

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
PS8-RE	0.005	180	Type E	17.400	17.039	0.261	494832.355	106231.185
PS9	0.006	450	Type E	17.490	16.909	0.481	494836.948	106240.499
PS1-RE	0.008	180	Type E	17.400	17.000	0.250	494804.113	106246.659
PS2	0.000	450	Type E	17.434	16.939	0.345	494808.804	106254.471
PS6-RE	0.002	180	Type E	17.400	16.996	0.254	494813.359	106238.444
PS34	0.000	450	Type E	17.475	16.864	0.461	494818.843	106249.438
PS36-RE	0.006	180	Type E	17.400	17.035	0.265	494825.050	106234.946
PS7	0.000	450	Type E	17.400	16.946	0.354	494818.752	106238.193
PS3	0.008	450	Type E	17.445	16.831	0.464	494823.368	106247.169
PS5-DIF	0.012	300x300	Type E	17.351	16.545	0.656	494825.552	106251.549
PP2-Dummy Outfall	0.000	150	Unknown	17.400	16.504	0.746	494828.226	106257.007

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	PS8-RE	17.039	PS9	16.909	Circ	100	10.384	80	0.600	0.261	0.481
1.001	PS9	16.909	PS3	16.881	Circ	100	15.129	533	0.600	0.481	0.464
2.000	PS1-RE	17.000	PS2	16.939	Circ	150	9.113	150	0.600	0.250	0.345
2.001	PS2	16.939	PS34	16.864	Circ	150	11.230	150	0.600	0.345	0.461
3.000	PS6-RE	16.996	PS34	16.914	Circ	150	12.285	151	0.600	0.254	0.411
2.002	PS34	16.864	PS3	16.831	Circ	150	5.063	150	0.600	0.461	0.464
4.000	PS36-RE	17.035	PS7	16.946	Circ	100	7.086	80	0.600	0.265	0.354
4.001	PS7	16.946	PS3	16.881	Circ	100	10.094	153	0.600	0.354	0.464
1.002	PS3	16.831	PS5-DIF	16.545	Circ	150	4.894	17	0.600	0.464	0.656
1.003	PS5-DIF	16.545	PP2-Dummy Outfall	16.504	Circ	150	6.078	150	0.600	0.656	0.746

Outfall Details

Outfall Manhole PP2-Dummy Outfall : Free Discharge

Flow Control Details

Controls within Manhole PS5-DIF

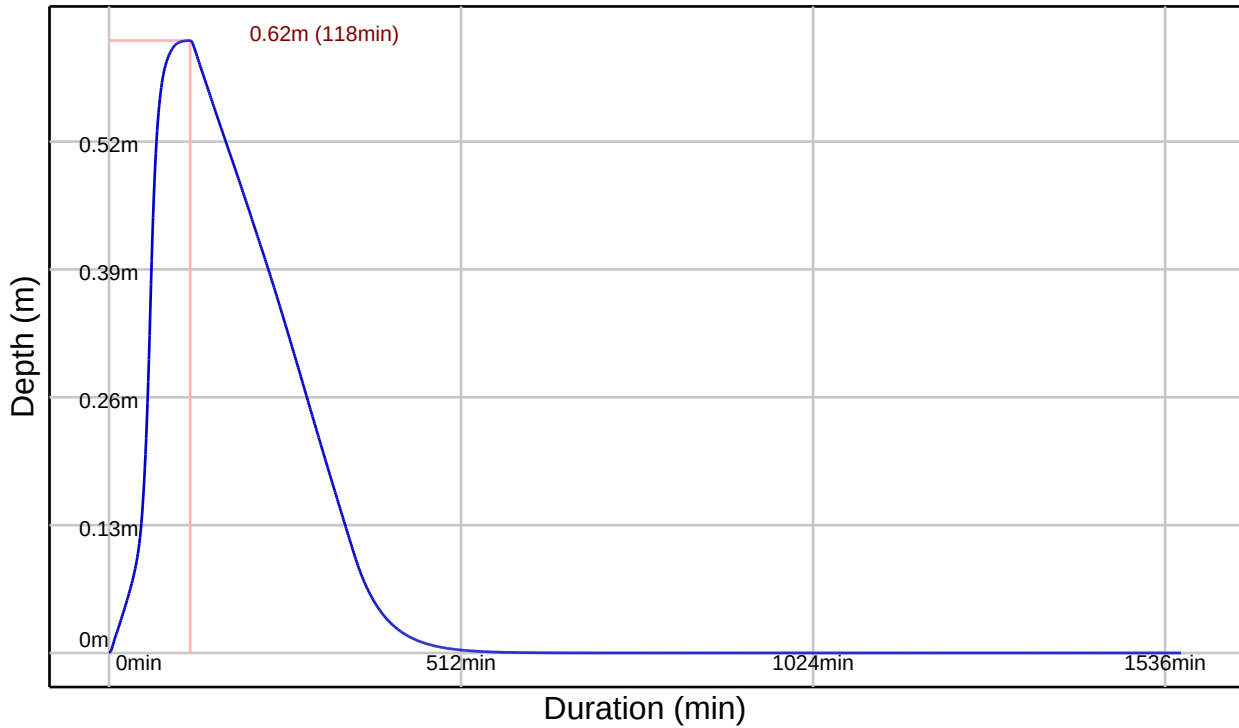
Flap Valve Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.150	0.600

Tank Structure at Manhole PS5-DIF

Tank Invert (m)	Tank Height (m)	Porosity Ratio (%)	Area (m2)	Effective Area (m2) Area x Porosity Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
16.545	0.675	30.00	120.695	36.208	24.441	0.07812000	0.07812000	2.00

Permeable Paving 2 at PS5-DIF (100Yr+45% 120Min Summer)



Controls within Manhole PP2-Dummy Outfall

Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.001	0.600

Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_494812_106233_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (1, +0%), (30, +40%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Item Volume Continuity Errors
1Yr 15Min Winter	15.628	0.00	7.79	PS5-DIF 0.09m3, PP2-Dummy Outfall 0.07m3
1Yr 15Min Summer	15.628	0.00	7.90	PS5-DIF 0.10m3, PP2-Dummy Outfall 0.07m3
1Yr 30Min Winter	10.316	0.00	7.19	PS5-DIF 0.13m3, PP2-Dummy Outfall 0.07m3
1Yr 30Min Summer	10.316	0.00	6.99	PS5-DIF 0.12m3, PP2-Dummy Outfall 0.07m3
1Yr 60Min Winter	6.595	0.00	6.24	PS5-DIF 0.14m3, PP2-Dummy Outfall 0.08m3
1Yr 60Min Summer	6.595	0.00	6.25	PS5-DIF 0.14m3, PP2-Dummy Outfall 0.08m3
1Yr 120Min Summer	5.323	0.00	5.26	PS5-DIF 0.21m3, PP2-Dummy Outfall 0.09m3
1Yr 120Min Winter	5.323	0.00	4.90	
1Yr 180Min Winter	4.511	0.00	3.88	
1Yr 180Min Summer	4.511	0.00	4.47	
1Yr 240Min Winter	3.753	0.00	3.08	
1Yr 240Min Summer	3.753	0.00	3.84	
1Yr 360Min Winter	2.919	0.00	2.01	
1Yr 360Min Summer	2.919	0.00	2.87	
1Yr 480Min Summer	2.427	0.00	2.04	
1Yr 480Min Winter	2.427	0.00	1.41	
1Yr 600Min Winter	2.074	0.00	1.11	
1Yr 600Min Summer	2.074	0.00	1.42	
1Yr 720Min Summer	1.811	0.00	1.22	
1Yr 720Min Winter	1.811	0.00	0.92	
1Yr 960Min Summer	1.465	0.00	0.95	
1Yr 960Min Winter	1.465	0.00	0.70	
1Yr 1440Min Winter	1.102	0.00	0.43	
1Yr 1440Min Summer	1.102	0.00	0.64	
30Yr+40% 15Min Winter	115.253	0.00	7.37	PS5-DIF 0.78m3, PP2-Dummy Outfall 0.34m3
30Yr+40% 15Min Summer	115.253	0.00	7.27	PS5-DIF 0.81m3, PP2-Dummy Outfall 0.27m3
30Yr+40% 30Min Summer	76.731	0.00	7.22	PS5-DIF 0.92m3, PP2-Dummy Outfall 0.55m3
30Yr+40% 30Min Winter	76.731	0.00	7.48	PS5-DIF 0.99m3, PP2-Dummy Outfall 0.46m3
30Yr+40% 60Min Summer	48.847	0.00	7.55	PS5-DIF 1.47m3, PP2-Dummy Outfall 0.38m3
30Yr+40% 60Min Winter	48.847	0.00	7.97	PS5-DIF 1.45m3, PP2-Dummy Outfall 0.82m3
30Yr+40% 120Min Summer	29.859	0.00	7.05	PS5-DIF 1.73m3, PP2-Dummy Outfall 0.47m3
30Yr+40% 120Min Winter	29.859	0.00	9.05	PS5-DIF 2.39m3, PP2-Dummy Outfall 0.36m3
30Yr+40% 180Min Winter	22.126	0.00	10.20	PS5-DIF 2.78m3, PP2-Dummy Outfall 0.30m3
30Yr+40% 180Min Summer	22.126	0.00	7.61	PS5-DIF 2.23m3, PP2-Dummy Outfall 0.33m3
30Yr+40% 240Min Summer	17.757	0.00	7.92	PS5-DIF 2.15m3, PP2-Dummy Outfall 0.94m3
30Yr+40% 240Min Winter	17.757	0.00	8.52	PS5-DIF 2.31m3, PP2-Dummy Outfall 0.74m3
30Yr+40% 360Min Summer	12.891	0.00	6.88	PS5-DIF 1.82m3, PP2-Dummy Outfall 0.82m3
30Yr+40% 360Min Winter	12.891	0.00	5.45	PS5-DIF 1.98m3, PP2-Dummy Outfall 0.30m3
30Yr+40% 480Min Summer	10.228	0.00	4.96	
30Yr+40% 480Min Winter	10.228	0.00	4.43	
30Yr+40% 600Min Summer	8.522	0.00	3.80	
30Yr+40% 600Min Winter	8.522	0.00	3.69	
30Yr+40% 720Min Summer	7.326	0.00	3.03	
30Yr+40% 720Min Winter	7.326	0.00	4.28	
30Yr+40% 960Min Summer	5.766	0.00	2.84	
30Yr+40% 960Min Winter	5.766	0.00	1.75	
30Yr+40% 1440Min Summer	4.126	0.00	1.41	
30Yr+40% 1440Min Winter	4.126	0.00	0.43	
100Yr+45% 15Min Summer	149.272	0.00	6.58	PS5-DIF 0.84m3, PP2-Dummy Outfall 0.46m3, PS9 0.06m3
100Yr+45% 15Min Winter	149.272	0.00	6.30	PS5-DIF 0.72m3, PP2-Dummy Outfall 0.54m3, PS9 0.06m3
100Yr+45% 30Min Summer	100.198	0.00	6.60	PS5-DIF 1.03m3, PP2-Dummy Outfall 0.91m3, PS9 0.07m3
100Yr+45% 30Min Winter	100.198	0.00	6.64	PS5-DIF 1.20m3, PP2-Dummy Outfall 0.39m3, PS9 0.07m3
100Yr+45% 60Min Summer	64.450	0.00	6.36	PS5-DIF 1.53m3, PP2-Dummy Outfall 0.47m3
100Yr+45% 60Min Winter	64.450	0.00	6.16	PS5-DIF 1.43m3, PP2-Dummy Outfall 0.47m3

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Item Volume Continuity Errors
100Yr+45% 120Min Summer	38.652	0.00	6.94	PS5-DIF 2.44m3, PP2-Dummy Outfall 0.47m3
100Yr+45% 120Min Winter	38.652	0.00	7.84	PS5-DIF 2.60m3, PP2-Dummy Outfall 0.56m3
100Yr+45% 180Min Summer	28.339	0.00	6.78	PS5-DIF 2.38m3, PP2-Dummy Outfall 0.92m3
100Yr+45% 180Min Winter	28.339	0.00	9.76	PS5-DIF 3.65m3, PP2-Dummy Outfall 0.46m3
100Yr+45% 240Min Summer	22.782	0.00	7.41	PS5-DIF 3.04m3, PP2-Dummy Outfall 0.44m3
100Yr+45% 240Min Winter	22.782	0.00	9.63	PS5-DIF 3.45m3, PP2-Dummy Outfall 0.73m3
100Yr+45% 360Min Summer	16.530	0.00	8.18	PS5-DIF 3.24m3, PP2-Dummy Outfall 0.70m3
100Yr+45% 360Min Winter	16.530	0.00	8.29	PS5-DIF 3.28m3, PP2-Dummy Outfall 0.51m3
100Yr+45% 480Min Summer	13.117	0.00	7.46	PS5-DIF 3.23m3, PP2-Dummy Outfall 0.35m3
100Yr+45% 480Min Winter	13.117	0.00	5.44	PS5-DIF 2.60m3, PP2-Dummy Outfall 1.07m3
100Yr+45% 600Min Summer	10.952	0.00	5.55	PS5-DIF 2.65m3, PP2-Dummy Outfall 0.92m3
100Yr+45% 600Min Winter	10.952	0.00	4.83	
100Yr+45% 720Min Summer	9.434	0.00	3.96	
100Yr+45% 720Min Winter	9.434	0.00	4.22	
100Yr+45% 960Min Summer	7.431	0.00	3.89	
100Yr+45% 960Min Winter	7.431	0.00	3.98	
100Yr+45% 1440Min Winter	5.311	0.00	0.63	
100Yr+45% 1440Min Summer	5.311	0.00	2.68	

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	15 min Summer	8	17.056	0.017	0.463		OK
PS9	15 min Summer	9	16.952	0.043	0.953		OK
PS1-RE	15 min Summer	8	17.023	0.023	0.769		OK
PS2	15 min Summer	9	16.962	0.023	0.771		OK
PS6-RE	15 min Summer	9	17.008	0.012	0.204		OK
PS34	15 min Summer	9	16.891	0.027	0.986		OK
PS36-RE	15 min Summer	8	17.054	0.019	0.538		OK
PS7	15 min Summer	9	16.969	0.022	0.524		OK
PS3	15 min Summer	8	16.861	0.031	3.111		OK
PS5-DIF	180 min Summer	110	16.615	0.070	0.946		OK
PP2-Dummy Outfall	180 min Summer	112	16.616	0.111	0.006		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	PS8-RE	PS9	0.030	0.238	0.454	0.067	OK
1.001	15 min Summer	9	PS9	PS3	0.037	0.360	0.948	0.371	OK
2.000	15 min Summer	8	PS1-RE	PS2	0.023	0.435	0.759	0.053	OK
2.001	15 min Summer	9	PS2	PS34	0.025	0.410	0.779	0.054	OK
3.000	15 min Summer	9	PS6-RE	PS34	0.012	0.297	0.207	0.014	OK
2.002	15 min Summer	9	PS34	PS3	0.028	0.441	0.989	0.068	OK
4.000	15 min Summer	9	PS36-RE	PS7	0.020	0.468	0.530	0.078	OK
4.001	15 min Summer	9	PS7	PS3	0.022	0.412	0.528	0.109	OK
1.002	180 min Summer	106	PS3	PS5-DIF	0.042	0.902	1.697	0.039	OK
1.003	180 min Summer	109	PS5-DIF	PP2-Dummy Outfall	0.091	0.146	0.068	0.005	OK

Return Period (yrs) + Climate Change (%):

30yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	15 min Summer	9	17.162	0.123	3.275		Flood Risk
PS9	15 min Summer	9	17.135	0.226	6.688		Surcharged
PS1-RE	15 min Summer	8	17.067	0.067	5.674		OK
PS2	120 min Summer	104	17.019	0.079	0.283		OK
PS6-RE	15 min Summer	8	17.029	0.033	1.573		OK
PS34	120 min Summer	104	17.019	0.154	0.360		Surcharged
PS36-RE	15 min Summer	8	17.092	0.057	3.973		OK
PS7	120 min Summer	103	17.019	0.072	0.197		OK
PS3	120 min Summer	104	17.019	0.188	1.178		Surcharged
PS5-DIF	120 min Summer	104	17.018	0.473	1.573		Surcharged
PP2-Dummy Outfall	120 min Summer	95	17.019	0.515	0.004		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	10	PS8-RE	PS9	0.100	0.418	3.048	0.452	Surcharged
1.001	120 min Winter	95	PS9	PS3	0.100	0.463	2.192	0.859	Surcharged
2.000	15 min Summer	8	PS1-RE	PS2	0.067	0.740	5.641	0.391	OK
2.001	120 min Summer	104	PS2	PS34	0.115	0.553	2.649	0.184	OK
3.000	120 min Summer	104	PS6-RE	PS34	0.063	0.429	0.711	0.049	OK
2.002	120 min Summer	91	PS34	PS3	0.150	0.620	3.356	0.233	Surcharged
4.000	15 min Summer	8	PS36-RE	PS7	0.063	0.760	3.939	0.584	OK
4.001	120 min Summer	103	PS7	PS3	0.086	0.578	1.795	0.371	OK
1.002	60 min Winter	46	PS3	PS5-DIF	0.150	1.600	11.674	0.270	Surcharged
1.003	15 min Summer	9	PS5-DIF	PP2-Dummy Outfall	0.150	0.405	1.698	0.118	Surcharged

Return Period (yrs) + Climate Change (%):

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	15 min Summer	10	17.273	0.234	3.536		Flood Risk
PS9	15 min Summer	10	17.232	0.323	7.776		Flood Risk
PS1-RE	120 min Summer	117	17.168	0.168	0.299		Flood Risk
PS2	120 min Summer	117	17.168	0.229	0.309		Flood Risk
PS6-RE	120 min Summer	117	17.168	0.172	0.083		Flood Risk
PS34	120 min Summer	117	17.168	0.304	0.393		Surcharged
PS36-RE	120 min Summer	117	17.168	0.133	0.209		Flood Risk
PS7	120 min Summer	117	17.168	0.222	0.209		Flood Risk
PS3	120 min Summer	117	17.168	0.338	1.281		Flood Risk
PS5-DIF	120 min Summer	117	17.168	0.623	1.715		Surcharged
PP2-Dummy Outfall	120 min Summer	118	17.171	0.667	0.029		Flood Risk

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	10	PS8-RE	PS9	0.100	0.451	3.543	0.525	Surcharged
1.001	30 min Summer	17	PS9	PS3	0.100	0.948	7.209	2.824	Surcharged
2.000	180 min Summer	124	PS1-RE	PS2	0.150	0.610	2.499	0.173	Surcharged
2.001	60 min Winter	41	PS2	PS34	0.150	0.585	3.720	0.258	Surcharged
3.000	60 min Winter	55	PS6-RE	PS34	0.150	0.474	0.999	0.069	Surcharged
2.002	30 min Winter	21	PS34	PS3	0.150	0.664	6.714	0.465	Surcharged
4.000	60 min Winter	50	PS36-RE	PS7	0.100	0.702	2.524	0.374	Surcharged
4.001	30 min Winter	26	PS7	PS3	0.100	0.691	3.704	0.764	Surcharged
1.002	30 min Summer	17	PS3	PS5-DIF	0.150	1.911	26.017	0.602	Surcharged
1.003	15 min Winter	8	PS5-DIF	PP2-Dummy Outfall	0.150	0.436	3.065	0.212	Surcharged