.751	5.9	1.0	0.550	0.634	0.005	0.0
1.004	1.748	30.9	14.5	0.550	0.550	0.074	0.0
1.003	2.372	41.9	12.2	0.550	0.550	0.062	0.0
4.000	1.291	10.1	0.8	0.550	0.550	0.004	0.0
3.000	1.789	14.0	1.7	0.550	0.550	0.008	0.0
1.002	1.852	32.7	9.9	0.955	0.550	0.050	0.0
1.001	0.981	17.3	5.8	0.690	0.955	0.029	0.0
2.003	1.132	8.9	2.6	0.694	0.550	0.013	0.0
2.002	0.753	5.9	1.8	0.825	0.694	0.009	0.0
2.001	0.758	5.9	1.0	0.727	0.825	0.005	0.0
2.000	0.757	5.9	1.0	0.550	0.727	0.005	0.0
1.000	0.752	5.9	2.9	0.550	0.690	0.014	0.0



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)
8.002	6	5	3.818	0.600	22.175	22.138	0.037	103.2	100	5.39	68.0
8.001	7	6	15.678	0.600	23.150	22.175	0.975	16.1	100	5.31	68.5
8.000	8	7	15.884	0.600	23.750	23.150	0.600	26.5	100	5.18	69.2
9.000	29	28	2.512	0.600	22.175	22.150	0.025	100.5	100	5.05	69.9

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
8.002	0.757	5.9	3.6	0.550	0.612	0.018	0.0
8.001	1.936	15.2	1.8	0.550	0.550	0.009	0.0
8.000	1.506	11.8	0.6	0.550	0.550	0.003	0.0
9.000	0.767	6.0	1.5	0.550	0.550	0.007	0.0

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)
1.008	18.978	300.0	225	Circular	21.900	20.727	0.948	21.250	20.664	0.361
1.007	19.873	300.0	225	Circular	22.825	20.793	1.807	21.900	20.727	0.948
1.006	2.089	300.0	225	Circular	22.850	20.800	1.825	22.825	20.793	1.807
9.001	5.814	103.8	100	Circular	22.800	22.150	0.550	22.850	22.094	0.656
8.003	8.067	104.8	100	Circular	22.850	22.138	0.612	22.850	22.061	0.689
1.005	12.508	83.4	150	Circular	23.000	22.300	0.550	22.850	22.150	0.550
5.004	11.646	237.7	150	Circular	23.000	20.899	1.951	22.850	20.850	1.850
5.003	2.512	167.5	150	Circular	22.975	20.914	1.911	23.000	20.899	1.951
5.002	7.876	175.0	150	Circular	22.825	20.959	1.716	22.975	20.914	1.911
7.000	19.713	104.9	100	Circular	23.100	22.450	0.550	22.975	22.262	0.613
5.001	13.809	104.6	150	Circular	22.775	21.091	1.534	22.825	20.959	1.716
6.000	16.611	104.5	100	Circular	21.950	21.300	0.550	22.775	21.141	1.534
5.000	27.083	104.6	100	Circular	22.950	22.300	0.550	22.775	22.041	0.634
1.004	3.337	33.4	150	Circular	23.100	22.400	0.550	23.000	22.300	0.550
1.003	14.553	18.2	150	Circular	23.900	23.200	0.550	23.100	22.400	0.550
4.000	3.592	35.9	100	Circular	24.000	23.350	0.550	23.900	23.250	0.550

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.008	2	600	Manhole	Adoptable	1	600	Manhole	Adoptable
1.007	3	1200	Manhole	Adoptable	2	600	Manhole	Adoptable
1.006	4		Junction		3	1200	Manhole	Adoptable
9.001	28		Junction		4		Junction	
8.003	5		Junction		4		Junction	
1.005	16		Junction		4		Junction	
5.004	9		Junction		4		Junction	
5.003	10	600	Manhole	Adoptable	9		Junction	
5.002	11	600	Manhole	Adoptable	10	600	Manhole	Adoptable
7.000	15		Junction		10	600	Manhole	Adoptable
5.001	12	600	Manhole	Adoptable	11	600	Manhole	Adoptable
6.000	14		Junction		12	600	Manhole	Adoptable
5.000	13		Junction		12	600	Manhole	Adoptable
1.004	17	600	Manhole	Adoptable	16		Junction	
1.003	18	600	Manhole	Adoptable	17	600	Manhole	Adoptable
4.000	27		Junction		18	600	Manhole	Adoptable

Pipeline Schedule

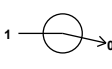
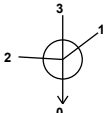
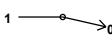
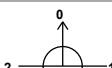
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	17.401	18.8	100	Circular	24.825	24.175	0.550	23.900	23.250	0.550
1.002	13.241	29.8	150	Circular	24.750	23.645	0.955	23.900	23.200	0.550
1.001	12.052	104.8	150	Circular	24.600	23.760	0.690	24.750	23.645	0.955
2.003	4.938	46.6	100	Circular	25.000	24.206	0.694	24.750	24.100	0.550
2.002	7.184	104.1	100	Circular	25.200	24.275	0.825	25.000	24.206	0.694
2.001	4.940	102.9	100	Circular	25.150	24.323	0.727	25.200	24.275	0.825
2.000	2.786	103.2	100	Circular	25.000	24.350	0.550	25.150	24.323	0.727
1.000	14.620	104.4	100	Circular	24.600	23.950	0.550	24.600	23.810	0.690
8.002	3.818	103.2	100	Circular	22.825	22.175	0.550	22.850	22.138	0.612
8.001	15.678	16.1	100	Circular	23.800	23.150	0.550	22.825	22.175	0.550
8.000	15.884	26.5	100	Circular	24.400	23.750	0.550	23.800	23.150	0.550
9.000	2.512	100.5	100	Circular	22.825	22.175	0.550	22.800	22.150	0.550

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	26		Junction		18	600	Manhole	Adoptable
1.002	19	600	Manhole	Adoptable	18	600	Manhole	Adoptable
1.001	20	600	Manhole	Adoptable	19	600	Manhole	Adoptable
2.003	22	600	Manhole	Adoptable	19	600	Manhole	Adoptable
2.002	23	600	Manhole	Adoptable	22	600	Manhole	Adoptable
2.001	24	600	Manhole	Adoptable	23	600	Manhole	Adoptable
2.000	25		Junction		24	600	Manhole	Adoptable
1.000	21		Junction		20	600	Manhole	Adoptable
8.002	6	600	Manhole	Adoptable	5		Junction	
8.001	7	600	Manhole	Adoptable	6	600	Manhole	Adoptable
8.000	8		Junction		7	600	Manhole	Adoptable
9.000	29	600	Manhole	Adoptable	28		Junction	

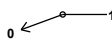
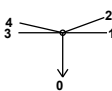
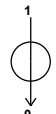
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
29	475193.006	107838.784	22.825	0.650	600				
						0	9.000	22.175	100
28	475193.006	107841.296	22.800	0.650					
						1	9.000	22.150	100
						0	9.001	22.150	100
27	475174.524	107860.788	24.000	0.650					
						0	4.000	23.350	100
26	475154.287	107859.635	24.825	0.650					
						0	3.000	24.175	100
25	475155.850	107866.998	25.000	0.650					
						0	2.000	24.350	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
24	475155.855	107869.784	25.150	0.827	600		1 2.000	24.323	100
23	475159.655	107872.940	25.200	0.925	600		0 1 2.001	24.323 24.275	100 100
22	475166.839	107872.940	25.000	0.794	600		0 1 2.002	24.275 24.206	100 100
21	475198.330	107871.863	24.600	0.650			0 1.000	23.950	100
20	475183.710	107871.863	24.600	0.840	600		0 1 1.000	23.810	100
19	475171.658	107871.863	24.750	1.105	600		0 1 2 1.001	23.760 24.100 23.645	150 100 150
18	475171.658	107858.622	23.900	0.700	600		0 1 2 3 1.002	23.645 23.250 23.250 23.200	150 100 100 150
17	475171.658	107844.069	23.100	0.700	600		0 1 1.003	22.400	150
16	475174.995	107844.069	23.000	0.700			0 1 1.004	22.300	150
15	475155.833	107838.784	23.100	0.650			0 7.000	22.450	100
14	475200.033	107824.975	21.950	0.650			0 6.000	21.300	100
13	475156.339	107824.975	22.950	0.650			0 5.000	22.300	100
12	475183.422	107824.975	22.775	1.684	600		0 1 2 5.001	21.141 22.041	100 100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
11	475183.422	107838.784	22.825	1.866	600		1 5.001	20.959	150
10	475175.546	107838.784	22.975	2.061	600		0 5.002 1 7.000 2 5.002	20.959 22.262 20.914	150 100 150
9	475175.546	107841.296	23.000	2.101			1 5.003	20.899	150
8	475182.700	107859.751	24.400	0.650			0 5.004	20.899	150
7	475198.584	107859.751	23.800	0.650	600		1 8.000 0 8.001	23.750 23.150	100 100
6	475198.584	107844.073	22.825	0.650	600		1 8.001	22.175	100
5	475194.766	107844.073	22.850	0.712			0 8.002 1 8.002	22.175 22.138	100 100
4	475187.192	107841.296	22.850	2.050			1 9.001 2 8.003 3 5.004 4 1.005 0 1.006	22.094 22.061 20.850 22.150 20.800	100 100 150 150 225
3	475187.191	107839.207	22.825	2.032	1200		1 1.006 0 1.007	20.793 20.793	225 225
2	475187.192	107819.334	21.900	1.173	600		1 1.007 0 1.008	20.727 20.727	225 225
1	475205.319	107813.714	21.250	0.586	600		1 1.008	20.664	225

Simulation Settings

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

Winter CV 0.840
Analysis Speed Normal
Skip Steady State x
Drain Down Time (mins) 240
Additional Storage (m³/ha) 20.0



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 3 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	20.793	Product Number	CTL-SHE-0057-2000-2032-2000
Design Depth (m)	2.032	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

Node 4 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	20.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	70.0	0.0	1.200	70.0	0.0	1.201	0.0	0.0



Results for 1 year Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	29	10	22.203	0.028	1.0	0.0140	0.0000	OK
15 minute winter	28	11	22.177	0.027	1.0	0.0000	0.0000	OK
15 minute winter	27	10	23.366	0.016	0.6	0.0020	0.0000	OK
15 minute winter	26	11	24.194	0.019	1.1	0.0047	0.0000	OK
15 minute winter	25	11	24.374	0.024	0.7	0.0037	0.0000	OK
15 minute winter	24	11	24.346	0.023	0.7	0.0065	0.0000	OK
15 minute winter	23	10	24.307	0.032	1.3	0.0119	0.0000	OK
15 minute winter	22	11	24.238	0.032	1.8	0.0122	0.0000	OK
15 minute winter	21	10	23.990	0.040	2.0	0.0173	0.0000	OK
15 minute winter	20	10	23.811	0.051	4.0	0.0326	0.0000	OK
15 minute winter	19	11	23.694	0.049	6.9	0.0208	0.0000	OK
15 minute winter	18	11	23.246	0.046	8.5	0.0130	0.0000	OK
15 minute winter	17	11	22.465	0.065	10.2	0.0408	0.0000	OK
15 minute winter	16	11	22.377	0.077	10.2	0.0000	0.0000	OK
15 minute winter	15	11	22.490	0.040	2.0	0.0171	0.0000	OK
15 minute winter	14	11	21.323	0.023	0.7	0.0036	0.0000	OK
15 minute winter	13	11	22.323	0.023	0.7	0.0036	0.0000	OK
15 minute winter	12	11	21.138	0.047	3.7	0.0227	0.0000	OK
15 minute winter	11	11	21.035	0.076	5.8	0.0336	0.0000	OK
120 minute winter	10	102	21.013	0.099	2.8	0.0349	0.0000	OK
120 minute winter	9	102	21.013	0.114	2.8	0.0000	0.0000	OK
15 minute summer	8	11	23.763	0.013	0.4	0.0012	0.0000	OK
15 minute winter	7	11	23.169	0.019	1.2	0.0089	0.0000	OK
15 minute winter	6	10	22.221	0.046	2.5	0.0259	0.0000	OK
15 minute winter	5	11	22.183	0.045	2.4	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	29	9.000	28	1.0	0.556	0.161	0.0044	
15 minute winter	28	9.001	4	1.0	0.558	0.161	0.0099	
15 minute winter	27	4.000	18	0.6	0.687	0.056	0.0030	
15 minute winter	26	3.000	18	1.1	1.060	0.078	0.0181	
15 minute winter	25	2.000	24	0.7	0.505	0.118	0.0039	
15 minute winter	24	2.001	23	0.7	0.401	0.118	0.0087	
15 minute winter	23	2.002	22	1.2	0.572	0.209	0.0155	
15 minute winter	22	2.003	19	1.8	0.854	0.200	0.0103	
15 minute winter	21	1.000	20	1.9	0.673	0.329	0.0423	
15 minute winter	20	1.001	19	4.0	0.787	0.230	0.0613	
15 minute winter	19	1.002	18	6.9	1.449	0.211	0.0631	
15 minute winter	18	1.003	17	8.6	1.444	0.204	0.0867	
15 minute winter	17	1.004	16	10.2	1.242	0.330	0.0274	
15 minute winter	16	1.005	4	10.2	1.123	0.525	0.1139	
15 minute winter	15	7.000	10	1.9	0.673	0.329	0.0568	
15 minute winter	14	6.000	12	0.7	0.505	0.118	0.0229	
15 minute winter	13	5.000	12	0.7	0.504	0.116	0.0369	
15 minute winter	12	5.001	11	3.7	0.553	0.213	0.0939	
15 minute winter	11	5.002	10	5.7	0.550	0.429	0.0824	
120 minute winter	10	5.003	9	2.8	0.545	0.205	0.0336	
120 minute winter	9	5.004	4	2.8	0.549	0.245	0.1864	
15 minute summer	8	8.000	7	0.4	0.502	0.034	0.0128	
15 minute winter	7	8.001	6	1.2	0.540	0.079	0.0359	
15 minute winter	6	8.002	5	2.4	0.708	0.408	0.0132	
15 minute winter	5	8.003	4	2.4	0.720	0.414	0.0274	



Results for 1 year Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	4	102	21.013	0.213	7.4	14.1800	0.0000	OK
120 minute winter	3	102	21.013	0.220	1.4	0.2491	0.0000	OK
120 minute winter	2	102	20.760	0.033	1.3	0.0094	0.0000	OK
120 minute winter	1	102	20.693	0.029	1.3	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)
120 minute winter	4	1.006	3	1.4	0.211	0.046	0.0820	
120 minute winter	3	Hydro-Brake®	2	1.3				
120 minute winter	2	1.008	1	1.3	0.399	0.044	0.0623	19.7

Results for 30 year Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	29	10	22.221	0.046	2.4	0.0229	0.0000	OK
15 minute winter	28	10	22.194	0.044	2.4	0.0000	0.0000	OK
15 minute winter	27	10	23.376	0.026	1.4	0.0032	0.0000	OK
15 minute winter	26	10	24.205	0.030	2.8	0.0075	0.0000	OK
15 minute winter	25	10	24.388	0.038	1.7	0.0059	0.0000	OK
15 minute winter	24	10	24.360	0.037	1.7	0.0104	0.0000	OK
15 minute winter	23	10	24.328	0.053	3.0	0.0197	0.0000	OK
15 minute winter	22	11	24.260	0.054	4.4	0.0206	0.0000	OK
15 minute winter	21	10	24.019	0.069	4.8	0.0298	0.0000	OK
15 minute winter	20	10	23.846	0.086	9.9	0.0551	0.0000	OK
15 minute winter	19	10	23.727	0.082	16.9	0.0349	0.0000	OK
15 minute winter	18	11	23.275	0.075	20.8	0.0211	0.0000	OK
15 minute winter	17	11	22.605	0.205	24.9	0.1281	0.0000	SURCHARGED
15 minute winter	16	11	22.514	0.214	24.1	0.0000	0.0000	SURCHARGED
15 minute winter	15	10	22.519	0.069	4.8	0.0295	0.0000	OK
240 minute winter	14	236	21.443	0.143	0.3	0.0220	0.0000	SURCHARGED
15 minute winter	13	11	22.336	0.036	1.7	0.0056	0.0000	OK
240 minute winter	12	236	21.443	0.352	1.7	0.1707	0.0000	SURCHARGED
240 minute winter	11	236	21.443	0.484	2.7	0.2149	0.0000	SURCHARGED
240 minute winter	10	236	21.443	0.529	3.8	0.1857	0.0000	SURCHARGED
240 minute winter	9	236	21.443	0.544	3.6	0.0000	0.0000	SURCHARGED
15 minute winter	8	11	23.770	0.020	1.0	0.0018	0.0000	OK
15 minute winter	7	10	23.181	0.031	3.1	0.0143	0.0000	OK
15 minute winter	6	11	22.265	0.090	6.2	0.0502	0.0000	OK
15 minute winter	5	11	22.220	0.082	6.0	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	29	9.000	28	2.4	0.699	0.395	0.0085	
15 minute winter	28	9.001	4	2.3	0.715	0.396	0.0191	
15 minute winter	27	4.000	18	1.4	0.884	0.136	0.0056	
15 minute winter	26	3.000	18	2.7	1.378	0.196	0.0347	
15 minute winter	25	2.000	24	1.7	0.629	0.282	0.0074	
15 minute winter	24	2.001	23	1.6	0.483	0.277	0.0169	
15 minute winter	23	2.002	22	3.0	0.701	0.506	0.0307	
15 minute winter	22	2.003	19	4.3	1.065	0.488	0.0201	
15 minute winter	21	1.000	20	4.7	0.829	0.796	0.0831	
15 minute winter	20	1.001	19	9.8	0.968	0.565	0.1221	
15 minute winter	19	1.002	18	16.7	1.808	0.511	0.1226	
15 minute winter	18	1.003	17	20.8	1.632	0.496	0.1918	
15 minute winter	17	1.004	16	24.1	1.396	0.781	0.0587	
15 minute winter	16	1.005	4	23.7	1.349	1.220	0.2155	
15 minute winter	15	7.000	10	4.7	0.830	0.794	0.1113	
240 minute winter	14	6.000	12	0.3	0.395	0.051	0.1300	
15 minute winter	13	5.000	12	1.6	0.644	0.277	0.0688	
240 minute winter	12	5.001	11	1.7	0.458	0.098	0.2431	
240 minute winter	11	5.002	10	2.5	0.429	0.184	0.1387	
240 minute winter	10	5.003	9	3.6	0.528	0.266	0.0442	
240 minute winter	9	5.004	4	3.5	0.458	0.306	0.2050	
15 minute winter	8	8.000	7	1.0	0.653	0.085	0.0248	
15 minute winter	7	8.001	6	3.1	0.662	0.202	0.0737	
15 minute winter	6	8.002	5	6.0	0.853	1.007	0.0273	
15 minute winter	5	8.003	4	6.0	0.885	1.017	0.0547	



Results for 30 year Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	4	236	21.443	0.643	9.9	42.7474	0.0000	SURCHARGED
240 minute winter	3	236	21.443	0.650	1.6	0.7347	0.0000	SURCHARGED
15 minute summer	2	79	20.760	0.033	1.3	0.0094	0.0000	OK
15 minute summer	1	80	20.693	0.029	1.3	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)
240 minute winter	4	1.006	3	1.6	0.219	0.052	0.0831	
240 minute winter	3	Hydro-Brake®	2	1.3				
15 minute summer	2	1.008	1	1.3	0.400	0.044	0.0624	18.6

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	29	344	22.430	0.255	0.6	0.1271	0.0000	SURCHARGED
360 minute winter	28	344	22.431	0.281	0.6	0.0000	0.0000	SURCHARGED
15 minute winter	27	12	23.592	0.242	2.5	0.0297	0.0000	SURCHARGED
15 minute winter	26	10	24.216	0.041	5.0	0.0101	0.0000	OK
15 minute winter	25	10	24.405	0.055	3.1	0.0085	0.0000	OK
15 minute winter	24	11	24.379	0.056	3.1	0.0157	0.0000	OK
15 minute winter	23	11	24.361	0.086	5.5	0.0317	0.0000	OK
15 minute winter	22	11	24.291	0.085	7.9	0.0327	0.0000	OK
15 minute winter	21	12	24.256	0.306	8.8	0.1318	0.0000	SURCHARGED
15 minute winter	20	12	24.037	0.277	17.2	0.1772	0.0000	SURCHARGED
15 minute winter	19	12	23.936	0.291	29.4	0.1244	0.0000	SURCHARGED
15 minute winter	18	12	23.588	0.388	33.2	0.1098	0.0000	SURCHARGED
15 minute winter	17	12	23.041	0.641	37.6	0.4012	0.0000	FLOOD RISK
15 minute winter	16	12	22.834	0.534	36.6	0.0000	0.0000	FLOOD RISK
15 minute winter	15	11	22.691	0.241	8.8	0.1039	0.0000	SURCHARGED
120 minute winter	14	116	21.950	0.650	1.0	0.1020	0.0000	FLOOD RISK
360 minute winter	13	344	22.431	0.131	0.4	0.0202	0.0000	SURCHARGED
360 minute winter	12	344	22.431	1.340	2.1	0.6501	0.0000	SURCHARGED
360 minute winter	11	344	22.430	1.471	3.3	0.6532	0.0000	SURCHARGED
360 minute winter	10	344	22.430	1.516	4.9	0.5323	0.0000	SURCHARGED
360 minute winter	9	344	22.431	1.532	4.7	0.0000	0.0000	SURCHARGED
15 minute winter	8	10	23.777	0.027	1.9	0.0025	0.0000	OK
15 minute winter	7	10	23.192	0.042	5.7	0.0197	0.0000	OK
15 minute winter	6	11	22.505	0.330	11.3	0.1848	0.0000	SURCHARGED
360 minute winter	5	344	22.432	0.294	1.6	0.0000	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	29	9.000	28	0.6	0.481	0.100	0.0197	
360 minute winter	28	9.001	4	0.6	0.487	0.101	0.0455	
15 minute winter	27	4.000	18	2.4	0.869	0.234	0.0281	
15 minute winter	26	3.000	18	5.0	1.485	0.353	0.0945	
15 minute winter	25	2.000	24	3.1	0.706	0.517	0.0123	
15 minute winter	24	2.001	23	3.0	0.522	0.511	0.0287	
15 minute winter	23	2.002	22	5.5	0.767	0.925	0.0513	
15 minute winter	22	2.003	19	7.9	1.185	0.888	0.0328	
15 minute winter	21	1.000	20	7.8	0.999	1.322	0.1144	
15 minute winter	20	1.001	19	16.7	1.045	0.963	0.2122	
15 minute winter	19	1.002	18	27.2	1.888	0.830	0.2331	
15 minute winter	18	1.003	17	30.9	1.754	0.736	0.2562	
15 minute winter	17	1.004	16	36.6	2.078	1.184	0.0587	
15 minute winter	16	1.005	4	36.5	2.072	1.874	0.2180	
15 minute winter	15	7.000	10	7.9	1.016	1.347	0.1496	
120 minute winter	14	6.000	12	0.9	0.519	0.152	0.1300	
360 minute winter	13	5.000	12	0.4	0.430	0.068	0.2119	
360 minute winter	12	5.001	11	2.0	0.407	0.112	0.2431	
360 minute winter	11	5.002	10	3.1	0.361	0.230	0.1387	
360 minute winter	10	5.003	9	4.7	0.452	0.344	0.0442	
360 minute winter	9	5.004	4	4.5	0.419	0.396	0.2050	
15 minute winter	8	8.000	7	1.9	0.781	0.159	0.0385	
15 minute winter	7	8.001	6	5.6	0.880	0.370	0.0860	
15 minute winter	6	8.002	5	10.1	1.290	1.699	0.0299	
360 minute winter	5	8.003	4	1.6	0.642	0.271	0.0631	



Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	4	344	22.432	1.632	12.9	79.8333	0.0000	SURCHARGED
360 minute winter	3	344	22.432	1.639	3.4	1.8539	0.0000	SURCHARGED
360 minute winter	2	344	20.766	0.039	1.8	0.0110	0.0000	OK
360 minute winter	1	344	20.698	0.034	1.8	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)
360 minute winter	4	1.006	3	3.4	0.191	0.113	0.0831	
360 minute winter	3	Hydro-Brake®	2	1.8				
360 minute winter	2	1.008	1	1.8	0.439	0.061	0.0785	49.6