

RECEIVED

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.500
CV	0.900	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	0.019	5.00	67.850	1200	468512.939	112669.746	1.350
2	0.039	5.00	67.400	1200	468515.842	112650.491	1.350
3	0.033	5.00	67.300	1200	468516.420	112657.796	1.350
4	0.126	5.00	63.738	1200	468552.550	112668.320	1.438
5	0.047	5.00	61.844	1200	468570.851	112673.653	1.350
6	0.031	5.00	61.200	1200	468579.182	112673.551	1.425
7	0.050	5.00	60.561	1200	468586.951	112666.203	2.311
8	0.000		60.377	1200	468603.261	112641.024	2.127
9	0.008	5.00	66.617	1200	468530.122	112591.428	1.350
10	0.015	5.00	66.012	1200	468536.042	112607.102	1.350
11	0.173	5.00	62.600	1200	468582.421	112616.717	1.350
12	0.071	5.00	62.229	1200	468586.820	112619.008	4.029
13	0.000		60.542	1200	468607.521	112633.026	2.342
14	0.000		60.100	1200	468614.781	112639.486	1.997
15	0.054	5.00	59.874	1200	468619.251	112642.146	1.974
16	0.000		59.137	1200	468636.244	112652.693	1.237
17	0.000		58.774	1200	468653.741	112663.455	1.011
18	0.000		58.822	1200	468652.567	112667.241	1.085
18_OUT	0.000		58.692	1200	468658.090	112670.534	1.017

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)
1.000	1	3	12.447	0.600	66.500	65.950	0.550	22.6	150	5.10	50.0
2.000	2	3	7.328	0.600	66.050	65.950	0.100	73.3	150	5.10	50.0
1.001	3	4	37.632	0.600	65.950	62.300	3.650	10.3	150	5.30	50.0
1.002	4	5	19.062	0.600	62.300	60.494	1.806	10.6	150	5.40	50.0
1.003	5	6	8.332	0.600	60.494	59.850	0.644	12.9	150	5.45	50.0
1.004	6	7	10.693	0.600	59.775	59.136	0.639	16.7	225	5.51	50.0
1.005	7	8	30.000	0.300	58.250	58.250	0.000	0.0	2850	6.01	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	2.126	37.6	3.1	1.200	1.200	0.019	0.0	29	1.288
2.000	1.176	20.8	6.3	1.200	1.200	0.039	0.0	57	1.032
1.001	3.156	55.8	14.8	1.200	1.288	0.091	0.0	52	2.668
1.002	3.119	55.1	35.3	1.288	1.200	0.217	0.0	88	3.308
1.003	2.816	49.8	42.9	1.200	1.200	0.264	0.0	108	3.157
1.004	3.214	127.8	48.0	1.200	1.200	0.295	0.0	95	2.990
1.005	1.000	3420.0	56.1	1.111	0.927	0.345	0.0	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)
1.006	8	14	11.622	0.300	58.250	58.103	0.147	79.1	150	6.17	50.0
3.000	9	10	16.755	0.600	65.267	64.662	0.605	27.7	150	5.15	50.0
3.001	10	11	47.365	0.600	64.662	61.250	3.412	13.9	150	5.44	50.0
3.002	11	12	4.960	0.600	61.250	59.500	1.750	2.8	225	5.45	50.0
3.003	12	13	25.500	0.300	58.200	58.200	0.000	0.0	5700	5.87	50.0
3.004	13	14	9.718	0.600	58.200	58.103	0.097	100.2	150	6.03	50.0
1.007	14	15	5.202	0.600	58.103	58.051	0.052	100.0	150	6.25	50.0
1.008	15	16	20.000	0.300	57.900	57.900	0.000	0.0	5225	6.59	49.4
1.009	16	17	20.542	0.600	57.900	57.763	0.137	149.9	225	6.91	48.3
1.010	17	18	3.964	0.600	57.763	57.737	0.026	152.5	225	6.97	48.0
1.011	18	18_OUT	6.430	0.600	57.737	57.675	0.062	103.7	225	7.05	47.8

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)
1.006	1.235	21.8	56.1	1.977	1.847	0.345	0.0	150	1.258
3.000	1.920	33.9	1.3	1.200	1.200	0.008	0.0	20	0.930
3.001	2.718	48.0	3.7	1.200	1.200	0.023	0.0	28	1.627
3.002	7.828	311.3	31.9	1.125	2.504	0.196	0.0	48	5.065
3.003	1.000	6840.0	43.4	2.829	1.142	0.267	0.0	0	∞
3.004	1.004	17.7	43.4	2.192	1.847	0.267	0.0	150	1.022
1.007	1.004	17.7	99.5	1.847	1.673	0.612	0.0	150	1.023
1.008	1.000	2090.0	107.1	1.574	0.837	0.666	0.0	0	∞
1.009	1.065	42.4	104.5	1.012	0.786	0.666	0.0	225	1.085
1.010	1.056	42.0	104.0	0.786	0.860	0.666	0.0	225	1.076
1.011	1.283	51.0	103.5	0.860	0.792	0.666	0.0	225	1.307

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)
1.000	12.447	22.6	150	Circular	67.850	66.500	1.200	67.300	65.950	1.200
2.000	7.328	73.3	150	Circular	67.400	66.050	1.200	67.300	65.950	1.200
1.001	37.632	10.3	150	Circular	67.300	65.950	1.200	63.738	62.300	1.288
1.002	19.062	10.6	150	Circular	63.738	62.300	1.288	61.844	60.494	1.200
1.003	8.332	12.9	150	Circular	61.844	60.494	1.200	61.200	59.850	1.200
1.004	10.693	16.7	225	Circular	61.200	59.775	1.200	60.561	59.136	1.200
1.005	30.000	0.0	2850	Storage Crate 5	60.561	58.250	1.111	60.377	58.250	0.927
1.006	11.622	79.1	150	Circular	60.377	58.250	1.977	60.100	58.103	1.847
3.000	16.755	27.7	150	Circular	66.617	65.267	1.200	66.012	64.662	1.200

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
2.000	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
1.001	3	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
1.002	4	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
1.003	5	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
1.004	6	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
1.005	7	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
1.006	8	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
3.000	9	1200	Manhole	Adoptable	10	1200	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)
3.001	47.365	13.9	150	Circular	66.012	64.662	1.200	62.600	61.250	1.200
3.002	4.960	2.8	225	Circular	62.600	61.250	1.125	62.229	59.500	2.504
3.003	25.500	0.0	5700	Storage Crate 6	62.229	58.200	2.829	60.542	58.200	1.142
3.004	9.718	100.2	150	Circular	60.542	58.200	2.192	60.100	58.103	1.847
1.007	5.202	100.0	150	Circular	60.100	58.103	1.847	59.874	58.051	1.673
1.008	20.000	0.0	5225	Storage Crate 7	59.874	57.900	1.574	59.137	57.900	0.837
1.009	20.542	149.9	225	Circular	59.137	57.900	1.012	58.774	57.763	0.786
1.010	3.964	152.5	225	Circular	58.774	57.763	0.786	58.822	57.737	0.860
1.011	6.430	103.7	225	Circular	58.822	57.737	0.860	58.692	57.675	0.792

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.001	10	1200	Manhole	Adoptable	11	1200	Manhole	Adoptable
3.002	11	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
3.003	12	1200	Manhole	Adoptable	13	1200	Manhole	Adoptable
3.004	13	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
1.007	14	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
1.008	15	1200	Manhole	Adoptable	16	1200	Manhole	Adoptable
1.009	16	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
1.010	17	1200	Manhole	Adoptable	18	1200	Manhole	Adoptable
1.011	18	1200	Manhole	Adoptable	18_OUT	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	468512.939	112669.746	67.850	1.350	1200		0	1.000	66.500
2	468515.842	112650.491	67.400	1.350	1200		0	2.000	66.050
3	468516.420	112657.796	67.300	1.350	1200		1	2.000	65.950
4	468552.550	112668.320	63.738	1.438	1200		0	1.001	65.950
5	468570.851	112673.653	61.844	1.350	1200		0	1.002	62.300
6	468579.182	112673.551	61.200	1.425	1200		0	1.003	60.494
							1	1.003	59.850
							0	1.004	59.775
									225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
7	468586.951	112666.203	60.561	2.311	1200		1 1.004	59.136	225
8	468603.261	112641.024	60.377	2.127	1200		0 1.005 1 1.005	58.250 58.250	2850 2850
9	468530.122	112591.428	66.617	1.350	1200		0 1.006	58.250	150
10	468536.042	112607.102	66.012	1.350	1200		0 3.000 1 3.000	65.267 64.662	150 150
11	468582.421	112616.717	62.600	1.350	1200		0 3.001 1 3.001	64.662 61.250	150 150
12	468586.820	112619.008	62.229	4.029	1200		0 3.002 1 3.002	61.250 59.500	225 225
13	468607.521	112633.026	60.542	2.342	1200		0 3.003 1 3.003	58.200 58.200	5700 5700
14	468614.781	112639.486	60.100	1.997	1200		0 3.004 1 3.004 2 1.006	58.200 58.103 58.103	150 150 150
15	468619.251	112642.146	59.874	1.974	1200		0 1.007 1 1.007	58.103 58.051	150 150
16	468636.244	112652.693	59.137	1.237	1200		0 1.008 1 1.008	57.900 57.900	5225 5225
17	468653.741	112663.455	58.774	1.011	1200		0 1.009 1 1.009	57.900 57.763	225 225
18	468652.567	112667.241	58.822	1.085	1200		0 1.010 1 1.010	57.763 57.737	225 225
18_OUT	468658.090	112670.534	58.692	1.017	1200		0 1.011 1 1.011	57.737 57.675	225 225

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	20.0
Summer CV	0.900	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.950	Drain Down Time (mins)	2000	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
30	40	0	0
100	40	0	0

Node 4 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	62.300	Product Number	CTL-SHE-0064-2000-1200-2000
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

Node 8 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	58.250	Product Number	CTL-SHE-0077-2800-1200-2800
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.8	Min Node Diameter (mm)	1200

Node 13 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	58.200	Product Number	CTL-SHE-0071-2400-1200-2400
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.4	Min Node Diameter (mm)	1200

Node 17 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	57.763	Product Number	CTL-SHE-0113-5000-0400-5000
Design Depth (m)	0.400	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node 4 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	62.300	Depth (m)	1.200
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	720	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	9.000	Number Required	1
Porosity	0.95	Pit Length (m)	14.000		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	113.456	32.104	30 year +40% CC 15 minute summer	382.121	108.127
2 year 15 minute winter	79.618	32.104	30 year +40% CC 15 minute winter	268.155	108.127
2 year 30 minute summer	74.604	21.110	30 year +40% CC 30 minute summer	254.650	72.057
2 year 30 minute winter	52.354	21.110	30 year +40% CC 30 minute winter	178.702	72.057
2 year 60 minute summer	50.536	13.355	30 year +40% CC 60 minute summer	173.703	45.905
2 year 60 minute winter	33.575	13.355	30 year +40% CC 60 minute winter	115.404	45.905
2 year 120 minute summer	33.692	8.904	30 year +40% CC 120 minute summer	102.111	26.985
2 year 120 minute winter	22.384	8.904	30 year +40% CC 120 minute winter	67.840	26.985
2 year 180 minute summer	26.853	6.910	30 year +40% CC 180 minute summer	76.760	19.753
2 year 180 minute winter	17.455	6.910	30 year +40% CC 180 minute winter	49.896	19.753
2 year 240 minute summer	21.720	5.740	30 year +40% CC 240 minute summer	59.875	15.823
2 year 240 minute winter	14.430	5.740	30 year +40% CC 240 minute winter	39.780	15.823
2 year 360 minute summer	17.054	4.388	30 year +40% CC 360 minute summer	44.947	11.566
2 year 360 minute winter	11.085	4.388	30 year +40% CC 360 minute winter	29.217	11.566
2 year 480 minute summer	13.664	3.611	30 year +40% CC 480 minute summer	35.054	9.264
2 year 480 minute winter	9.078	3.611	30 year +40% CC 480 minute winter	23.289	9.264
2 year 600 minute summer	11.327	3.098	30 year +40% CC 600 minute summer	28.520	7.801
2 year 600 minute winter	7.739	3.098	30 year +40% CC 600 minute winter	19.487	7.801
2 year 720 minute summer	10.189	2.731	30 year +40% CC 720 minute summer	25.301	6.781
2 year 720 minute winter	6.847	2.731	30 year +40% CC 720 minute winter	17.004	6.781
2 year 960 minute summer	8.484	2.234	30 year +40% CC 960 minute summer	20.656	5.439
2 year 960 minute winter	5.620	2.234	30 year +40% CC 960 minute winter	13.683	5.439
2 year 1440 minute summer	6.265	1.679	30 year +40% CC 1440 minute summer	14.887	3.990
2 year 1440 minute winter	4.211	1.679	30 year +40% CC 1440 minute winter	10.005	3.990
10 year 15 minute summer	210.848	59.663	100 year +40% CC 15 minute summer	478.572	135.419
10 year 15 minute winter	147.963	59.663	100 year +40% CC 15 minute winter	335.840	135.419
10 year 30 minute summer	139.075	39.354	100 year +40% CC 30 minute summer	321.475	90.966
10 year 30 minute winter	97.597	39.354	100 year +40% CC 30 minute winter	225.596	90.966
10 year 60 minute summer	94.512	24.977	100 year +40% CC 60 minute summer	221.039	58.414
10 year 60 minute winter	62.792	24.977	100 year +40% CC 60 minute winter	146.853	58.414
10 year 120 minute summer	57.432	15.178	100 year +40% CC 120 minute summer	127.403	33.669
10 year 120 minute winter	38.156	15.178	100 year +40% CC 120 minute winter	84.643	33.669
10 year 180 minute summer	43.795	11.270	100 year +40% CC 180 minute summer	94.956	24.436
10 year 180 minute winter	28.468	11.270	100 year +40% CC 180 minute winter	61.724	24.436
10 year 240 minute summer	34.462	9.107	100 year +40% CC 240 minute summer	73.700	19.477
10 year 240 minute winter	22.896	9.107	100 year +40% CC 240 minute winter	48.964	19.477
10 year 360 minute summer	26.171	6.735	100 year +40% CC 360 minute summer	54.998	14.153
10 year 360 minute winter	17.012	6.735	100 year +40% CC 360 minute winter	35.750	14.153
10 year 480 minute summer	20.544	5.429	100 year +40% CC 480 minute summer	42.767	11.302
10 year 480 minute winter	13.649	5.429	100 year +40% CC 480 minute winter	28.413	11.302
10 year 600 minute summer	16.789	4.592	100 year +40% CC 600 minute summer	34.727	9.499
10 year 600 minute winter	11.471	4.592	100 year +40% CC 600 minute winter	23.727	9.499
10 year 720 minute summer	14.943	4.005	100 year +40% CC 720 minute summer	30.759	8.244
10 year 720 minute winter	10.043	4.005	100 year +40% CC 720 minute winter	20.672	8.244
10 year 960 minute summer	12.262	3.229	100 year +40% CC 960 minute summer	25.035	6.592
10 year 960 minute winter	8.123	3.229	100 year +40% CC 960 minute winter	16.584	6.592
10 year 1440 minute summer	8.897	2.384	100 year +40% CC 1440 minute summer	17.995	4.823
10 year 1440 minute winter	5.979	2.384	100 year +40% CC 1440 minute winter	12.094	4.823

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	66.530	0.030	3.2	0.0417	0.0000	OK
15 minute summer	2	10	66.112	0.062	6.5	0.1056	0.0000	OK
15 minute summer	3	9	66.004	0.054	15.1	0.0876	0.0000	OK
360 minute winter	4	272	62.556	0.256	6.4	31.3949	0.0000	SURCHARGED
15 minute summer	5	11	60.539	0.045	8.8	0.0822	0.0000	OK
15 minute summer	6	10	59.827	0.052	13.9	0.0821	0.0000	OK
480 minute winter	7	352	58.499	0.249	4.7	0.3898	0.0000	OK
480 minute winter	8	352	58.499	0.249	3.6	0.2819	0.0000	SURCHARGED
15 minute summer	9	11	65.287	0.020	1.3	0.0251	0.0000	OK
15 minute summer	10	10	64.690	0.028	3.8	0.0384	0.0000	OK
15 minute summer	11	10	61.305	0.055	32.6	0.2023	0.0000	OK
360 minute winter	12	264	58.479	0.279	7.8	0.4131	0.0000	OK
360 minute winter	13	264	58.479	0.279	4.9	0.3151	0.0000	SURCHARGED
480 minute winter	14	352	58.161	0.058	4.8	0.0655	0.0000	OK
360 minute winter	15	344	58.003	0.103	9.6	0.1726	0.0000	OK
360 minute winter	16	360	58.002	0.102	13.7	0.1157	0.0000	OK
360 minute winter	17	264	58.024	0.261	11.6	0.2948	0.0000	SURCHARGED
480 minute winter	18	552	57.787	0.050	5.0	0.0571	0.0000	OK
180 minute winter	18_OUT	208	57.722	0.047	5.0	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	1	1.000	3	3.2	0.797	0.084	0.0504	
15 minute summer	2	2.000	3	6.4	1.031	0.310	0.0458	
15 minute summer	3	1.001	4	15.3	2.934	0.274	0.3078	
360 minute winter	4	Hydro-Brake®	5	1.8				
15 minute summer	5	1.003	6	8.8	2.047	0.176	0.0356	
15 minute summer	6	1.004	7	13.8	2.040	0.108	0.0722	
480 minute winter	7	1.005	8	3.6	0.027	0.001	21.3116	
480 minute winter	8	Hydro-Brake®	14	2.6				
15 minute summer	9	3.000	10	1.3	0.707	0.038	0.0311	
15 minute summer	10	3.001	11	3.7	0.956	0.078	0.1925	
15 minute summer	11	3.002	12	32.4	4.754	0.104	0.0339	
360 minute winter	12	3.003	13	4.9	0.030	0.001	40.4916	
360 minute winter	13	3.004	14	2.2	0.469	0.124	0.0459	
480 minute winter	14	1.007	15	4.8	0.814	0.272	0.0309	
360 minute winter	15	1.008	16	13.7	0.032	0.007	10.6728	
360 minute winter	16	1.009	17	11.6	0.409	0.273	0.5887	
360 minute winter	17	Hydro-Brake®	18	5.0				
480 minute winter	18	1.011	18_OUT	5.0	0.789	0.098	0.0408	180.7

Results for 10 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	66.540	0.040	5.9	0.0566	0.0000	OK
15 minute summer	2	10	66.140	0.090	12.1	0.1542	0.0000	OK
15 minute summer	3	10	66.025	0.075	28.0	0.1215	0.0000	OK
240 minute winter	4	232	62.758	0.458	13.1	56.1078	0.0000	SURCHARGED
15 minute summer	5	10	60.557	0.063	16.1	0.1159	0.0000	OK
15 minute summer	6	10	59.848	0.073	25.6	0.1148	0.0000	OK
480 minute winter	7	376	58.657	0.407	6.4	0.6359	0.0000	OK
480 minute winter	8	376	58.657	0.407	4.5	0.4598	0.0000	SURCHARGED
15 minute summer	9	10	65.295	0.028	2.5	0.0344	0.0000	OK
15 minute summer	10	10	64.701	0.039	7.1	0.0524	0.0000	OK
15 minute summer	11	10	61.329	0.079	60.6	0.2901	0.0000	OK
240 minute winter	12	232	58.681	0.481	16.2	0.7131	0.0000	OK
240 minute winter	13	232	58.681	0.481	9.2	0.5439	0.0000	SURCHARGED
720 minute summer	14	720	58.163	0.060	4.9	0.0681	0.0000	OK
960 minute winter	15	1035	58.147	0.247	6.0	0.4144	0.0000	OK
960 minute winter	16	1035	58.147	0.247	13.5	0.2793	0.0000	SURCHARGED
960 minute winter	17	1035	58.145	0.382	11.6	0.4318	0.0000	SURCHARGED
30 minute winter	18	81	57.787	0.050	5.0	0.0571	0.0000	OK
30 minute winter	18_OUT	91	57.722	0.047	5.0	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	1	1.000	3	5.9	0.943	0.156	0.0783	
15 minute summer	2	2.000	3	12.0	1.206	0.577	0.0728	
15 minute summer	3	1.001	4	27.8	3.085	0.499	0.4845	
240 minute winter	4	Hydro-Brake®	5	1.8				
15 minute summer	5	1.003	6	16.0	2.384	0.322	0.0560	
15 minute summer	6	1.004	7	25.5	2.398	0.200	0.1138	
480 minute winter	7	1.005	8	4.5	0.032	0.001	34.7646	
480 minute winter	8	Hydro-Brake®	14	2.7				
15 minute summer	9	3.000	10	2.5	0.861	0.073	0.0486	
15 minute summer	10	3.001	11	7.0	1.106	0.145	0.3062	
15 minute summer	11	3.002	12	60.3	5.495	0.194	0.0545	
240 minute winter	12	3.003	13	9.2	0.042	0.001	69.9005	
240 minute winter	13	3.004	14	2.2	0.470	0.125	0.0463	
720 minute summer	14	1.007	15	4.9	0.817	0.276	0.0434	
960 minute winter	15	1.008	16	13.5	0.031	0.006	25.8078	
960 minute winter	16	1.009	17	11.6	0.385	0.274	0.8170	
960 minute winter	17	Hydro-Brake®	18	5.0				
30 minute winter	18	1.011	18_OUT	5.0	0.789	0.098	0.0408	122.9

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	66.555	0.055	10.7	0.0772	0.0000	OK
15 minute summer	2	11	66.219	0.169	21.9	0.2896	0.0000	SURCHARGED
15 minute summer	3	10	66.060	0.110	49.9	0.1783	0.0000	OK
360 minute winter	4	352	63.209	0.909	16.7	111.3970	0.0000	SURCHARGED
15 minute summer	5	10	60.584	0.090	28.1	0.1653	0.0000	OK
15 minute summer	6	10	59.877	0.102	45.4	0.1604	0.0000	OK
600 minute winter	7	585	59.087	0.837	8.3	1.3088	0.0000	OK
600 minute winter	8	585	59.087	0.837	5.5	0.9465	0.0000	SURCHARGED
15 minute summer	9	10	65.304	0.037	4.5	0.0460	0.0000	OK
15 minute summer	10	10	64.715	0.053	12.9	0.0714	0.0000	OK
15 minute summer	11	10	61.365	0.115	109.9	0.4264	0.0000	OK
480 minute winter	12	464	59.155	0.955	16.4	1.4167	0.0000	OK
480 minute winter	13	464	59.155	0.955	9.3	1.0804	0.0000	SURCHARGED
480 minute winter	14	464	58.181	0.078	4.9	0.0886	0.0000	OK
480 minute winter	15	464	58.179	0.279	8.1	0.4690	0.0000	OK
480 minute winter	16	464	58.179	0.279	10.1	0.3161	0.0000	SURCHARGED
480 minute winter	17	464	58.177	0.414	7.5	0.4684	0.0000	SURCHARGED
720 minute winter	18	300	57.787	0.050	5.0	0.0571	0.0000	OK
60 minute winter	18_OUT	979	57.722	0.047	5.0	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	1	1.000	3	10.6	1.075	0.283	0.1223	
15 minute summer	2	2.000	3	21.2	1.334	1.022	0.1153	
15 minute summer	3	1.001	4	49.5	3.179	0.888	0.5919	
360 minute winter	4	Hydro-Brake®	5	1.8				
15 minute summer	5	1.003	6	28.0	2.700	0.563	0.0864	
15 minute summer	6	1.004	7	45.2	2.755	0.354	0.1755	
600 minute winter	7	1.005	8	5.5	0.036	0.002	71.5540	
600 minute winter	8	Hydro-Brake®	14	2.7				
15 minute summer	9	3.000	10	4.5	1.013	0.132	0.0744	
15 minute summer	10	3.001	11	12.7	1.258	0.265	0.4754	
15 minute summer	11	3.002	12	109.4	6.197	0.352	0.0877	
480 minute winter	12	3.003	13	9.3	0.033	0.001	138.8612	
480 minute winter	13	3.004	14	2.2	0.474	0.125	0.0604	
480 minute winter	14	1.007	15	4.9	0.817	0.276	0.0660	
480 minute winter	15	1.008	16	10.1	0.022	0.005	29.2082	
480 minute winter	16	1.009	17	7.5	0.307	0.176	0.8170	
480 minute winter	17	Hydro-Brake®	18	5.0				
720 minute winter	18	1.011	18_OUT	5.0	0.789	0.098	0.0408	512.7

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	66.562	0.062	13.4	0.0872	0.0000	OK
15 minute summer	2	12	66.599	0.549	27.4	0.9390	0.0000	SURCHARGED
15 minute summer	3	12	66.433	0.483	58.5	0.7832	0.0000	SURCHARGED
480 minute winter	4	464	63.450	1.150	16.2	140.9376	0.0000	FLOOD RISK
15 minute summer	5	10	60.600	0.106	34.9	0.1940	0.0000	OK
15 minute summer	6	10	59.893	0.118	56.5	0.1842	0.0000	OK
720 minute winter	7	705	59.315	1.065	8.5	1.6663	0.0000	OK
720 minute winter	8	705	59.315	1.065	5.5	1.2050	0.0000	SURCHARGED
15 minute summer	9	10	65.308	0.041	5.6	0.0514	0.0000	OK
15 minute summer	10	10	64.722	0.060	16.2	0.0808	0.0000	OK
15 minute summer	11	10	61.386	0.136	137.7	0.5021	0.0000	OK
480 minute winter	12	464	59.618	1.418	20.0	2.1033	0.0000	SURCHARGED
480 minute winter	13	464	59.616	1.416	11.0	1.6018	0.0000	SURCHARGED
480 minute winter	14	472	58.264	0.161	5.2	0.1821	0.0000	SURCHARGED
480 minute winter	15	472	58.257	0.357	8.6	0.5996	0.0000	OK
480 minute winter	16	472	58.257	0.357	12.8	0.4042	0.0000	SURCHARGED
480 minute winter	17	472	58.255	0.492	8.5	0.5560	0.0000	SURCHARGED
480 minute winter	18	472	57.789	0.052	5.4	0.0592	0.0000	OK
480 minute winter	18_OUT	472	57.724	0.049	5.4	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 summer	1	1.000	3	13.3	1.100	0.355	0.1521	
15 minute summer	2	2.000	3	23.7	1.360	1.141	0.1290	
15 minute summer	3	1.001	4	56.1	3.219	1.006	0.6625	
480 minute winter	4	Hydro-Brake®	5	2.0				
15 minute summer	5	1.003	6	34.7	2.804	0.697	0.1029	
15 minute summer	6	1.004	7	56.2	2.892	0.440	0.2079	
720 minute winter	7	1.005	8	5.5	0.036	0.002	91.0980	
720 minute winter	8	Hydro-Brake®	14	2.7				
15 minute summer	9	3.000	10	5.6	1.072	0.164	0.0875	
15 minute summer	10	3.001	11	16.0	1.323	0.334	0.5521	
15 minute summer	11	3.002	12	137.1	6.434	0.441	0.1056	
480 minute winter	12	3.003	13	11.0	0.029	0.002	174.5106	
480 minute winter	13	3.004	14	2.5	0.481	0.143	0.1211	
480 minute winter	14	1.007	15	5.1	0.817	0.290	0.0916	
480 minute winter	15	1.008	16	12.8	0.024	0.006	37.3480	
480 minute winter	16	1.009	17	8.5	0.309	0.202	0.8170	
480 minute winter	17	Hydro-Brake®	18	5.4				
480 minute winter	18	1.011	18_OUT	5.4	0.803	0.105	0.0429	566.8