

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
PS15-RE	0.009	180	Type E	17.550	17.075	0.325	494856.335	106209.065
PS16	0.000	450	Type D	17.550	16.997	0.403	494845.918	106214.285
PS32-RE	0.006	180	Type E	17.530	17.188	0.242	494864.805	106229.492
PS34-RE	0.000	180	Type E	17.525	17.157	0.268	494862.669	106214.799
PS33	0.000	450	Type D	17.552	17.031	0.371	494861.562	106222.338
PS41-ACO	0.002	180	Type E	17.551	17.401	0.050	494854.004	106218.814
PS42-ACO	0.000	180	Type E	17.552	17.364	0.088	494855.351	106221.453
PS17	0.004	450	Type D	17.597	16.902	0.545	494852.392	106227.072
PS37-RE	0.000	180	Type E	17.534	17.105	0.278	494839.187	106227.517
PS10	0.009	450	Type E	17.617	17.079	0.389	494842.856	106226.035
PS11-RE	0.001	180	Type E	17.723	17.373	0.250	494847.749	106235.781
PS39-ACO	0.003	180	Type E	17.561	17.411	0.050	494842.729	106234.277
PS40-ACO	0.000	180	Type E	17.585	17.368	0.117	494845.783	106232.719
PS35	0.000	450	Type D	17.640	17.049	0.441	494844.849	106230.006
PS49-DIF	0.000	300x300	Type E	17.735	16.890	0.695	494846.404	106229.244
PS21-DIF	0.009	300x300	Type E	17.638	16.793	0.845	494850.440	106228.026
PP5-Dummy Outfall	0.000	100	Unknown	17.554	16.719	0.834	494843.677	106219.273

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	PS15-RE	17.075	PS16	16.997	Circ	150	11.652	150	0.600	0.325	0.403
1.001	PS16	16.997	PS17	16.902	Circ	150	14.333	150	0.600	0.403	0.545
2.000	PS32-RE	17.188	PS33	17.081	Circ	100	7.854	74	0.600	0.242	0.371
3.000	PS34-RE	17.157	PS33	17.081	Circ	100	7.619	100	0.600	0.268	0.371
2.001	PS33	17.031	PS17	16.902	Circ	150	10.320	80	0.600	0.371	0.545
4.000	PS41-ACO	17.401	PS42-ACO	17.364	Circ	100	2.963	79	0.600	0.050	0.088
4.001	PS42-ACO	17.364	PS17	16.952	Circ	100	6.350	15	0.600	0.088	0.545
1.002	PS17	16.902	PS21-DIF	16.793	Circ	150	2.172	20	0.600	0.545	0.696
5.000	PS37-RE	17.105	PS10	17.079	Circ	150	3.956	150	0.600	0.278	0.389
5.001	PS10	17.079	PS35	17.049	Circ	150	4.444	148	0.600	0.389	0.441
6.000	PS11-RE	17.373	PS35	17.099	Circ	100	6.462	24	0.600	0.250	0.441
7.000	PS39-ACO	17.411	PS40-ACO	17.368	Circ	100	3.428	80	0.600	0.050	0.117
7.001	PS40-ACO	17.368	PS35	17.099	Circ	100	2.869	11	0.600	0.117	0.441
5.002	PS35	17.049	PS49-DIF	16.890	Circ	150	1.731	11	0.600	0.441	0.695
5.003	PS49-DIF	16.890	PS21-DIF	16.793	Circ	150	4.216	43	0.600	0.695	0.696
1.003	PS21-DIF	16.793	PP5-Dummy Outfall	16.719	Circ	1	11.061	150	0.600	0.845	0.834

Permeable Paving Schedule

Permeable Paving	Assigned Manhole	Effective Storage Volume (m3)	CL (m)	IL (m)	Storage Infil Rate (m/hr)	Safety Factor	Easting (m)	Northing (m)
Permeable Paving 5	PS21-DIF	19.004	17.638	16.793	0.07812000	2.00	494849.931	106231.433

Outfall Details

Outfall Manhole PP5-Dummy Outfall : Free Discharge

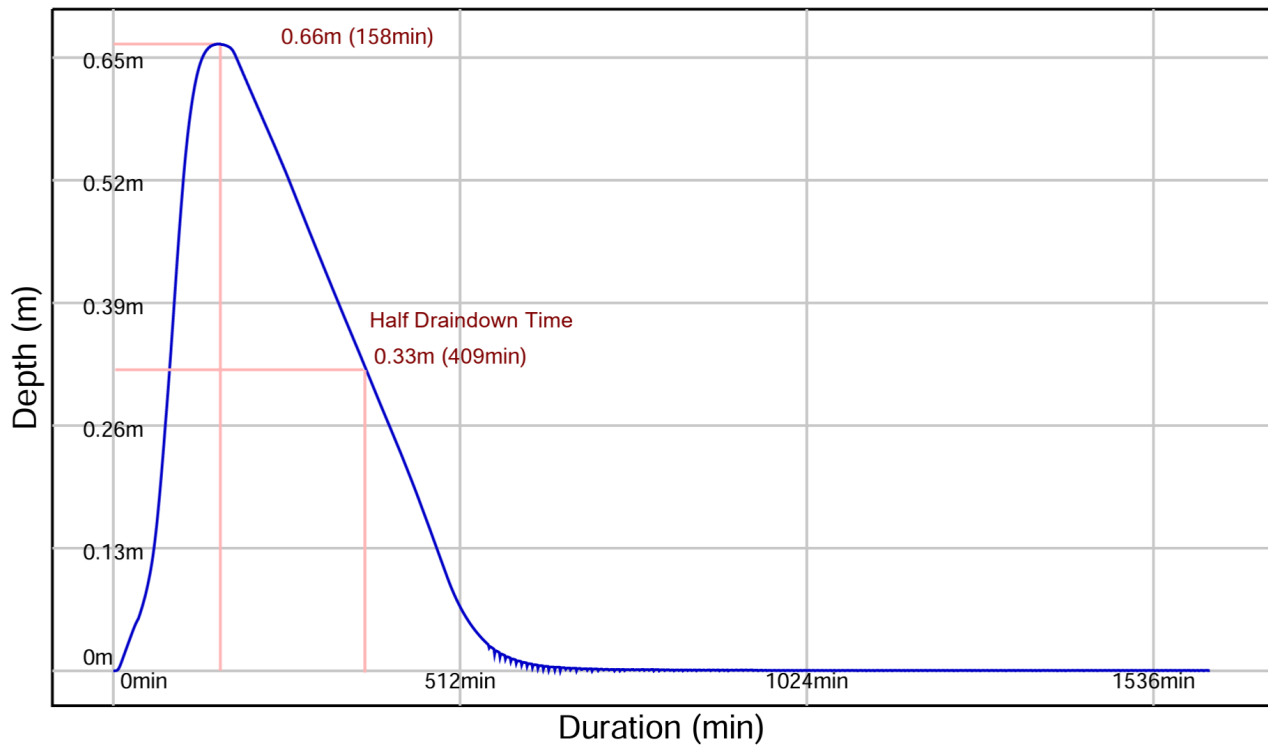
Flow Control Details

Controls within Manhole PP5-Dummy Outfall

Orifice Control

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

Permeable Paving 5 at PS21-DIF (100Yr+45% 180Min Winter)



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 %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	15.628	0.00	0.00	30Yr+40% 360Min Summer	12.891	0.00	0.00
1Yr 15Min Summer	15.628	0.00	0.00	30Yr+40% 360Min Winter	12.891	0.00	0.00
1Yr 30Min Winter	10.316	0.00	0.00	30Yr+40% 480Min Summer	10.228	0.00	0.00
1Yr 30Min Summer	10.316	0.00	0.00	30Yr+40% 480Min Winter	10.228	0.00	0.00
1Yr 60Min Winter	6.595	0.00	0.00	30Yr+40% 600Min Summer	8.522	0.00	0.00
1Yr 60Min Summer	6.595	0.00	0.00	30Yr+40% 600Min Winter	8.522	0.00	0.00
1Yr 120Min Summer	5.323	0.00	0.00	30Yr+40% 720Min Summer	7.326	0.00	0.00
1Yr 120Min Winter	5.323	0.00	0.00	30Yr+40% 720Min Winter	7.326	0.00	0.00
1Yr 180Min Winter	4.511	0.00	0.00	30Yr+40% 960Min Summer	5.766	0.00	0.00
1Yr 180Min Summer	4.511	0.00	0.00	30Yr+40% 960Min Winter	5.766	0.00	0.00
1Yr 240Min Winter	3.753	0.00	0.00	30Yr+40% 1440Min Summer	4.126	0.00	0.00
1Yr 240Min Summer	3.753	0.00	0.00	30Yr+40% 1440Min Winter	4.126	0.00	0.00
1Yr 360Min Winter	2.919	0.00	0.00	100Yr+45% 15Min Summer	149.272	0.00	0.00
1Yr 360Min Summer	2.919	0.00	0.00	100Yr+45% 15Min Winter	149.272	0.00	0.00
1Yr 480Min Summer	2.427	0.00	0.00	100Yr+45% 30Min Summer	100.198	0.00	0.00
1Yr 480Min Winter	2.427	0.00	0.00	100Yr+45% 30Min Winter	100.198	0.00	0.00
1Yr 600Min Winter	2.074	0.00	0.00	100Yr+45% 60Min Summer	64.450	0.00	0.00
1Yr 600Min Summer	2.074	0.00	0.00	100Yr+45% 60Min Winter	64.450	0.00	0.00
1Yr 720Min Summer	1.811	0.00	0.00	100Yr+45% 120Min Summer	38.652	0.00	0.00
1Yr 720Min Winter	1.811	0.00	0.00	100Yr+45% 120Min Winter	38.652	0.00	0.00
1Yr 960Min Summer	1.465	0.00	0.00	100Yr+45% 180Min Summer	28.339	0.00	0.00
1Yr 960Min Winter	1.465	0.00	0.00	100Yr+45% 180Min Winter	28.339	0.00	-0.16
1Yr 1440Min Winter	1.102	0.00	0.00	100Yr+45% 240Min Summer	22.782	0.00	0.00
1Yr 1440Min Summer	1.102	0.00	0.00	100Yr+45% 240Min Winter	22.782	0.00	0.00
30Yr+40% 15Min Winter	115.253	0.00	0.00	100Yr+45% 360Min Summer	16.530	0.00	0.00
30Yr+40% 15Min Summer	115.253	0.00	0.00	100Yr+45% 360Min Winter	16.530	0.00	0.00
30Yr+40% 30Min Summer	76.731	0.00	0.00	100Yr+45% 480Min Summer	13.117	0.00	0.00
30Yr+40% 30Min Winter	76.731	0.00	0.00	100Yr+45% 480Min Winter	13.117	0.00	0.00
30Yr+40% 60Min Summer	48.847	0.00	0.00	100Yr+45% 600Min Summer	10.952	0.00	0.00
30Yr+40% 60Min Winter	48.847	0.00	0.00	100Yr+45% 600Min Winter	10.952	0.00	0.00
30Yr+40% 120Min Summer	29.859	0.00	0.00	100Yr+45% 720Min Summer	9.434	0.00	0.00
30Yr+40% 120Min Winter	29.859	0.00	0.00	100Yr+45% 720Min Winter	9.434	0.00	0.00
30Yr+40% 180Min Winter	22.126	0.00	0.00	100Yr+45% 960Min Summer	7.431	0.00	0.00
30Yr+40% 180Min Summer	22.126	0.00	0.00	100Yr+45% 960Min Winter	7.431	0.00	0.00
30Yr+40% 240Min Summer	17.757	0.00	0.00	100Yr+45% 1440Min Winter	5.311	0.00	0.00
30Yr+40% 240Min Winter	17.757	0.00	0.00	100Yr+45% 1440Min Summer	5.311	0.00	0.00

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
PS15-RE	15 min Summer	8	17.099	0.024	0.854		OK
PS16	15 min Summer	9	17.023	0.025	0.857		OK
PS32-RE	15 min Summer	8	17.207	0.019	0.555		OK
PS34-RE	15 min Winter	0	17.157	0.000	0.000		OK
PS33	15 min Summer	9	17.048	0.017	0.539		OK
PS41-ACO	15 min Summer	9	17.414	0.012	0.194		OK
PS42-ACO	15 min Summer	9	17.372	0.008	0.197		OK
PS17	15 min Summer	9	16.923	0.021	1.933		OK
PS37-RE	15 min Winter	0	17.105	0.000	0.000		OK
PS10	15 min Summer	8	17.103	0.024	0.854		OK
PS11-RE	15 min Summer	9	17.378	0.005	0.053		OK
PS39-ACO	15 min Summer	9	17.425	0.014	0.237		OK
PS40-ACO	15 min Summer	9	17.376	0.008	0.241		OK
PS35	15 min Summer	9	17.063	0.014	1.122		OK
PS49-DIF	15 min Summer	9	16.910	0.020	1.125		OK
PS21-DIF	180 min Summer	109	16.876	0.083	0.721		Surcharged
PP5-Dummy Outfall	15 min Winter	0	16.719	0.000	0.000		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	8	PS15-RE	PS16	0.025	0.441	0.844	0.058	OK
1.001	15 min Summer	9	PS16	PS17	0.023	0.497	0.869	0.060	OK
2.000	15 min Summer	8	PS32-RE	PS33	0.019	0.538	0.546	0.077	OK
3.000	15 min Winter	0	PS34-RE	PS33	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	9	PS33	PS17	0.019	0.415	0.543	0.027	OK
4.000	15 min Summer	9	PS41-ACO	PS42-ACO	0.010	0.486	0.197	0.029	OK
4.001	15 min Summer	9	PS42-ACO	PS17	0.008	0.692	0.197	0.013	OK
1.002	15 min Summer	9	PS17	PS21-DIF	0.050	0.597	1.939	0.048	OK
5.000	15 min Summer	8	PS37-RE	PS10	0.012	0.000	0.000	0.000	OK
5.001	15 min Summer	8	PS10	PS35	0.019	0.629	0.844	0.058	OK
6.000	15 min Summer	9	PS11-RE	PS35	0.005	0.397	0.053	0.004	OK
7.000	15 min Summer	9	PS39-ACO	PS40-ACO	0.011	0.536	0.241	0.036	OK
7.001	15 min Summer	9	PS40-ACO	PS35	0.008	0.850	0.242	0.013	OK
5.002	15 min Summer	9	PS35	PS49-DIF	0.017	1.000	1.125	0.021	OK
5.003	15 min Summer	9	PS49-DIF	PS21-DIF	0.049	0.262	1.130	0.042	OK
1.003	15 min Winter	3	PS21-DIF	PP5-Dummy Outfall	0.001	0.000	0.000	0.000	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 5	180 min Summer	110	16.875	0.082	0.873			OK

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

30yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS15-RE	180 min Winter	144	17.325	0.250	0.280		Flood Risk
PS16	180 min Winter	145	17.325	0.328	0.282		Flood Risk
PS32-RE	180 min Winter	145	17.325	0.138	0.177		Flood Risk
PS34-RE	180 min Winter	144	17.325	0.168	0.001		Flood Risk
PS33	180 min Winter	146	17.325	0.294	0.174		Flood Risk
PS41-ACO	15 min Summer	8	17.434	0.032	1.495		OK
PS42-ACO	15 min Summer	8	17.385	0.021	1.481		OK
PS17	180 min Winter	145	17.325	0.424	0.650		Flood Risk
PS37-RE	180 min Winter	145	17.325	0.220	0.000		Flood Risk
PS10	180 min Winter	145	17.325	0.246	0.273		Flood Risk
PS11-RE	15 min Summer	8	17.385	0.012	0.408		OK
PS39-ACO	15 min Summer	8	17.447	0.036	1.824		OK
PS40-ACO	15 min Summer	8	17.388	0.020	1.808		OK
PS35	180 min Winter	145	17.325	0.276	0.374		Surcharged
PS49-DIF	180 min Winter	145	17.325	0.435	0.373		Surcharged
PS21-DIF	180 min Winter	145	17.325	0.533	1.021		Surcharged
PP5-Dummy Outfall	15 min Winter	0	16.719	0.000	0.000		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	PS15-RE	PS16	0.150	0.738	6.000	0.416	Surcharged
1.001	15 min Summer	9	PS16	PS17	0.150	0.668	4.519	0.313	Surcharged
2.000	30 min Summer	18	PS32-RE	PS33	0.100	0.870	3.683	0.523	Surcharged
3.000	15 min Summer	16	PS34-RE	PS33	0.100	0.085	0.486	0.081	Surcharged
2.001	15 min Summer	8	PS33	PS17	0.150	0.580	2.806	0.141	Surcharged
4.000	15 min Summer	8	PS41-ACO	PS42-ACO	0.026	0.889	1.481	0.218	OK
4.001	15 min Summer	8	PS42-ACO	PS17	0.060	0.934	1.472	0.095	OK
1.002	15 min Summer	8	PS17	PS21-DIF	0.150	0.798	9.211	0.230	Surcharged
5.000	15 min Summer	16	PS37-RE	PS10	0.150	0.064	0.469	0.033	Surcharged
5.001	15 min Summer	9	PS10	PS35	0.150	1.049	5.713	0.394	Surcharged
6.000	15 min Summer	9	PS11-RE	PS35	0.056	0.717	0.403	0.032	OK
7.000	15 min Summer	8	PS39-ACO	PS40-ACO	0.028	0.990	1.808	0.267	OK
7.001	15 min Summer	9	PS40-ACO	PS35	0.060	1.482	1.800	0.096	OK
5.002	60 min Winter	34	PS35	PS49-DIF	0.150	1.159	8.903	0.164	Surcharged
5.003	120 min Winter	53	PS49-DIF	PS21-DIF	0.150	0.474	6.772	0.250	Surcharged
1.003	15 min Winter	1	PS21-DIF	PP5-Dummy Outfall	0.001	0.000	0.000	0.000	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 5	180 min Winter	146	17.323	0.529	1.267			OK

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

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS15-RE	180 min Winter	159	17.501	0.426	0.268		Flood Risk
PS16	180 min Winter	154	17.501	0.503	0.293		Flood Risk
PS32-RE	180 min Winter	158	17.502	0.314	0.177		Flood Risk
PS34-RE	180 min Winter	158	17.502	0.345	0.000		Flood Risk
PS33	180 min Winter	158	17.502	0.471	0.460		Flood Risk
PS41-ACO	180 min Winter	159	17.501	0.100	0.064		OK
PS42-ACO	180 min Winter	158	17.501	0.137	0.115		Flood Risk
PS17	180 min Winter	154	17.501	0.599	0.448		Flood Risk
PS37-RE	180 min Winter	157	17.503	0.397	0.000		Flood Risk
PS10	180 min Winter	157	17.501	0.422	0.348		Flood Risk
PS11-RE	180 min Winter	157	17.502	0.129	0.018		Flood Risk
PS39-ACO	180 min Winter	157	17.503	0.092	0.080		OK
PS40-ACO	180 min Winter	157	17.502	0.134	0.129		Flood Risk
PS35	180 min Winter	157	17.502	0.453	0.837		Flood Risk
PS49-DIF	180 min Winter	159	17.501	0.611	1.053		Flood Risk
PS21-DIF	180 min Winter	159	17.501	0.709	1.072		Flood Risk
PP5-Dummy Outfall	15 min Summer	0	16.719	0.000	0.000		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 Winter	8	PS15-RE	PS16	0.150	0.710	6.212	0.430	Surcharged
1.001	15 min Winter	8	PS16	PS17	0.150	0.675	5.269	0.365	Surcharged
2.000	15 min Winter	9	PS32-RE	PS33	0.100	0.899	4.647	0.660	Surcharged
3.000	15 min Winter	16	PS34-RE	PS33	0.100	0.075	0.588	0.098	Surcharged
2.001	15 min Winter	7	PS33	PS17	0.150	0.584	2.757	0.139	Surcharged
4.000	180 min Winter	159	PS41-ACO	PS42-ACO	0.100	0.615	0.431	0.064	OK
4.001	180 min Summer	129	PS42-ACO	PS17	0.100	0.708	0.658	0.042	Surcharged
1.002	30 min Summer	18	PS17	PS21-DIF	0.150	0.806	9.260	0.231	Surcharged
5.000	15 min Winter	16	PS37-RE	PS10	0.150	0.055	0.603	0.042	Surcharged
5.001	15 min Winter	8	PS10	PS35	0.150	1.057	5.520	0.381	Surcharged
6.000	120 min Winter	172	PS11-RE	PS35	0.100	0.524	0.202	0.016	Surcharged
7.000	180 min Winter	157	PS39-ACO	PS40-ACO	0.096	0.682	0.525	0.078	OK
7.001	180 min Summer	134	PS40-ACO	PS35	0.100	1.093	0.803	0.043	Surcharged
5.002	120 min Summer	58	PS35	PS49-DIF	0.150	0.946	7.895	0.145	Surcharged
5.003	180 min Summer	77	PS49-DIF	PS21-DIF	0.150	0.456	6.506	0.240	Surcharged
1.003	15 min Summer	0	PS21-DIF	PP5-Dummy Outfall	0.001	0.000	0.000	0.000	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 5	180 min Winter	159	17.499	0.705	1.384			Surcharged