

Drainage Design Report

Flow

v7.0

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Network	Storm Network
Filename	C:\Users\Bob\Documents\reford\chatburn road\drainage design\new layout\chatburn road new layout with houses 1000 year.pfd
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Rainfall Methodology	FSR
Return Period (years)	2
Additional Flow (%)	0
FSR Region	England and Wales
M5-60 (mm)	20.000
Ratio-R	0.200
CV	0.750
Time of Entry (mins)	5.00
Maximum Time of Concentration (mins)	30.00
Maximum Rainfall (mm/hr)	75.0
Minimum Velocity (m/s)	1.00
Connection Type	Level Soffits
Minimum Backdrop Height (m)	3.000
Preferred Cover Depth (m)	0.600
Enforce best practice design rules	

Name	Area (ha)	T of E (mins)	Add Inflow (l/s)	Cover Level (m)	Node Type	Diameter (mm)	Depth (m)
1	0.012	5.00		91.700	Manhole	1200	1.150
2	0.012	5.00		90.700	Manhole	1200	1.150
3	0.002	5.00		90.550	Manhole	100	0.700
4	0.002	5.00		90.550	Manhole	450	0.885
5	0.004	5.00		90.550	Manhole	100	0.700
6	0.008	5.00		90.550	Manhole	450	1.054
7	0.004	5.00		90.450	Manhole	100	0.700
8	0.009	5.00		90.450	Manhole	450	1.123
9	0.004	5.00		90.150	Manhole	100	0.700
10	0.010	5.00		90.150	Manhole	450	0.958
11	0.018	5.00		89.100	Manhole	1200	1.050
12	0.004	5.00		89.350	Manhole	100	0.700
13	0.009	5.00		89.350	Manhole	450	0.902
14	0.004	5.00		88.550	Manhole	100	0.700
15	0.009	5.00		88.550	Manhole	450	0.902
16	0.005	5.00		87.650	Manhole	100	0.641
17	0.008	5.00		87.650	Manhole	450	0.893
18	0.014	5.00		88.000	Manhole	1200	1.343
19	0.006	5.00		87.650	Manhole	100	0.700
20	0.005	5.00		86.550	Manhole	100	0.700
21	0.010	5.00		86.550	Manhole	450	0.902
22	0.005	5.00		86.100	Manhole	1200	1.050
23	0.026	5.00		86.300	Manhole	1200	1.399
24	0.024	5.00		86.800	Manhole	1200	2.153
25	0.004	5.00		89.850	Manhole	100	0.700
26	0.014	5.00		89.850	Manhole	450	0.936
27	0.006	5.00		89.600	Manhole	100	0.700
28	0.007	5.00		89.600	Manhole	450	1.006
29	0.003	5.00		89.350	Manhole	100	0.700

30	0.007	5.00	89.350	Manhole	450	0.902
31	0.005	5.00	89.350	Manhole	100	0.700
32	0.016	5.00	89.350	Manhole	450	1.171
33	0.009	5.00	90.000	Manhole	1200	1.050
34	0.038	5.00	89.000	Manhole	1200	1.050
35	0.007	5.00	88.350	Manhole	100	0.700
36	0.008	5.00	88.150	Manhole	450	0.700
37	0.002	5.00	88.350	Manhole	100	0.700
38	0.009	5.00	88.150	Manhole	450	0.902
39	0.008	5.00	87.850	Manhole	100	0.700
40	0.008	5.00	87.850	Manhole	450	0.902
41	0.004	5.00	87.850	Manhole	450	1.104
42	0.009	5.00	87.850	Manhole	450	1.491
43	0.008	5.00	88.250	Manhole	100	0.700
44	0.005	5.00	88.250	Manhole	450	2.115
45	0.010	5.00	88.550	Manhole	100	0.700
46	0.005	5.00	88.550	Manhole	450	2.486
47	0.004	5.00	88.150	Manhole	100	0.700
48	0.006	5.00	88.150	Manhole	450	2.157
49	0.012	5.00	85.300	Manhole	3000	2.847
50	0.007	5.00	85.450	Manhole	100	0.700
51	0.008	5.00	85.350	Manhole	450	0.785
52	0.003	5.00	85.450	Manhole	100	0.700
53	0.006	5.00	85.350	Manhole	450	0.987
54	0.010	5.00	85.350	Manhole	100	0.700
55	0.005	5.00	85.350	Manhole	450	1.172
56	0.010	5.00	85.250	Manhole	100	0.700
57	0.005	5.00	85.250	Manhole	450	1.274
58	0.002	5.00	85.250	Manhole	100	0.700
59	0.003	5.00	85.250	Manhole	450	1.476
60		5.00	84.600	Manhole	3000	2.109
61	0.015	5.00	84.500	Manhole	3000	2.069

62	0.003	5.00	85.050	Manhole	100	0.700
63	0.003	5.00	85.050	Manhole	450	0.902
64	0.005	5.00	84.450	Manhole	100	0.542
65	0.012	5.00	84.450	Manhole	450	0.744
66	0.003	5.00	84.450	Manhole	100	0.667
67	0.003	5.00	84.450	Manhole	100	0.642
68			84.450	Manhole	450	0.811
69	0.010	5.00	84.450	Manhole	450	1.047
70	0.003	5.00	84.450	Manhole	100	0.700
71	0.003	5.00	84.450	Manhole	450	0.902
72	0.005	5.00	84.450	Manhole	100	0.700
73	0.013	5.00	84.450	Manhole	450	1.434
74	0.035	5.00	84.000	Manhole	3000	1.637
75			82.900	Manhole	1200	0.580

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)	Rain (mm/hr)	Min DS IL (m)	Lateral Area (ha)	Lateral Ins Point (%)	Lateral T of E (mins)
16.000	1	2	15.000	90.550	89.550	1.000	15.0	150	Circular	5.10	48.9				
16.001	2	11	24.000	89.550	88.050	1.500	16.0	150	Circular	5.25	48.4				
12.000	3	4	11.000	89.850	89.665	0.185	59.5	100	Circular	5.18	48.6				
12.001	4	6	10.000	89.665	89.496	0.169	59.2	100	Circular	5.35	48.1				
13.000	5	6	12.000	89.850	89.496	0.354	33.9	100	Circular	5.15	48.7				
12.002	6	8	10.000	89.496	89.327	0.169	59.2	100	Circular	5.52	47.6				
14.000	7	8	12.000	89.750	89.327	0.423	28.4	100	Circular	5.14	48.7				
12.003	8	10	8.000	89.327	89.192	0.135	59.3	100	Circular	5.65	47.2				
15.000	9	10	12.000	89.450	89.192	0.258	46.5	100	Circular	5.18	48.6				
12.004	10	11	14.000	89.192	88.100	1.092	12.8	100	Circular	5.76	46.9				
12.005	11	18	18.000	88.050	86.657	1.393	12.9	150	Circular	5.86	46.6				
17.000	12	13	12.000	88.650	88.448	0.202	59.4	100	Circular	5.20	48.5				
17.001	13	15	10.000	88.448	87.648	0.800	12.5	100	Circular	5.28	48.3				
18.000	14	15	12.000	87.850	87.648	0.202	59.4	100	Circular	5.20	48.5				
17.002	15	17	10.000	87.648	86.807	0.841	11.9	100	Circular	5.35	48.1				
19.000	16	17	12.000	87.009	86.807	0.202	59.4	100	Circular	5.20	48.5				
17.003	17	18	10.000	86.757	86.657	0.100	100.0	150	Circular	5.52	47.6				
12.006	18	24	20.000	86.657	84.722	1.935	10.3	150	Circular	5.97	46.3				
21.000	19	21	6.000	86.950	85.648	1.302	4.6	100	Circular	5.03	49.1				
20.000	20	21	12.000	85.850	85.648	0.202	59.4	100	Circular	5.20	48.5				
20.001	21	23	15.000	85.648	84.951	0.697	21.5	100	Circular	5.35	48.1				
22.000	22	23	15.000	85.050	84.901	0.149	100.7	150	Circular	5.25	48.4				
20.002	23	24	18.000	84.901	84.722	0.179	100.6	150	Circular	5.65	47.2				
12.007	24	49	24.000	84.647	83.128	1.519	15.8	225	Circular	6.09	46.0				
1.000	25	26	14.000	89.150	88.914	0.236	59.3	100	Circular	5.23	48.4				
1.001	26	28	19.000	88.914	88.594	0.320	59.4	100	Circular	5.55	47.5				
2.000	27	28	14.000	88.900	88.594	0.306	45.8	100	Circular	5.20	48.5				
1.002	28	32	12.000	88.594	88.179	0.415	28.9	100	Circular	5.69	47.1				
3.000	29	30	12.000	88.650	88.448	0.202	59.4	100	Circular	5.20	48.5				
3.001	30	32	16.000	88.448	88.179	0.269	59.5	100	Circular	5.47	47.7				
4.000	31	32	12.000	88.650	88.179	0.471	25.5	100	Circular	5.13	48.8				
1.003	32	34	10.000	88.179	88.000	0.179	55.9	100	Circular	5.85	46.7				
5.000	33	34	28.000	88.950	87.950	1.000	28.0	150	Circular	5.24	48.4				
1.004	34	42	24.000	87.950	86.359	1.591	15.1	150	Circular	6.00	46.2				
9.000	35	36	8.000	87.650	87.450	0.200	40.0	100	Circular	5.11	48.8				
9.001	36	38	12.000	87.450	87.248	0.202	59.4	100	Circular	5.31	48.2				

10.000	37	38	10.000	87.650	87.248	0.402	24.9	100Circular	5.11	48.8			
9.002	38	48	12.000	87.248	86.118	1.130	10.6	100Circular	5.39	48.0			
6.000	39	40	12.000	87.150	86.948	0.202	59.4	100Circular	5.20	48.5			
6.001	40	41	12.000	86.948	86.746	0.202	59.4	100Circular	5.40	47.9			
6.002	41	42	20.000	86.746	86.409	0.337	59.3	100Circular	5.73	47.0			
1.005	42	44	15.000	86.359	86.210	0.149	100.7	150Circular	6.25	45.6			
7.000	43	44	12.000	87.550	86.260	1.290	9.3	100Circular	5.08	48.9			
1.006	44	46	12.000	86.135	86.064	0.071	169.0	225Circular	6.45	45.1			
8.000	45	46	12.000	87.850	86.189	1.661	7.2	100Circular	5.07	48.9			
1.007	46	48	12.000	86.064	85.993	0.071	169.0	225Circular	6.65	44.6			
11.000	47	48	12.000	87.450	86.118	1.332	9.0	100Circular	5.08	48.9			
1.008	48	49	28.000	85.993	83.128	2.865	9.8	225Circular	6.76	44.3			
1.009	49	61	20.000	82.453	82.431	0.022	909.1	900double	7.09	43.6			
23.000	50	51	11.000	84.750	84.565	0.185	59.5	100Circular	5.18	48.6			
23.001	51	53	12.000	84.565	84.363	0.202	59.4	100Circular	5.38	48.0			
24.000	52	53	11.000	84.750	84.363	0.387	28.4	100Circular	5.13	48.8			
23.002	53	55	11.000	84.363	84.178	0.185	59.5	100Circular	5.57	47.5			
25.000	54	55	12.000	84.650	84.178	0.472	25.4	100Circular	5.13	48.8			
23.003	55	57	12.000	84.178	83.976	0.202	59.4	100Circular	5.77	46.9			
26.000	56	57	12.000	84.550	83.976	0.574	20.9	100Circular	5.12	48.8			
23.004	57	59	12.000	83.976	83.774	0.202	59.4	100Circular	5.97	46.3			
27.000	58	59	11.000	84.550	83.774	0.776	14.2	100Circular	5.09	48.9			
23.005	59	61	8.000	83.774	83.231	0.543	14.7	100Circular	6.03	46.2			
28.000	60	61	57.000	82.491	82.431	0.060	950.0	900double	5.94	46.4			
1.010	61	74	65.000	82.431	82.363	0.068	955.9	900double	8.16	41.3			
29.000	62	63	12.000	84.350	84.148	0.202	59.4	100Circular	5.20	48.5			
29.001	63	65	12.000	84.148	83.706	0.442	27.1	100Circular	5.33	48.1			
30.000	64	65	12.000	83.908	83.706	0.202	59.4	100Circular	5.20	48.5			
29.002	65	69	18.000	83.706	83.403	0.303	59.4	100Circular	5.63	47.3			
32.000	66	68	8.000	83.783	83.639	0.144	55.6	100Circular	5.13	48.8			
31.000	67	68	10.000	83.808	83.639	0.169	59.2	100Circular	5.17	48.6			
31.001	68	69	12.000	83.639	83.403	0.236	50.8	100Circular	5.35	48.1			
29.003	69	73	20.000	83.403	83.066	0.337	59.3	100Circular	5.97	46.3			
33.000	70	71	12.000	83.750	83.548	0.202	59.4	100Circular	5.20	48.5			
33.001	71	73	20.000	83.548	83.066	0.482	41.5	100Circular	5.48	47.7			
34.000	72	73	12.000	83.750	83.066	0.684	17.5	100Circular	5.11	48.8			
29.004	73	74	12.000	83.016	82.513	0.503	23.9	150Circular	6.06	46.1			
1.011	74	75	10.000	82.363	82.320	0.043	232.6	300Circular	8.33	41.0	82.320		

Rainfall Methodology	FSR	Return Period (years)	Climate Change (%)
FSR Region	England and Wales	1000	0
M5-60 (mm)	20.000		
Ratio-R	0.200		
Summer CV	0.750		
Winter CV	0.840		
Analysis Speed	Normal		
Drain Down Time (mins)	240		
Additional Storage (m³/ha)	20.0		
Storm Durations (mins)	15		
	30		
	60		
	120		
	180		
	240		
	360		
	480		
	600		
	720		
	960		
	1440		
Check Discharge Rate(s)	x		
1 year (l/s)	12.1		
30 year (l/s)	23.6		
100 year (l/s)	28.9		
Check Discharge Volume	x		
100 year 360 minute (m³)	638		

Hydro-Brake®												
Node	Flap Valve	Online / Offline	Replaces Downstream Link	Loop to Node	Invert Level (m)	Design Depth (m)	Design Flow (l/s)	Objective	Sump Available	Product Number	Min Outlet Diameter (m)	Min Node Diameter (mm)
74	x	Online	x		82.363	1.630	13.2	(HE) Minimise upstream storage		CTL-SHE-0156-1320-1630-1320	0.225	1500
74	x	Online	x		82.681	1.312	15.6	(HE) Minimise upstream storage		CTL-SHE-0174-1560-1312-1560	0.225	1500

Results for 1000 year Critical Storm Duration. Lowest mass balance: 99.62%															
Event	US Node ID	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	Link ID	DS Node ID	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1	18	90.589	0.039	6.8	0.0522	0.0000	OK	16.000	2	6.8	1.407	0.147	0.0730	
30 minute summer	2	18	89.607	0.057	13.6	0.0761	0.0000	OK	16.001	11	13.6	1.386	0.304	0.2653	
30 minute summer	3	21	89.910	0.060	1.1	0.0039	0.0000	OK	12.000	4	1.1	0.522	0.140	0.0700	
30 minute summer	4	20	89.907	0.242	2.4	0.0494	0.0000	SURCHARGED	12.001	6	3.2	0.429	0.405	0.0782	
30 minute summer	5	21	89.906	0.056	2.3	0.0068	0.0000	OK	13.000	6	2.3	0.447	0.220	0.0739	
30 minute summer	6	20	89.899	0.403	7.9	0.1255	0.0000	SURCHARGED	12.002	8	6.9	0.878	0.872	0.0782	
30 minute summer	7	20	89.807	0.057	2.3	0.0070	0.0000	OK	14.000	8	2.3	0.391	0.201	0.0748	
30 minute summer	8	20	89.799	0.472	12.8	0.1505	0.0000	SURCHARGED	12.003	10	11.3	1.450	1.441	0.0626	
30 minute summer	9	20	89.488	0.038	2.3	0.0046	0.0000	OK	15.000	10	2.3	0.411	0.258	0.0633	
30 minute summer	10	19	89.478	0.286	18.4	0.1052	0.0000	SURCHARGED	12.004	11	17.0	2.345	0.998	0.1095	
30 minute summer	11	19	88.181	0.131	40.0	0.1932	0.0000	OK	12.005	18	39.0	2.373	0.783	0.3054	
30 minute summer	12	18	88.687	0.037	2.3	0.0045	0.0000	OK	17.000	13	2.3	0.750	0.293	0.0369	
30 minute summer	13	18	88.494	0.046	7.4	0.0165	0.0000	OK	17.001	15	7.4	1.536	0.429	0.0566	
30 minute summer	14	20	87.909	0.059	2.3	0.0072	0.0000	OK	18.000	15	2.3	0.526	0.293	0.0760	
30 minute summer	15	20	87.895	0.247	14.8	0.0888	0.0000	SURCHARGED	17.002	17	13.8	2.055	0.780	0.0782	
30 minute summer	16	20	87.505	0.496	4.2	0.0813	0.0000	FLOOD RISK	19.000	17	5.3	0.682	0.678	0.0939	
30 minute summer	17	20	87.489	0.732	19.2	0.2474	0.0000	FLOOD RISK	17.003	18	19.6	1.113	1.104	0.1760	
30 minute summer	18	20	87.379	0.722	60.8	0.9669	0.0000	SURCHARGED	12.006	24	58.5	3.364	1.051	0.3521	
30 minute summer	19	18	86.973	0.023	3.4	0.0042	0.0000	OK	21.000	21	3.4	0.907	0.119	0.0276	
15 minute winter	20	10	85.892	0.042	2.9	0.0063	0.0000	OK	20.000	21	2.9	0.587	0.363	0.0649	
30 minute summer	21	19	85.817	0.169	11.8	0.0645	0.0000	SURCHARGED	20.001	23	11.0	1.502	0.841	0.1174	
30 minute summer	22	19	85.315	0.265	3.1	0.3244	0.0000	SURCHARGED	22.000	23	5.0	0.346	0.282	0.2641	
30 minute summer	23	19	85.308	0.407	26.1	0.6123	0.0000	SURCHARGED	20.002	24	25.9	1.471	1.462	0.3123	
30 minute summer	24	19	84.802	0.155	96.2	0.2101	0.0000	OK	12.007	49	96.1	3.460	0.731	0.6666	
30 minute winter	25	22	89.753	0.603	2.0	0.0736	0.0000	FLOOD RISK	1.000	26	2.1	0.376	0.263	0.1095	
30 minute winter	26	22	89.748	0.834	8.0	0.3818	0.0000	FLOOD RISK	1.001	28	5.9	0.924	0.753	0.1487	
30 minute winter	27	22	89.600	0.700	3.1	0.1253	0.0700	FLOOD	2.000	28	2.1	0.452	0.236	0.1095	
30 minute winter	28	22	89.597	1.003	10.6	0.2989	0.0000	FLOOD RISK	1.002	32	8.8	1.129	0.781	0.0939	
30 minute winter	29	21	89.350	0.700	2.9	0.0658	0.1483	FLOOD	3.000	30	1.6	0.371	0.209	0.0939	
30 minute winter	30	21	89.350	0.902	3.6	0.2832	0.1209	FLOOD	3.001	32	3.8	0.513	0.482	0.1252	
30 minute winter	31	22	89.350	0.700	2.9	0.1057	0.0041	FLOOD	4.000	32	2.1	0.308	0.176	0.0939	
30 minute winter	32	21	89.343	1.164	16.7	0.5030	0.0000	FLOOD RISK	1.003	34	18.1	2.309	2.227	0.0782	
30 minute summer	33	18	88.989	0.039	5.1	0.0514	0.0000	OK	5.000	34	5.1	0.508	0.151	0.2981	
30 minute summer	34	20	88.551	0.601	40.6	1.1144	0.0000	SURCHARGED	1.004	42	34.8	2.012	0.756	0.4225	
30 minute summer	35	18	87.695	0.045	4.0	0.0094	0.0000	OK	9.000	36	4.0	0.684	0.417	0.0450	
30 minute summer	36	19	87.589	0.139	8.5	0.0539	0.0000	SURCHARGED	9.001	38	8.0	1.168	1.017	0.0817	
15 minute winter	37	11	87.670	0.020	1.1	0.0013	0.0000	OK	10.000	38	1.1	0.332	0.090	0.0344	

30 minute summer	38		18	87.317	0.069	14.1	0.0249	0.0000	OK	9.002	48	14.0	2.513	0.748	0.0669	
30 minute winter	39		22	87.850	0.700	4.1	0.1652	0.0175	FLOOD	6.000	40	3.4	0.656	0.433	0.0939	
30 minute winter	40		22	87.832	0.884	6.9	0.2969	0.0000	FLOOD RISK	6.001	41	5.2	0.886	0.661	0.0939	
30 minute winter	41		22	87.745	0.999	6.2	0.2318	0.0000	FLOOD RISK	6.002	42	7.4	0.949	0.944	0.1565	
30 minute winter	42		21	87.531	1.172	42.4	0.3282	0.0000	SURCHARGED	1.005	44	42.3	2.405	2.393	0.2641	
15 minute winter	43		10	87.583	0.033	4.6	0.0077	0.0000	OK	7.000	44	4.6	1.530	0.228	0.0602	
30 minute summer	44		19	86.486	0.351	47.7	0.0723	0.0000	SURCHARGED	1.006	46	47.8	1.202	1.200	0.4773	
15 minute winter	45		10	87.884	0.034	5.7	0.0100	0.0000	OK	8.000	46	5.7	2.000	0.250	0.0611	
30 minute summer	46		19	86.344	0.280	55.2	0.0557	0.0000	SURCHARGED	1.007	48	55.1	1.714	1.382	0.3541	
30 minute summer	47		18	87.473	0.023	2.3	0.0028	0.0000	OK	11.000	48	2.3	1.694	0.113	0.0163	
30 minute summer	48		19	86.103	0.110	74.1	0.0236	0.0000	OK	1.008	49	74.2	3.983	0.443	0.5213	
120 minute winter	49		72	84.030	1.577	110.1	11.2827	0.0000	SURCHARGED	1.009	61	98.5	0.492	0.075	25.3510	
30 minute winter	50		22	85.368	0.618	3.6	0.1285	0.0000	FLOOD RISK	23.000	51	2.9	0.619	0.372	0.0861	
30 minute winter	51		22	85.350	0.785	6.4	0.2850	0.2126	FLOOD	23.001	53	4.4	0.787	0.558	0.0939	
30 minute winter	52		22	85.322	0.572	2.4	0.0538	0.0000	FLOOD RISK	24.000	53	1.6	0.247	0.143	0.0861	
30 minute winter	53		22	85.319	0.956	7.6	0.2687	0.0000	FLOOD RISK	23.002	55	6.3	0.810	0.807	0.0861	
30 minute winter	54		22	85.247	0.597	5.1	0.1755	0.0000	FLOOD RISK	25.000	55	3.8	0.599	0.315	0.0939	
30 minute winter	55		22	85.213	1.035	10.4	0.2526	0.0000	FLOOD RISK	23.003	57	10.0	1.274	1.267	0.0939	
30 minute winter	56		22	84.881	0.331	5.1	0.0973	0.0000	SURCHARGED	26.000	57	4.4	0.676	0.329	0.0939	
30 minute winter	57		22	84.842	0.866	14.9	0.2061	0.0000	SURCHARGED	23.004	59	14.4	1.837	1.828	0.0939	
15 minute winter	58		11	84.568	0.018	1.1	0.0012	0.0000	OK	27.000	59	1.1	0.264	0.068	0.0482	
60 minute winter	59		46	84.331	0.557	15.5	0.1114	0.0000	SURCHARGED	23.005	61	15.4	2.132	0.972	0.0626	
120 minute summer	60		74	84.036	1.545	50.1	10.9250	0.0000	SURCHARGED	28.000	61	-50.1	-0.110	-0.039	72.2502	
120 minute winter	61		72	84.024	1.593	115.7	11.4911	0.0000	SURCHARGED	1.010	74	120.4	0.252	0.094	82.3906	
30 minute winter	62		22	84.387	0.037	1.5	0.0035	0.0000	OK	29.000	63	1.5	0.689	0.191	0.0626	
30 minute winter	63		22	84.383	0.235	3.0	0.0532	0.0000	SURCHARGED	29.001	65	2.9	0.485	0.251	0.0939	
30 minute winter	64		21	84.380	0.472	2.6	0.0906	0.0000	FLOOD RISK	30.000	65	2.1	0.384	0.268	0.0939	
30 minute winter	65		21	84.370	0.664	9.8	0.3199	0.0000	FLOOD RISK	29.002	69	7.6	0.969	0.964	0.1408	
120 minute winter	66		82	84.219	0.436	1.5	0.0427	0.0000	FLOOD RISK	32.000	68	0.8	0.517	0.098	0.0626	
120 minute winter	67		82	84.219	0.411	1.3	0.0415	0.0000	FLOOD RISK	31.000	68	0.8	0.511	0.102	0.0782	
120 minute winter	68		82	84.218	0.579	2.8	0.0921	0.0000	FLOOD RISK	31.001	69	-2.8	-0.355	-0.327	0.0939	
120 minute winter	69		82	84.216	0.813	9.6	0.2844	0.0000	FLOOD RISK	29.003	73	9.0	1.154	1.148	0.1565	
120 minute winter	70		78	84.047	0.297	2.6	0.0279	0.0000	SURCHARGED	33.000	71	-1.9	0.531	-0.237	0.0939	
120 minute winter	71		78	84.046	0.498	4.7	0.1126	0.0000	SURCHARGED	33.001	73	-4.0	0.855	-0.422	0.1565	
120 minute winter	72		80	84.042	0.292	2.3	0.0441	0.0000	SURCHARGED	34.000	73	1.3	1.076	0.089	0.0939	
120 minute winter	73		78	84.040	1.024	15.3	0.3480	0.0000	SURCHARGED	29.004	74	14.5	1.195	0.396	0.2113	
180 minute winter	74		104	84.000	1.637	127.4	12.2710	99.4016	FLOOD	1.011	75	28.7	0.927	0.396	0.3098	436.0
360 minute summer	75		344	82.449	0.129	28.7	0.0000	0.0000	OK							