Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
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)
1	0.023	5.00	31.286		507082.028	179992.600	0.736
3	0.011	5.00	31.420		507111.662	179987.984	0.920
7	0.011	5.00	31.540		507117.572	179984.861	1.090
8	0.011	5.00	30.800	600	507120.602	180006.224	0.851
10	0.023	5.00	31.540		507140.100	179978.870	0.740
11	0.012	5.00	31.540	600	507161.135	179976.106	0.941
12	0.023	5.00	31.600	1200	507164.391	180000.291	1.651
13			31.600	600	507166.879	179999.946	1.666
14			31.520	600	507166.370	179996.220	1.608
14_OUT			31.500	1200	507169.321	179995.875	1.600
6	0.011	5.00	30.800	1200	507118.061	180006.568	0.680
5	0.016	5.00	31.480	600	507115.315	179986.122	1.130
9	0.011		30.900	1200	507141.679	180003.380	0.951
15	0.016	5.00	31.300	600	507085.114	179988.718	0.800
16	0.014	5.00	31.520	1200	507123.836	179981.164	1.255
17	0.014	5.00	31.480	1200	507145.502	179974.782	1.350
18	0.013	5.00	31.530	600	507162.689	179975.094	1.502
19	0.017	5.00	31.530	1200	507164.493	179988.696	1.584
20			31.520	1200	507167.177	179988.340	1.590
OUTFALL			31.400		507168.819	180001.080	1.531

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)
2.000	3	5	4.100	0.600	30.500	30.425	0.075	54.7	150	5.05	31.2
3.000	7	16	2.585	0.600	30.450	30.425	0.025	103.4	150	5.04	31.2
3.000_1	10	11	21.216	0.600	30.800	30.674	0.126	168.4	225	5.35	30.4

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	1.363	24.1	0.9	0.770	0.905	0.011	0.0	20	0.658
3.000	0.988	17.5	0.9	0.940	0.945	0.011	0.0	24	0.526
3.000_1	1.005	39.9	1.9	0.515	0.641	0.023	0.0	33	0.515

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)
5.001	11	12	24.403	0.600	30.599	29.949	0.650	37.5	225	5.54	30.0
3.002	12	13	2.512	0.600	29.949	29.934	0.015	169.0	225	5.58	29.9
3.003	13	14	3.761	0.600	29.934	29.912	0.022	169.0	225	5.65	29.7
3.004	14	14_OUT	2.971	0.600	29.912	29.900	0.012	247.6	225	5.71	29.6
1.003	6	8	2.564	0.600	30.120	30.100	0.020	128.2	300	5.29	29.6
2.001	5	6	20.630	0.600	30.350	30.120	0.230	89.7	300	5.26	30.5
1.001	15	16	39.452	0.600	30.500	30.265	0.235	167.9	225	5.72	29.6
1.003_1	17	18	17.190	0.600	30.130	30.028	0.102	168.5	225	6.38	28.1
5.003	18	19	13.721	0.600	30.028	29.946	0.082	167.3	225	6.60	27.7
1.005	19	20	2.708	0.600	29.946	29.930	0.016	169.3	225	6.65	27.1
1.006	20	14_OUT	7.834	0.600	29.930	29.900	0.030	261.1	225	6.81	27.2
1.002	16	17	22.586	0.600	30.265	30.130	0.135	167.3	225	6.09	28.7
1.007	14_OUT	OUTFALL	5.229	0.600	29.900	29.869	0.031	168.7	225	6.90	27.0
1.000	1	15	4.959	0.600	30.550	30.500	0.050	99.2	225	5.06	31.1

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)
5.001	2.141	85.1	2.8	0.716	1.426	0.035	0.0	28	0.990
3.002	1.003	39.9	4.7	1.426	1.441	0.058	0.0	52	0.679
3.003	1.003	39.9	4.7	1.441	1.383	0.058	0.0	51	0.672
3.004	0.826	32.9	4.7	1.383	1.375	0.058	0.0	57	0.585
1.003	1.387	98.0	3.0	0.380	0.400	0.038	0.0	36	0.634
2.001	1.660	117.4	2.2	0.830	0.380	0.027	0.0	28	0.654
1.001	1.006	40.0	3.1	0.575	1.030	0.039	0.0	43	0.604
1.003_1	1.004	39.9	5.9	1.125	1.277	0.078	0.0	58	0.724
5.003	1.008	40.1	6.8	1.277	1.359	0.091	0.0	63	0.757
1.005	1.002	39.8	7.9	1.359	1.365	0.108	0.0	68	0.786
1.006	0.804	32.0	8.0	1.365	1.375	0.108	0.0	76	0.668
1.002	1.008	40.1	5.0	1.030	1.125	0.064	0.0	53	0.689
1.007	1.004	39.9	12.1	1.375	1.306	0.166	0.0	85	0.882
1.000	1.313	52.2	1.9	0.511	0.575	0.023	0.0	29	0.629

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)
2.000	4.100	54.7	150	Circular_Default Sewer Type	31.420	30.500	0.770	31.480	30.425	0.905
3.000	2.585	103.4	150	Circular_Default Sewer Type	31.540	30.450	0.940	31.520	30.425	0.945
3.000_1	21.216	168.4	225	Circular_Default Sewer Type	31.540	30.800	0.515	31.540	30.674	0.641

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.000	3		Junction		5	600	Manhole	Adoptable
3.000	7		Junction		16	1200	Manhole	Adoptable
3.000_1	10		Junction		11	600	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.001	24.403	37.5	225	Circular_Default Sewer Type	31.540	30.599	0.716	31.600	29.949	1.426
3.002	2.512	169.0	225	Circular_Default Sewer Type	31.600	29.949	1.426	31.600	29.934	1.441
3.003	3.761	169.0	225	Circular_Default Sewer Type	31.600	29.934	1.441	31.520	29.912	1.383
3.004	2.971	247.6	225	Circular_Default Sewer Type	31.520	29.912	1.383	31.500	29.900	1.375
1.003	2.564	128.2	300	Circular_Default Sewer Type	30.800	30.120	0.380	30.800	30.100	0.400
2.001	20.630	89.7	300	Circular_Default Sewer Type	31.480	30.350	0.830	30.800	30.120	0.380
1.001	39.452	167.9	225	Circular_Default Sewer Type	31.300	30.500	0.575	31.520	30.265	1.030
1.003_1	17.190	168.5	225	Circular_Default Sewer Type	31.480	30.130	1.125	31.530	30.028	1.277
5.003	13.721	167.3	225	Circular_Default Sewer Type	31.530	30.028	1.277	31.530	29.946	1.359
1.005	2.708	169.3	225	Circular_Default Sewer Type	31.530	29.946	1.359	31.520	29.930	1.365
1.006	7.834	261.1	225	Circular_Default Sewer Type	31.520	29.930	1.365	31.500	29.900	1.375
1.002	22.586	167.3	225	Circular_Default Sewer Type	31.520	30.265	1.030	31.480	30.130	1.125
1.007	5.229	168.7	225	Circular_Default Sewer Type	31.500	29.900	1.375	31.400	29.869	1.306
1.000	4.959	99.2	225	Circular_Default Sewer Type	31.286	30.550	0.511	31.300	30.500	0.575

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
5.001	11	600	Manhole	Adoptable	12	1200	Manhole	Adoptable
3.002	12	1200	Manhole	Adoptable	13	600	Manhole	Adoptable
3.003	13	600	Manhole	Adoptable	14	600	Manhole	Adoptable
3.004	14	600	Manhole	Adoptable	14_OUT	1200	Manhole	Adoptable
1.003	6	1200	Manhole	Adoptable	8	600	Manhole	Adoptable
2.001	5	600	Manhole	Adoptable	6	1200	Manhole	Adoptable
1.001	15	600	Manhole	Adoptable	16	1200	Manhole	Adoptable
1.003_1	17	1200	Manhole	Adoptable	18	600	Manhole	Adoptable
5.003	18	600	Manhole	Adoptable	19	1200	Manhole	Adoptable
1.005	19	1200	Manhole	Adoptable	20	1200	Manhole	Adoptable
1.006	20	1200	Manhole	Adoptable	14_OUT	1200	Manhole	Adoptable
1.002	16	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
1.007	14_OUT	1200	Manhole	Adoptable	OUTFALL		Junction	
1.000	1		Junction		15	600	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	507082.028	179992.600	31.286	0.736		0	1.000	30.550	225
3	507111.662	179987.984	31.420	0.920		0	2.000	30.500	150
7	507117.572	179984.861	31.540	1.090		0	3.000	30.450	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
8	507120.602	180006.224	30.800	0.851	600	1	1.003	30.100	300
10	507140.100	179978.870	31.540	0.740		0	3.000_1	30.800	225
11	507161.135	179976.106	31.540	0.941	600	1	3.000_1	30.674	225
						0	5.001	30.599	225
12	507164.391	180000.291	31.600	1.651	1200	1	5.001	29.949	225
						0	3.002	29.949	225
13	507166.879	179999.946	31.600	1.666	600	1	3.002	29.934	225
						0	3.003	29.934	225
14	507166.370	179996.220	31.520	1.608	600	1	3.003	29.912	225
						0	3.004	29.912	225
14_OUT	507169.321	179995.875	31.500	1.600	1200	1	3.004	29.900	225
						2	1.006	29.900	225
						0	1.007	29.900	225
6	507118.061	180006.568	30.800	0.680	1200	1	2.001	30.120	300
						0	1.003	30.120	300
5	507115.315	179986.122	31.480	1.130	600	1	2.000	30.425	150
						0	2.001	30.350	300
9	507141.679	180003.380	30.900	0.951	1200				
15	507085.114	179988.718	31.300	0.800	600	1	1.000	30.500	225
						0	1.001	30.500	225
16	507123.836	179981.164	31.520	1.255	1200	1	3.000	30.425	150
						2	1.001	30.265	225
						0	1.002	30.265	225
17	507145.502	179974.782	31.480	1.350	1200	1	1.002	30.130	225
						0	1.003_1	30.130	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
18	507162.689	179975.094	31.530	1.502	600	1	1.003_1	30.028	225
						0	5.003	30.028	225
19	507164.493	179988.696	31.530	1.584	1200	1	5.003	29.946	225
						0	1.005	29.946	225
20	507167.177	179988.340	31.520	1.590	1200	1	1.005	29.930	225
						0	1.006	29.930	225
OUTFALL	507168.819	180001.080	31.400	1.531		1	1.007	29.869	225

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	✓	Check Discharge Rate(s)	✓
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	✓
Winter CV	0.840	Additional Storage (m³/ha)	20.0	100 year 360 minute (m³)	

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	30	0	0
100	45	0	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 (m³)	

Node 12 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	29.949	Product Number	CTL-SHE-0056-1300-0851-1300
Design Depth (m)	0.851	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.3	Min Node Diameter (mm)	1200

Node 19 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	29.946	Product Number	CTL-SHE-0036-7000-1354-7000
Design Depth (m)	1.354	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.7	Min Node Diameter (mm)	1200

Node 6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	30.235
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	123.5	0.0	0.400	123.5	0.0	0.401	0.0	0.0

Node 12 Tank Storage Structure

Invert Level (m)	29.949	Time to half empty (mins)		Analyse flow through structure	x

Inlets

9

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	38.0	0.400	38.0	0.401	0.0

Node 9 Tank Storage Structure

Invert Level (m)	29.949	Time to half empty (mins)		Analyse flow through structure	x

Inlets

8

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	38.0	0.400	38.0	0.401	0.0

Node 19 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	29.946
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	33.0	0.0	0.800	33.0	0.0	0.801	0.0	0.0

Node 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	30.550
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	22.5	22.5	0.400	22.5	29.2	0.401	0.0	29.2

Node 15 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	30.680	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.500
Safety Factor	2.0	Width (m)	16.800	Inf Depth (m)	
Porosity	0.30	Length (m)	4.800		

Node 17 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	30.840	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.500
Safety Factor	2.0	Width (m)	9.600	Inf Depth (m)	
Porosity	0.30	Length (m)	4.800		

Node 18 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	30.860	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.500
Safety Factor	2.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	21.600		

Node 16 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	30.265
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	33.0	33.0	0.400	33.0	41.1	0.401	0.0	41.1

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.86%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	1	21	30.572	0.022	1.4	0.4777	0.0000	OK
15 minute winter	3	10	30.520	0.020	0.9	0.0048	0.0000	OK
15 minute winter	7	10	30.474	0.024	0.9	0.0048	0.0000	OK
180 minute winter	8	132	30.059	0.110	1.3	0.0000	0.0000	OK
15 minute winter	10	11	30.832	0.032	1.8	0.0199	0.0000	OK
15 minute winter	11	10	30.628	0.029	2.6	0.0155	0.0000	OK
180 minute winter	12	128	30.053	0.104	2.1	4.0966	0.0000	OK
180 minute winter	13	132	29.961	0.027	1.1	0.0076	0.0000	OK
180 minute winter	14	128	29.942	0.030	1.1	0.0085	0.0000	OK
180 minute winter	14_OUT	128	29.930	0.030	1.5	0.0345	0.0000	OK
15 minute winter	6	11	30.159	0.039	3.0	0.0563	0.0000	OK
15 minute winter	5	10	30.378	0.028	2.2	0.0158	0.0000	OK
180 minute winter	9	132	30.056	0.107	1.1	4.2208	0.0000	OK
15 minute winter	15	11	30.536	0.036	2.0	0.0244	0.0000	OK
120 minute summer	16	70	30.300	0.035	2.6	1.1578	0.0000	OK
240 minute winter	17	232	30.204	0.074	1.7	0.0987	0.0000	OK
240 minute winter	18	232	30.204	0.176	2.0	0.0802	0.0000	OK
240 minute winter	19	232	30.204	0.258	2.2	8.4323	0.0000	SURCHARGED
240 minute winter	20	460	29.949	0.019	0.4	0.0212	0.0000	OK
180 minute winter	OUTFALL	128	29.899	0.030	1.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	1	1.000	15	1.0	0.382	0.019	0.0137	
15 minute winter	3	2.000	5	0.9	0.640	0.036	0.0056	
15 minute winter	7	3.000	16	0.9	0.507	0.050	0.0045	
15 minute winter	10	3.000_1	11	1.7	0.508	0.044	0.0728	
15 minute winter	11	5.001	12	2.7	1.189	0.032	0.0838	
180 minute winter	12	Hydro-Brake®	13	1.1				
180 minute winter	13	3.003	14	1.1	0.375	0.027	0.0108	
180 minute winter	14	3.004	14_OUT	1.1	0.341	0.033	0.0094	
180 minute winter	14_OUT	1.007	OUTFALL	1.5	0.481	0.038	0.0165	22.8
15 minute winter	6	1.003	8	3.0	0.592	0.030	0.0128	
15 minute winter	5	2.001	6	2.1	0.505	0.018	0.0878	
15 minute winter	15	1.001	16	2.0	0.653	0.050	0.1346	
120 minute summer	16	1.002	17	2.2	0.504	0.054	0.0980	
240 minute winter	17	1.003_1	18	1.7	0.449	0.042	0.3834	
240 minute winter	18	5.003	19	1.8	0.406	0.046	0.5013	
240 minute winter	19	Hydro-Brake®	20	0.4				
240 minute winter	20	1.006	14_OUT	0.4	0.283	0.014	0.0184	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.40%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	352	30.645	0.095	1.3	2.1000	0.0000	OK
15 minute winter	3	10	30.546	0.045	4.4	0.0109	0.0000	OK
360 minute winter	7	352	30.645	0.195	0.6	0.0395	0.0000	SURCHARGED
240 minute winter	8	232	30.317	0.368	3.4	0.0000	0.0000	OK
15 minute winter	10	10	30.874	0.074	9.2	0.0458	0.0000	OK
15 minute winter	11	10	30.660	0.061	13.8	0.0327	0.0000	OK
240 minute winter	12	228	30.309	0.360	5.0	14.1967	0.0000	SURCHARGED
60 minute summer	13	38	29.963	0.029	1.2	0.0082	0.0000	OK
720 minute winter	14	765	29.944	0.032	1.2	0.0091	0.0000	OK
720 minute winter	14_OUT	705	29.933	0.033	1.8	0.0371	0.0000	OK
240 minute winter	6	232	30.317	0.197	4.0	9.9313	0.0000	OK
15 minute winter	5	10	30.411	0.061	10.8	0.0344	0.0000	OK
240 minute winter	9	228	30.313	0.364	2.5	14.2123	0.0000	OK
360 minute winter	15	352	30.646	0.146	2.2	0.0994	0.0000	OK
360 minute winter	16	352	30.645	0.380	3.6	12.4428	0.0000	SURCHARGED
360 minute winter	17	352	30.645	0.515	3.6	0.6897	0.0000	SURCHARGED
360 minute winter	18	352	30.645	0.617	3.5	0.2815	0.0000	SURCHARGED
360 minute winter	19	352	30.645	0.699	4.2	22.8678	0.0000	SURCHARGED
360 minute winter	20	352	29.950	0.020	0.5	0.0226	0.0000	OK
720 minute winter	OUTFALL	705	29.901	0.032	1.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	1	1.000	15	1.3	0.414	0.025	0.1071	
15 minute winter	3	2.000	5	4.4	1.006	0.182	0.0179	
360 minute winter	7	3.000	16	1.0	0.455	0.058	0.0455	
15 minute winter	10	3.000_1	11	9.0	0.812	0.226	0.2358	
15 minute winter	11	5.001	12	13.7	1.428	0.161	0.5468	
240 minute winter	12	Hydro-Brake®	13	1.2				
60 minute summer	13	3.003	14	1.2	0.390	0.031	0.0121	
720 minute winter	14	3.004	14_OUT	1.2	0.361	0.038	0.0105	
720 minute winter	14_OUT	1.007	OUTFALL	1.8	0.503	0.044	0.0183	81.8
240 minute winter	6	1.003	8	2.6	0.556	0.027	0.1326	
15 minute winter	5	2.001	6	10.7	0.769	0.091	0.2896	
360 minute winter	15	1.001	16	2.2	0.440	0.055	1.3203	
360 minute winter	16	1.002	17	2.9	0.485	0.071	0.8983	
360 minute winter	17	1.003_1	18	2.9	0.416	0.073	0.6837	
360 minute winter	18	5.003	19	3.4	0.417	0.085	0.5457	
360 minute winter	19	Hydro-Brake®	20	0.5				
360 minute winter	20	1.006	14_OUT	0.5	0.222	0.016	0.0206	

Results for 100 year +30% CC Critical Storm Duration. Lowest mass balance: 99.08%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	472	31.111	0.561	3.4	8.9111	0.0000	FLOOD RISK
360 minute winter	3	352	30.573	0.073	1.0	0.0175	0.0000	OK
480 minute winter	7	472	31.111	0.661	0.8	0.1335	0.0000	SURCHARGED
360 minute winter	8	352	30.573	0.624	5.5	0.0000	0.0000	OK
15 minute winter	10	10	30.898	0.098	15.5	0.0610	0.0000	OK
15 minute winter	11	10	30.679	0.080	23.3	0.0429	0.0000	OK
360 minute winter	12	336	30.569	0.620	5.5	16.0936	0.0000	SURCHARGED
60 minute winter	13	30	29.963	0.029	1.2	0.0082	0.0000	OK
1440 minute winter	14	1650	29.944	0.032	1.2	0.0092	0.0000	OK
1440 minute winter	14_OUT	1530	29.934	0.034	1.8	0.0379	0.0000	OK
360 minute winter	6	352	30.573	0.453	8.8	40.4116	0.0000	FLOOD RISK
360 minute winter	5	352	30.573	0.223	2.5	0.1264	0.0000	OK
360 minute winter	9	336	30.572	0.623	4.7	16.1687	0.0000	OK
480 minute winter	15	472	31.111	0.611	3.9	10.7168	0.0000	FLOOD RISK
480 minute winter	16	472	31.111	0.846	4.5	13.7007	0.0000	SURCHARGED
480 minute winter	17	472	31.111	0.981	2.7	5.0193	0.0000	SURCHARGED
480 minute winter	18	472	31.111	1.083	2.7	7.9483	0.0000	SURCHARGED
480 minute winter	19	472	31.111	1.165	3.9	26.6634	0.0000	SURCHARGED
480 minute winter	20	472	29.952	0.022	0.7	0.0251	0.0000	OK
1440 minute winter	OUTFALL	1530	29.902	0.033	1.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	1	1.000	15	-1.9	0.437	-0.036	0.1972	
360 minute winter	3	2.000	5	1.6	0.665	0.066	0.0535	
480 minute winter	7	3.000	16	0.9	0.475	0.053	0.0455	
15 minute winter	10	3.000_1	11	15.2	0.933	0.381	0.3460	
15 minute winter	11	5.001	12	23.2	1.511	0.272	0.6363	
360 minute winter	12	Hydro-Brake®	13	1.2				
60 minute winter	13	3.003	14	1.2	0.390	0.031	0.0121	
1440 minute winter	14	3.004	14_OUT	1.2	0.359	0.038	0.0107	
1440 minute winter	14_OUT	1.007	OUTFALL	1.8	0.509	0.046	0.0189	150.9
360 minute winter	6	1.003	8	-5.4	0.515	-0.055	0.1806	
360 minute winter	5	2.001	6	2.5	0.438	0.021	1.3067	
480 minute winter	15	1.001	16	-2.9	0.417	-0.074	1.5690	
480 minute winter	16	1.002	17	-2.5	0.430	-0.062	0.8983	
480 minute winter	17	1.003_1	18	2.2	0.404	0.055	0.6837	
480 minute winter	18	5.003	19	2.6	0.417	0.065	0.5457	
480 minute winter	19	Hydro-Brake®	20	0.7				
480 minute winter	20	1.006	14_OUT	0.7	0.238	0.020	0.0218	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.03%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	1	585	31.268	0.718	2.6	9.0097	0.0000	FLOOD RISK
360 minute winter	3	352	30.741	0.241	1.6	0.0577	0.0000	SURCHARGED
600 minute winter	7	585	31.268	0.818	0.7	0.1653	0.0000	FLOOD RISK
360 minute winter	8	352	30.741	0.792	6.7	0.0000	0.0000	OK
15 minute winter	10	10	30.905	0.105	17.3	0.0650	0.0000	OK
360 minute winter	11	352	30.731	0.132	3.7	0.0712	0.0000	OK
360 minute winter	12	352	30.731	0.782	6.1	16.3220	0.0000	SURCHARGED
60 minute winter	13	29	29.963	0.029	1.2	0.0082	0.0000	OK
360 minute winter	14	352	29.944	0.032	1.2	0.0092	0.0000	OK
360 minute winter	14_OUT	352	29.934	0.034	1.9	0.0388	0.0000	OK
360 minute winter	6	352	30.741	0.621	10.4	47.9515	0.0000	FLOOD RISK
360 minute winter	5	352	30.741	0.391	2.9	0.2215	0.0000	SURCHARGED
360 minute winter	9	352	30.737	0.788	5.7	16.6286	0.0000	OK
600 minute winter	15	585	31.268	0.768	4.3	12.5125	0.0000	FLOOD RISK
600 minute winter	16	585	31.268	1.003	4.8	13.9142	0.0000	FLOOD RISK
600 minute winter	17	585	31.268	1.138	2.1	7.4100	0.0000	FLOOD RISK
600 minute winter	18	585	31.268	1.240	2.5	12.9243	0.0000	FLOOD RISK
600 minute winter	19	585	31.268	1.322	3.7	26.8755	0.0000	FLOOD RISK
600 minute winter	20	585	29.953	0.023	0.7	0.0258	0.0000	OK
360 minute winter	OUTFALL	352	29.902	0.033	1.9	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)
600 minute winter	1	1.000	15	1.5	0.423	0.028	0.1972	
360 minute winter	3	2.000	5	1.2	0.701	0.050	0.0722	
600 minute winter	7	3.000	16	1.7	0.430	0.100	0.0455	
15 minute winter	10	3.000_1	11	17.0	0.960	0.425	0.3756	
360 minute winter	11	5.001	12	3.7	0.776	0.043	0.7812	
360 minute winter	12	Hydro-Brake®	13	1.2				
60 minute winter	13	3.003	14	1.2	0.390	0.031	0.0121	
360 minute winter	14	3.004	14_OUT	1.2	0.362	0.038	0.0109	
360 minute winter	14_OUT	1.007	OUTFALL	1.9	0.516	0.048	0.0195	57.5
360 minute winter	6	1.003	8	-6.6	0.505	-0.067	0.1806	
360 minute winter	5	2.001	6	2.9	0.442	0.025	1.4528	
600 minute winter	15	1.001	16	-3.3	0.377	-0.082	1.5690	
600 minute winter	16	1.002	17	-1.8	0.411	-0.044	0.8983	
600 minute winter	17	1.003_1	18	1.6	0.404	0.041	0.6837	
600 minute winter	18	5.003	19	2.5	0.422	0.061	0.5457	
600 minute winter	19	Hydro-Brake®	20	0.7				
600 minute winter	20	1.006	14_OUT	0.7	0.243	0.022	0.0226	