

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	99.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	0.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	1.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
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)
S3	0.109	5.00	90.652	1500	451010.554	305422.616	1.612
S4	0.060	5.00	89.667	1500	451011.895	305394.182	1.817
S5	0.040	5.00	88.888	1500	451013.324	305372.349	1.550
S1	0.041	5.00	91.969	1200	450928.749	305356.698	1.934
S2	0.116	5.00	91.150	1500	450946.993	305364.548	1.500
S6	0.051	5.00	88.438	2100	451023.312	305368.388	1.673
S7	0.104	5.00	87.626	1500	451024.927	305344.290	1.811
S10	0.110	5.00	86.700	1500	451015.126	305309.874	1.930
S11	0.070	5.00	86.038	1500	451008.003	305287.592	1.868
S12	0.173	5.00	84.566	1350	450992.540	305235.329	2.156
S13	0.050	5.00	94.212	1500	450885.597	305389.463	1.502
S14	0.098	5.00	92.956	1500	450902.001	305362.489	1.581
S15			92.000	1500	450907.515	305346.432	1.310
S16	0.100	5.00	89.070	1350	450927.371	305294.787	1.500
S17	0.018	5.00	88.000	1350	450931.558	305276.097	1.740
S18	0.085	5.00	86.100	1350	450945.349	305242.882	1.540
S20			85.030	1500	450959.539	305230.633	1.150
S21			84.891	1500	450967.372	305228.021	1.391
S22	0.027	5.00	83.890	1800	450995.680	305218.130	2.115
S23	0.031	5.00	83.448	1500	451006.900	305206.405	2.163
S27	0.066	5.00	85.667	1500	451040.479	305302.873	1.397
S28	0.123	5.00	84.511	1500	451068.958	305294.106	1.616
S77			83.992	1500	451059.137	305258.649	1.716
S78	0.057	5.00	83.818	1500	451049.623	305243.026	1.797
S24	0.016	5.00	82.689	1500	451036.959	305197.780	1.984
S25			80.000	1500	451046.119	305170.170	2.575
S26			78.350	1500	451050.281	305159.824	1.295
S29	0.129	5.00	83.251	1500	451099.480	305285.005	1.581
S30	0.121	5.00	81.251	1350	451158.093	305267.460	2.356
S31	0.086	5.00	80.512	1800	451169.295	305257.088	2.988
S32	0.056	5.00	79.726	1800	451208.330	305258.808	2.175
S33	0.028	5.00	79.581	1800	451197.956	305245.573	2.064
S34	0.093	5.00	79.554	1800	451180.049	305235.189	2.078
S35	0.087	5.00	82.262	1500	451057.961	305202.450	2.427
S36	0.151	5.00	81.475	1500	451087.567	305207.620	2.242
S37	0.139	5.00	80.206	1800	451144.770	305217.725	2.809
S79	0.027	5.00	79.552	1800	451149.716	305190.006	2.188
S38	0.250	5.00	79.196	1800	451154.394	305165.614	1.905
S39	0.203	5.00	79.428	2100	451111.741	305157.005	2.248
S40			78.350	1500	451111.638	305141.811	1.295
S41	0.465	5.00	78.350	1500	451059.176	305117.934	1.350

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S42			78.350	3000	451061.564	305107.932	1.371
S81			78.860	1200	451084.181	305111.241	2.012
S44			77.761	1200	451136.543	305127.088	1.225
S45			76.950	1200	451201.546	305153.919	0.948
S46			76.681	1500	451213.767	305154.012	0.781

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)
1.007	S3	S4	28.466	0.600	89.040	87.850	1.190	23.9	225	5.18	0.0
1.008	S4	S5	21.879	0.600	87.850	87.413	0.437	50.1	225	5.37	0.0
1.009	S5	S6	10.745	0.600	87.338	86.840	0.498	21.6	300	5.43	0.0
14.000	S1	S2	19.861	0.600	90.035	89.650	0.385	51.6	225	5.18	0.0
14.001	S2	S6	76.415	0.600	89.650	86.915	2.735	27.9	225	5.69	0.0
1.010	S6	S7	24.152	0.600	86.765	85.815	0.950	25.4	375	5.81	0.0
1.011	S7	S10	35.785	0.600	85.815	84.845	0.970	36.9	375	6.01	0.0
1.012	S10	S11	23.393	0.600	84.770	84.170	0.600	39.0	450	6.12	0.0
1.013	S11	S12	54.503	0.600	84.170	82.410	1.760	31.0	450	6.37	0.0
1.014	S12	S22	17.483	0.600	82.410	81.850	0.560	31.2	450	6.45	0.0
37.000	S13	S14	31.571	0.600	92.710	91.375	1.335	23.6	225	5.19	0.0
34.005	S14	S15	16.977	0.600	91.375	90.765	0.610	27.8	225	5.31	0.0
34.006	S15	S16	55.330	0.600	90.690	87.570	3.120	17.7	300	5.55	0.0
34.007	S16	S17	19.154	0.600	87.570	86.260	1.310	14.6	300	5.63	0.0
34.008	S17	S18	35.964	0.600	86.260	84.560	1.700	21.2	300	5.81	0.0
34.009	S18	S20	18.746	0.600	84.560	83.880	0.680	27.6	300	5.91	0.0
34.010	S20	S21	8.257	0.600	83.880	83.575	0.305	27.1	300	5.96	0.0
34.011	S21	S22	29.986	0.600	83.500	81.925	1.575	19.0	375	6.08	0.0
1.015	S22	S23	16.228	0.600	81.775	81.285	0.490	33.1	525	6.52	0.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.007	2.686	106.8	0.0	1.387	1.592	0.109	0.0
1.008	1.853	73.7	0.0	1.592	1.250	0.169	0.0
1.009	3.399	240.3	0.0	1.250	1.298	0.209	0.0
14.000	1.825	72.6	0.0	1.709	1.275	0.041	0.0
14.001	2.484	98.8	0.0	1.275	1.298	0.156	0.0
1.010	3.606	398.2	0.0	1.298	1.436	0.416	0.0
1.011	2.991	330.3	0.0	1.436	1.480	0.520	0.0
1.012	3.263	519.0	0.0	1.480	1.418	0.630	0.0
1.013	3.663	582.6	0.0	1.418	1.706	0.700	0.0
1.014	3.648	580.2	0.0	1.706	1.590	0.873	0.0
37.000	2.701	107.4	0.0	1.277	1.356	0.050	0.0
34.005	2.489	99.0	0.0	1.356	1.010	0.148	0.0
34.006	3.751	265.1	0.0	1.010	1.200	0.148	0.0
34.007	4.132	292.1	0.0	1.200	1.440	0.248	0.0
34.008	3.433	242.7	0.0	1.440	1.240	0.266	0.0
34.009	3.006	212.4	0.0	1.240	0.850	0.351	0.0
34.010	3.033	214.4	0.0	0.850	1.016	0.351	0.0
34.011	4.169	460.4	0.0	1.016	1.590	0.351	0.0
1.015	3.901	844.5	0.0	1.590	1.638	1.251	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)
1.016	S23	S24	31.272	0.600	81.285	80.705	0.580	53.9	525	6.69	0.0
47.006	S27	S28	29.798	0.600	84.270	82.895	1.375	21.7	150	5.23	0.0
47.007	S28	S77	36.792	0.600	82.895	82.276	0.619	59.4	300	5.53	0.0
47.008	S77	S78	18.291	0.600	82.276	82.096	0.180	101.6	300	5.72	0.0
47.009	S78	S24	46.985	0.600	82.021	80.855	1.166	40.3	375	6.00	0.0
1.017	S24	S25	29.090	0.600	80.705	77.500	3.205	9.1	525	6.76	0.0
1.018	S25	S26	11.152	0.600	77.425	77.350	0.075	148.7	600	6.85	0.0
63.007	S29	S30	61.182	0.600	81.670	79.045	2.625	23.3	300	5.31	0.0
63.008	S30	S31	15.267	0.600	78.895	77.824	1.071	14.3	450	5.36	0.0
63.009	S31	S34	24.397	0.600	77.524	77.476	0.048	508.3	750	5.69	0.0
73.005	S32	S33	16.817	0.600	77.551	77.517	0.034	494.6	750	5.22	0.0
73.006	S33	S34	20.700	0.600	77.517	77.476	0.041	504.9	750	5.50	0.0
63.010	S34	S37	39.364	0.600	77.476	77.397	0.079	498.3	750	6.21	0.0
86.000	S35	S36	30.054	0.600	79.835	79.233	0.602	49.9	525	5.16	0.0
82.006	S36	S37	58.089	0.600	79.233	77.622	1.611	36.1	525	5.42	0.0
63.011	S37	S79	28.157	0.600	77.397	77.364	0.033	853.2	750	6.71	0.0
63.012	S79	S38	24.837	0.600	77.364	77.341	0.023	1079.9	750	7.20	0.0
63.013	S38	S39	43.513	0.600	77.291	77.180	0.111	392.0	750	7.72	0.0
63.014	S39	S40	15.194	0.600	77.180	77.150	0.030	506.5	750	7.92	0.0
1.020	S41	S42	10.283	0.600	77.000	76.979	0.021	489.7	750	5.14	0.0
1.021	S42	S81	22.857	0.600	76.979	76.848	0.131	174.5	225	5.52	0.0
1.022	S81	S44	54.708	0.600	76.848	76.536	0.312	175.3	225	6.45	0.0
1.023	S44	S45	70.322	0.600	76.536	76.002	0.534	131.7	225	7.48	0.0
1.024	S45	S46	12.221	0.600	76.002	75.900	0.102	119.8	225	7.65	0.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.016	3.055	661.3	0.0	1.638	1.459	1.282	0.0
47.006	2.173	38.4	0.0	1.247	1.466	0.066	0.0
47.007	2.043	144.4	0.0	1.316	1.416	0.189	0.0
47.008	1.559	110.2	0.0	1.416	1.422	0.189	0.0
47.009	2.861	316.0	0.0	1.422	1.459	0.246	0.0
1.017	7.464	1615.8	0.0	1.459	1.975	1.544	0.0
1.018	1.994	563.9	0.0	1.975	0.400	1.544	0.0
63.007	3.270	231.1	0.0	1.281	1.906	0.129	0.0
63.008	5.405	859.7	0.0	1.906	2.238	0.250	0.0
63.009	1.234	545.2	0.0	2.238	1.328	0.335	0.0
73.005	1.251	552.8	0.0	1.425	1.314	0.056	0.0
73.006	1.238	547.1	0.0	1.314	1.328	0.084	0.0
63.010	1.247	550.7	0.0	1.328	2.059	0.512	0.0
86.000	3.175	687.3	0.0	1.902	1.717	0.087	0.0
82.006	3.738	809.3	0.0	1.717	2.059	0.238	0.0
63.011	0.950	419.6	0.0	2.059	1.438	0.889	0.0
63.012	0.843	372.4	0.0	1.438	1.105	0.916	0.0
63.013	1.407	621.6	0.0	1.155	1.498	1.167	0.0
63.014	1.236	546.2	0.0	1.498	0.450	1.369	0.0
1.020	1.258	555.6	0.0	0.600	0.621	0.465	0.0
1.021	0.987	39.2	0.0	1.146	1.787	0.465	0.0
1.022	0.984	39.1	0.0	1.787	1.000	0.465	0.0
1.023	1.137	45.2	0.0	1.000	0.723	0.465	0.0
1.024	1.193	47.4	0.0	0.723	0.556	0.465	0.0

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	10080
Ratio-R	0.400	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node S42 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	76.979	Product Number	CTL-SHE-0182-1630-1000-1630
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	16.3	Min Node Diameter (mm)	1500

Node S41 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	55.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	77.000	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)	1200	Main Channel n	0.040

Inlets

S40 | S26

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	2025.7	0.0	0.400	2288.1	0.0	0.800	2560.8	0.0	1.200	2842.6	0.0
0.100	2089.4	0.0	0.500	2355.4	0.0	0.900	2630.4	0.0	1.300	3241.5	0.0
0.200	2155.1	0.0	0.600	2423.3	0.0	1.000	2700.6	0.0	1.350	3621.8	0.0
0.300	2221.3	0.0	0.700	2491.8	0.0	1.100	2771.3	0.0			

Node S20 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	83.880
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.0	0.0	0.200	5.5	0.0	0.400	18.1	0.0
0.100	1.7	0.0	0.300	11.0	0.0	0.492	26.3	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S3	10	89.097	0.057	15.4	0.1012	0.0000	OK
15 minute winter	S4	10	87.941	0.091	23.7	0.1601	0.0000	OK
15 minute winter	S5	10	87.413	0.075	28.7	0.1326	0.0000	OK
15 minute winter	S1	10	90.078	0.043	5.8	0.0482	0.0000	OK
15 minute winter	S2	11	89.721	0.071	22.0	0.1261	0.0000	OK
15 minute winter	S6	11	86.860	0.095	56.6	0.3282	0.0000	OK
15 minute winter	S7	11	85.937	0.122	70.8	0.2160	0.0000	OK
15 minute winter	S10	11	84.901	0.131	85.8	0.2320	0.0000	OK
15 minute winter	S11	11	84.292	0.122	95.4	0.2148	0.0000	OK
15 minute winter	S12	11	82.562	0.152	118.7	0.2170	0.0000	OK
15 minute winter	S13	10	92.749	0.039	7.0	0.0682	0.0000	OK
15 minute winter	S14	10	91.448	0.073	20.7	0.1282	0.0000	OK
15 minute winter	S15	11	90.746	0.056	20.4	0.0984	0.0000	OK
15 minute winter	S16	10	87.640	0.070	34.3	0.1001	0.0000	OK
15 minute winter	S17	11	86.338	0.078	36.3	0.1117	0.0000	OK
15 minute winter	S18	11	84.660	0.100	47.8	0.1436	0.0000	OK
15 minute winter	S20	11	83.990	0.110	48.0	0.2989	0.0000	OK
15 minute winter	S21	11	83.584	0.084	48.2	0.1486	0.0000	OK
15 minute winter	S22	11	81.950	0.175	170.9	0.4452	0.0000	OK
15 minute winter	S23	11	81.492	0.207	175.1	0.3656	0.0000	OK
15 minute winter	S27	10	84.320	0.050	9.3	0.0884	0.0000	OK
15 minute winter	S28	10	82.981	0.086	26.6	0.1518	0.0000	OK
15 minute winter	S77	11	82.380	0.104	26.2	0.1844	0.0000	OK
15 minute winter	S78	11	82.105	0.084	33.5	0.1479	0.0000	OK
15 minute winter	S24	11	80.831	0.126	210.9	0.2222	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	S3	1.007	S4	15.3	1.346	0.143	0.3259	
15 minute winter	S4	1.008	S5	23.1	1.604	0.314	0.3162	
15 minute winter	S5	1.009	S6	28.5	2.196	0.119	0.1399	
15 minute winter	S1	14.000	S2	5.7	0.729	0.079	0.1584	
15 minute winter	S2	14.001	S6	21.3	1.985	0.215	0.8193	
15 minute winter	S6	1.010	S7	56.7	2.151	0.142	0.6394	
15 minute winter	S7	1.011	S10	71.2	2.360	0.216	1.0804	
15 minute winter	S10	1.012	S11	86.1	2.363	0.166	0.8529	
15 minute winter	S11	1.013	S12	95.7	2.357	0.164	2.2183	
15 minute winter	S12	1.014	S22	119.0	2.727	0.205	0.7635	
15 minute winter	S13	37.000	S14	6.9	0.909	0.064	0.2457	
15 minute winter	S14	34.005	S15	20.4	1.909	0.206	0.1812	
15 minute winter	S15	34.006	S16	20.2	1.896	0.076	0.5928	
15 minute winter	S16	34.007	S17	33.8	2.524	0.116	0.2577	
15 minute winter	S17	34.008	S18	36.5	2.080	0.150	0.6324	
15 minute winter	S18	34.009	S20	48.0	2.184	0.226	0.4122	
15 minute winter	S20	34.010	S21	48.2	2.257	0.225	0.1765	
15 minute winter	S21	34.011	S22	48.3	2.689	0.105	0.5385	
15 minute winter	S22	1.015	S23	170.9	2.412	0.202	1.1512	
15 minute winter	S23	1.016	S24	175.1	2.985	0.265	1.8546	
15 minute winter	S27	47.006	S28	9.2	1.185	0.239	0.2320	
15 minute winter	S28	47.007	S77	26.2	1.378	0.182	0.7014	
15 minute winter	S77	47.008	S78	26.1	1.246	0.236	0.3826	
15 minute winter	S78	47.009	S24	33.7	1.874	0.107	0.8458	
15 minute winter	S24	1.017	S25	210.6	3.668	0.130	1.7818	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S25	11	77.714	0.289	210.6	0.5115	0.0000	OK
15 minute winter	S26	11	77.367	0.312	209.6	0.5518	0.0000	OK
15 minute winter	S29	10	81.727	0.057	18.2	0.0999	0.0000	OK
15 minute winter	S30	10	78.959	0.064	34.7	0.0914	0.0000	OK
15 minute winter	S31	12	77.690	0.166	46.5	0.4222	0.0000	OK
15 minute winter	S32	12	77.684	0.133	8.0	0.3379	0.0000	OK
15 minute winter	S33	12	77.682	0.165	9.4	0.4212	0.0000	OK
15 minute winter	S34	12	77.681	0.205	63.3	0.5211	0.0000	OK
15 minute winter	S35	10	79.883	0.048	12.2	0.0845	0.0000	OK
15 minute winter	S36	10	79.305	0.072	33.3	0.1266	0.0000	OK
15 minute winter	S37	12	77.665	0.268	108.7	0.6811	0.0000	OK
15 minute winter	S79	12	77.619	0.255	109.3	0.6490	0.0000	OK
15 minute winter	S38	12	77.546	0.255	137.2	0.6494	0.0000	OK
15 minute winter	S39	12	77.460	0.280	159.2	0.9705	0.0000	OK
15 minute winter	S40	12	77.357	0.302	158.2	0.5334	0.0000	OK
360 minute winter	S41	288	77.228	0.228	43.4	0.4035	0.0000	OK
360 minute winter	S42	288	77.228	0.249	16.1	1.7588	0.0000	SURCHARGED
360 minute winter	S81	288	76.951	0.103	16.1	0.1160	0.0000	OK
360 minute winter	S44	288	76.629	0.093	16.1	0.1049	0.0000	OK
360 minute winter	S45	288	76.098	0.096	16.1	0.1089	0.0000	OK
360 minute winter	S46	288	75.990	0.090	16.1	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	S25	1.018	S26	209.6	1.720	0.372	1.3599	
15 minute winter	S26	Flow through pond	S41	300.8	0.125	0.010	206.8072	
15 minute winter	S29	63.007	S30	17.7	1.943	0.076	0.5566	
15 minute winter	S30	63.008	S31	34.5	2.604	0.040	0.2020	
15 minute winter	S31	63.009	S34	45.0	0.633	0.082	2.0668	
15 minute winter	S32	73.005	S33	6.0	0.320	0.011	1.0454	
15 minute winter	S33	73.006	S34	12.1	0.223	0.022	1.7510	
15 minute winter	S34	63.010	S37	60.4	0.524	0.110	4.6873	
15 minute winter	S35	86.000	S36	12.1	0.894	0.018	0.4106	
15 minute winter	S36	82.006	S37	32.4	1.857	0.040	1.0128	
15 minute winter	S37	63.011	S79	106.3	0.779	0.253	3.8405	
15 minute winter	S79	63.012	S38	109.6	0.975	0.294	2.8494	
15 minute winter	S38	63.013	S39	136.9	0.972	0.220	6.1341	
15 minute winter	S39	63.014	S40	158.2	1.169	0.290	2.0578	
15 minute winter	S40	Flow through pond	S41	300.8	0.125	0.010	206.8072	
360 minute winter	S41	1.020	S42	16.1	0.219	0.029	1.2377	
360 minute winter	S42	Hydro-Brake®	S81	16.1				
360 minute winter	S81	1.022	S44	16.1	0.974	0.411	0.9036	
360 minute winter	S44	1.023	S45	16.1	1.017	0.356	1.1121	
360 minute winter	S45	1.024	S46	16.1	1.041	0.339	0.1889	618.9

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S3	10	89.132	0.092	37.8	0.1620	0.0000	OK
15 minute winter	S4	10	88.012	0.162	58.3	0.2870	0.0000	OK
15 minute winter	S5	10	87.464	0.126	70.7	0.2223	0.0000	OK
15 minute winter	S1	10	90.102	0.067	14.1	0.0754	0.0000	OK
15 minute winter	S2	10	89.768	0.118	54.0	0.2092	0.0000	OK
15 minute winter	S6	10	86.923	0.158	140.0	0.5460	0.0000	OK
15 minute winter	S7	11	86.022	0.207	175.1	0.3661	0.0000	OK
15 minute winter	S10	11	84.992	0.222	211.0	0.3922	0.0000	OK
15 minute winter	S11	11	84.366	0.196	234.6	0.3464	0.0000	OK
15 minute winter	S12	11	82.674	0.264	292.2	0.3780	0.0000	OK
15 minute winter	S13	10	92.771	0.061	17.3	0.1070	0.0000	OK
15 minute winter	S14	10	91.498	0.123	51.0	0.2182	0.0000	OK
15 minute winter	S15	10	90.778	0.088	50.3	0.1547	0.0000	OK
15 minute winter	S16	10	87.685	0.115	84.7	0.1647	0.0000	OK
15 minute winter	S17	11	86.385	0.125	89.9	0.1787	0.0000	OK
15 minute winter	S18	10	84.733	0.173	118.4	0.2478	0.0000	OK
15 minute winter	S20	11	84.077	0.197	117.9	0.7797	0.0000	OK
15 minute winter	S21	11	83.629	0.129	118.8	0.2283	0.0000	OK
15 minute winter	S22	11	82.095	0.320	421.4	0.8135	0.0000	OK
15 minute winter	S23	11	81.650	0.365	432.8	0.6444	0.0000	OK
15 minute winter	S27	10	84.353	0.083	22.8	0.1463	0.0000	OK
15 minute winter	S28	10	83.038	0.143	65.3	0.2518	0.0000	OK
15 minute winter	S77	11	82.455	0.179	64.6	0.3154	0.0000	OK
15 minute winter	S78	11	82.156	0.135	82.6	0.2384	0.0000	OK
15 minute winter	S24	11	80.906	0.201	522.1	0.3552	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	S3	1.007	S4	37.6	1.633	0.352	0.6529	
15 minute winter	S4	1.008	S5	57.0	1.964	0.774	0.6369	
15 minute winter	S5	1.009	S6	70.3	2.737	0.293	0.2765	
15 minute winter	S1	14.000	S2	14.0	0.913	0.193	0.3077	
15 minute winter	S2	14.001	S6	52.2	2.513	0.529	1.5920	
15 minute winter	S6	1.010	S7	139.2	2.628	0.349	1.2807	
15 minute winter	S7	1.011	S10	175.1	2.946	0.530	2.1270	
15 minute winter	S10	1.012	S11	211.8	2.940	0.408	1.6858	
15 minute winter	S11	1.013	S12	236.0	2.895	0.405	4.4416	
15 minute winter	S12	1.014	S22	293.8	3.188	0.506	1.6150	
15 minute winter	S13	37.000	S14	17.2	1.124	0.160	0.4877	
15 minute winter	S14	34.005	S15	50.3	2.383	0.508	0.3585	
15 minute winter	S15	34.006	S16	49.9	2.393	0.188	1.1604	
15 minute winter	S16	34.007	S17	83.8	3.189	0.287	0.5036	
15 minute winter	S17	34.008	S18	89.3	2.566	0.368	1.2555	
15 minute winter	S18	34.009	S20	117.9	2.601	0.555	0.8531	
15 minute winter	S20	34.010	S21	118.8	2.736	0.554	0.3580	
15 minute winter	S21	34.011	S22	119.0	3.196	0.258	1.2293	
15 minute winter	S22	1.015	S23	422.6	2.837	0.500	2.4156	
15 minute winter	S23	1.016	S24	433.7	3.658	0.656	3.6915	
15 minute winter	S27	47.006	S28	22.6	1.593	0.589	0.4060	
15 minute winter	S28	47.007	S77	64.6	1.687	0.447	1.4081	
15 minute winter	S77	47.008	S78	64.1	1.552	0.581	0.7551	
15 minute winter	S78	47.009	S24	83.3	2.400	0.264	1.6313	
15 minute winter	S24	1.017	S25	522.1	3.694	0.323	4.0474	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S25	11	77.965	0.540	522.1	0.9539	0.0000	OK
15 minute winter	S26	11	77.631	0.576	521.5	1.0172	0.0000	OK
15 minute winter	S29	10	81.760	0.090	44.6	0.1584	0.0000	OK
15 minute winter	S30	10	78.998	0.103	85.4	0.1469	0.0000	OK
15 minute winter	S31	12	77.878	0.354	114.6	0.8999	0.0000	OK
15 minute winter	S32	12	77.874	0.323	19.5	0.8224	0.0000	OK
15 minute winter	S33	12	77.876	0.359	23.9	0.9128	0.0000	OK
15 minute winter	S34	12	77.873	0.397	155.6	1.0100	0.0000	OK
15 minute winter	S35	10	79.908	0.073	30.0	0.1295	0.0000	OK
15 minute winter	S36	10	79.343	0.110	81.9	0.1946	0.0000	OK
15 minute winter	S37	12	77.860	0.463	266.7	1.1779	0.0000	OK
15 minute winter	S79	12	77.815	0.451	260.7	1.1476	0.0000	OK
15 minute winter	S38	12	77.754	0.463	329.3	1.1776	0.0000	OK
15 minute winter	S39	12	77.683	0.503	385.2	1.7422	0.0000	OK
15 minute winter	S40	12	77.602	0.547	384.4	0.9669	0.0000	OK
480 minute winter	S41	464	77.528	0.528	71.9	0.9328	0.0000	OK
480 minute winter	S42	464	77.528	0.549	16.8	3.8798	0.0000	SURCHARGED
60 minute winter	S81	40	76.951	0.103	16.3	0.1168	0.0000	OK
60 minute summer	S44	43	76.629	0.093	16.3	0.1056	0.0000	OK
30 minute summer	S45	35	76.099	0.097	16.3	0.1096	0.0000	OK
30 minute summer	S46	36	75.990	0.090	16.3	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)
15 minute winter	S25	1.018	S26	521.5	2.125	0.925	2.7189	
15 minute winter	S26	Flow through pond	S41	644.7	0.160	0.022	515.8709	
15 minute winter	S29	63.007	S30	43.7	2.513	0.189	1.0640	
15 minute winter	S30	63.008	S31	85.0	3.322	0.099	0.3910	
15 minute winter	S31	63.009	S34	105.2	0.693	0.193	5.3737	
15 minute winter	S32	73.005	S33	16.2	0.341	0.029	3.2737	
15 minute winter	S33	73.006	S34	28.7	0.258	0.052	4.5986	
15 minute winter	S34	63.010	S37	145.1	0.563	0.264	10.2666	
15 minute winter	S35	86.000	S36	29.7	1.180	0.043	0.7672	
15 minute winter	S36	82.006	S37	80.8	2.147	0.100	3.6042	
15 minute winter	S37	63.011	S79	253.4	0.917	0.604	7.9074	
15 minute winter	S79	63.012	S38	261.6	1.029	0.703	6.5163	
15 minute winter	S38	63.013	S39	330.4	1.103	0.532	13.0319	
15 minute winter	S39	63.014	S40	384.4	1.322	0.704	4.4921	
15 minute winter	S40	Flow through pond	S41	644.7	0.160	0.022	515.8709	
480 minute winter	S41	1.020	S42	16.8	0.226	0.030	3.4786	
480 minute winter	S42	Hydro-Brake®	S81	16.3				
60 minute winter	S81	1.022	S44	16.3	0.977	0.416	0.9117	
60 minute summer	S44	1.023	S45	16.3	1.020	0.360	1.1222	
30 minute summer	S45	1.024	S46	16.3	1.044	0.343	0.1906	625.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S3	11	89.199	0.159	68.7	0.2806	0.0000	OK
15 minute winter	S4	11	88.616	0.766	104.4	1.3540	0.0000	SURCHARGED
15 minute winter	S5	11	87.520	0.182	124.4	0.3209	0.0000	OK
15 minute winter	S1	10	90.127	0.092	25.7	0.1036	0.0000	OK
15 minute winter	S2	10	89.833	0.183	98.1	0.3235	0.0000	OK
15 minute winter	S6	11	86.996	0.231	249.4	0.7990	0.0000	OK
15 minute winter	S7	11	86.153	0.338	311.7	0.5971	0.0000	OK
15 minute winter	S10	11	85.104	0.334	378.4	0.5895	0.0000	OK
15 minute winter	S11	11	84.502	0.332	420.3	0.5860	0.0000	OK
15 minute winter	S12	12	83.445	1.035	515.0	1.4808	0.0000	SURCHARGED
15 minute winter	S13	10	92.793	0.083	31.4	0.1460	0.0000	OK
15 minute winter	S14	10	91.575	0.200	92.7	0.3543	0.0000	OK
15 minute winter	S15	11	90.810	0.120	90.6	0.2113	0.0000	OK
15 minute winter	S16	10	87.736	0.166	153.2	0.2378	0.0000	OK
15 minute winter	S17	11	86.450	0.190	163.1	0.2718	0.0000	OK
15 minute winter	S18	11	85.203	0.643	212.9	0.9200	0.0000	SURCHARGED
15 minute winter	S20	12	84.309	0.429	209.5	4.0491	0.0000	SURCHARGED
15 minute winter	S21	12	83.688	0.188	198.1	0.3315	0.0000	OK
15 minute winter	S22	12	82.791	1.016	705.1	2.5860	0.0000	SURCHARGED
15 minute winter	S23	12	82.176	0.891	721.4	1.5744	0.0000	SURCHARGED
15 minute winter	S27	11	84.630	0.360	41.4	0.6369	0.0000	SURCHARGED
15 minute winter	S28	10	83.104	0.209	113.3	0.3700	0.0000	OK
15 minute winter	S77	11	82.604	0.328	111.7	0.5800	0.0000	SURCHARGED
15 minute winter	S78	11	82.208	0.187	145.4	0.3297	0.0000	OK
15 minute winter	S24	12	80.992	0.287	867.3	0.5074	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	S3	1.007	S4	66.8	1.781	0.625	0.9923	
15 minute winter	S4	1.008	S5	100.9	2.537	1.370	0.8644	
15 minute winter	S5	1.009	S6	124.4	3.059	0.518	0.4379	
15 minute winter	S1	14.000	S2	25.5	1.030	0.352	0.4943	
15 minute winter	S2	14.001	S6	95.1	2.804	0.963	2.5903	
15 minute winter	S6	1.010	S7	250.1	2.813	0.628	2.1219	
15 minute winter	S7	1.011	S10	313.1	3.237	0.948	3.4759	
15 minute winter	S10	1.012	S11	378.9	3.195	0.730	2.9388	
15 minute winter	S11	1.013	S12	412.6	2.992	0.708	7.7306	
15 minute winter	S12	1.014	S22	499.2	3.162	0.860	2.7701	
15 minute winter	S13	37.000	S14	31.2	1.215	0.290	0.7985	
15 minute winter	S14	34.005	S15	90.6	2.622	0.916	0.5867	
15 minute winter	S15	34.006	S16	90.2	2.771	0.340	1.8313	
15 minute winter	S16	34.007	S17	152.0	3.623	0.520	0.8237	
15 minute winter	S17	34.008	S18	161.9	2.684	0.667	2.1119	
15 minute winter	S18	34.009	S20	209.5	2.975	0.986	1.3201	
15 minute winter	S20	34.010	S21	198.1	2.934	0.924	0.5239	
15 minute winter	S21	34.011	S22	198.1	3.153	0.430	2.4800	
15 minute winter	S22	1.015	S23	706.0	3.268	0.836	3.5058	
15 minute winter	S23	1.016	S24	722.0	3.794	1.092	5.2667	
15 minute winter	S27	47.006	S28	37.3	2.139	0.973	0.5246	
15 minute winter	S28	47.007	S77	111.7	1.847	0.774	2.2526	
15 minute winter	S77	47.008	S78	111.9	1.678	1.015	1.2319	
15 minute winter	S78	47.009	S24	145.0	2.752	0.459	2.4761	
15 minute winter	S24	1.017	S25	868.2	4.562	0.537	4.8992	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S25	12	78.348	0.923	868.2	1.6303	0.0000	SURCHARGED
720 minute winter	S26	720	77.971	0.916	75.9	1.6190	0.0000	OK
15 minute winter	S29	10	81.794	0.124	81.1	0.2197	0.0000	OK
15 minute winter	S30	9	79.030	0.135	155.5	0.1934	0.0000	OK
15 minute winter	S31	12	78.312	0.788	209.5	2.0062	0.0000	SURCHARGED
15 minute winter	S32	12	78.291	0.740	35.5	1.8832	0.0000	OK
15 minute winter	S33	12	78.296	0.779	47.1	1.9826	0.0000	SURCHARGED
15 minute winter	S34	12	78.305	0.829	275.1	2.1107	0.0000	SURCHARGED
15 minute winter	S35	10	79.933	0.098	54.5	0.1732	0.0000	OK
15 minute winter	S36	10	79.382	0.149	149.0	0.2631	0.0000	OK
15 minute winter	S37	12	78.296	0.899	455.8	2.2880	0.0000	SURCHARGED
15 minute winter	S79	12	78.227	0.863	465.2	2.1961	0.0000	SURCHARGED
15 minute winter	S38	12	78.158	0.867	583.7	2.2054	0.0000	SURCHARGED
15 minute winter	S39	12	78.003	0.823	676.6	2.8506	0.0000	SURCHARGED
720 minute winter	S40	720	77.973	0.918	62.7	1.6228	0.0000	OK
720 minute winter	S41	705	77.967	0.967	88.8	1.7081	0.0000	SURCHARGED
720 minute winter	S42	705	77.967	0.988	16.8	6.9815	0.0000	SURCHARGED
15 minute winter	S81	11	76.954	0.106	16.3	0.1198	0.0000	OK
15 minute summer	S44	13	76.631	0.095	16.5	0.1073	0.0000	OK
15 minute summer	S45	15	76.099	0.097	16.5	0.1100	0.0000	OK
15 minute summer	S46	15	75.990	0.090	16.4	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	S25	1.018	S26	869.0	3.085	1.541	3.1037	
720 minute winter	S26	Flow through pond	S41	65.9	0.037	0.002	2195.2383	
15 minute winter	S29	63.007	S30	79.7	2.952	0.345	1.6525	
15 minute winter	S30	63.008	S31	155.7	3.566	0.181	1.4538	
15 minute winter	S31	63.009	S34	191.4	0.726	0.351	10.7376	
15 minute winter	S32	73.005	S33	33.6	0.370	0.061	7.3919	
15 minute winter	S33	73.006	S34	71.2	0.283	0.130	9.1105	
15 minute winter	S34	63.010	S37	273.1	0.621	0.496	17.3249	
15 minute winter	S35	86.000	S36	54.1	1.402	0.079	1.1729	
15 minute winter	S36	82.006	S37	147.2	2.230	0.182	7.7021	
15 minute winter	S37	63.011	S79	451.9	1.027	1.077	12.3925	
15 minute winter	S79	63.012	S38	460.8	1.067	1.237	10.9313	
15 minute winter	S38	63.013	S39	577.1	1.311	0.928	19.1510	
15 minute winter	S39	63.014	S40	668.2	1.518	1.223	6.6842	
720 minute winter	S40	Flow through pond	S41	65.9	0.037	0.002	2195.2383	
720 minute winter	S41	1.020	S42	16.8	0.231	0.030	4.5258	
720 minute winter	S42	Hydro-Brake®	S81	16.3				
15 minute winter	S81	1.022	S44	16.4	1.085	0.419	0.9185	
15 minute summer	S44	1.023	S45	16.5	1.106	0.364	1.1259	
15 minute summer	S45	1.024	S46	16.4	1.045	0.345	0.1914	874.2