

### Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
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)	4.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	3.00	Enforce best practice design rules	✓

### Circular Default Sewer Type Link Type

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

### Available Diameters (mm)

100 | 150

### Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
21	0.105	3.00	60.788	1200	508946.679	154413.879	1.638
22	0.059	3.00	60.388	1200	509025.802	154454.747	1.609
23	0.036	3.00	60.156	1200	509019.436	154473.720	1.460
HW5			59.600		509027.217	154477.325	0.980
35	0.040	3.00	60.017	1200	509009.561	154492.772	1.342
HW17			59.600		509015.536	154500.224	0.980
HW8		3.00	59.600		509020.978	154504.381	1.000
28			59.600	1200	509022.203	154512.202	1.700
29			59.100		509022.772	154517.965	1.375
37	0.014	3.00	60.583	1200	508900.835	154414.071	1.426
38	0.092	3.00	60.261	1200	508891.534	154437.669	1.506
39	0.044	3.00	60.032	1500	508884.811	154455.284	1.500
40	0.027	3.00	60.097	1200	508908.191	154464.248	1.722
41	0.125	3.00	59.717	1500	508936.017	154477.430	1.587
42	0.054	3.00	59.583	1500	508945.705	154489.145	1.591
43	0.082	3.00	59.800	1500	509004.804	154512.935	2.020
44			59.100		509019.772	154519.925	1.375
30		3.00	59.000		509024.913	154540.863	1.300
31			58.400		509014.443	154573.314	1.900
45	0.072	3.00	59.468	1200	508934.295	154506.408	1.368
46	0.152	3.00	58.996	1500	508915.013	154544.646	1.771
47			58.400	1200	508968.782	154570.600	1.750
48			58.400		508997.186	154578.004	1.900
49	0.076	3.00	58.704	1200	508995.547	154557.732	1.425
50			58.400		509000.955	154574.939	1.900
32		3.00	58.400		509017.763	154584.751	1.900
33			58.300	1200	509020.731	154589.887	1.820
34			57.650		509023.547	154595.422	1.211
5	0.051	3.00	62.218	1200	508932.618	154328.665	1.425
6	0.084	3.00	61.734	1200	508918.977	154363.406	1.734
7	0.013	3.00	61.617	1200	508920.609	154375.763	1.766

**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)
1.003	21	22	89.054	0.600	59.150	58.779	0.371	240.0	300	5.42	50.0
1.004	22	23	20.013	0.600	58.779	58.696	0.083	241.1	300	5.75	50.0
1.005	23	HW5	8.576	0.600	58.696	58.620	0.076	112.8	300	5.84	50.0
2.000	35	HW17	9.552	0.600	58.675	58.620	0.055	173.7	225	3.16	50.0
1.006	HW8	28	7.916	0.600	58.600	57.900	0.700	11.3	300	3.03	50.0
1.007	28	29	5.791	0.600	57.900	57.725	0.175	33.1	300	3.06	50.0
3.000	37	38	25.365	0.600	59.157	58.755	0.402	63.0	300	3.21	50.0
3.001	38	39	18.854	0.600	58.755	58.532	0.223	84.7	300	3.40	50.0
3.002	39	40	25.040	0.600	58.532	58.375	0.157	159.5	300	3.73	50.0
3.003	40	41	30.790	0.600	58.375	58.130	0.245	125.8	300	4.10	50.0
3.004	41	42	15.202	0.600	58.130	58.067	0.063	241.3	300	4.35	50.0
3.005	42	43	63.708	0.600	57.992	57.780	0.212	300.0	375	5.37	50.0
3.006	43	44	16.520	0.600	57.780	57.725	0.055	300.0	375	5.64	50.0
1.009	30	31	34.098	0.600	57.700	56.500	1.200	28.4	300	3.19	50.0
4.000	45	46	42.825	0.600	58.100	57.225	0.875	48.9	300	3.32	50.0
4.001	46	47	59.705	0.600	57.225	56.650	0.575	103.8	300	3.96	50.0
4.002	47	48	29.353	0.600	56.650	56.500	0.150	195.7	300	4.40	50.0
5.000	49	50	18.037	0.600	57.279	56.500	0.779	23.2	225	3.11	50.0
1.011	32	33	5.932	0.600	56.500	56.480	0.020	300.0	300	3.11	50.0
1.012	33	34	6.210	0.600	56.480	56.439	0.041	150.0	150	3.24	50.0
1.000	5	6	37.323	0.600	60.793	60.000	0.793	47.1	225	3.33	50.0
1.001	6	7	12.464	0.600	60.000	59.851	0.149	83.7	225	3.47	50.0
1.002	7	21	46.179	0.600	59.851	59.150	0.701	65.9	225	3.95	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)
1.003	1.010	71.4	34.3	1.338	1.309	0.253	0.0	146	1.000
1.004	1.008	71.2	42.3	1.309	1.160	0.312	0.0	167	1.050
1.005	1.479	104.6	47.2	1.160	0.680	0.348	0.0	141	1.441
2.000	0.989	39.3	5.4	1.117	0.755	0.040	0.0	56	0.695
1.006	4.700	332.2	0.0	0.700	1.400	0.000	0.0	0	0.000
1.007	2.742	193.8	0.0	1.400	1.075	0.000	0.0	0	0.000
3.000	1.983	140.2	1.9	1.126	1.206	0.014	0.0	24	0.707
3.001	1.709	120.8	14.4	1.206	1.200	0.106	0.0	69	1.161
3.002	1.242	87.8	20.3	1.200	1.422	0.150	0.0	98	1.015
3.003	1.400	99.0	24.0	1.422	1.287	0.177	0.0	100	1.158
3.004	1.008	71.2	40.9	1.287	1.216	0.302	0.0	163	1.041
3.005	1.041	114.9	48.2	1.216	1.645	0.356	0.0	170	0.997
3.006	1.041	114.9	59.4	1.645	1.000	0.438	0.0	192	1.050
1.009	2.960	209.2	0.0	1.000	1.600	0.000	0.0	0	0.000
4.000	2.252	159.2	9.8	1.068	1.471	0.072	0.0	50	1.266
4.001	1.542	109.0	30.4	1.471	1.450	0.224	0.0	108	1.328
4.002	1.120	79.2	30.4	1.450	1.600	0.224	0.0	129	1.048
5.000	2.730	108.6	10.3	1.200	1.675	0.076	0.0	46	1.726
1.011	0.902	63.8	0.0	1.600	1.520	0.000	0.0	0	0.000
1.012	0.818	14.5	0.0	1.670	1.061	0.000	0.0	0	0.000
1.000	1.911	76.0	6.9	1.200	1.509	0.051	0.0	45	1.193
1.001	1.430	56.9	18.3	1.509	1.541	0.135	0.0	87	1.277
1.002	1.613	64.2	20.1	1.541	1.413	0.148	0.0	87	1.433

### Pipeline Schedule









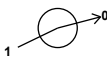




Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.003	89.054	240.0	300	Circular_Default Sewer Type	60.788	59.150	1.338	60.388	58.779	1.309
1.004	20.013	241.1	300	Circular_Default Sewer Type	60.388	58.779	1.309	60.156	58.696	1.160
1.005	8.576	112.8	300	Circular_Default Sewer Type	60.156	58.696	1.160	59.600	58.620	0.680
2.000	9.552	173.7	225	Circular_Default Sewer Type	60.017	58.675	1.117	59.600	58.620	0.755
1.006	7.916	11.3	300	Circular_Default Sewer Type	59.600	58.600	0.700	59.600	57.900	1.400
1.007	5.791	33.1	300	Circular_Default Sewer Type	59.600	57.900	1.400	59.100	57.725	1.075
3.000	25.365	63.0	300	Circular_Default Sewer Type	60.583	59.157	1.126	60.261	58.755	1.206
3.001	18.854	84.7	300	Circular_Default Sewer Type	60.261	58.755	1.206	60.032	58.532	1.200
3.002	25.040	159.5	300	Circular_Default Sewer Type	60.032	58.532	1.200	60.097	58.375	1.422
3.003	30.790	125.8	300	Circular_Default Sewer Type	60.097	58.375	1.422	59.717	58.130	1.287
3.004	15.202	241.3	300	Circular_Default Sewer Type	59.717	58.130	1.287	59.583	58.067	1.216
3.005	63.708	300.0	375	Circular_Default Sewer Type	59.583	57.992	1.216	59.800	57.780	1.645
3.006	16.520	300.0	375	Circular_Default Sewer Type	59.800	57.780	1.645	59.100	57.725	1.000
1.009	34.098	28.4	300	Circular_Default Sewer Type	59.000	57.700	1.000	58.400	56.500	1.600
4.000	42.825	48.9	300	Circular_Default Sewer Type	59.468	58.100	1.068	58.996	57.225	1.471
4.001	59.705	103.8	300	Circular_Default Sewer Type	58.996	57.225	1.471	58.400	56.650	1.450
4.002	29.353	195.7	300	Circular_Default Sewer Type	58.400	56.650	1.450	58.400	56.500	1.600
5.000	18.037	23.2	225	Circular_Default Sewer Type	58.704	57.279	1.200	58.400	56.500	1.675
1.011	5.932	300.0	300	Circular_Default Sewer Type	58.400	56.500	1.600	58.300	56.480	1.520
1.012	6.210	150.0	150	Circular_Default Sewer Type	58.300	56.480	1.670	57.650	56.439	1.061
1.000	37.323	47.1	225	Circular_Default Sewer Type	62.218	60.793	1.200	61.734	60.000	1.509
1.001	12.464	83.7	225	Circular_Default Sewer Type	61.734	60.000	1.509	61.617	59.851	1.541
1.002	46.179	65.9	225	Circular_Default Sewer Type	61.617	59.851	1.541	60.788	59.150	1.413

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.003	21	1200	Manhole	Adoptable	22	1200	Manhole	Adoptable
1.004	22	1200	Manhole	Adoptable	23	1200	Manhole	Adoptable
1.005	23	1200	Manhole	Adoptable	HW5		Junction	
2.000	35	1200	Manhole	Adoptable	HW17		Junction	
1.006	HW8		Junction		28	1200	Manhole	Adoptable
1.007	28	1200	Manhole	Adoptable	29		Junction	
3.000	37	1200	Manhole	Adoptable	38	1200	Manhole	Adoptable
3.001	38	1200	Manhole	Adoptable	39	1500	Manhole	Adoptable
3.002	39	1500	Manhole	Adoptable	40	1200	Manhole	Adoptable
3.003	40	1200	Manhole	Adoptable	41	1500	Manhole	Adoptable
3.004	41	1500	Manhole	Adoptable	42	1500	Manhole	Adoptable
3.005	42	1500	Manhole	Adoptable	43	1500	Manhole	Adoptable
3.006	43	1500	Manhole	Adoptable	44		Junction	
1.009	30		Junction		31		Junction	
4.000	45	1200	Manhole	Adoptable	46	1500	Manhole	Adoptable
4.001	46	1500	Manhole	Adoptable	47	1200	Manhole	Adoptable
4.002	47	1200	Manhole	Adoptable	48		Junction	
5.000	49	1200	Manhole	Adoptable	50		Junction	
1.011	32		Junction		33	1200	Manhole	Adoptable
1.012	33	1200	Manhole	Adoptable	34		Junction	
1.000	5	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
1.001	6	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
1.002	7	1200	Manhole	Adoptable	21	1200	Manhole	Adoptable

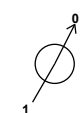




**Manhole Schedule**

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
21	508946.679	154413.879	60.788	1.638	1200		1	1.002	59.150	225
							0	1.003	59.150	300
22	509025.802	154454.747	60.388	1.609	1200		1	1.003	58.779	300
							0	1.004	58.779	300
23	509019.436	154473.720	60.156	1.460	1200		1	1.004	58.696	300
							0	1.005	58.696	300
HW5	509027.217	154477.325	59.600	0.980			1	1.005	58.620	300
35	509009.561	154492.772	60.017	1.342	1200					
							0	2.000	58.675	225
HW17	509015.536	154500.224	59.600	0.980			1	2.000	58.620	225
HW8	509020.978	154504.381	59.600	1.000						
							0	1.006	58.600	300
28	509022.203	154512.202	59.600	1.700	1200		1	1.006	57.900	300
							0	1.007	57.900	300
29	509022.772	154517.965	59.100	1.375			1	1.007	57.725	300
37	508900.835	154414.071	60.583	1.426	1200					
							0	3.000	59.157	300
38	508891.534	154437.669	60.261	1.506	1200		1	3.000	58.755	300
							0	3.001	58.755	300
39	508884.811	154455.284	60.032	1.500	1500		1	3.001	58.532	300
							0	3.002	58.532	300
40	508908.191	154464.248	60.097	1.722	1200		1	3.002	58.375	300
							0	3.003	58.375	300

**Manhole Schedule**

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
41	508936.017	154477.430	59.717	1.587	1500		1	3.003	58.130	300
							0	3.004	58.130	300
42	508945.705	154489.145	59.583	1.591	1500		1	3.004	58.067	300
							0	3.005	57.992	375
43	509004.804	154512.935	59.800	2.020	1500		1	3.005	57.780	375
							0	3.006	57.780	375
44	509019.772	154519.925	59.100	1.375			1	3.006	57.725	375
30	509024.913	154540.863	59.000	1.300						
							0	1.009	57.700	300
31	509014.443	154573.314	58.400	1.900			1	1.009	56.500	300
45	508934.295	154506.408	59.468	1.368	1200					
							0	4.000	58.100	300
46	508915.013	154544.646	58.996	1.771	1500		1	4.000	57.225	300
							0	4.001	57.225	300
47	508968.782	154570.600	58.400	1.750	1200		1	4.001	56.650	300
							0	4.002	56.650	300
48	508997.186	154578.004	58.400	1.900			1	4.002	56.500	300
49	508995.547	154557.732	58.704	1.425	1200					
							0	5.000	57.279	225
50	509000.955	154574.939	58.400	1.900			1	5.000	56.500	225
32	509017.763	154584.751	58.400	1.900						
							0	1.011	56.500	300

### Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
33	509020.731	154589.887	58.300	1.820	1200		1	1.011	56.480	300
							0	1.012	56.480	150
34	509023.547	154595.422	57.650	1.211			1	1.012	56.439	150
5	508932.618	154328.665	62.218	1.425	1200					
							0	1.000	60.793	225
6	508918.977	154363.406	61.734	1.734	1200		1	1.000	60.000	225
							0	1.001	60.000	225
7	508920.609	154375.763	61.617	1.766	1200		1	1.001	59.851	225
							0	1.002	59.851	225

### Simulation Settings

Rainfall Methodology	FEH-13	Skip Steady State	✓	Check Discharge Volume	✓
Summer CV	0.750	Drain Down Time (mins)	240	100 year 360 minute (m <sup>3</sup> )	
Winter CV	0.840	Additional Storage (m <sup>3</sup> /ha)	50.0		
Analysis Speed	Detailed	Check Discharge Rate(s)	✓		

### 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 %)
2	0	0	0
30	0	0	0
100	40	6	0

### Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)		Betterment (%)	0
SAAR (mm)		QBar	
Soil Index	1	Q 1 year (l/s)	
SPR	0.10	Q 30 year (l/s)	
Region	1	Q 100 year (l/s)	
Growth Factor 1 year	0.85		

### Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)		Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m <sup>3</sup> )	

### Node 34 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m <sup>2</sup> )	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to 2yr, 30yr, 100yr+40% CC

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	1.000	270	1.000	540	1.000	810	1.000	1080	1.000	1350	1.000
30	1.000	300	1.000	570	1.000	840	1.000	1110	1.000	1380	1.000
60	1.000	330	1.000	600	1.000	870	1.000	1140	1.000	1410	1.000
90	1.000	360	1.000	630	1.000	900	1.000	1170	1.000	1440	1.000
120	1.000	390	1.000	660	1.000	930	1.000	1200	1.000		
150	1.000	420	1.000	690	1.000	960	1.000	1230	1.000		
180	1.000	450	1.000	720	1.000	990	1.000	1260	1.000		
210	1.000	480	1.000	750	1.000	1020	1.000	1290	1.000		
240	1.000	510	1.000	780	1.000	1050	1.000	1320	1.000		

### Node 33 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	56.480	Product Number	CTL-SHE-0114-7100-1690-7100
Design Depth (m)	1.690	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.1	Min Node Diameter (mm)	1200

### Node 28 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	57.900	Product Number	CTL-SHE-0067-2000-1000-2000
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

### Node 30 Online Orifice Control

Flap Valve	x	Invert Level (m)	57.700	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.100		

### Node 30 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	34.097
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	57.700	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)	116	Main Channel n	0.150

#### Inlets

29 | 44

Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )
0.000	234.9	0.0	1.200	547.0	0.0

**Node 32 Flow through Pond Storage Structure**

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	21.655
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	56.500	Main Channel Slope (1:X)	500.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.150

**Inlets**

48 | 50 | 31

Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )
0.000	74.0	0.0	1.200	321.0	0.0

**Node HW8 Flow through Pond Storage Structure**

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	36.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	58.600	Main Channel Slope (1:X)	1250.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.150

**Inlets**

HW5 | HW17

Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf Area (m <sup>2</sup> )
0.000	238.0	0.0	1.000	612.2	0.0

**Other (defaults)**

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300



**Results for 2 year Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute summer	21	10	59.302	0.152	38.4	0.6598	0.0000	OK
15 minute winter	22	11	58.955	0.176	44.4	0.5223	0.0000	OK
15 minute winter	23	11	58.858	0.162	45.8	0.3823	0.0000	OK
15 minute winter	HW5	11	58.804	0.184	45.8	0.0000	0.0000	OK
360 minute winter	35	312	58.798	0.123	1.0	0.3231	0.0000	OK
360 minute winter	HW17	312	58.798	0.178	1.0	0.0000	0.0000	OK
360 minute winter	HW8	304	58.798	0.198	16.6	0.0000	0.0000	OK
360 minute winter	28	296	58.800	0.900	15.5	1.0179	0.0000	SURCHARGED
240 minute winter	29	168	57.897	0.172	1.9	0.0000	0.0000	OK
15 minute summer	37	9	59.183	0.026	2.3	0.0422	0.0000	OK
15 minute summer	38	9	58.830	0.076	17.5	0.3174	0.0000	OK
15 minute summer	39	10	58.641	0.109	23.7	0.3537	0.0000	OK
15 minute summer	40	10	58.482	0.107	27.4	0.2045	0.0000	OK
15 minute summer	41	10	58.314	0.184	45.4	1.0504	0.0000	OK
15 minute summer	42	10	58.167	0.175	52.0	0.6055	0.0000	OK
15 minute winter	43	11	57.993	0.213	61.0	0.8082	0.0000	OK
15 minute winter	44	11	57.961	0.236	57.9	0.0000	0.0000	OK
240 minute winter	30	168	57.896	0.196	11.6	0.0000	0.0000	OK
480 minute winter	31	424	56.988	0.488	7.5	0.0000	0.0000	OK
15 minute summer	45	9	58.154	0.054	12.0	0.2030	0.0000	OK
15 minute summer	46	10	57.341	0.116	36.7	0.7005	0.0000	OK
480 minute winter	47	424	56.988	0.338	4.7	0.3820	0.0000	SURCHARGED
480 minute winter	48	440	56.987	0.487	4.1	0.0000	0.0000	OK
15 minute summer	49	9	57.330	0.051	12.7	0.1941	0.0000	OK
480 minute winter	50	432	56.986	0.486	1.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute summer	21	1.003	22	36.3	0.957	0.509	3.3891	
15 minute winter	22	1.004	23	42.0	1.027	0.589	0.8178	
15 minute winter	23	1.005	HW5	45.8	1.094	0.438	0.3606	
15 minute winter	HW5	Flow through pond	HW8	26.8	0.056	0.024	20.2799	
360 minute winter	35	2.000	HW17	1.0	0.197	0.024	0.2673	
360 minute winter	HW17	Flow through pond	HW8	7.3	0.021	0.007	50.2264	
360 minute winter	HW8	1.006	28	15.5	0.335	0.047	0.4744	
360 minute winter	28	Hydro-Brake®	29	1.9				
240 minute winter	29	Flow through pond	30	11.6	0.020	0.005	46.2629	
15 minute summer	37	3.000	38	2.2	0.275	0.015	0.2144	
15 minute summer	38	3.001	39	16.4	0.905	0.136	0.3456	
15 minute summer	39	3.002	40	23.5	1.030	0.268	0.5719	
15 minute summer	40	3.003	41	27.4	0.811	0.277	1.0437	
15 minute summer	41	3.004	42	44.2	1.048	0.620	0.6406	
15 minute summer	42	3.005	43	49.8	0.915	0.434	3.5589	
15 minute winter	43	3.006	44	57.9	0.857	0.504	1.1349	
15 minute winter	44	Flow through pond	30	37.2	0.064	0.016	24.6116	
240 minute winter	30	Orifice	31	8.0				
480 minute winter	31	Flow through pond	32	9.5	0.019	0.002	56.6622	
15 minute summer	45	4.000	46	11.4	0.704	0.071	0.7138	
15 minute summer	46	4.001	47	35.0	1.266	0.321	1.6688	
480 minute winter	47	4.002	48	4.1	0.210	0.052	2.0670	
480 minute winter	48	Flow through pond	32	9.5	0.019	0.002	56.6622	
15 minute summer	49	5.000	50	12.3	0.980	0.114	0.3310	
480 minute winter	50	Flow through pond	32	9.5	0.019	0.002	56.6622	

**Results for 2 year Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
480 minute winter	32	432	56.985	0.485	9.5	0.0000	0.0000	SURCHARGED
480 minute winter	33	432	56.985	0.505	7.1	0.5712	0.0000	SURCHARGED
480 minute winter	34	432	56.513	0.074	7.1	0.0000	0.0000	OK
15 minute summer	5	9	60.842	0.049	8.5	0.1439	0.0000	OK
15 minute summer	6	9	60.101	0.101	22.0	0.3595	0.0000	OK
15 minute summer	7	10	59.944	0.093	22.7	0.1388	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
480 minute winter	32	1.011	33	7.1	0.179	0.111	0.4177	
480 minute winter	33	1.012	34	7.1	0.797	0.489	0.0551	227.0
15 minute summer	5	1.000	6	8.1	0.693	0.106	0.4425	
15 minute summer	6	1.001	7	20.8	1.290	0.366	0.2030	
15 minute summer	7	1.002	21	23.1	1.067	0.359	1.0151	

**Results for 30 year Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	21	11	59.835	0.685	99.0	2.9718	0.0000	SURCHARGED
15 minute winter	22	11	59.308	0.529	102.3	1.5686	0.0000	SURCHARGED
15 minute winter	23	11	59.088	0.392	114.0	0.9276	0.0000	SURCHARGED
480 minute winter	HW5	464	59.057	0.437	21.2	0.0000	0.0000	OK
480 minute winter	35	464	59.048	0.373	1.8	0.9781	0.0000	SURCHARGED
480 minute winter	HW17	472	59.049	0.429	1.7	0.0000	0.0000	OK
480 minute winter	HW8	464	59.048	0.448	14.3	0.0000	0.0000	SURCHARGED
480 minute winter	28	464	59.048	1.148	16.8	1.2988	0.0000	SURCHARGED
180 minute winter	29	140	58.101	0.376	2.1	0.0000	0.0000	OK
15 minute summer	37	9	59.200	0.043	6.6	0.0702	0.0000	OK
15 minute summer	38	9	58.897	0.142	49.6	0.5939	0.0000	OK
15 minute winter	39	11	58.863	0.331	64.6	1.0710	0.0000	SURCHARGED
15 minute winter	40	11	58.804	0.429	73.2	0.8217	0.0000	SURCHARGED
15 minute winter	41	11	58.700	0.570	112.2	3.2502	0.0000	SURCHARGED
15 minute winter	42	11	58.520	0.528	122.0	1.8302	0.0000	SURCHARGED
15 minute winter	43	10	58.266	0.486	146.5	1.8460	0.0000	SURCHARGED
15 minute winter	44	11	58.160	0.435	143.7	0.0000	0.0000	OK
180 minute winter	30	140	58.100	0.400	25.5	0.0000	0.0000	SURCHARGED
600 minute winter	31	675	57.625	1.125	11.2	0.0000	0.0000	OK
15 minute summer	45	9	58.191	0.091	33.8	0.3442	0.0000	OK
600 minute winter	46	675	57.622	0.397	8.4	2.4083	0.0000	SURCHARGED
600 minute winter	47	675	57.621	0.971	8.4	1.0986	0.0000	SURCHARGED
600 minute winter	48	675	57.623	1.123	8.0	0.0000	0.0000	OK
600 minute winter	49	675	57.622	0.343	2.8	1.3039	0.0000	SURCHARGED
600 minute winter	50	675	57.622	1.122	2.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	21	1.003	22	81.0	1.150	1.134	6.2711	
15 minute winter	22	1.004	23	100.2	1.423	1.407	1.4093	
15 minute winter	23	1.005	HW5	112.7	1.600	1.078	0.6039	
480 minute winter	HW5	Flow through pond	HW8	9.4	0.019	0.009	138.6516	
480 minute winter	35	2.000	HW17	1.7	0.235	0.042	0.3799	
480 minute winter	HW17	Flow through pond	HW8	9.4	0.019	0.009	138.6516	
480 minute winter	HW8	1.006	28	16.8	0.347	0.051	0.5574	
480 minute winter	28	Hydro-Brake®	29	2.1				
180 minute winter	29	Flow through pond	30	25.5	0.029	0.011	109.0996	
15 minute summer	37	3.000	38	6.4	0.358	0.045	0.4951	
15 minute summer	38	3.001	39	47.8	1.117	0.396	0.9119	
15 minute winter	39	3.002	40	61.4	1.234	0.700	1.7633	
15 minute winter	40	3.003	41	64.2	0.946	0.648	2.1682	
15 minute winter	41	3.004	42	99.9	1.418	1.402	1.0705	
15 minute winter	42	3.005	43	117.6	1.067	1.023	7.0268	
15 minute winter	43	3.006	44	143.7	1.303	1.251	1.8221	
15 minute winter	44	Flow through pond	30	124.1	0.106	0.054	67.1686	
180 minute winter	30	Orifice	31	12.4				
600 minute winter	31	Flow through pond	32	13.8	0.020	0.003	206.4523	
15 minute summer	45	4.000	46	32.6	0.877	0.205	1.6562	
600 minute winter	46	4.001	47	8.4	0.595	0.077	4.2044	
600 minute winter	47	4.002	48	8.0	0.203	0.102	2.0670	
600 minute winter	48	Flow through pond	32	13.8	0.020	0.003	206.4523	
600 minute winter	49	5.000	50	2.8	0.111	0.026	0.7174	
600 minute winter	50	Flow through pond	32	13.8	0.020	0.003	206.4523	

**Results for 30 year Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
600 minute winter	32	675	57.622	1.122	13.8	0.0000	0.0000	SURCHARGED
600 minute winter	33	675	57.622	1.142	7.2	1.2917	0.0000	SURCHARGED
60 minute summer	34	56	56.513	0.074	7.1	0.0000	0.0000	OK
15 minute summer	5	9	60.878	0.085	23.9	0.2474	0.0000	OK
15 minute winter	6	11	60.376	0.376	58.7	1.3373	0.0000	SURCHARGED
15 minute winter	7	11	60.261	0.410	60.0	0.6148	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
600 minute winter	32	1.011	33	7.2	0.196	0.112	0.4177	
600 minute winter	33	1.012	34	7.1	0.797	0.491	0.0552	265.7
15 minute summer	5	1.000	6	23.1	0.842	0.304	0.9887	
15 minute winter	6	1.001	7	54.3	1.539	0.954	0.4957	
15 minute winter	7	1.002	21	52.9	1.351	0.825	1.8366	

**Results for 100 year +40% CC +6% A Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	21	10	60.788	1.638	136.6	7.4169	2.5509	FLOOD
15 minute winter	22	10	59.880	1.101	151.3	3.3857	0.0000	SURCHARGED
720 minute winter	23	705	59.434	0.738	21.4	1.7987	0.0000	SURCHARGED
720 minute winter	HW5	720	59.435	0.815	21.4	0.0000	0.0000	OK
720 minute winter	35	705	59.431	0.756	2.5	2.0485	0.0000	SURCHARGED
720 minute winter	HW17	705	59.432	0.812	2.4	0.0000	0.0000	OK
720 minute winter	HW8	705	59.431	0.831	13.2	0.0000	0.0000	FLOOD RISK
720 minute winter	28	705	59.431	1.531	4.9	1.7313	0.0000	FLOOD RISK
240 minute winter	29	184	58.408	0.683	2.2	0.0000	0.0000	OK
15 minute winter	37	11	60.127	0.970	48.7	1.6010	0.0000	SURCHARGED
15 minute winter	38	11	60.126	1.371	80.1	5.9884	0.0000	FLOOD RISK
15 minute winter	39	11	60.032	1.500	86.7	4.9830	1.3490	FLOOD
15 minute winter	40	11	59.914	1.539	81.8	3.0191	0.0000	FLOOD RISK
15 minute winter	41	11	59.717	1.587	166.5	9.4300	0.7197	FLOOD
15 minute winter	42	11	59.364	1.372	175.9	4.8920	0.0000	FLOOD RISK
15 minute winter	43	11	58.817	1.037	225.2	4.0646	0.0000	SURCHARGED
15 minute winter	44	11	58.560	0.835	221.5	0.0000	0.0000	OK
240 minute winter	30	184	58.407	0.707	37.8	0.0000	0.0000	SURCHARGED
960 minute winter	31	930	58.211	1.711	14.1	0.0000	0.0000	OK
15 minute winter	45	11	58.605	0.505	60.5	1.9790	0.0000	SURCHARGED
15 minute winter	46	11	58.549	1.324	177.5	8.3626	0.0000	SURCHARGED
960 minute winter	47	930	58.209	1.559	10.5	1.7635	0.0000	FLOOD RISK
960 minute winter	48	930	58.212	1.712	10.4	0.0000	0.0000	OK
960 minute winter	49	930	58.209	0.930	3.8	3.6815	0.0000	SURCHARGED
960 minute winter	50	930	58.209	1.709	3.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	21	1.003	22	112.8	1.602	1.579	6.2711	
15 minute winter	22	1.004	23	151.0	2.144	2.119	1.4093	
720 minute winter	23	1.005	HW5	21.4	0.608	0.204	0.6039	
720 minute winter	HW5	Flow through pond	HW8	13.0	0.021	0.012	319.0212	
720 minute winter	35	2.000	HW17	2.4	0.230	0.061	0.3799	
720 minute winter	HW17	Flow through pond	HW8	13.0	0.021	0.012	319.0212	
720 minute winter	HW8	1.006	28	-9.7	0.264	-0.029	0.5574	
720 minute winter	28	Hydro-Brake®	29	2.2				
240 minute winter	29	Flow through pond	30	37.8	0.034	0.016	223.8237	
15 minute winter	37	3.000	38	-36.9	-0.533	-0.263	1.7862	
15 minute winter	38	3.001	39	61.7	1.146	0.511	1.3277	
15 minute winter	39	3.002	40	72.8	1.191	0.829	1.7633	
15 minute winter	40	3.003	41	86.8	1.232	0.877	2.1682	
15 minute winter	41	3.004	42	144.3	2.049	2.026	1.0705	
15 minute winter	42	3.005	43	172.7	1.566	1.502	7.0268	
15 minute winter	43	3.006	44	221.5	2.009	1.928	1.8221	
15 minute winter	44	Flow through pond	30	191.7	0.126	0.083	127.4681	
240 minute winter	30	Orifice	31	16.9				
960 minute winter	31	Flow through pond	32	16.4	0.020	0.003	393.7272	
15 minute winter	45	4.000	46	52.0	0.924	0.327	3.0157	
15 minute winter	46	4.001	47	127.7	1.814	1.172	4.2044	
960 minute winter	47	4.002	48	10.4	0.218	0.132	2.0670	
960 minute winter	48	Flow through pond	32	16.4	0.020	0.003	393.7272	
960 minute winter	49	5.000	50	3.5	0.133	0.032	0.7174	
960 minute winter	50	Flow through pond	32	16.4	0.020	0.003	393.7272	

**Results for 100 year +40% CC +6% A Critical Storm Duration. Lowest mass balance: 97.98%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
960 minute winter	32	930	58.209	1.709	16.4	0.0000	0.0000	FLOOD RISK
960 minute winter	33	930	58.209	1.729	7.2	1.9552	0.0000	FLOOD RISK
30 minute summer	34	20	56.513	0.074	7.1	0.0000	0.0000	OK
15 minute winter	5	11	61.898	1.105	42.9	3.3447	0.0000	SURCHARGED
15 minute winter	6	11	61.734	1.734	99.4	6.4123	1.4894	FLOOD
15 minute winter	7	11	61.542	1.691	65.7	2.5714	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
960 minute winter	32	1.011	33	7.2	0.204	0.112	0.4177	
960 minute winter	33	1.012	34	7.1	0.797	0.491	0.0553	436.6
15 minute winter	5	1.000	6	35.5	1.047	0.467	1.4844	
15 minute winter	6	1.001	7	57.1	1.512	1.003	0.4957	
15 minute winter	7	1.002	21	65.3	1.641	1.017	1.8366	