

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S1	0.058	1.350	Type C	68.673	67.248	1.200	356443.411	180337.938
S2	0.050	1.350	Type C	68.446	67.044	1.177	356434.060	180325.528
S3	0.000	1.350	Type C	68.144	66.717	1.202	356434.073	180317.708
S4	0.050	1.350	Type C	66.648	65.148	1.200	356451.612	180306.670
S5	0.019	1.200	Type B	64.869	62.985	1.584	356472.557	180288.810
S6	0.057	1.200	Type B	64.917	62.882	1.735	356482.557	180293.200
S7	0.063	1.200	Type B	65.124	62.694	2.130	356494.214	180309.279
S8	0.123	1.200	Type B	65.208	62.202	2.706	356525.616	180350.951
S9	0.176	1.350	Type C	63.209	61.709	1.200	356557.018	180392.623
S10	0.006	1.350	Type C	62.256	60.756	1.200	356568.397	180416.380
S11	0.035	1.350	Type C	61.819	60.319	1.200	356575.741	180418.830
S12	0.000	1.350	Type C	58.098	56.453	1.270	356616.665	180396.679
S13	0.076	1.350	Type C	57.649	56.024	1.250	356620.685	180387.795
S14	0.000	1.350	Type C	56.729	55.054	1.300	356604.396	180347.313
S15	0.042	1.350	Type C	56.013	54.438	1.200	356590.148	180325.119
S16	0.182	1.350	Type B	55.740	53.815	1.550	356569.889	180302.411
S17	0.076	1.350	Type B	56.555	53.647	2.533	356544.014	180280.546
EX5	0.000	1.350	Type B	52.483	49.375	2.733	356560.613	180259.093

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Diameter (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S1	67.248	S2	67.044	0.225	15.538	76.1	0.600	1.200	1.177
1.001	S2	67.044	S3	66.717	0.225	7.820	23.9	0.600	1.177	1.202
1.002	S3	66.717	S4	65.223	0.225	20.724	13.9	0.600	1.202	1.200
1.003	S4	65.148	S5	62.985	0.300	27.526	12.7	0.600	1.200	1.584
1.004	S5	62.985	S6	62.882	0.300	10.921	105.9	0.600	1.584	1.735
1.005	S6	62.882	S7	62.694	0.300	19.859	105.9	0.600	1.735	2.130
1.006	S7	62.694	S8	62.202	0.300	52.179	105.9	0.600	2.130	2.706
1.007	S8	62.202	S9	61.709	0.300	52.179	105.9	0.600	2.706	1.200
1.008	S9	61.709	S10	60.756	0.300	26.341	27.6	0.600	1.200	1.200
1.009	S10	60.756	S11	60.319	0.300	7.743	17.7	0.600	1.200	1.200
1.010	S11	60.319	S12	56.528	0.300	46.534	12.3	0.600	1.200	1.270
1.011	S12	56.453	S13	56.024	0.375	9.752	22.7	0.600	1.270	1.250
1.012	S13	56.024	S14	55.054	0.375	43.636	45.0	0.600	1.250	1.300
1.013	S14	55.054	S15	54.438	0.375	26.374	42.8	0.600	1.300	1.200
1.014	S15	54.438	S16	53.815	0.375	30.432	48.9	0.600	1.200	1.550
1.015	S16	53.815	S17	53.647	0.375	33.876	200.7	0.600	1.550	2.533
1.016	S17	53.647	EX5	49.375	0.375	27.126	6.4	0.600	2.533	2.733

Outfall Details

Outfall Manhole EX5 : Free Discharge

Flow Control Details

Simulation Settings

FSR: M5-60=20.00, R=0.35, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 480, 600, 720

Return Periods (yrs) + Climate Change: (1, +0%), (30, +0%), (100, +40%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	34.957	0.00	-0.10	30Yr 480Min Summer	6.855	0.00	-0.01
1Yr 15Min Summer	34.957	0.00	-0.06	30Yr 480Min Winter	6.855	0.00	-0.01
1Yr 30Min Winter	22.649	0.00	-0.04	30Yr 600Min Summer	5.801	0.00	-0.01
1Yr 30Min Summer	22.649	0.00	0.00	30Yr 600Min Winter	5.801	0.00	-0.01
1Yr 60Min Summer	14.222	0.00	0.00	30Yr 720Min Summer	5.059	0.00	-0.01
1Yr 60Min Winter	14.222	0.00	0.00	30Yr 720Min Winter	5.059	0.00	-0.01
1Yr 480Min Summer	3.368	0.00	-0.02	100Yr +40% 15Min Summer	131.851	0.00	-0.23
1Yr 480Min Winter	3.368	0.00	-0.01	100Yr +40% 15Min Winter	131.851	0.00	-0.72
1Yr 600Min Summer	2.882	0.00	-0.02	100Yr +40% 30Min Summer	88.566	0.00	-0.39
1Yr 600Min Winter	2.882	0.00	-0.01	100Yr +40% 30Min Winter	88.566	0.00	-0.28
1Yr 720Min Winter	2.538	0.00	-0.01	100Yr +40% 60Min Summer	56.713	0.00	-0.04
1Yr 720Min Summer	2.538	0.00	-0.02	100Yr +40% 60Min Winter	56.713	0.00	-0.02
30Yr 15Min Summer	72.682	0.00	0.00	100Yr +40% 480Min Summer	12.341	0.00	0.00
30Yr 15Min Winter	72.682	0.00	-0.06	100Yr +40% 480Min Winter	12.341	0.00	-0.01
30Yr 30Min Summer	48.363	0.00	0.00	100Yr +40% 600Min Summer	10.402	0.00	-0.00
30Yr 30Min Winter	48.363	0.00	-0.03	100Yr +40% 600Min Winter	10.402	0.00	-0.00
30Yr 60Min Summer	30.811	0.00	0.00	100Yr +40% 720Min Winter	9.042	0.00	-0.00
30Yr 60Min Winter	30.811	0.00	-0.02	100Yr +40% 720Min Summer	9.042	0.00	0.00

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	67.306	0.058	9.012		OK
S2	15 min Winter	8	67.105	0.061	16.666		OK
S3	15 min Winter	8	66.768	0.052	16.541		OK
S4	15 min Winter	8	65.203	0.056	24.192		OK
S5	15 min Winter	8	63.087	0.102	26.963		OK
S6	15 min Winter	8	62.999	0.117	35.458		OK
S7	15 min Winter	9	62.827	0.133	44.560		OK
S8	15 min Winter	9	62.363	0.162	62.855		OK
S9	15 min Winter	9	61.845	0.136	88.234		OK
S10	15 min Winter	9	60.875	0.119	89.061		OK
S11	15 min Winter	9	60.430	0.110	94.184		OK
S12	15 min Winter	9	56.571	0.118	93.914		OK
S13	15 min Winter	9	56.175	0.151	104.950		OK
S14	15 min Winter	9	55.202	0.148	104.771		OK
S15	15 min Winter	9	54.596	0.158	110.156		OK
S16	15 min Winter	9	54.090	0.274	135.885		OK
S17	15 min Winter	9	53.754	0.107	148.469		OK
EX5	15 min Winter	9	49.481	0.106	144.274		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.060	1.059	8.919	0.150	OK
1.001	15 min Winter	8	S2	S3	0.056	2.130	16.541	0.155	OK
1.002	15 min Winter	8	S3	S4	0.052	2.382	16.370	0.117	OK
1.003	15 min Winter	8	S4	S5	0.079	1.621	24.050	0.077	OK
1.004	15 min Winter	8	S5	S6	0.109	1.140	26.567	0.246	OK
1.005	15 min Winter	8	S6	S7	0.123	1.278	35.037	0.325	OK
1.006	15 min Winter	9	S7	S8	0.147	1.301	44.926	0.417	OK
1.007	15 min Winter	9	S8	S9	0.161	1.611	62.461	0.579	OK
1.008	15 min Winter	9	S9	S10	0.128	3.080	88.237	0.416	OK
1.009	15 min Winter	9	S10	S11	0.115	3.572	89.025	0.336	OK
1.010	15 min Winter	9	S11	S12	0.110	3.982	93.914	0.295	OK
1.011	15 min Winter	9	S12	S13	0.135	2.623	93.843	0.223	OK
1.012	15 min Winter	9	S13	S14	0.150	2.545	104.771	0.351	OK
1.013	15 min Winter	9	S14	S15	0.153	2.456	104.064	0.340	OK
1.014	15 min Winter	9	S15	S16	0.216	1.658	109.281	0.381	OK
1.015	15 min Winter	9	S16	S17	0.191	2.436	137.407	0.977	OK
1.016	15 min Winter	9	S17	EX5	0.106	5.587	144.274	0.181	OK

Return Period Yrs: 30.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	67.334	0.086	18.745		OK
S2	15 min Winter	8	67.133	0.089	34.700		OK
S3	15 min Winter	8	66.792	0.075	34.496		OK
S4	15 min Winter	8	65.228	0.080	50.477		OK
S5	15 min Winter	8	63.145	0.159	56.308		OK
S6	15 min Winter	8	63.066	0.184	74.043		OK
S7	15 min Winter	9	62.906	0.212	92.666		OK
S8	15 min Winter	10	62.552	0.350	115.824		Surcharged
S9	15 min Winter	8	61.918	0.209	174.779		OK
S10	15 min Winter	8	60.933	0.177	175.380		OK
S11	15 min Winter	9	60.481	0.162	185.444		OK
S12	15 min Winter	9	56.624	0.171	185.074		OK
S13	15 min Winter	9	56.251	0.227	208.243		OK
S14	15 min Winter	9	55.279	0.225	209.803		OK
S15	15 min Winter	10	54.856	0.418	214.357		Surcharged
S16	15 min Winter	10	54.525	0.710	261.549		Surcharged
S17	15 min Winter	9	53.799	0.152	283.907		OK
EX5	15 min Winter	9	49.526	0.151	283.090		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.087	1.304	18.590	0.312	OK
1.001	15 min Winter	8	S2	S3	0.082	2.625	34.496	0.323	OK
1.002	15 min Winter	8	S3	S4	0.075	2.938	34.209	0.244	OK
1.003	15 min Winter	8	S4	S5	0.120	1.904	50.251	0.161	OK
1.004	15 min Winter	8	S5	S6	0.172	1.329	55.551	0.515	OK
1.005	15 min Winter	8	S6	S7	0.196	1.498	73.329	0.680	OK
1.006	15 min Winter	9	S7	S8	0.256	1.459	93.637	0.868	OK
1.007	15 min Winter	10	S8	S9	0.283	1.770	122.203	1.133	OK
1.008	15 min Winter	8	S9	S10	0.193	3.618	173.555	0.818	OK
1.009	15 min Winter	8	S10	S11	0.169	4.239	174.200	0.657	OK
1.010	15 min Winter	9	S11	S12	0.162	4.754	185.074	0.580	OK
1.011	15 min Winter	9	S12	S13	0.199	3.109	185.155	0.440	OK
1.012	15 min Winter	9	S13	S14	0.226	3.021	209.803	0.702	OK
1.013	15 min Winter	9	S14	S15	0.291	2.301	211.605	0.691	OK
1.014	15 min Winter	10	S15	S16	0.375	1.953	215.736	0.752	Surcharged
1.015	15 min Winter	10	S16	S17	0.263	3.167	262.341	1.865	OK
1.016	15 min Winter	9	S17	EX5	0.152	6.748	283.090	0.355	OK

Return Period Yrs: 100.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	67.369	0.120	34.006		OK
S2	15 min Winter	8	67.169	0.125	62.989		OK
S3	15 min Winter	8	66.821	0.104	62.658		OK
S4	15 min Winter	8	65.257	0.110	91.706		OK
S5	15 min Winter	11	64.132	1.147	66.163		Surcharged
S6	15 min Winter	11	64.091	1.209	91.092		Surcharged
S7	15 min Winter	11	63.959	1.265	115.808		Surcharged
S8	15 min Winter	11	63.385	1.183	162.408		Surcharged
S9	15 min Winter	10	62.296	0.587	243.609		Surcharged
S10	15 min Winter	10	60.982	0.226	248.238		OK
S11	15 min Winter	10	60.524	0.205	264.475		OK
S12	15 min Winter	11	57.074	0.621	256.315		Surcharged
S13	15 min Winter	11	56.928	0.904	279.882		Surcharged
S14	15 min Winter	11	56.144	1.090	277.002		Surcharged
S15	15 min Winter	11	55.679	1.241	288.028		Surcharged
S16	15 min Winter	10	55.097	1.282	358.579		Surcharged
S17	15 min Winter	9	53.829	0.183	392.210		OK
EX5	15 min Winter	10	49.557	0.182	391.851		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.123	1.523	33.759	0.567	OK
1.001	15 min Winter	8	S2	S3	0.115	3.078	62.658	0.587	OK
1.002	15 min Winter	8	S3	S4	0.104	3.453	62.191	0.443	OK
1.003	15 min Winter	8	S4	S5	0.205	1.777	91.374	0.292	OK
1.004	15 min Winter	11	S5	S6	0.300	1.005	71.056	0.659	Surcharged
1.005	15 min Winter	11	S6	S7	0.300	1.327	93.824	0.870	Surcharged
1.006	15 min Winter	11	S7	S8	0.300	1.689	119.384	1.107	Surcharged
1.007	15 min Winter	11	S8	S9	0.300	2.386	168.647	1.564	Surcharged
1.008	15 min Winter	10	S9	S10	0.263	3.738	245.665	1.158	OK
1.009	15 min Winter	10	S10	S11	0.216	4.563	248.367	0.937	OK
1.010	15 min Winter	10	S11	S12	0.253	4.169	264.814	0.831	OK
1.011	15 min Winter	11	S12	S13	0.375	2.293	253.229	0.601	Surcharged
1.012	15 min Winter	11	S13	S14	0.375	2.508	277.002	0.927	Surcharged
1.013	15 min Winter	11	S14	S15	0.375	2.475	273.409	0.892	Surcharged
1.014	15 min Winter	11	S15	S16	0.375	2.603	287.516	1.003	Surcharged
1.015	15 min Winter	10	S16	S17	0.279	4.055	357.017	2.538	OK
1.016	15 min Winter	9	S17	EX5	0.182	7.352	391.749	0.491	OK