



Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	✓	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0	Foul Event Duration (mins)	

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	45	0	0
30	45	0	0
100	45	0	0

**Design Settings**

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	2.000
CV	1.000	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
J1		5.00	22.200		564727.926	173780.717	0.700	21.500
1	0.006	5.00	22.200	450	564729.787	173782.585	0.776	21.424
J2		5.00	22.200		564728.165	173788.652	0.700	21.500
3	0.003	5.00	22.200	450	564729.708	173789.284	0.843	21.357
4	0.009	5.00	22.200	450	564726.460	173797.812	0.875	21.325
5			21.950	450	564729.612	173797.455	0.950	21.000
J3			21.950		564729.543	173798.465	1.000	20.950
J4		5.00	22.200		564724.660	173822.946	0.700	21.500
6	0.004	5.00	22.000	450	564726.678	173822.177	0.750	21.250
J5		5.00	22.200		564724.783	173820.024	0.700	21.500
J6			22.200		564726.755	173819.171	0.980	21.220
J7		5.00	22.200		564725.383	173810.800	0.700	21.500
7	0.003	5.00	22.200	450	564726.985	173810.964	1.062	21.138
J8		5.00	22.200		564725.869	173803.743	0.700	21.500
8	0.003	5.00	22.200	450	564727.436	173804.230	1.250	20.950
J9			21.950		564729.028	173804.319	1.000	20.950
J10			21.950		564728.494	173810.967	1.000	20.950
9			21.950	1200	564728.115	173813.938	1.030	20.920
10	0.008	5.00	21.970	450	564726.840	173824.166	1.153	20.817
J11		5.00	22.200		564716.216	173822.843	0.700	21.500
11			21.900	450	564714.226	173824.013	1.209	20.691
12		5.00	21.500	200	564708.339	173824.821	0.656	20.844
13	0.005	5.00	21.650	450	564705.742	173823.911	1.383	20.267
J12			22.000		564705.742	173821.457	1.823	20.177
14	0.006	5.00	22.200	450	564699.050	173805.079	0.875	21.325
15			22.200	450	564704.599	173805.146	1.213	20.987
16			22.150	450	564704.582	173806.486	1.186	20.964
J13		5.00	22.200		564714.591	173808.410	0.700	21.500
17	0.009	5.00	22.200	450	564707.739	173806.525	0.875	21.325
18	0.016	5.00	22.200	450	564705.884	173809.896	1.425	20.775
J22		5.00	22.200		564714.546	173812.531	0.700	21.500
J20A			22.150		564705.851	173812.525	1.585	20.565
J20			22.150		564705.837	173813.716	1.680	20.470
21			22.050	450	564705.777	173818.660	2.050	20.000
22			22.000	450	564701.873	173818.631	2.187	19.813
J14			21.900		564699.873	173818.605	2.100	19.800
J15			21.625		564680.874	173818.375	1.825	19.800
24	0.005	5.00	22.200	450	564715.804	173773.691	0.750	21.450
25	0.002	5.00	22.200	450	564707.199	173774.464	0.836	21.364
37			22.150	450	564691.966	173777.031	1.150	21.000
J16	0.004	5.00	22.100	200	564690.863	173777.463	1.150	20.950
J21			22.100		564679.853	173781.852	1.150	20.950
27	0.016	5.00	22.200	450	564685.640	173786.073	0.875	21.325
28	0.011	5.00	22.200	450	564701.180	173787.027	0.875	21.325
29	0.007	5.00	22.200	450	564694.772	173786.117	0.875	21.325
30			22.200	450	564696.588	173784.789	0.973	21.227
26	0.028	5.00	22.200	450	564708.157	173785.665	0.875	21.325
31			22.100	450	564696.281	173782.544	0.972	21.128
J17			22.100		564693.853	173782.535	1.150	20.950
J18			22.100		564679.853	173782.487	1.150	20.950
32	0.004	5.00	22.100	1200	564678.263	173782.488	1.243	20.857
J19		5.00	22.200		564685.859	173806.350	0.700	21.500
33	0.007	5.00	22.200	450	564678.602	173807.152	1.488	20.712
35	0.020	5.00	21.700	450	564679.098	173815.342	0.637	21.063
34	0.034	5.00	21.580	450	564679.671	173819.463	0.635	20.945
23			21.600	450	564678.556	173818.348	1.815	19.785
20			21.600	1200	564676.221	173818.322	1.831	19.769
36			21.180	450	564668.384	173825.354	1.510	19.670
20A			21.600	600	564673.995	173818.325	1.870	19.730

**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)	Design Flow (l/s)
1.000	J1	1	2.637	0.600	21.500	21.474	0.026	101.4	100	5.06	50.0	
1.001	1	3	6.699	0.600	21.424	21.357	0.067	100.0	150	5.17	50.0	
2.000	J2	3	1.667	0.600	21.500	21.407	0.093	17.9	100	5.02	50.0	
1.002	3	5	8.172	0.600	21.357	21.000	0.357	22.9	150	5.23	50.0	
3.000	4	5	3.172	0.600	21.325	21.000	0.325	9.8	150	5.02	50.0	
1.003	5	J3	1.012	0.600	21.000	20.950	0.050	20.2	150	5.24	50.0	
1.004	J3	J9	5.877	0.600	20.950	20.950	0.000	0.0	150	5.34	50.0	
4.000	J4	6	2.160	0.600	21.500	21.300	0.200	10.8	100	5.02	50.0	
4.001	6	J6	3.007	0.600	21.250	21.220	0.030	100.2	150	5.07	50.0	
5.000	J5	J6	2.149	0.600	21.500	21.270	0.230	9.3	100	5.01	50.0	
4.002	J6	7	8.210	0.600	21.220	21.138	0.082	100.1	150	5.20	50.0	
6.000	J7	7	1.610	0.600	21.500	21.188	0.312	5.2	100	5.01	50.0	
4.003	7	8	6.749	0.600	21.138	20.950	0.188	35.9	150	5.27	50.0	
7.000	J8	8	1.641	0.600	21.500	21.000	0.500	3.3	100	5.01	50.0	
4.004	8	J9	1.594	0.600	20.950	20.950	0.000	0.0	150	5.29	50.0	
1.005	J9	J10	6.669	0.600	20.950	20.950	0.000	0.0	150	5.45	50.0	
1.006	J10	9	2.995	0.600	20.950	20.920	0.030	99.8	150	5.50	50.0	
1.007	9	10	10.307	0.600	20.920	20.817	0.103	100.1	150	5.67	50.0	
1.008	10	11	12.615	0.600	20.817	20.691	0.126	100.1	150	5.88	50.0	
8.000	J11	11	2.308	0.600	21.500	20.741	0.759	3.0	100	5.01	50.0	
1.009	11	13	8.485	0.600	20.691	20.267	0.424	20.0	150	5.94	50.0	
9.000	12	13	2.752	0.600	20.844	20.317	0.527	5.2	100	5.01	50.0	
1.010	13	J12	2.454	0.600	20.267	20.177	0.090	27.3	150	5.96	50.0	
1.011	J12	21	2.797	0.600	20.177	20.075	0.102	27.4	150	5.99	50.0	
10.000	14	15	5.549	0.600	21.325	20.987	0.338	16.4	100	5.05	50.0	
10.001	15	16	1.340	0.600	20.987	20.964	0.023	58.3	100	5.07	50.0	
10.002	16	18	3.650	0.600	20.964	20.825	0.139	26.3	100	5.11	50.0	
11.000	J13	18	8.833	0.600	21.500	20.825	0.675	13.1	100	5.07	50.0	
12.000	17	18	3.848	0.600	21.325	20.775	0.550	7.0	150	5.02	50.0	
10.003	18	J20A	2.629	0.600	20.775	20.565	0.210	12.5	150	5.13	50.0	
13.000	J22	J20A	8.695	0.600	21.500	20.615	0.885	9.8	100	5.06	50.0	
10.004	J20A	J20	1.191	0.600	20.565	20.470	0.095	12.5	150	5.13	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)
1.000	0.763	6.0	0.0	0.600	0.626	0.000	0.0	0	0.000
1.001	1.005	17.8	1.1	0.626	0.693	0.006	0.0	25	0.552
2.000	1.832	14.4	0.0	0.600	0.693	0.000	0.0	0	0.000
1.002	2.114	37.3	1.6	0.693	0.800	0.009	0.0	21	1.061
3.000	3.244	57.3	1.6	0.725	0.800	0.009	0.0	17	1.425
1.003	2.248	39.7	3.3	0.800	0.850	0.018	0.0	29	1.362
1.004	1.000	17.7	3.3	0.850	0.850	0.018	0.0	150	0.000
4.000	2.365	18.6	0.0	0.600	0.600	0.000	0.0	0	0.000
4.001	1.003	17.7	0.7	0.600	0.830	0.004	0.0	21	0.492
5.000	2.544	20.0	0.0	0.600	0.830	0.000	0.0	0	0.000
4.002	1.004	17.7	0.7	0.830	0.912	0.004	0.0	21	0.492
6.000	3.426	26.9	0.0	0.600	0.912	0.000	0.0	0	0.000
4.003	1.685	29.8	1.3	0.912	1.100	0.007	0.0	21	0.830
7.000	4.300	33.8	0.0	0.600	1.100	0.000	0.0	0	0.000
4.004	1.000	17.7	1.8	1.100	0.850	0.010	0.0	150	0.000
1.005	1.000	17.7	5.1	0.850	0.850	0.028	0.0	150	0.000
1.006	1.005	17.8	5.1	0.850	0.880	0.028	0.0	55	0.868
1.007	1.004	17.7	5.1	0.880	1.003	0.028	0.0	55	0.867
1.008	1.004	17.7	6.5	1.003	1.059	0.036	0.0	63	0.929
8.000	4.468	35.1	0.0	0.600	1.059	0.000	0.0	0	0.000
1.009	2.261	40.0	6.5	1.059	1.233	0.036	0.0	41	1.669
9.000	3.407	26.8	0.0	0.556	1.233	0.000	0.0	0	0.000
1.010	1.935	34.2	7.4	1.233	1.673	0.041	0.0	47	1.547
1.011	1.930	34.1	7.4	1.673	1.825	0.041	0.0	47	1.543
10.000	1.915	15.0	1.1	0.775	1.113	0.006	0.0	18	1.114
10.001	1.011	7.9	1.1	1.113	1.086	0.006	0.0	25	0.700
10.002	1.512	11.9	1.1	1.086	1.275	0.006	0.0	21	0.946
11.000	2.147	16.9	0.0	0.600	1.275	0.000	0.0	0	0.000
12.000	3.833	67.7	1.6	0.725	1.275	0.009	0.0	16	1.610
10.003	2.865	50.6	5.6	1.275	1.435	0.031	0.0	34	1.898
13.000	2.480	19.5	0.0	0.600	1.435	0.000	0.0	0	0.000
10.004	2.865	50.6	5.6	1.435	1.530	0.031	0.0	34	1.898

**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)	Design Flow (l/s)
10.005	J20	21	4.944	0.600	20.470	20.075	0.395	12.5	150	5.16	50.0	
1.012	21	22	3.904	0.600	20.000	19.813	0.187	20.9	225	6.01	50.0	
1.013	22	J14	2.000	0.600	19.813	19.800	0.013	150.0	225	6.04	50.0	
1.014	J14	J15	19.000	0.600	19.800	19.800	0.000	0.0	225	6.36	50.0	
1.015	J15	23	2.318	0.600	19.800	19.785	0.015	150.0	225	6.39	50.0	
14.000	24	25	8.640	0.600	21.450	21.364	0.086	100.5	150	5.14	50.0	
14.001	25	37	15.448	0.600	21.364	21.000	0.364	42.4	150	5.31	50.0	
14.002	37	J16	1.185	0.600	21.000	20.950	0.050	23.7	150	5.32	50.0	
14.003	J16	J21	11.853	0.600	20.950	20.950	0.000	0.0	150	5.52	50.0	
14.004	J21	32	1.712	0.600	20.950	20.932	0.018	95.1	150	5.54	50.0	
15.000	27	30	11.023	0.600	21.325	21.227	0.098	112.5	150	5.19	50.0	
16.000	28	30	5.108	0.600	21.325	21.227	0.098	52.1	150	5.06	50.0	
17.000	29	30	2.250	0.600	21.325	21.227	0.098	23.0	150	5.02	50.0	
15.001	30	31	2.266	0.600	21.227	21.203	0.024	94.4	150	5.23	50.0	
18.000	26	31	12.279	0.600	21.325	21.203	0.122	100.6	150	5.20	50.0	
15.002	31	J17	2.428	0.600	21.128	20.950	0.178	13.6	225	5.24	50.0	
15.003	J17	J18	14.000	0.600	20.950	20.950	0.000	0.0	225	5.48	50.0	
15.004	J18	32	1.590	0.600	20.950	20.857	0.093	17.1	225	5.48	50.0	
14.005	32	33	24.666	0.600	20.857	20.712	0.145	170.1	225	5.96	50.0	
19.000	J19	33	7.301	0.600	21.500	20.879	0.621	11.8	100	5.05	50.0	
14.006	33	23	11.196	0.600	20.712	19.785	0.927	12.1	225	6.01	50.0	
20.000	35	23	3.054	0.600	21.063	19.860	1.203	2.5	150	5.01	50.0	
21.000	34	23	1.577	0.600	20.945	19.860	1.085	1.5	150	5.00	50.0	
1.016	23	20	2.335	0.600	19.785	19.769	0.016	150.0	225	6.43	50.0	
1.018	20A	36	8.994	0.600	19.730	19.670	0.060	150.0	150	6.64	50.0	2.1
1.017	20	20A	2.226	0.600	19.769	19.730	0.039	57.1	150	6.46	50.0	2.1

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)
10.005	2.863	50.6	5.6	1.530	1.825	0.031	0.0	34	1.896
1.012	2.876	114.4	13.0	1.825	1.962	0.072	0.0	51	1.916
1.013	1.065	42.3	13.0	1.962	1.875	0.072	0.0	86	0.941
1.014	1.000	39.8	13.0	1.875	1.600	0.072	0.0	225	0.000
1.015	1.065	42.3	13.0	1.600	1.590	0.072	0.0	86	0.941
14.000	1.002	17.7	0.9	0.600	0.686	0.005	0.0	23	0.526
14.001	1.549	27.4	1.3	0.686	1.000	0.007	0.0	22	0.789
14.002	2.077	36.7	1.3	1.000	1.000	0.007	0.0	19	0.969
14.003	1.000	17.7	2.0	1.000	1.000	0.011	0.0	150	0.000
14.004	1.030	18.2	2.0	1.000	1.018	0.011	0.0	34	0.680
15.000	0.947	16.7	2.9	0.725	0.823	0.016	0.0	42	0.708
16.000	1.396	24.7	2.0	0.725	0.823	0.011	0.0	29	0.844
17.000	2.110	37.3	1.3	0.725	0.823	0.007	0.0	19	0.984
15.001	1.034	18.3	6.1	0.823	0.747	0.034	0.0	60	0.935
18.000	1.001	17.7	5.1	0.725	0.747	0.028	0.0	55	0.865
15.002	3.561	141.6	11.2	0.747	0.925	0.062	0.0	43	2.150
15.003	1.000	39.8	11.2	0.925	0.925	0.062	0.0	225	0.000
15.004	3.180	126.4	11.2	0.925	1.018	0.062	0.0	45	1.988
14.005	0.999	39.7	13.9	1.018	1.263	0.077	0.0	92	0.913
19.000	2.266	17.8	0.0	0.600	1.221	0.000	0.0	0	0.000
14.006	3.785	150.5	15.2	1.263	1.590	0.084	0.0	48	2.447
20.000	6.372	112.6	3.6	0.487	1.590	0.020	0.0	18	2.926
21.000	8.427	148.9	6.1	0.485	1.590	0.034	0.0	21	4.176
1.016	1.065	42.3	37.9	1.590	1.606	0.210	0.0	167	1.200
1.018	0.818	14.5	2.1	1.720	1.360	0.210	0.0	38	0.582
1.017	1.334	23.6	2.1	1.681	1.720	0.210	0.0	30	0.826

Node 32 Online Orifice Control

Flap Valve	x	Invert Level (m)	20.857	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.040		

Node 20 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	19.769	Product Number	CTL-SHE-0062-2100-1600-2100
Design Depth (m)	1.600	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.1	Min Node Diameter (mm)	1200

**Node 9 Online Orifice Control**

Flap Valve	x	Invert Level (m)	20.920	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.025		

Node 34 Online Orifice Control

Flap Valve	x	Invert Level (m)	20.945	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.090		

Node 35 Online Orifice Control

Flap Valve	x	Invert Level (m)	21.063	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.080		

Node J9 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	20.950
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	212

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)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	37.2	0.0	0.401	5.6	0.0	0.825	11.3	0.0	0.975	37.2	0.0
0.001	11.3	0.0	0.750	5.6	0.0	0.826	37.2	0.0			
0.400	11.3	0.0	0.751	11.3	0.0	0.900	37.2	0.0			

Node J18 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	20.950
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	168

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)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	110.0	110.0	0.451	16.4	126.1	0.975	32.8	151.4	1.001	110.0	151.4
0.001	32.8	110.0	0.900	16.4	148.2	0.976	110.0	151.4	1.150	110.0	151.4
0.450	32.8	126.1	0.901	32.8	148.3	1.000	110.0	151.4	1.151	110.0	151.4

Node J15 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	19.800	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	705	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	19.000	Number Required	1
Porosity	0.95	Pit Length (m)	8.000		

Node 34 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	20.945	Slope (1:X)	20.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	180	Depth (m)	0.370
Safety Factor	2.0	Width (m)	22.500	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Node 35 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	21.063	Slope (1:X)	20.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	180	Depth (m)	0.370
Safety Factor	2.0	Width (m)	26.200	Inf Depth (m)	
Porosity	0.30	Length (m)	5.200		

Node J15 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	19.800	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	705	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	19.000	Number Required	1
Porosity	0.30	Pit Length (m)	1.000		

**Results for 2 year +45% CC Critical Storm Duration. Lowest mass balance: 97.38%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J1	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	1	10	21.455	0.031	1.5	0.0049	0.0000	OK
15 minute summer	J2	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	3	10	21.382	0.025	2.2	0.0039	0.0000	OK
15 minute summer	4	10	21.345	0.020	2.2	0.0032	0.0000	OK
180 minute summer	5	128	21.196	0.196	1.6	0.0312	0.0000	SURCHARGED
180 minute summer	J3	128	21.196	0.246	5.2	0.0000	0.0000	SURCHARGED
15 minute summer	J4	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	6	11	21.275	0.025	1.0	0.0040	0.0000	OK
15 minute summer	J5	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J6	11	21.244	0.024	1.0	0.0000	0.0000	OK
15 minute summer	J7	1	21.500	0.000	0.0	0.0000	0.0000	OK
180 minute summer	7	128	21.196	0.058	0.7	0.0093	0.0000	OK
15 minute summer	J8	1	21.500	0.000	0.0	0.0000	0.0000	OK
180 minute summer	8	128	21.196	0.246	1.0	0.0391	0.0000	SURCHARGED
180 minute summer	J9	128	21.196	0.246	2.2	2.7948	0.0000	SURCHARGED
180 minute summer	J10	128	21.196	0.246	0.8	0.0000	0.0000	SURCHARGED
180 minute summer	9	128	21.196	0.276	1.2	0.3122	0.0000	SURCHARGED
15 minute summer	10	11	20.856	0.039	2.3	0.0063	0.0000	OK
15 minute summer	J11	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	11	11	20.716	0.025	2.3	0.0039	0.0000	OK
15 minute summer	12	1	20.844	0.000	0.0	0.0000	0.0000	OK
15 minute summer	13	11	20.301	0.034	3.5	0.0055	0.0000	OK
15 minute summer	J12	11	20.211	0.034	3.5	0.0000	0.0000	OK
15 minute summer	14	10	21.346	0.021	1.5	0.0034	0.0000	OK
15 minute summer	15	10	21.020	0.033	1.5	0.0052	0.0000	OK
15 minute summer	16	10	20.989	0.025	1.5	0.0040	0.0000	OK
15 minute summer	J13	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	17	10	21.344	0.019	2.2	0.0030	0.0000	OK
15 minute summer	18	10	20.817	0.042	7.6	0.0067	0.0000	OK
15 minute summer	J22	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J20A	10	20.604	0.039	7.6	0.0000	0.0000	OK
15 minute summer	J20	10	20.511	0.041	7.6	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 summer	J1	1.000	1	0.0	0.000	0.000	0.0000	
15 minute summer	1	1.001	3	1.5	0.663	0.083	0.0150	
15 minute summer	J2	2.000	3	0.0	0.000	0.000	0.0000	
15 minute summer	3	1.002	5	2.2	0.730	0.058	0.0560	
15 minute summer	4	3.000	5	2.2	0.930	0.038	0.0216	
180 minute summer	5	1.003	J3	5.2	0.601	0.132	0.0178	
180 minute summer	J3	1.004	J9	1.3	0.352	0.074	0.1035	
15 minute summer	J4	4.000	6	0.0	0.000	0.000	0.0000	
15 minute summer	6	4.001	J6	1.0	0.530	0.056	0.0057	
15 minute summer	J5	5.000	J6	0.0	0.000	0.000	0.0000	
15 minute summer	J6	4.002	7	1.0	0.538	0.056	0.0153	
15 minute summer	J7	6.000	7	0.0	0.000	0.000	0.0000	
180 minute summer	7	4.003	8	0.7	0.149	0.024	0.0807	
15 minute summer	J8	7.000	8	0.0	0.000	0.000	0.0064	
180 minute summer	8	4.004	J9	0.9	0.112	0.050	0.0281	
180 minute summer	J9	1.005	J10	0.8	0.215	0.047	0.1174	
180 minute summer	J10	1.006	9	1.2	0.273	0.065	0.0527	
180 minute summer	9	1.007	10	0.7	0.434	0.037	0.0183	
15 minute summer	10	1.008	11	2.3	0.847	0.131	0.0352	
15 minute summer	J11	8.000	11	0.0	0.000	0.000	0.0000	
15 minute summer	11	1.009	13	2.3	0.955	0.058	0.0209	
15 minute summer	12	9.000	13	0.0	0.000	0.000	0.0000	
15 minute summer	13	1.010	J12	3.5	1.161	0.103	0.0075	
15 minute summer	J12	1.011	21	3.5	1.204	0.104	0.0082	
15 minute summer	14	10.000	15	1.5	0.869	0.099	0.0096	
15 minute summer	15	10.001	16	1.5	0.781	0.185	0.0025	
15 minute summer	16	10.002	18	1.5	0.986	0.122	0.0054	
15 minute summer	J13	11.000	18	0.0	0.000	0.000	0.0000	
15 minute summer	17	12.000	18	2.2	0.860	0.032	0.0102	
15 minute summer	18	10.003	J20A	7.6	1.967	0.151	0.0102	
15 minute summer	J22	13.000	J20A	0.0	0.000	0.000	0.0000	
15 minute summer	J20A	10.004	J20	7.6	2.005	0.150	0.0045	
15 minute summer	J20	10.005	21	7.6	2.003	0.150	0.0187	

**Results for 2 year +45% CC Critical Storm Duration. Lowest mass balance: 97.38%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	21	424	20.066	0.066	2.0	0.0105	0.0000	OK
480 minute winter	22	432	20.065	0.252	2.0	0.0400	0.0000	SURCHARGED
480 minute winter	J14	432	20.066	0.266	2.0	0.0000	0.0000	SURCHARGED
480 minute winter	J15	440	20.064	0.264	3.7	39.6428	0.0000	SURCHARGED
15 minute summer	24	11	21.477	0.027	1.2	0.0043	0.0000	OK
15 minute summer	25	10	21.390	0.026	1.7	0.0041	0.0000	OK
180 minute summer	37	120	21.193	0.193	2.1	0.0307	0.0000	SURCHARGED
180 minute summer	J16	120	21.193	0.243	2.9	0.0075	0.0000	SURCHARGED
180 minute summer	J21	120	21.193	0.243	8.3	0.0000	0.0000	SURCHARGED
15 minute summer	27	10	21.375	0.050	4.0	0.0079	0.0000	OK
15 minute summer	28	10	21.358	0.033	2.7	0.0053	0.0000	OK
15 minute summer	29	11	21.347	0.022	1.7	0.0035	0.0000	OK
15 minute summer	30	10	21.309	0.082	8.4	0.0131	0.0000	OK
15 minute summer	26	10	21.394	0.069	7.0	0.0109	0.0000	OK
120 minute summer	31	82	21.203	0.075	8.7	0.0120	0.0000	OK
120 minute summer	J17	80	21.208	0.258	10.8	0.0000	0.0000	SURCHARGED
180 minute summer	J18	120	21.193	0.243	12.2	8.0145	0.0000	SURCHARGED
180 minute summer	32	120	21.193	0.336	19.6	0.3802	0.0000	SURCHARGED
15 minute summer	J19	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	33	11	20.734	0.022	3.1	0.0036	0.0000	OK
15 minute summer	35	12	21.160	0.097	5.0	0.7637	0.0000	OK
15 minute summer	34	13	21.082	0.137	8.5	1.2996	0.0000	OK
480 minute winter	23	440	20.064	0.279	3.3	0.0444	0.0000	SURCHARGED
480 minute winter	20	440	20.064	0.295	2.0	0.3337	0.0000	SURCHARGED
360 minute summer	36	344	19.704	0.034	1.6	0.0000	0.0000	OK
360 minute summer	20A	344	19.765	0.035	1.6	0.0098	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	21	1.012	22	2.0	0.447	0.017	0.0966	
480 minute winter	22	1.013	J14	2.0	0.179	0.047	0.0795	
480 minute winter	J14	1.014	J15	1.9	0.190	0.048	0.7557	
480 minute winter	J15	1.015	23	-1.8	0.228	-0.042	0.0922	
15 minute summer	24	14.000	25	1.2	0.579	0.068	0.0181	
15 minute summer	25	14.001	37	1.8	0.910	0.065	0.1226	
180 minute summer	37	14.002	J16	2.6	0.258	0.070	0.0209	
180 minute summer	J16	14.003	J21	-1.5	0.274	-0.087	0.2087	
180 minute summer	J21	14.004	32	-8.1	0.570	-0.444	0.0301	
15 minute summer	27	15.000	30	4.0	0.533	0.238	0.0827	
15 minute summer	28	16.000	30	2.7	0.429	0.109	0.0328	
15 minute summer	29	17.000	30	1.7	0.416	0.046	0.0129	
15 minute summer	30	15.001	31	8.3	0.919	0.455	0.0205	
15 minute summer	26	18.000	31	6.9	0.915	0.392	0.0932	
120 minute summer	31	15.002	J17	10.8	0.747	0.076	0.0624	
120 minute summer	J17	15.003	J18	7.0	0.509	0.176	0.5568	
180 minute summer	J18	15.004	32	19.3	0.645	0.153	0.0632	
180 minute summer	32	Orifice	33	1.9				
15 minute summer	J19	19.000	33	0.0	0.000	0.000	0.0000	
15 minute summer	33	14.006	23	3.1	0.505	0.021	0.1055	
15 minute summer	35	20.000	23	3.2	2.732	0.028	0.0036	
15 minute summer	34	21.000	23	5.1	3.791	0.034	0.0021	
480 minute winter	23	1.016	20	2.0	0.241	0.047	0.0929	
480 minute winter	20	1.017	20A	1.6	0.586	0.068	0.0061	
360 minute summer	20A	1.018	36	1.6	0.531	0.110	0.0270	67.7

**Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 98.99%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	J1	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	1	98	21.551	0.127	1.1	0.0202	0.0000	OK
120 minute winter	J2	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	3	98	21.551	0.194	1.7	0.0309	0.0000	SURCHARGED
120 minute winter	4	98	21.551	0.226	1.7	0.0359	0.0000	SURCHARGED
120 minute winter	5	98	21.551	0.551	5.4	0.0876	0.0000	SURCHARGED
120 minute winter	J3	98	21.551	0.601	6.4	0.0000	0.0000	SURCHARGED
120 minute winter	J4	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	6	98	21.551	0.301	0.8	0.0479	0.0000	SURCHARGED
120 minute winter	J5	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	J6	98	21.551	0.331	0.7	0.0000	0.0000	SURCHARGED
120 minute winter	J7	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	7	98	21.551	0.413	1.3	0.0657	0.0000	SURCHARGED
120 minute winter	J8	98	21.551	0.051	0.1	0.0000	0.0000	OK
120 minute winter	8	98	21.551	0.601	1.7	0.0956	0.0000	SURCHARGED
120 minute winter	J9	98	21.551	0.601	4.3	5.6612	0.0000	SURCHARGED
120 minute winter	J10	98	21.551	0.601	1.5	0.0000	0.0000	SURCHARGED
120 minute winter	9	98	21.551	0.631	1.2	0.7132	0.0000	SURCHARGED
15 minute summer	10	10	20.881	0.064	5.8	0.0101	0.0000	OK
15 minute summer	J11	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	11	10	20.729	0.038	5.7	0.0061	0.0000	OK
15 minute summer	12	1	20.844	0.000	0.0	0.0000	0.0000	OK
720 minute summer	13	750	20.571	0.304	1.8	0.0484	0.0000	SURCHARGED
720 minute summer	J12	750	20.571	0.394	1.8	0.0000	0.0000	SURCHARGED
15 minute summer	14	10	21.360	0.035	3.9	0.0055	0.0000	OK
15 minute summer	15	10	21.045	0.058	3.9	0.0092	0.0000	OK
15 minute summer	16	10	21.007	0.043	3.9	0.0069	0.0000	OK
15 minute summer	J13	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	17	10	21.355	0.030	5.9	0.0048	0.0000	OK
15 minute summer	18	10	20.849	0.074	20.2	0.0118	0.0000	OK
15 minute summer	J22	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J20A	10	20.631	0.066	20.2	0.0000	0.0000	OK
720 minute summer	J20	750	20.571	0.101	2.3	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	J1	1.000	1	-0.1	-0.080	-0.018	0.0138	
120 minute winter	1	1.001	3	1.1	0.608	0.062	0.1122	
120 minute winter	J2	2.000	3	-0.1	-0.017	-0.006	0.0099	
120 minute winter	3	1.002	5	1.7	0.585	0.046	0.1439	
120 minute winter	4	3.000	5	1.7	0.660	0.030	0.0558	
120 minute winter	5	1.003	J3	6.4	0.489	0.161	0.0178	
120 minute winter	J3	1.004	J9	2.9	0.465	0.167	0.1035	
120 minute winter	J4	4.000	6	-0.1	-0.014	-0.004	0.0128	
120 minute winter	6	4.001	J6	0.7	0.482	0.040	0.0529	
120 minute winter	J5	5.000	J6	-0.1	-0.015	-0.004	0.0127	
120 minute winter	J6	4.002	7	0.7	0.457	0.039	0.1445	
120 minute winter	J7	6.000	7	-0.1	-0.015	-0.003	0.0095	
120 minute winter	7	4.003	8	1.1	0.311	0.035	0.1188	
120 minute winter	J8	7.000	8	-0.1	-0.015	-0.002	0.0097	
120 minute winter	8	4.004	J9	1.4	0.492	0.079	0.0281	
120 minute winter	J9	1.005	J10	1.5	0.249	0.083	0.1174	
120 minute winter	J10	1.006	9	1.2	0.376	0.068	0.0527	
120 minute winter	9	1.007	10	1.0	0.514	0.057	0.0272	
15 minute summer	10	1.008	11	5.7	1.088	0.323	0.0671	
15 minute summer	J11	8.000	11	0.0	0.000	0.000	0.0000	
15 minute summer	11	1.009	13	5.7	1.187	0.143	0.0415	
15 minute summer	12	9.000	13	0.0	0.000	0.000	0.0004	
720 minute summer	13	1.010	J12	1.8	0.995	0.052	0.0432	
720 minute summer	J12	1.011	21	3.6	0.984	0.107	0.0492	
15 minute summer	14	10.000	15	3.9	1.099	0.258	0.0197	
15 minute summer	15	10.001	16	3.9	0.976	0.485	0.0053	
15 minute summer	16	10.002	18	3.8	1.262	0.322	0.0111	
15 minute summer	J13	11.000	18	0.0	0.000	0.000	0.0065	
15 minute summer	17	12.000	18	5.9	1.083	0.087	0.0215	
15 minute summer	18	10.003	J20A	20.2	2.495	0.398	0.0213	
15 minute summer	J22	13.000	J20A	0.0	0.000	0.000	0.0035	
15 minute summer	J20A	10.004	J20	20.1	2.564	0.398	0.0094	
720 minute summer	J20	10.005	21	2.3	1.431	0.045	0.0749	

**Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 98.99%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	21	750	20.571	0.571	5.1	0.0908	0.0000	SURCHARGED
720 minute summer	22	750	20.571	0.758	5.4	0.1206	0.0000	SURCHARGED
720 minute summer	J14	750	20.571	0.771	3.9	0.0000	0.0000	SURCHARGED
720 minute summer	J15	750	20.571	0.771	9.2	112.6500	0.0000	SURCHARGED
120 minute summer	24	94	21.724	0.274	1.4	0.0436	0.0000	SURCHARGED
120 minute summer	25	94	21.724	0.360	1.9	0.0572	0.0000	SURCHARGED
120 minute summer	37	94	21.724	0.724	1.9	0.1151	0.0000	SURCHARGED
120 minute summer	J16	94	21.724	0.774	2.8	0.0240	0.0000	SURCHARGED
120 minute summer	J21	94	21.724	0.774	5.8	0.0000	0.0000	SURCHARGED
120 minute summer	27	94	21.725	0.400	4.4	0.0635	0.0000	SURCHARGED
120 minute summer	28	94	21.725	0.400	3.0	0.0635	0.0000	SURCHARGED
120 minute summer	29	94	21.725	0.400	1.9	0.0635	0.0000	SURCHARGED
120 minute summer	30	94	21.725	0.498	9.3	0.0791	0.0000	SURCHARGED
120 minute summer	26	94	21.725	0.400	7.7	0.0636	0.0000	SURCHARGED
120 minute summer	31	94	21.724	0.596	16.0	0.0948	0.0000	SURCHARGED
120 minute summer	J17	94	21.724	0.774	16.7	0.0000	0.0000	SURCHARGED
120 minute summer	J18	94	21.724	0.774	15.1	20.1183	0.0000	SURCHARGED
120 minute summer	32	94	21.724	0.867	20.4	0.9803	0.0000	SURCHARGED
15 minute summer	J19	1	21.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	33	11	20.744	0.032	6.4	0.0050	0.0000	OK
30 minute summer	35	22	21.254	0.191	11.6	2.8950	0.0000	SURCHARGED
30 minute summer	34	22	21.221	0.276	19.7	5.1465	0.0000	SURCHARGED
720 minute summer	23	750	20.571	0.786	6.7	0.1250	0.0000	SURCHARGED
720 minute summer	20	750	20.571	0.802	1.7	0.9073	0.0000	SURCHARGED
30 minute summer	36	41	19.704	0.034	1.6	0.0000	0.0000	OK
30 minute summer	20A	41	19.765	0.035	1.6	0.0098	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)
720 minute summer	21	1.012	22	5.4	0.416	0.047	0.1553	
720 minute summer	22	1.013	J14	3.9	0.183	0.091	0.0795	
720 minute summer	J14	1.014	J15	4.1	0.324	0.104	0.7557	
720 minute summer	J15	1.015	23	-5.0	-0.187	-0.118	0.0922	
120 minute summer	24	14.000	25	1.4	0.613	0.079	0.1521	
120 minute summer	25	14.001	37	1.9	0.550	0.069	0.2720	
120 minute summer	37	14.002	J16	2.7	0.434	0.073	0.0209	
120 minute summer	J16	14.003	J21	3.2	0.246	0.179	0.2087	
120 minute summer	J21	14.004	32	9.8	0.732	0.541	0.0301	
120 minute summer	27	15.000	30	4.4	0.516	0.262	0.1941	
120 minute summer	28	16.000	30	3.0	0.425	0.121	0.0899	
120 minute summer	29	17.000	30	1.9	0.313	0.051	0.0396	
120 minute summer	30	15.001	31	8.3	0.889	0.453	0.0399	
120 minute summer	26	18.000	31	7.7	0.878	0.433	0.2162	
120 minute summer	31	15.002	J17	16.7	0.572	0.118	0.0966	
120 minute summer	J17	15.003	J18	15.1	0.670	0.379	0.5568	
120 minute summer	J18	15.004	32	20.1	0.743	0.159	0.0632	
120 minute summer	32	Orifice	33	3.1				
15 minute summer	J19	19.000	33	0.0	0.000	0.000	0.0000	
15 minute summer	33	14.006	23	6.4	0.603	0.043	0.2317	
30 minute summer	35	20.000	23	5.2	2.673	0.046	0.0290	
30 minute summer	34	21.000	23	8.1	3.704	0.055	0.0150	
720 minute summer	23	1.016	20	1.7	0.095	0.039	0.0929	
720 minute summer	20	1.017	20A	1.6	0.586	0.068	0.0061	
30 minute summer	20A	1.018	36	1.6	0.531	0.110	0.0270	76.4

**Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.65%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	J1	132	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	1	132	21.714	0.290	1.6	0.0461	0.0000	SURCHARGED
180 minute summer	J2	136	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	3	136	21.714	0.357	2.4	0.0567	0.0000	SURCHARGED
180 minute summer	4	136	21.714	0.389	2.4	0.0618	0.0000	SURCHARGED
180 minute summer	5	136	21.714	0.714	4.4	0.1135	0.0000	FLOOD RISK
180 minute summer	J3	136	21.714	0.764	4.1	0.0000	0.0000	FLOOD RISK
180 minute summer	J4	136	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	6	136	21.714	0.464	1.0	0.0737	0.0000	FLOOD RISK
180 minute summer	J5	136	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	J6	136	21.714	0.494	0.7	0.0000	0.0000	SURCHARGED
180 minute summer	J7	136	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	7	136	21.714	0.576	1.1	0.0915	0.0000	SURCHARGED
180 minute summer	J8	136	21.714	0.214	0.2	0.0000	0.0000	SURCHARGED
180 minute summer	8	136	21.714	0.764	1.4	0.1214	0.0000	SURCHARGED
180 minute summer	J9	136	21.714	0.764	4.5	6.6470	0.0000	FLOOD RISK
180 minute summer	J10	136	21.713	0.763	1.8	0.0000	0.0000	FLOOD RISK
180 minute summer	9	136	21.713	0.793	1.4	0.8971	0.0000	FLOOD RISK
960 minute winter	10	885	21.418	0.601	1.4	0.0956	0.0000	SURCHARGED
15 minute summer	J11	1	21.500	0.000	0.0	0.0000	0.0000	OK
960 minute winter	11	885	21.418	0.727	1.4	0.1156	0.0000	SURCHARGED
960 minute winter	12	885	21.418	0.574	0.5	0.0178	0.0000	FLOOD RISK
960 minute winter	13	885	21.418	1.151	1.6	0.1830	0.0000	FLOOD RISK
960 minute winter	J12	885	21.418	1.241	4.6	0.0000	0.0000	SURCHARGED
960 minute winter	14	885	21.418	0.093	0.3	0.0148	0.0000	OK
960 minute winter	15	885	21.418	0.431	0.3	0.0686	0.0000	SURCHARGED
960 minute winter	16	885	21.418	0.454	0.3	0.0722	0.0000	SURCHARGED
15 minute summer	J13	1	21.500	0.000	0.0	0.0000	0.0000	OK
960 minute winter	17	885	21.418	0.093	0.5	0.0148	0.0000	OK
960 minute winter	18	885	21.418	0.643	1.7	0.1023	0.0000	SURCHARGED
15 minute summer	J22	1	21.500	0.000	0.0	0.0000	0.0000	OK
960 minute winter	J20A	885	21.418	0.853	1.7	0.0000	0.0000	SURCHARGED
960 minute winter	J20	885	21.418	0.948	1.7	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)
180 minute summer	J1	1.000	1	-0.2	-0.035	-0.034	0.0206	
180 minute summer	1	1.001	3	1.6	0.630	0.091	0.1179	
180 minute summer	J2	2.000	3	-0.2	-0.031	-0.015	0.0130	
180 minute summer	3	1.002	5	2.0	0.536	0.053	0.1439	
180 minute summer	4	3.000	5	2.1	0.566	0.036	0.0558	
180 minute summer	5	1.003	J3	4.1	0.463	0.103	0.0178	
180 minute summer	J3	1.004	J9	3.5	0.519	0.195	0.1035	
180 minute summer	J4	4.000	6	-0.2	-0.034	-0.013	0.0169	
180 minute summer	6	4.001	J6	0.7	0.461	0.040	0.0529	
180 minute summer	J5	5.000	J6	-0.2	-0.034	-0.012	0.0168	
180 minute summer	J6	4.002	7	0.6	0.400	0.033	0.1445	
180 minute summer	J7	6.000	7	-0.2	-0.036	-0.009	0.0126	
180 minute summer	7	4.003	8	0.8	0.239	0.026	0.1188	
180 minute summer	J8	7.000	8	-0.2	-0.035	-0.007	0.0128	
180 minute summer	8	4.004	J9	1.0	0.482	0.058	0.0281	
180 minute summer	J9	1.005	J10	1.8	0.255	0.103	0.1174	
180 minute summer	J10	1.006	9	1.4	0.307	0.080	0.0527	
180 minute summer	9	1.007	10	1.1	0.529	0.064	0.0764	
960 minute winter	10	1.008	11	1.4	0.724	0.077	0.2221	
15 minute summer	J11	8.000	11	0.0	0.000	0.000	0.0000	
960 minute winter	11	1.009	13	1.4	0.887	0.034	0.1494	
960 minute winter	12	9.000	13	-0.5	-0.062	-0.017	0.0215	
960 minute winter	13	1.010	J12	4.6	0.934	0.136	0.0432	
960 minute winter	J12	1.011	21	-2.8	0.892	-0.083	0.0492	
960 minute winter	14	10.000	15	0.3	0.561	0.020	0.0428	
960 minute winter	15	10.001	16	0.3	0.516	0.038	0.0105	
960 minute winter	16	10.002	18	0.3	0.631	0.025	0.0286	
15 minute summer	J13	11.000	18	0.0	0.000	0.000	0.0117	
960 minute winter	17	12.000	18	0.5	0.601	0.007	0.0560	
960 minute winter	18	10.003	J20A	1.7	1.298	0.034	0.0463	
15 minute summer	J22	13.000	J20A	0.0	0.000	0.000	0.0072	
960 minute winter	J20A	10.004	J20	1.7	1.326	0.034	0.0210	
960 minute winter	J20	10.005	21	1.7	1.234	0.034	0.0870	

**Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.65%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	21	885	21.418	1.418	4.2	0.2255	0.0000	SURCHARGED
960 minute winter	22	885	21.418	1.605	3.1	0.2552	0.0000	SURCHARGED
960 minute winter	J14	885	21.418	1.618	3.8	0.0000	0.0000	SURCHARGED
960 minute winter	J15	885	21.418	1.618	7.8	112.6500	0.0000	FLOOD RISK
120 minute winter	24	102	21.946	0.496	1.2	0.0789	0.0000	FLOOD RISK
120 minute winter	25	102	21.946	0.582	1.7	0.0926	0.0000	FLOOD RISK
120 minute winter	37	102	21.946	0.946	2.1	0.1504	0.0000	FLOOD RISK
120 minute winter	J16	102	21.946	0.996	2.8	0.0309	0.0000	FLOOD RISK
120 minute winter	J21	102	21.946	0.996	6.8	0.0000	0.0000	FLOOD RISK
120 minute winter	27	98	21.947	0.622	3.9	0.0989	0.0000	FLOOD RISK
120 minute winter	28	100	21.947	0.622	2.7	0.0989	0.0000	FLOOD RISK
120 minute winter	29	100	21.947	0.622	1.7	0.0989	0.0000	FLOOD RISK
120 minute winter	30	100	21.947	0.720	7.3	0.1145	0.0000	FLOOD RISK
120 minute winter	26	98	21.947	0.622	6.8	0.0990	0.0000	FLOOD RISK
120 minute winter	31	100	21.947	0.819	12.5	0.1302	0.0000	FLOOD RISK
120 minute winter	J17	100	21.947	0.997	12.7	0.0000	0.0000	FLOOD RISK
120 minute winter	J18	100	21.946	0.996	14.6	26.9281	0.0000	FLOOD RISK
120 minute winter	32	100	21.946	1.089	12.6	1.2317	0.0000	FLOOD RISK
15 minute summer	J19	1	21.500	0.000	0.0	0.0000	0.0000	OK
960 minute winter	33	885	21.418	0.706	3.1	0.1123	0.0000	SURCHARGED
960 minute winter	35	885	21.418	0.355	1.2	9.2768	0.0000	FLOOD RISK
960 minute winter	34	885	21.418	0.473	2.2	8.3734	0.0000	FLOOD RISK
960 minute winter	23	885	21.418	1.633	5.8	0.2597	0.0000	FLOOD RISK
960 minute winter	20	885	21.418	1.649	2.1	1.8649	0.0000	FLOOD RISK
960 minute winter	36	885	19.709	0.039	2.1	0.0000	0.0000	OK
960 minute winter	20A	885	19.770	0.040	2.1	0.0113	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)
960 minute winter	21	1.012	22	3.1	0.375	0.028	0.1553	
960 minute winter	22	1.013	J14	3.8	0.171	0.089	0.0795	
960 minute winter	J14	1.014	J15	3.5	0.203	0.089	0.7557	
960 minute winter	J15	1.015	23	-4.4	-0.284	-0.103	0.0922	
120 minute winter	24	14.000	25	1.2	0.570	0.068	0.1521	
120 minute winter	25	14.001	37	1.6	0.550	0.058	0.2720	
120 minute winter	37	14.002	J16	2.6	0.384	0.071	0.0209	
120 minute winter	J16	14.003	J21	2.3	0.256	0.129	0.2087	
120 minute winter	J21	14.004	32	9.9	0.721	0.542	0.0301	
120 minute winter	27	15.000	30	3.4	0.480	0.203	0.1941	
120 minute winter	28	16.000	30	2.4	0.400	0.097	0.0899	
120 minute winter	29	17.000	30	1.5	0.473	0.040	0.0396	
120 minute winter	30	15.001	31	6.7	0.818	0.365	0.0399	
120 minute winter	26	18.000	31	6.4	0.806	0.361	0.2162	
120 minute winter	31	15.002	J17	12.7	0.789	0.089	0.0966	
120 minute winter	J17	15.003	J18	14.6	0.669	0.367	0.5568	
120 minute winter	J18	15.004	32	12.4	0.690	0.098	0.0632	
120 minute winter	32	Orifice	33	3.5				
15 minute summer	J19	19.000	33	0.0	0.000	0.000	0.0000	
960 minute winter	33	14.006	23	3.1	0.284	0.021	0.4453	
960 minute winter	35	20.000	23	1.1	1.227	0.010	0.0538	
960 minute winter	34	21.000	23	1.9	1.857	0.013	0.0278	
960 minute winter	23	1.016	20	2.1	0.122	0.050	0.0929	
960 minute winter	20	1.017	20A	2.1	0.625	0.090	0.0075	
960 minute winter	20A	1.018	36	2.1	0.575	0.146	0.0331	227.2

**Design Settings**

Frequency of use (kDU)	0.50	Minimum Velocity (m/s)	1.00
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.0	Minimum Backdrop Height (m)	1.750
Industrial Flow (l/s/ha)	0.0	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Nodes

Name	Dwellings	Add Inflow (l/s)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
1	1	5.0	22.200	450	564728.671	173779.653	0.875	21.325
2	1		22.200	450	564728.332	173782.714	0.875	21.325
3	1		22.200	450	564729.220	173783.865	0.917	21.283
J5	1		22.200		564729.177	173787.632	1.043	21.157
6	1		22.200	450	564728.675	173791.928	0.875	21.325
J7	1		22.200		564729.113	173792.911	1.219	20.981
10	1		22.200	450	564729.061	173797.156	1.360	20.840
11	1		22.200	450	564727.260	173799.337	1.389	20.811
12	1		22.200	450	564726.426	173800.552	0.875	21.325
J13	1		22.200		564727.112	173801.827	1.406	20.794
14	1		22.200	450	564726.620	173810.081	1.462	20.738
17	1		21.970	450	564725.678	173823.644	1.323	20.647
18	1		21.900	450	564717.694	173823.546	1.572	20.328
19	1		22.200	450	564714.575	173822.534	0.875	21.325
J20			21.900		564715.049	173824.193	1.647	20.253
21	1		22.200	450	564683.159	173806.980	0.875	21.325
22	1		22.200	450	564684.386	173806.961	0.875	21.325
23	1		22.200	450	564684.938	173808.697	0.900	21.300
24	1		22.200	450	564688.477	173807.644	0.875	21.325
J25	1		22.200		564688.433	173809.816	1.047	21.153
26	1		22.200	450	564693.235	173807.703	0.875	21.325
J27	1		22.200		564693.134	173811.323	1.244	20.956
28	1		22.200	450	564694.179	173807.713	0.875	21.325
J29	1		22.200		564695.042	173811.934	1.324	20.876
31	1		22.200	450	564696.727	173812.474	1.395	20.805
33	1		22.200	450	564712.894	173807.885	0.825	21.375
34	1		22.200	450	564710.178	173807.853	0.875	21.325
35	1		22.200	450	564705.493	173806.498	0.875	21.325
36	1		22.200	450	564706.838	173806.514	0.875	21.325
J37	1		22.200		564706.220	173807.366	0.893	21.307
38	1		22.200	450	564707.666	173809.086	0.910	21.290
39	1		22.200	450	564712.990	173814.374	0.825	21.375
40	1		22.200	450	564710.099	173814.339	0.875	21.325
41	1		22.200	450	564707.519	173814.308	1.471	20.729
42	1		21.400	450	564707.294	173826.343	1.371	20.029
43	1		21.480	450	564694.936	173826.447	1.534	19.946
43_OUT	1		21.380	450	564690.557	173827.467	1.464	19.916
4	2		22.200	450	564728.765	173786.608	0.875	21.325
J9			22.200		564729.087	173795.169	1.294	20.906
8	2		22.200	450	564728.653	173793.782	0.908	21.292
J16			21.970		564725.823	173821.547	1.309	20.661
15			22.200	450	564725.028	173820.580	0.875	21.325

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	1	3	4.248	1.500	21.325	21.283	0.042	101.1	150
2.000	2	3	1.454	1.500	21.325	21.283	0.042	34.6	150
1.001	3	J5	3.767	1.500	21.283	21.157	0.126	29.9	150
1.002	J5	J7	5.279	1.500	21.157	20.981	0.176	30.0	150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.567	0.871	15.4	5.0	0.725	0.767	0.000	1	0.0	5.0	59	0.777
2.000	0.178	1.492	26.4	0.0	0.725	0.767	0.000	1	0.0	0.0	5	0.254
1.001	0.880	1.606	28.4	5.1	0.767	0.893	0.000	3	0.0	5.0	43	1.211
1.002	0.879	1.603	28.3	5.3	0.893	1.069	0.000	6	0.0	5.0	44	1.227

**Links**

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
4.000	6	J7	1.076	1.500	21.325	20.981	0.344	3.1	150
1.003	J7	J9	2.258	1.500	20.981	20.906	0.075	30.1	150
1.005	10	11	2.828	1.500	20.840	20.811	0.029	97.5	150
1.006	11	J13	2.494	1.500	20.811	20.794	0.017	146.7	150
5.000	8	J9	1.453	1.500	21.292	20.906	0.386	3.8	150
6.000	12	J13	1.448	1.500	21.325	20.794	0.531	2.7	150
1.007	J13	14	8.269	1.500	20.794	20.738	0.056	147.7	150
1.008	14	J16	11.494	1.500	20.738	20.661	0.077	149.3	150
1.010	17	18	7.985	1.500	20.647	20.328	0.319	25.0	150
1.011	18	J20	2.723	1.500	20.328	20.253	0.075	36.3	150
8.000	19	J20	1.725	1.500	21.325	20.253	1.072	1.6	150
7.000	15	J16	1.252	1.500	21.325	20.661	0.664	1.9	150
1.012	J20	42	8.048	1.500	20.253	20.029	0.224	35.9	150
9.000	21	23	2.472	1.500	21.325	21.300	0.025	100.0	150
10.000	22	23	1.822	1.500	21.325	21.304	0.021	86.7	150
9.001	23	J25	3.670	1.500	21.300	21.153	0.147	25.0	150
11.000	24	J25	2.172	1.500	21.325	21.153	0.172	12.6	150
9.002	J25	J27	4.937	1.500	21.153	20.956	0.197	25.0	150
12.000	26	J27	3.621	1.500	21.325	20.956	0.369	9.8	150
13.000	28	J29	4.308	1.500	21.325	20.876	0.449	9.6	150
9.004	J29	31	1.769	1.500	20.876	20.805	0.071	25.0	150
9.003	J27	J29	2.003	1.500	20.956	20.876	0.080	25.0	150
9.005	31	41	10.947	1.500	20.805	20.729	0.076	144.0	150
14.000	33	34	2.716	1.500	21.375	21.325	0.050	54.3	150
14.001	34	38	2.798	1.500	21.325	21.290	0.035	80.0	150
15.000	35	J37	1.132	1.500	21.325	21.317	0.008	150.0	150
16.000	36	J37	1.053	1.500	21.325	21.307	0.018	58.5	150
15.001	J37	38	2.247	1.500	21.307	21.292	0.015	150.0	150
14.002	38	41	5.224	1.500	21.290	20.729	0.561	9.3	150
17.000	39	40	2.891	1.500	21.375	21.325	0.050	57.8	150
17.001	40	41	2.580	1.500	21.325	20.729	0.596	4.3	150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	0.411	4.976	87.9	0.0	0.725	1.069	0.000	1	0.0	0.0	3	0.605
1.003	0.890	1.600	28.3	5.4	1.069	1.144	0.000	8	0.0	5.0	44	1.225
1.005	0.590	0.887	15.7	5.5	1.210	1.239	0.000	11	0.0	5.0	61	0.807
1.006	0.513	0.722	12.8	5.6	1.239	1.256	0.000	12	0.0	5.0	69	0.698
5.000	0.466	4.535	80.1	0.1	0.758	1.144	0.000	2	0.0	0.0	4	0.709
6.000	0.440	5.330	94.2	0.0	0.725	1.256	0.000	1	0.0	0.0	3	0.548
1.007	0.511	0.720	12.7	5.6	1.256	1.312	0.000	14	0.0	5.0	70	0.698
1.008	0.513	0.716	12.6	5.7	1.312	1.159	0.000	15	0.0	5.0	71	0.697
1.010	0.963	1.756	31.0	5.7	1.173	1.422	0.000	16	0.0	5.0	44	1.334
1.011	0.844	1.457	25.7	5.8	1.422	1.497	0.000	17	0.0	5.0	48	1.172
8.000	0.422	6.939	122.6	0.0	0.725	1.497	0.000	1	0.0	0.0	3	0.715
7.000	0.000	6.411	113.3	0.0	0.725	1.159	0.000	0	0.0	0.0	0	0.000
1.012	0.849	1.465	25.9	5.8	1.497	1.221	0.000	18	0.0	5.0	48	1.178
9.000	0.119	0.876	15.5	0.0	0.725	0.750	0.000	1	0.0	0.0	6	0.175
10.000	0.128	0.941	16.6	0.0	0.725	0.746	0.000	1	0.0	0.0	6	0.188
9.001	0.272	1.757	31.0	0.1	0.750	0.897	0.000	3	0.0	0.0	7	0.404
11.000	0.252	2.474	43.7	0.0	0.725	0.897	0.000	1	0.0	0.0	4	0.343
9.002	0.328	1.757	31.0	0.2	0.897	1.094	0.000	5	0.0	0.0	10	0.496
12.000	0.286	2.807	49.6	0.0	0.725	1.094	0.000	1	0.0	0.0	4	0.389
13.000	0.290	2.839	50.2	0.0	0.725	1.174	0.000	1	0.0	0.0	4	0.394
9.004	0.404	1.757	31.0	0.4	1.174	1.245	0.000	9	0.0	0.0	13	0.600
9.003	0.379	1.757	31.0	0.3	1.094	1.174	0.000	7	0.0	0.0	11	0.539
9.005	0.239	0.729	12.9	0.5	1.245	1.321	0.000	10	0.0	0.0	20	0.335
14.000	0.141	1.190	21.0	0.0	0.675	0.725	0.000	1	0.0	0.0	6	0.221
14.001	0.166	0.980	17.3	0.1	0.725	0.760	0.000	2	0.0	0.0	8	0.250
15.000	0.108	0.714	12.6	0.0	0.725	0.733	0.000	1	0.0	0.0	7	0.152
16.000	0.136	1.147	20.3	0.0	0.725	0.743	0.000	1	0.0	0.0	6	0.213
15.001	0.152	0.714	12.6	0.1	0.743	0.758	0.000	3	0.0	0.0	11	0.225
14.002	0.495	2.882	50.9	0.3	0.760	1.321	0.000	6	0.0	0.0	8	0.743
17.000	0.137	1.153	20.4	0.0	0.675	0.725	0.000	1	0.0	0.0	6	0.214
17.001	0.434	4.229	74.7	0.1	0.725	1.321	0.000	2	0.0	0.0	4	0.661

**Links**

	Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
	9.006	41	42	12.037	1.500	20.729	20.029	0.700	17.2	150
	1.013	42	43	12.358	1.500	20.029	19.946	0.083	148.9	150
	1.014	43	43_OUT	4.496	1.500	19.946	19.916	0.030	150.0	150
	3.000	4	J5	1.104	1.500	21.325	21.157	0.168	6.6	150
	1.004	J9	10	1.987	1.500	20.906	20.840	0.066	30.1	150
	1.009	J16	17	2.102	1.500	20.661	20.647	0.014	150.1	150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)	
9.006	0.599	2.119	37.4	0.9	1.321	1.221	0.000		19	0.0	0.0	16	0.859
1.013	0.540	0.717	12.7	6.8	1.221	1.384	0.000		38	0.0	5.0	78	0.730
1.014	0.538	0.714	12.6	6.8	1.384	1.314	0.000		39	0.0	5.0	78	0.727
3.000	0.351	3.432	60.6	0.1	0.725	0.893	0.000		2	0.0	0.0	5	0.591
1.004	0.890	1.600	28.3	5.5	1.144	1.210	0.000		10	0.0	5.0	45	1.234
1.009	0.512	0.714	12.6	5.7	1.159	1.173	0.000		15	0.0	5.0	71	0.695



Circular SW Link Type

Template	Freeform	Carrier	Barrels	1	Follow Ground	x
Shape	Circular		Auto Increment (mm)	75		

Available Diameters (mm)
100 | 150

Private Surface Link Type Group

Link Type	Minimum size (mm)	Maximum size (mm)	Link Type	Minimum size (mm)	Maximum size (mm)
Private Surface 1/100		120	Private Surface 1/150	120	

Adopted Surface Link Type Group

Link Type	Minimum size (mm)	Maximum size (mm)	Link Type	Minimum size (mm)	Maximum size (mm)
Adoptable Surface 1/100		120	Adoptable Surface 1/150	120	

Highway Surface Link Type Group

Link Type	Minimum size (mm)	Maximum size (mm)	Link Type	Minimum size (mm)	Maximum size (mm)
Highway Surface 1/100		120	Highway Surface 1/150	120	

Swale Link Type Group

Link Type	Minimum size (mm)	Maximum size (mm)	Link Type	Minimum size (mm)	Maximum size (mm)	Link Type	Minimum size (mm)	Maximum size (mm)
Swale 0.5mBGL		750	Swale 0.75mBGL	750	1000	Swale 1mBGL	1000	